

# **Hypnotherapy in medicine**

## **The subconscious approach to healing**

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The Ministry of Public Health  
Bangkok Thailand

to the  
Medical Science Department

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## **Forward**

I want to thank the Ministry of Public Health for allowing me to make this presentation. I am hopeful that the door can be opened in Thailand that will allow the people of Thailand to understand and benefit from hypnotherapy.

The intent of this presentation is to only introduce western hypnotherapy to Thailand's medical professionals with easy to understand concepts and hands on examples. There is simply too much to cover in the time allowed so only some examples are touched on. I have provided some research information in the appendix sections.

At the time of this presentation there are little or no resources in Thailand for people to learn and understand about the potential healing power of the human mind. Even the Hypnotherapists in Thailand have only just scratched the surface because of lack of western educational materials on hypnosis applications in therapy. I am hopeful that this presentation will start the process of educating Thailand's medical and mental health professionals as to how the human mind can help them or stand in their way. One thing is certain, the limits of the human brain have yet to be found.

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## **Acknowledgments**

I want to thank my colleagues Paul Durbin PhD and Kevin Hogan Psy. D. for their contributions to this presentation. Their input in assisting me in locating relevant materials is greatly appreciated. Also the published comments of the late Dr. Frank S. Caprio.

Special thanks to Boonlert Saisanit and Suwit Phanpeng for helping to arrange this presentation.

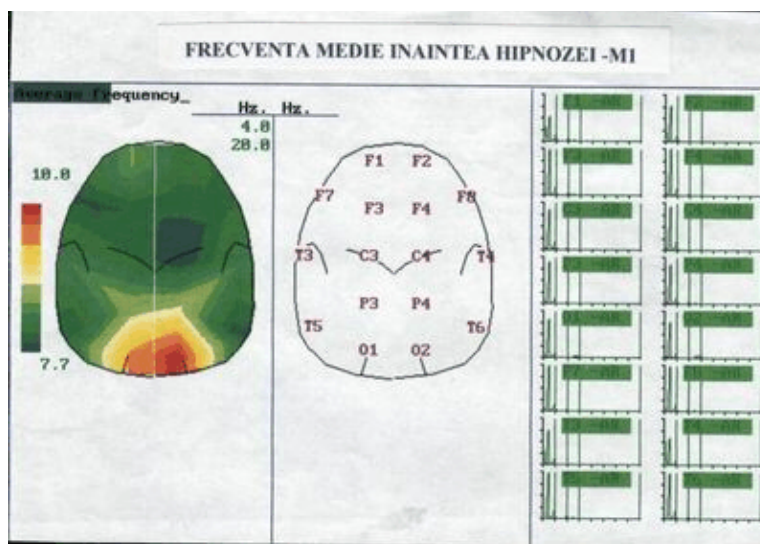
## **Additional sources of hypnosis research**

<http://www.ijceh.com/>

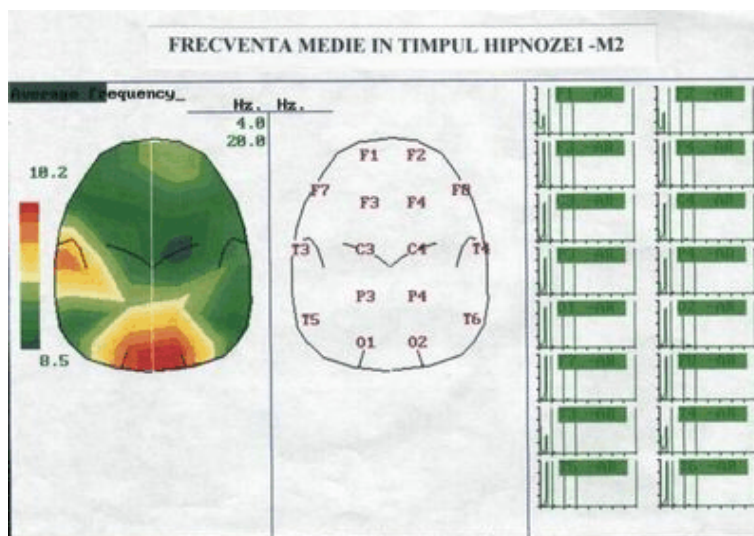
### What hypnosis is and is not

Hypnosis is a state of mind that allows a person to process and act on suggestions. Hypnosis bypasses the conscious mind and allows direct interaction with the subconscious mind. Hypnosis allows the person to perceive things differently. The altered perception can be emotional or physical. Hypnosis is not magic, although people in and after a hypnotic state appear to have ability to achieve remarkable things. It is also not necessary for a person to believe in hypnosis to be hypnotized.

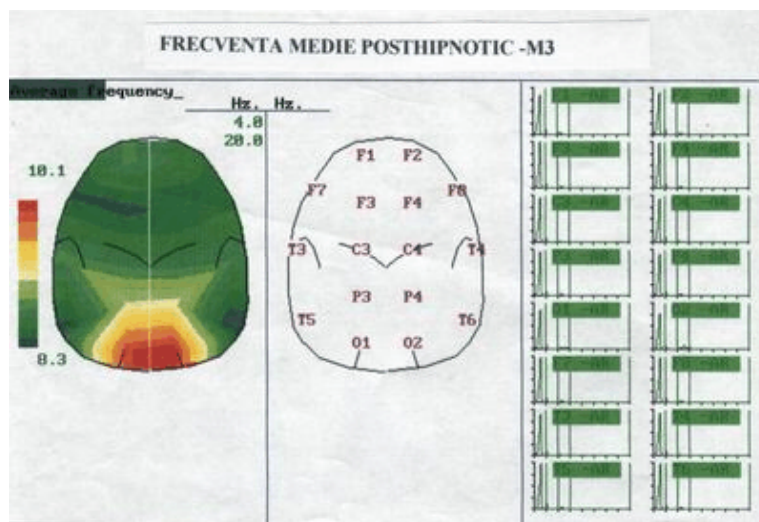
The effects of hypnosis are clearly visible in brain scans.



**1 Pre hypnosis**



**2 in hypnosis**



**3 Post hypnosis**

### **Hypnosis ability to cure physical illness**

Hypnosis makes no claim that it can cure physical illness. Hypnosis simply has the ability to stimulate the human mind to it's fullest potential to cure the body. Each persons mind has the ability to make the condition better or worse. Depending on the given strength of that persons mind and how advanced the medical condition is the expected outcomes will change.

In example, doctors and others have seen people give up and die quickly there after. Doctors and others have also see people fight and survive much longer than expected. It has also been observed seeing people recover completely.

We generally accept that humans use about 5% of their brain day to day. That is simply referred to as the conscious mind. The subconscious mind makes up the remaining 95%. Everything other than cognitive thought is subconscious. This includes the regulation of hormones, body temperature, pain management, blood flow, and other functions that can be manipulated with modern medicine. Antibiotics and antiviral medicines are excluded because they deal with foreign organisms. In short medicines that effect how people feel only mimics what hypnosis does naturally. However the manual administration of medicine may exceed the body's natural ability to produce it on it's own. Unlike administration of medicines, there are no side effects with hypnotherapy because nothing is being introduced into the body.

### **Understanding how hypnosis works**

In short the human brain is the ultimate expert on the human body. It knows what to do when we are sick even if we as humans have not discovered the answer yet.

When you watch a DVD at home, all most people know is put it in the player and push the play button. The need to know exactly what is happening is not necessary. Just the general concept it has to do with lasers is about all most know. The same is true with hypnosis. Hypnotherapists don't know or need to know exactly what is going on inside the human mind such as what chemical changes are occurring and so on. All that is necessary is knowing how to reach the desired outcomes hence push the right button.

Research continues mostly by drug companies to understand how the human brain works. As technology improves the brain is slowly giving up it's secrets. This is not so much driven by the desire to know but more by finding a way to make a profit from it.

### **Hypnotherapy at a cellular level**

The human mind has the ability to affect change at the cellular level. The changes observed are the result of collective cell stimulation. The mind can select a specific group of cells and ignore others. All that is required is the proper suggestions to achieve this. The need to be in a hypnotic state is not required.

**Example 1:** If you are traveling down a road and suddenly you encounter the smell a food that you particularly enjoy, your mouth will start to salivate in anticipation of the food. If the desire is strong enough you will stop and indulge. If you don't stop then once you pass out of the range the desire will pass. This is not hypnosis however it does reflect that the suggestion of eating that food will cause a physical reaction that starts at the subconscious level.

**Example 2:** Sexual arousal can start with the suggestion of impending sexual activity and/or for some observing sexual activity of others as in pornography. Without physical sexual stimulation the body prepares for sex. Males will start to have an erection. Females will start to secrete vaginal lubrication and experience vaginal lengthening. The process of physical sexual arousal will continue until the suggestion is removed.

**Example 3:** The sound of a crying baby will cause nursing mothers to lactate even if it is not their baby.

By identifying specific hypnotic suggestions the body will respond accordingly. In short giving proper hypnotic suggestions the body will produce or do what it needs to combat illness. An example may be slowing or stopping the blood flow to a tumor causing changes in the tumor. This essentially is no different than the suggestion that would cause males to get an erection by redirecting blood to the penis. Knowing what suggestion is the key.

Here is a short client history that clearly shows the ability of the brain to control blood flow: In 2003 a young female client came to me with a fear of needles. She wanted to donate some of her eggs as a way to make some money. The procedure required several blood tests prior to egg harvesting. When it came time for her blood to be drawn her arms became pale cold and clammy. Her fear was so profound her subconscious actually stopped the blood flowing to her arms as an effort to discourage the needles. When it was explained to her that her subconscious was causing her arms to change and at the same time the suggestion was given,

*“If they can’t find the blood in your arms the other places they will look are much less pleasant.”*

After the suggestion the blood visibly returned to her arms in about 30 seconds. She was not in a hypnotic state when the suggestion was given. After that her fear of needles was dealt with using hypnotic suggestions.

### **Hypnotherapy vs psychotherapy vs psychiatry**

Hypnotherapy greatly differs from psychotherapy and psychiatry. Psychotherapy and psychiatry deal with the conscious mind. The conscious mind is much more technical and requires a more technical approach. This is very time consuming with slow recovery. Most if not all mental illness starts at the subconscious level. Hypnotherapy is the only therapy that goes directly to the subconscious source. Hypnotherapy on average takes 25% of the time of conscious therapy. This is because the subconscious mind is vastly more powerful than the conscious mind. Psychiatrists and Psychologists often send their toughest cases to qualified hypnotherapists.

Psychotherapy works by stepping through the problems or tasks and talking about them along the way. Looking at things from many viewpoints and seeing what response is given. This helps to identify and to focus on the problem. This is a long and drawn out process. If you were to give the example of building a house, everything and every step from deciding where to build to getting the material to putting on the last coat of paint must be covered.

Psychiatry most typically is the introduction of mind altering medicines. This often only masks the problem with the hope that the afflicted person will sort things out on their own. Unfortunately due to the low number of Psychiatrists in Thailand it leaves few other options. Medications that were intended for short term therapy have been and are being used in long term therapy. This is still a conscious approach.

Hypnotherapy deals with the subconscious. The approaches are completely different. It is much like the Trojan horse. All resistance is in the conscious mind. The ‘I can not’ and the ‘I will not’ exist in the conscious mind. Hypnotherapy simply bypasses that and goes to the source. The subconscious is very simple and will only respond to simple ideas. So instead of giving step by step instructions on building a house, that is simply replace with the concept **‘build a house.’** The person accepts the suggestion and sets about building the house. They will only stop and ask for directions if they truly do not know what to do along the way. The subconscious also tends to be lazy and often makes mistakes although all intentions are good. So by helping the subconscious mind to find a new and better idea is one of the keys to hypnotherapy.

It is not necessary for a Hypnotherapist to have a degree in psychology or other conscious approaches. Hypnotherapy is unique and should not be confused with conscious therapy. There is at least one group that does not agree with this and some professionals view them as a bit arrogant. Ultimately it is each persons decision if this is necessary to have both or not.

Quotes from Dr. Of Psychiatry Frank S. Caprio

*I BELIEVE THAT THE USE OF HYPNOSIS SHOULD NOT BE LIMITED TO PHYSICIANS AND DENTISTS. FRANK S. CAPRIO: FRANK S. CAPRIO: BETTER HEALTH WITH SELF HYPNOSIS: PARKER PUB CO. NEW YORK: 1985*

*1Hypnosis is a rapidly growing specialty. In 1958 there were no more than two hundred dentists and physicians in the United States using hypnosis. There is at the present time a minimum of 15,000 dentists and physicians using hypnosis.*

*Most of the instruction in hypnosis is now being given by teams of traveling dentists and physicians who offer three-and four-day and one-week post-graduate courses in dental and medical hypnosis. These courses are open to practicing dentists and physicians and persons in related fields.*

***I believe that the use of hypnosis should not be limited to physicians and dentists.** It is a proven fact that many qualified and ethical hypno-technicians are capable of achieving successful therapeutic results.*

*Lectures regarding hypnosis and self-hypnosis. should be made available to the general public. The inestimable value of self-hypnosis should inspire everyone to apply self-hypnosis to day-to-day self-improvement.*

*Hypnosis and self-hypnosis are gaining increasing importance in the lives of all human beings. The potentials are unlimited. I predict hypnosis will become a great force for the prevention of wars. War is a form of insanity, caused by hate sickness, irrational fears, uncontrolled aggressiveness, and unresolved conflicts arising from religious and other differences which account for the widespread violence we are presently witnessing. Hypnosis is based on the control of man's intellect over his emotions. Man's greatest triumph some day will be the conquest of himself so that he may teach others it is better to love than to hate.*

*It was J .B.S. Haldane, British scientist, who substantiated this when he stated: (182) "Anyone who has seen even a single example of the power of hypnosis and suggestion must realize that the face of the world and the possibilities of existence will be totally altered when we control their effects and standardize their application. " (183)*

### **Unqualified opinions and comments**

Negative comments about any profession tend to come from unqualified people, hypnotherapy is no exception. A psychologist or psychiatrist is not qualified to make comments on hypnotherapy. Although the expected outcomes may be the same, the methods differ greatly. Think of the differences between a carpenter and a stone mason. Both can build a dwelling but use entirely different methods. All each group needs is a concept of the others methods so they can work together.



When a Hypnotherapist is working with a client, only the Hypnotherapist knows what he or she is trying to accomplish. Each person will process the same suggestion differently. If the suggestion 'Think of your favorite food' is given, each person would have a different food come to mind. So a person observing a hypnotherapy session would perceive the suggestion differently than the person being hypnotized. The observer's perception would be conscious based, while the person in hypnosis would perceive it with the subconscious. Conscious suggestions are not processed the same as subconscious suggestion. As a result what an observer thinks may happen after processing it with their conscious logic is not necessarily the same as subconscious processing. The subconscious is impulsive and not logical.

As with any negative comment about any profession, the source can be traced to an unqualified person. Very often the comment comes from the media as the journalist tries to understand things that he has had little or no experience with. In most cases this is accidental and not intentional.

### **People who can't be hypnotized for therapy**

There are a few groups of people who can't be hypnotized for therapy. Each group has their own reason.

The first group is very young children under age 6. The reason for this is young children have small vocabularies and short attention spans.

The second group is people with a low I.Q. The threshold appears to be people who have an I.Q. below 70 can't be hypnotized. The reason is attention and the lack of ability to process logic. On the opposite end of the scale people with a high I.Q. are very easily hypnotized.

A difficult group to hypnotize is people suffering from schizophrenia. They can only be hypnotized if they don't know it is happening. If they know they will successfully resist.

Resisting hypnosis is not the same as not being able to be hypnotized. Anyone can resist hypnosis.

Not everyone enters hypnosis at the same speed. In fact there are some that will enter hypnosis in a few seconds, while others may require much longer inductions.

### **Depths of therapeutic hypnosis**

As with medication different effects occur at different dosages. There are several scales of trance depths in hypnosis. The simplest scale is the Arons scale. It divides trance depth into six levels. Other scales are more refined and have up to thirty levels. Depending on the reason for therapy different levels of trance are required. Levels one through three are typically all that is needed for emotional problems. Levels four and deeper are needed to bring about physical changes. There are distinct tests to determine trance depth. It may take several sessions to achieve deep hypnosis for some people.

**Level 1** is very light and this is not deep enough for most Hypnotherapy. Most hypnotherapists prefer deeper levels.

**Level 2** is sufficient for dealing with phobias and other minor mental illness issues. This is then minimum level hypnotherapists prefer. Local catalepsy can be achieved at this level.

**Level 3** is the minimum depth needed to deal with addictions such as nicotine. It is also the depth needed to modify habits, dealing with mental issues. More pronounced catalepsy can be achieved at this level.

**Level 4** is the minimum depth needed to affect physical changes in the body. Changes in physical sensation in localized areas. People will not feel pain but will feel touch. Amnesia can be induced at this stage. Complete catalepsy can be achieved at this level.

**level 5** is needed to effect physical sensations over the entire body. People will feel neither pain nor touch. Vivid memory recovery and positive hallucinations (*Positive hallucination: seeing things that do not exist*) can occur at this level. Early stages of somnambulism.

**Level 6** is only needed when the hypnotist wants or needs a more profound effect. All senses are effected at this level. Negative hallucinations (*Negative hallucination: not seeing things that do exist*) can occur at this level. Profound somnambulism.

### **Coma**

Levels deeper than level six are not necessary for hypnotherapy. The deepest levels of hypnosis are known as coma. Not because the subject is in a coma, but they only appear to be. The deeper levels are very pleasant and people don't want to come out. The only people who would seek to use the coma levels would be medical doctors, nurses or other health emergency professionals. The application would be mostly used for trauma patients. All pain and discomfort disappear passing through levels 5 and 6. Coma produces large quantities of hormones related to pleasure and relaxation. Anxiety completely disappears and is replaced with a wonderful sense of well being and being care free. This can eliminate or reduce the need for stabilizing medications in transit or in the trauma center. In short people in coma don't care about anything but are completely aware. Because of that awareness they will respond to danger if needed.

### **Hypnotherapists**

Hypnotherapy covers a large area. Some Hypnotherapist may not be certified in some areas and specialize in only a few things. Some Hypnotherapists are very holistic while others much more traditional. Typically western doctors prefer more traditional Hypnotherapists. Think of Hypnotherapists as specialists with the subconscious mind. The same would apply to a gynecologist or urologist in their area of speciality. Typically people who specialize only in one area tend to be the best at what they do as compared to people who may cover several areas.

### **Types of hypnotic suggestion**

There are three types of hypnotic suggestion. Each is perceived differently by the subconscious mind.

**Type 1 Direct suggestion:** Usually accompanied with the words ‘you will’ ‘you should.’ They are used when a specific response is required.

**Type 2 Indirect suggestion:** Usually given in the form of a metaphor. This allows the subconscious to relate to a past experience and process the suggestion accordingly.

**Type 3 Seed suggestion:** A very subtle suggestion and also the least controlled. This is because the suggestion is planted and allowed to grow without supervision.

### **Ease of suggestions**

Not all suggestions need come from a hypnotherapist while a person is hypnotized. In a medical setting patients overhear conversations about them and react accordingly. A persons emotional state will change depending on what is heard. Emotions do affect the bodies ability to heal. Sad or negative emotions weaken the body while positive emotions strengthen the body.

Negative suggestions can come from a doctor. If a doctor says to a patient

***“you have x months to live”***

, and if the patient truly feels that it is truly hopeless, the patients subconscious will see to it that the doctor is correct and proceed to die on Que. If there is doubt or denial then the suggestion will be rejected.

Example experiment: Have someone sit in a chair and have them put their arm straight out to the side. Ask them to think a happy thought give them a few moments and then push down on their arm. Take note of how much force is needed to push down their arm. Then ask them to think of a very sad thought and repeat the process. Take note of the change in resistance.

Example of a simple seed suggestion a medical doctor might use;

A patient is very sick and expects to die in the hospital. The patient fully believes they will never see the outside again. This negative thinking of impending death will make the condition worse. To administer the suggestion simply the doctor would defer a question the patient may have and say

***“Lets talk about that when you get out of the hospital.”***

The suggestion is understood by the subconscious as ‘I must not be as sick as I thought’ and will encourage the mind to end the negative thinking and work on healing the body. Hearing it from a medical doctor is more powerful than from a person seen as a non medical professional by the patient. A hypnotherapist knows how to get around this and can render powerful suggestions.

## **Body language**

Body language is direct communication from the subconscious. learning how to read it is a significant part of Hypnotherapy. Body language tells the hypnotherapist how the subconscious is responding to suggestions and alters the suggestions as needed to get the desired outcome. When working with someone it is important to remember that the subconscious of the person who you are working with is reading you too. Never forget communication goes both ways.

## **Applications of hypnosis in medicine (summary)**

There are several applications of hypnosis in medicine. In some cases hypnosis works better than conventional medicine such as Irritable Bowel Syndrome.

Fibromyalgia, Hypertension, Hypnooncology, Multiple Sclerosis, and pain management are several typical examples that hypnotherapy is commonly used.

Dealing with pre and post surgery anxiety, as well as general anxiety in medical settings.

There are also several cutting edge applications under development or proposed.

**Proposed, Alzheimer's:** Use of hypnosis to see what changes occur in the brain thus allowing the brain to point the way to a cure for traditional medicine.

**Under development, Stroke:** Accelerate the recovery process and or improve expected outcomes with hypnosis.

Keep in mind that hypnotherapy is not practicing medicine and should not replace medicine. It is simply a tool that can be used to assist. Think of it as medicine of the mind.

## Irritable Bowel Syndrom (IBS)

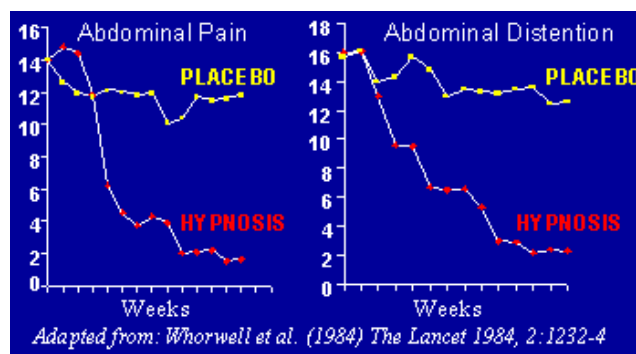
(General outline of therapy) IBS is caused mostly by anxiety. The afflicted person responds to a trigger (*trigger: a sight, sound, touch, sensation, or smell that is related to "x"*) that starts the syndrom.

The first step is to remove that and other triggers at the subconscious level.

The second step is to show that their thoughts contribute to the syndrom.

The third step is teach them that they can control the syndrom and to replace the negative triggers with positive triggers.

Hypnotherapy has been proven to be the most effective method. There are several reports available on the Internet that reflect more recent but similar results. One such website is <http://www.aboutibs.org/Publications/HypnosisPalsson.html>



## Fibromyalgia

(General outline of therapy) Fibromyalgia seems to be caused by miss-communication between the mind and body. The symptoms are exaggerated by the anticipation that they will occur. There are three steps to this therapy.

The first step is to remove the pain and discomfort.

The second step is to retrain the brain not to expect the pain and discomfort.

The third step is maintenance with one session every 4 to 6 months.

This therapy works best in conjunction with other therapies. Chiropractic treatments to realign bones pulled out of location by muscle spasms. Therapeutic deep tissue massage (not Thai massage) to remove any trigger points in the muscles to allow them to relax completely. There are other therapies that work but chiropractic treatments and therapeutic deep tissue massage have shown the best results in supplementing hypnotherapy for fibromyalgia symptoms.

### **Hypertension**

(General outline of therapy) Hypertension can be caused by external stimuli or internal obstructions of blood flow. Hypnotherapy will only affect hypertension related to external stimuli. As a result hypnotherapy becomes a quick and easy diagnostic tool to establish if the source of hypertension is internal or external. Typically the change is from 8 to 42 points with most being in the 22 to 30 point range on both systolic and diastolic.

The therapy focuses on stress and anxiety management. It also focuses on relaxation techniques that the client can use. Hypnotic suggestions focus on causing the muscles to be more relaxed and dilation of arteries and veins. The results are lasting, however an occasional followup visit every three to six months may be suggested for people who have high stress lives.

### **Hypnooncology**

Hypnooncology is a method of using Hypnosis to motivate positive emotions and positive thinking "I CAN." The first program of this type was developed and offered at La Grange Memorial Hospital in La Grange Illinois. The "I CAN" program merges self help techniques with instruction in self Hypnosis. Based on the finding that the state of mind has a significant effect on medical outcomes. People who are engaged in healthy minded living simply do better medically, even if they have a life changing disease.

Each person has their own perception of the condition they are experiencing. Because of that personalized suggestions are used within the parameters of the program. See appendix A for a typical case history.

### **Multiple Sclerosis**

This therapy is focused on suppressing emotions that may advance the condition. Inward thinking as compared to outward thinking. Apparently some research has suggested that negative emotions accelerate the advancement of the condition. This therapy is very similar to Hypnooncology.

### **Pain management**

Pain management with hypnosis is very effective for short periods of time. However once a person is taught how to control the pain with self hypnosis the pain can be controlled indefinitely. Hypnosis naturally produces endorphins and endorphins have been shown to be up to twenty times more effective than morphine.

Because hypnosis is so powerful, hypnotherapy for pain management should only be performed when the pain producing condition is diagnosed and ordered by a doctor. Simply pain is the body's alarm that something is wrong. Shutting off the alarm without knowing why is ethically wrong.

Often clients seeking other forms of hypnotherapy report that pain they had disappeared

completely during the session as an unexpected side effect. Because the focus of that particular therapy was on something other than pain, any discomfort they had returns within the next several hours.

A common use in hospital settings is pre surgery. Assuming a pre surgery patient is suffering from significant pain and they are taking medications to control the pain. The mixing of pain medications together with general anesthesia may prove to be life threatening. By seeing a hypnotherapist the patient may be able to reduce or eliminate the pain medication prior to surgery thus reducing the chance of complications in surgery.

Waking surgery has been done in operating theaters for patients who are allergic to anesthesia.

### **Hypnotherapy and mental health**

Hypnotherapy has been proven to be helpful with mental illness. To understand how this works mental illness must be first classified as mild, moderate, or severe.

**Mild** may be defined as loss of a loved one and or the inability to cope with a situation and phobias.

**Moderate** would be defined as mental illness other than a desire to harm themselves or others. They are still able to distinguish reality from imagination.

**Severe** may be defined as the inability to separate reality from imagination and or a desire to harm others or themselves.

Hypnotherapy is very effective in mild and moderate cases with results often occurring much quicker than conscious therapy.

Severe mental illness is best left to a psychiatrist as they can introduce medications to initially assist. After the patient has been stabilized and brought down to moderate levels, then hypnotherapy can be used in conjunction with psychiatry.

See page 7 for more information.

### **Other common applications of Hypnotherapy**

there are several applications of hypnotherapy. Not every hypnotherapist does the same therapy. Below are listed many of the more common therapies.

One of the most common and recognized is smoking cessation. It is the only method that breaks the mental addiction to nicotine.

Weight management.

Sexual dysfunction including erectile dysfunction, premature ejaculation, frigidity.

Stress and anxiety management.

Obsessive compulsive disorder OCD.

Sleep disorders.

Eating disorders.

Antidepressant withdrawal.

Diabetes.



Appendix A

CANCER PATIENT: BEE'S CASE HISTORY:  
PAUL G. DURBIN, Ph.D.  
RETIRED US ARMY CHAPLAIN (BRIGADIER GENERAL) [1986]  
RETIRED DIRECTOR OF PASTORAL CARE: METHODIST HOSPITAL [2001]  
RETIRED DIRECTOR OF CLINICAL HYPNOTHERAPY: METHODIST HOSPITAL  
NEW ORLEANS, LA [2005]  
(LIVED IN BANGKOK, THAILAND 1973-1975)

I would like to share with you a case history of a cancer patient I worked with using hypnosis. When I work with a patient who has a terminal disease, I tell them that we are working for a better quality of life as well as healing. To increase exceptions for good results, I began with information in the following areas:

1. I assist patients to focus all their mental, emotional, spiritual and physical energies on health.
2. I emphasize the importance of mental, emotional and spiritual aspects of healing.
3. In focusing on the mental and spiritual, I am aware that physical things seem much more real. We talk about "mind over matter," but for many that is only a concept. Most of our science rests on the premise that to be "real" something must be predictable, measurable, and repeatable.
4. This way of thinking is reflected in how we think about the body. If I tell you "lift your arms" or "close your eyes" you could all do it. That would seem natural. These things are under our conscious control. These kinds of things are controlled by the central nervous system. But if I said "the discomfort is being released from your body and you are feeling better and better" or "Relax the blood vessels in your head so that the headache is relieved." Many would discount that suggestion or think I was just joking with them.
5. Research has demonstrated that you could quickly learn to follow each of those suggestions. If provided with proper directions, you could soon learn to reduce discomfort in your body or to relax blood vessels to your head to reduce or eliminate a headache.
6. Some conscious control over internal "involuntary" processes can be accomplished by hypnosis, relaxation, guided imagery and visualizing. If you wanted to feel warmer, you could imagine yourself on a warm tropical beach with the sun covering your body with its warm rays and the warm sand beneath you warming you. You actually feel warmer. Thought and images in your mind changed how your body felt.
7. But the "mind" controls your body in an even more remarkable way for your attitudes and beliefs will affect how much control you have over internal bodily functions.
  - a. Psychologists have developed a test that distinguishes "internals"-people who believe they are responsible for their own behavior and create their own experiences -- and "externals" -- people who believe their behavior and their experiences are controlled by luck or fate.
  - b. "Internals" are able to exercise greater control over their heart rate than "externals."
  - c. "Internals" can decrease their heart rate while in a light state of hypnosis and proper suggestions; "externals" may need a deeper hypnotic state with suggestions to accomplish the same task.
  - d. The difference was their "beliefs" and their "expectations."
8. How does this relate to the patient and their cancer? I believe that a person's beliefs about themselves and their cancer will have a great deal of impact on the outcome of their treatment.
9. The mind, body and emotions are a unit and act together.

10. If the patient believes their cancer will kill them, it is more likely to do so. If the patient believes their treatment is helping them, it is more likely to help them.

11. Attitudes produce real effects: good or bad.

12. The "imagines in our mind" affect physical reality.

13. Hypnosis, relaxation, guided imagery and visualization are ways to focus attitudes and beliefs to mobilize spiritual, emotional, mental and physical energy in a desired direction.

Bee (not her real name) was referred to me by her doctor after her second hospitalization with cancer. I met Bee about two years before when she had a breast removed and again when she returned to the hospital with a lump in her remaining breast. She refused to have more surgery, but agreed to chemotherapy. As Bee was very sick between each of her chemotherapy treatments, her doctor referred her to me for pain management and emotional/spiritual support. For cancer patients, I follow a course of therapy based on the Simonton's approach. (Carl and Stephanie Simonton and James Creighton Getting Well Again)

I used imagery with Bee and had her use it during her self-hypnosis sessions. I used imagery that would help:

1. Increase the number of healthy white blood cells. (Imagine the number of white blood cells increasing and image the cancer cells as weak and disorganized cells that they, in truth are.)

2. Increase the number of natural T killer cells and T helper cells. (Both T killer cells and T helper cells are destructive to cancer cells.)

3. Increase the power of any cancer fighting medication or radiation by imaging them as allies in the battle to defeat the cancer and bring healing. (See your chemotherapy/radiation killing cancer cells but not destroying healthy cells.)

4. Increase activity of bone marrow-producing healthy cells

5. Imagine the cancer cells decreasing and gone.

Near the end of her first visit, I gave Bee some homework. I asked her to write down any stressful situations she had experienced over the 6-18 months before her diagnosis. She listed the following: (Simonton's studies shows that most cancer patients went through some very stressful events anywhere from 6-18 months prior to diagnosis of the disease. They found that the inappropriate handling of stress reduces the immune system and weakens an individuals resistance to cancer and/or other diseases. Simonton p87)

1. A year before her cancer was discovered, her husband left her and their children for another woman.

2. The next month, she had to go to work to support herself and the children.

3. Filed for divorce.

4. Had first date with another man.

5. Found lump in her breast and breast was removed.

6. Divorce final.

7. Married the man she had been dating.

8. Another lump was found in her breast and returned to the hospital.

During the second session we discussed the above list and I taught her several pain reduction and elimination techniques. I pointed out that there are four things that contributes to one's ability to obtain pain relief with self-hypnosis:

1. Your success in developing self-hypnosis trance. Success with self-hypnosis techniques is a matter of practice. You need to experiment with various approaches, suggestions and kinds of imagery. Relaxation in many cases will relieve a considerable amount of pain. Muscle tension often puts pressure on nerves and this aggravates discomfort. Easing your tension is the first goal. Then you can begin dealing directly with the pain.

2. Motivation for pain relief means freeing yourself from the need to keep pain in your life. It may seem unbelievable that you might "need" to keep pain. But often there are advantages as well as disadvantages to pain problems. If pain results in you getting secondary gains and getting out of responsibilities you do not like, these benefits can reduce your motivation to feel better.

3. You may fear letting go of your pain. Because pain can be a signal that we are alive, we may fear shutting it off.

4. You can have some control over your pain. Pain serves our survival needs and we have the some control over it. (Some excerpts from Alman, B and Lambrou, P; Self-Hypnosis.)

**PAIN VAPORING AS STEAM:** Some techniques which I taught Bee over the course of her therapy with general illustrations, follows: For this illustration, let us assume the patient's pain is in the knee. I have the patient visualize the discomfort leaving the knee as a vapor of steam. I repeat softly, as steam rises from a kettle so the discomfort is leaving your knee as steam. Visualize the steam rising from your knee and as the steam rises, the discomfort is evaporating. As the steam rises, the discomfort is leaving and you are feeling more and more comfortable. I repeat the idea of comfort many times and then I count the client out of hypnosis.

**PAIN IN A BOX ATTACHED TO A HELIUM BALLOON:** Sometimes I have the client imagine that they are placing all of their discomfort (pain) in a box. I suggest, now imagine that you are attaching the box to a ribbon which is attached to a helium filled balloon. The balloon is lighter than air so when you let go of the box it will begin to float upward. Just imagine that you are lying on a blanket in a beautiful garden and you let go of the box containing your discomfort. The balloon with the box attached begins to float upwards. As the balloon goes higher and higher, the box gets smaller and smaller and as the box gets smaller and smaller, the discomfort is less and less. The balloon goes higher and higher, the box gets smaller and smaller and the discomfort less and less. As the balloon goes higher and higher, the box gets smaller and smaller and you feel more and more comfortable. (repeat the last sentence several times) The box is going, going, going, it is out of your sight and you feel very, very good, very, very comfortable.

**HYPNOSIS FOR GLOVE ANESTHESIA:** (Described by John Krukowski, C.H.)

**REDUCING HEADACHES BY RELAXING BLOOD VESSELS:** For a headache, I ask the client to visualize the blood vessels in her head are tight and tense. The discomfort comes as the blood tries to flow through those tight vessels. Under hypnosis, I have the client make a tight fist and I say: As you relax your hand, the vessels in your head are relaxing, as the vessels relax, you feel more and more comfortable. Visualize the blood vessels relaxing and the blood flowing freely with out stress or tension. As the blood flows freely, you become more and more comfortable.

**WARM HAND FOR HEADACHE REDUCTION:** A second method of headache relief is to imagine the hand on the opposite side of the headache, or both hands if the headache is general, becoming very warm. Picture your hands warming near a fire place. The hands become warmer and warmer. The excess blood, which is putting a strain on the blood vessels in your head, begins to flow from the head into the hand. As the blood flows from the head into the hand, you become more and more comfortable (repeat these ideas in various ways).

**REDUCING THE SIDE-EFFECTS OF CHEMO-THERAPY:** Cancer patients often get very nauseated by just the thought of chemo-therapy or when they come into the hospital or treatment room for chemo-therapy.

In a recent study discussed by Gary R. Morrow, M.D. and Christine Morrell in the New England Journal of Medicine, 40 patients were followed: Twenty were given relaxation exercise

and suggestions for comfort and healing with their chemo-therapy and twenty just followed the chemo-therapy routine. Of those who practiced relaxation and gave themselves suggestions of comfort and healing, half had no more nausea and half said their discomfort was less severe than before. Of the twenty patients who followed the regular chemo-therapy routine, 95% continued to be sick.

I have found that relaxation, imagery and hypnosis are important assets in the reduction of the side effects of chemo-therapy. I have the client visualize their white blood cells joining with the chemo-therapy to destroy any enemies to their health. This is done in such a way to help the patient see their chemo-therapy as their friend with their own white cells destroying the cancer and bringing healing to their body.

If they are experiencing nausea, I have them visualize the stomach containing a reddish fluid. I have them visualize the reddish fluid slowly turning to a clear fluid. I say, "As the color changes, you are feeling more and more comfortable. All discomfort is leaving as the fluid becomes clear. You are feeling more and more comfortable." I repeat this several times.

I have the client visualize coming into the hospital or treatment clinic, going through the admit procedures, sitting down in their room, and taking the chemo-therapy without any discomfort. I have them visualize themselves relating to the nurses and hospital staff in a friendly and easy manner.

I have them repeat to themselves several times, "I go through my chemo-therapy feeling good and comfortable." I have them seeing themselves well, feeling good, and being active. In their suggestion and visualization, I emphasize that they use suggestions and visualizations of what they desire to be in the present tense. That may seem unusual because we are accustomed to speaking of the future in the future tense, but the subconscious mind response much better to suggestion in the present tense as if it has already happened. I teach the client self hypnosis so that they can visualize this between treatments. I recommend that they use visualization at least once a day.

I now return to Bee's case as it progressed. I ask Bee to list the gains she received from her illness. At first she said that she had not received any gains, but as she thought about it, she came up with four gains.

1. Did not have to work.
2. Could take it easy.
3. Gets more attention.
4. Could say "no" without worrying about hurting other people's feelings.

We discussed how she could accomplish these gains without the excuse provided her by being sick. We talked about relaxation therapy, image therapy and hypnosis to help her deal with a wide range of issues in her life. I explained what hypnosis was and what it was not and how she could use it to reduce or eliminate pain and improve her life style. Since she began chemotherapy, Bee had been spending a majority of time lying in bed. I asked her to do the relaxation therapy, image therapy, and self-hypnosis three times a day.

When Bee first came to me, she could see only sickness, pain, and death in her future. I addressed these concerns by suggesting that she visualize herself getting better and doing things that she enjoyed doing. This helped her to have a more hopeful attitude and a better quality of life. In Matthew (6: 22-23) we read, "The eye is the lamp of the body. So if your eye is sound, your whole body will be full of light: but if your eye is not sound, your whole body will be full of darkness." I suggested that this scripture has more to do with one's attitude and expectation than it does with physical sight. It is how you look upon life that makes a difference. Norman Vincent Peale said, "This means that the way you see things, the attitude you take, the slant of

your thinking determines whether your whole body shall be full of darkness and gloom, or light and joy. It's how you see or look upon life that makes the difference." [Peale, p25] These were direct and indirect suggestions for her to make some changes in her attitude by imagining what she wanted to happen as if it had already happened. I shared with her the words of Dr. Harry Emerson Fosdick, "Picture yourself as defeated and that alone will make victory impossible. Picture yourself vividly as winning and that alone will contribute to success. Great living starts with a picture held in your imagination of what you would like to do or be."

I asked Bee to set some attainable goals for the future. When one goal is reached, she can set another. The goal setting is an ongoing process. In goal setting, when a goal is attained, you can choose another and even have several goals at one time.

Establishing goals serves five purposes:

1. Setting goals is different from making a bargain. A bargain may be, "If I just live to see my daughter graduate in May, then I will be ready to die." A goal is "One of my goals is to see my daughter graduate from college in May."
2. Establishing goals is an affirmation of the ability to create the experiences needed to meet emotional and spiritual needs.
3. Goals serve to focus a person's attention and energy in a positive direction and establish "hopeful expectation."
4. Goals are affirmations of life.
5. Establishing goals is a re-investment of meaning in life.

I asked her to set aside a regular schedule for exercise and play. In a seminar, Richard Haas said, "Historically, it has long been recognized that stress related occasions may be reduced through exercise. These exercises reduce stress and depression. They encourage enhancement of the lives of people physically, mentally, emotionally and socially. There is no doubt in my mind that proper exercise improves both physical and mental health of a person."

We discussed how her resentment toward her first husband and his new wife interfered with her health and quality of life. Resentment keeps the hurt alive and blocks the healing; emotionally, physically, and spiritually. Maxwell Maltz said, "Forgive others. Do it not only for their sake but for your own. If you don't, you will feel within you a nauseating resentment destroying you from within." [Maxwell Maltz, Psycho-Cybernetics, p104] I had her visualize her first husband sitting in a chair in front of her. She told him of all the hurt she had experienced as a results of his deserting her and their children. She said that in order for her to get on with her life she was releasing the resentment by forgiving him and she did.

We discussed her feelings that God had forsaken her. She worked through those feelings to an understanding of God who was actively helping her through this situation. We talked about set-backs which she has had or might have in the future. We talked about the death process and the grief she experiences concerning her death.

After several months, Bee returned to the hospital with excess fluid on her lungs. Just a few days before returning to the hospital, she had completed a joyful pain-free vacation with her husband. She died three days later. I do not know if we added any time to Bee's life, but she did live six months longer than expected and had a better quality of life. Her doctor told me that he had never seen such a change in the attitude of a patient as he had seen in Bee as a result of the relaxation, imagery therapy and hypnosis. Just after her second hospitalization, Bee was ready to die, stayed home in bed most of the time and had no hope for the future but as a result of the therapy, she lived with hopeful expectation and lived a more meaningful life. During this time, Bee was relatively pain-free and lived an active life to include enrolling in a local community college.

Relaxation, imagery therapy and hypnosis tends to decrease fear and bring about an attitude change. These techniques have been found to effect physical changes, enhancing the person's own immune system, altering the cause of the disease, decreasing tension and stress and helping to confront and alter the stance of hopelessness and helplessness. These methods along with traditional medical treatment and faith in the God who cares can help in healing. Even for those illnesses and injuries which cannot be healed, these methods bring about an improved quality of life. Again, I would like to emphasize that to say one participates in his or her own health situation is not intended to create guilt over being sick, but to give hope for healing and help for dying. [Simonton, p137-138]

Many in our world are sick: some physically, some mentally, some spiritually. Millions of people feel lonely and unacceptable. Others feel a lack of satisfaction with jobs, marriages and life. Doctors say that over half the people suffering from an illness are sick because they have an emotional or spiritual problem that keeps their body or mind from functioning properly. This does not mean that the sickness is just in their minds, but that the body is weakened and illness comes. Often when the person gets their emotional or spiritual problems straightened out, healing takes place. It is an accepted fact that a person's attitude does have a profound effect upon the body for good or bad.

## Appendix B

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## HYPNOSIS RESEARCH AND STUDIES

### 1. DR. ROBERTA TEMES MEDICAL RESEARCH

Hypnosis is the original mind/body medicine and every year many clinical trials are conducted to prove the usefulness of hypnosis in specific situations. Here are some recent outcomes:

Would you take a pill that promised to speed you through surgery? Would you take a pill that's been tested on hundreds of surgical patients and all but one of them maintained stable vital signs during their operation - no sudden high blood pressure - and all needed far less pain medication than patients who did not take the pill-much reduced pain after surgery, and there's more. The surgeons were able to complete the operation quicker in the patients who had the pill. I suspect if there was such a pill every HMO would insist upon it. After all, they'd save money on medications and on time spent in the operating room. The 'pill' that's been proved to have this effect is hypnosis!

In the April 29, 2000 edition of the scholarly medical journal, the Lancet, Dr. Elvira Lang of Harvard University published her study of clinical trials using hypnosis before **surgery**. People who had been hypnotized prior to surgery needed less pain medication, left the operating room sooner, and had more stable vital signs during their operation.

A study of children with **trichotillomania** appeared in the medical journal, Acta Paediatrica, 88 (4) pp. 407-410. Children who were hypnotized to stop pulling their hair remained able to refrain from doing so for 16 months, after just a few hypnotic sessions. The authors, H. Cohen, A. Barzilal, and E. Lahat at the Pediatric Ambulatory Center, in Petach Tikva, Israel, suggest that doctors consider hypnosis and not medication as the primary treatment for compulsive hair pulling.

Patients with **migraine headaches** had a group hypnosis session and then were given pre-recorded self-hypnosis tapes to take home. On the self-hypnosis tapes they were given imagery of wearing a helmet that was very cold because it had freezer coils inside it. They were also taught how to relax themselves using hypnosis. Before joining this research study all the patients agreed to keep written records for three months. During those three months they listed every migraine they had and how long it lasted, how severe it was, and how much medication they needed.

For three months the patients listened to their hypnosis tapes, which put them into a hypnotic state. At the end of three months the data from the first three months was compared to the data of the three months during which they used self-hypnosis.

- \* During those last three months:
- \* The headaches occurred less often
- \* When the headaches did appear they went away quicker
- \* The headaches were less severe
- \* Medication use was cut in half

Hypnosis is an effective treatment for migraine headaches.

Before having **dental surgery** patients listened to a 20 minute hypnosis audio tape. The tape put them into a hypnotic state and then told them that during the procedure they would be able to control bleeding from their gums, they would heal rapidly, and would easily cope with pain. Patients were told to listen to their tape every day for one week prior to the surgery. The dental surgeon performed similar operations on patients who listened to the tape and patients who were not given a tape. The dentist did not know which patients had tapes and which did not. After the surgery it was determined that patients who had been hypnotically prepared

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experienced less anxiety, and needed much less pain medication. This study proves that a properly designed audio tape can be an effective intervention. This study was conducted by Bjorn Enqvist, DDS, in Stockholm, Sweden.

Fifty patients suffering from **irritable bowel syndrome** were asked to fill out questionnaires about their symptoms. Half of the patients were hypnotized and half were not. After a few months new questionnaires determined that the patients who had been hypnotized had less abdominal pain, less bloating, less nausea, less gas pain, and fewer backaches. Additionally, the hypnotized patients said they felt more in control of their lives and did not call in sick as often as they did before having the hypnosis. Also, they did not need to visit their doctors as often as they did before the hypnosis. The patients in the study who did not receive hypnosis did not show these improvements. This study proves that hypnosis not only relieves symptoms of irritable bowel syndrome, but also improves quality of life for those patients. This study was conducted by Dr. Whorwell, University Hospital of South Manchester, in the United Kingdom.

Research was done to determine the effectiveness of hypnosis in treating **trichotillomania**, compulsive hair pulling, in children. The children were hypnotized and then taught self-hypnosis so they could re-hypnotize themselves at home on a daily basis. The children who had trichotillomania without depression recovered well. Those who had depression were only partially successful. This study was done by Dr. Daniel Kohen, University of Minnesota in Minneapolis.

Patients suffering from **irritable bowel syndrome** were treated with hypnosis. Eighty two percent of the patients improved. Patients were less anxious, had less abdominal pain, less bloating, less constipation and less gas. Even those patients who were not very hypnotizable had good results. Hypnosis is an effective treatment for irritable bowel syndrome. For more information, please contact: Dr. Edward Blanchard Center for Stress and Anxiety Disorders 1535 Western Avenue Albany, NY 12203

Patients suffering from **psoriasis** were hypnotized and some patients had quite an improvement. The patients who improved were those who were very hypnotizable. Those who were moderately hypnotizable did not improve. Hypnosis may be useful with psoriasis patients who are very hypnotizable. For more information, please contact: Dr. Francisco Tausk Department of Dermatology Johns Hopkins School of Medicine 601 N. Caroline Street Baltimore, MD 21287

Pregnant women who begin to go into labor long before their ninth month are said to have preterm labor. Patients who had preterm labor were hypnotized and given suggestions to keep their cervix firm and hard to hold the baby in the uterus. Hypnosis was continued until the contractions stopped. Patients were seen for hypnosis two or three times each day and then given audio tapes to play several times a day. Seventy percent of the hypnotized patients were able to prolong their pregnancies. Only twenty percent of the women who were not hypnotized were able to prolong their pregnancies. Hypnosis can help prevent premature births. Dr. Donald Brown, Nova Scotia, Canada, can be reached at: Dcbrown@is.dal.ca.

Hypnosis has been used to **help bereaved people** get through mourning. In this article a widow is treated with hypnosis. Hypnotic relaxation is recommended for the first stages of grief, then supportive suggestions, and finally a new way to look at her relationship with her husband is recommended. All the above is done with the aid of hypnosis, and then the patient is

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hypnotized to strengthen her ego and look toward the future. Hypnosis is an effective tool in bereavement counseling. Dr. Gary Elkins is the author of this paper. He can be reached at: [gelkins@bellnet.tamu.edu](mailto:gelkins@bellnet.tamu.edu).

Prior to **surgery twenty six children** were hypnotized and twenty six others, who were the same age and having the same surgery, were not hypnotized. The hypnosis group was taught self-hypnosis (guided imagery) and given the hypnotic suggestion that they would recover easily and quickly. After all the children were recovered it was determined that those who had been hypnotized had less pain, needed fewer pain killers, and went home days earlier than those in the non-hypnosis group. Also, those in the hypnosis group were calm, while those in the other group were anxious, even after the surgery. This study was done by Sally Lambert at the Rainbow Babies and Children's Hospital in Cleveland, Ohio.

Patients who were healthy, but had a **broken bone** in their foot, were recruited from an orthopedic emergency room. They all received regular orthopedic care, but half of them were given hypnosis, too. The hypnosis consisted of individual sessions and a hypnosis audio tape to be played at home. After 9 weeks, x-rays and clinical assessments of the foot showed that the patients who were hypnotized were healing faster. The hypnotized patients had improved ankle mobility, an easier time walking down stairs, and had a decreased need for painkillers. Hypnosis can be used to enhance fracture healing. This study is from: C.S. Ginandes Dept. of Psychiatry Harvard Medical School Cambridge, MA

Severely **burned patients** were hypnotized to feel less pain, in addition to receiving their regular dosages of morphine and other pain medications. The patients who most benefitted from hypnosis were those who were in the most pain. Hypnosis worked best when it was administered by the hypnotist and didn't work as well when the patient was told to rely on self-hypnosis. Hypnosis is an effective adjunct to treatment in burn patients. This study was done by Dr. David Patterson at the University of Washington School of Medicine, Seattle, Washington.

### 2. HYPNOSIS HELPS FRACTURES HEAL FASTER

The Harvard Medical School conducted research on the use of hypnosis to enhance physical healing. Twelve people with a recent bone fracture were divided into two groups. One group received hypnosis and the other group served as control. Both groups received standard orthopedic treatment. The hypnosis group had individual hypnotic sessions and listened to audiotapes designed to increase bone healing. X-ray and orthopedic evaluations were made during the 12 weeks of the experiment.

The results showed a faster healing for the hypnosis group at week 9 of the experiment. X-rays revealed a notable difference at the edge of the fracture at week 6 of the experiment. The hypnosis group also had better mobility and used less pain killers. The researchers conclude by saying that "despite a small sample size.....these data suggest that hypnosis may be capable of enhancing both anatomical and functional fracture healing, and that further investigation of hypnosis to accelerate healing is warranted."

### 3. HYPNOSIS CUT PAIN IN SURGERY STUDY FINDS: THE ASSOCIATED PRESS:

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People who were hypnotized while undergoing surgery without a general anesthetic needed less pain medication, left the operating room sooner and had more stable vital signs than those who were not, according to a study in an issue of *The Lancet Medical Journal*.

David Patterson, professor of rehabilitation medicine, surgery and psychology at the University of Washington in Seattle, who was not connected with the study. "This really solidifies the evidence," he said. "For acute pain... is not arguable any more."

The study led by Dr. Elvira Lang of Beth Israel Deaconess Medical Center in Boston, involved 241 people similar health and age who had operations to open clogged arteries and veins, relieved blockages in the kidney drainage system or blocked blood vessels feeding tumors.

The patients were divided into three groups - one that experienced normal interactions with doctors and nurses, another that received extra attention from an additional person in the operating room who made sure nobody said anything negative and a third who were helped to hypnotize themselves.

All the patients were able to give themselves as much pain medication as they wanted through an intravenous tube. The hypnosis group - who were guided through visualization of scenarios they found pleasant - fared best, but the patients receiving extra attention also benefitted.

About half the patients in these two groups needed no drugs at all, while the rest gave themselves only half the amount of medication as those undergoing the operation with no special attention.

The hypnotized patients were the only ones who said the pain did not get worse as the surgery progressed. They also had fewer problems with their blood pressure and heart rate during the operation. Their operations also finished 17 minutes earlier than those conducted without the patients receiving special attention.

Lang suggested that time was saved in these operations because the surgeon's attention was diverted less often by events such as the patient being over sedated, unstable blood pressure or vomiting. "This is a breakthrough study that moves beyond mere anecdote and actually demonstrates not only a benefit, but also a cost saving.

## 5. HYPNOSIS IN MEDICINE: THE HOSPITAL PHARMACISTS' REPORTER

**Uses of hypnosis for Arthritis:** Stress and pain management are two other reasons for calling on a hypnotherapist. As Dr. Joseph Barber of the University of California recently stated in a publication of the Arthritis Foundation, "Among psychological approaches to the management of pain, hypnosis is the most effective technique...often the only effective remedy." He specifically notes its value in arthritis and cancer patients. In the same article, Dr. Herbert Spiegel, former Columbia University Professor of Psychiatry and a leading hypnotherapist, says he's found it particularly valuable for arthritic patients because it not only controls pain but relaxes the patient. As Dr. D. Spiegel has phrased it, "...the trance state can be used most effectively by teaching patients to use their own hypnotic capacity rather than rely on the doctor."

**Uses for Cancer Patients:** Hypnosis is also being widely used with cancer patients for pain management. As Atlanta psychiatrist Kathryn Sands, MD, phrased it, "Hypnosis is so clearly valuable

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in chronic pain patients who can use it that any doctor who dismisses it is not using all the tool he can. How can it be used with such patients is illustrated by Marilyn Hockenberry-Eaton, MSN, PNP, an assistant professor in the graduate pediatric oncology program at Emory University. She has been using hypnosis with patients since 1982. Ms. Hockenberry-Eaton's current work is with children with cancer who are receiving chemotherapy. She is operating under a grant from the Oncology Nursing Society and Smith Kline & French - to investigate the use of guided imagery and muscle relaxation for children receiving chemotherapy. "It gives them a way to cope and it changes perception - particularly of pain," Ms. Hockenberry-Eaton said. She uses it to control nausea and vomiting associated with chemotherapy, and also to cope with invasive procedures, such as bone marrow aspirations and lumbar punctures.

**Smoking Cessation through Hypnosis:** Certainly one reason for the growing popularity of hypnotherapy is that it offers an alternative for patients whose problems stubbornly resist conventional treatment. Clearly, one of these areas is smoking cessation.

Rose F. McGee, PhD, RN, is a professor of nursing at Emory University and coordinator of its adult oncology program. She went through training with Dr. Hodges over a year ago, and has applied for a grant to use hypnosis with adult patients experiencing nausea and vomiting associated with chemotherapy. One of the things she thinks practitioners should look at is hypnosis, since "there's not a lot invested, except time, and there's no risk. If you can help someone stop smoking, there's no better gift you can give them."

The just-released Surgeon General's 25th anniversary smoking report leads off its section on "Stop Smoking Programs" with a discussion of hypnosis, noting that "it has long been advocated as an effective treatment for stopping smoking." It notes that a "review of smoking cessation treatments listed in the telephone yellow pages of 47 U.S. cities found that hypnosis was the most frequently advertised service" - one sign of how popular hypnosis has become. The same report gave quite high marks to hypnosis. In summary table of one-year follow-up quit rates in 416 smoking cessation trials involving 20 different intervention methods, group hypnosis was one of a handful with 50% or better rates. Physician intervention to stop smoking among cardiac patients had the highest rates - 63%. The only other intervention that scored higher than group hypnosis in that review was "satiation smoking," with 58% reported follow-up quit rate at one year. Regardless of the method - group or individual, or combined - "smoking-cessation success rates are directly related to the experience and expertise of the hypnotherapist," Dr. Spillman says. "Those who are very successful are those who are very innovative."

## 5. HYPNOSIS RESEARCH: NORTH SHORE HYPNOSIS

**HYPNO-BIRTHING RESEARCH:** The benefits of hypnotic analgesia as an adjunct to childbirth education were studied in 60 nulliparous women. Subjects were divided into high and low hypnotic susceptibility groups before receiving 6 sessions of childbirth education and skill mastery using an ischemic pain task. Half of the Subjects in each group received a hypnotic induction at the beginning of each session; the remaining control Subjects received relaxation and breathing exercises typically used in childbirth education. Both hypnotic Subjects and highly susceptible Subjects reported reduced pain. Hypnotically prepared births had shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries than control Subjects' births. Highly susceptible, hypnotically treated women had lower depression

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scores after birth than women in the other three groups. We propose that repeated skill mastery facilitated the effectiveness of hypnosis in the study.

**WEIGHT LOSS:** A study from the University of Connecticut, Storrs, suggests that long term results are better when hypnosis is part of the therapy package particularly if the patient is a believer in hypnosis. Researchers analyzed 18 studies comparing a cognitive behavioral therapy, such as relaxation training, guided imagery, self monitoring or goal setting with the same therapy supplemented by hypnosis. Those who received the hypnosis lost more weight than 90 percent of the non hypnosis, and maintained the weight loss two years after treatment ended. The placebo effect may account for some of hypnosis's success, says Irving Kirsch, PhD professor of psychology. Although therapeutic suggestion and relaxation training were used in both hypnotic and non hypnotic sessions, they worked much better when they were referred to as "hypnosis" techniques, he notes.

**ERECTILE DYSFUNCTION:** In a controlled study of 79 men with impotence from no known organic cause, only hypnosis proved more effective than a placebo, boosting sexual function by 80 percent (British Journal of Urology, February 1996).

**PREPARING FOR SURGERY:** A controlled study of 32 coronary bypass patients showed that those taught self-hypnosis pre-operatively were more relaxed after surgery and had less need for pain medication (Journal of Cardiovascular Surgery, February 1997).

**Pain:** A review panel appointed by the National Institutes of Health found "strong evidence" for the use of hypnosis in alleviating pain associated with cancer (Journal of the American Medical Association, July 24-31, 1996).

**SELF-HYPNOSIS CAN CUT STRESS AND BOOST YOUR IMMUNE SYSTEM:** A number of studies have suggested stress can hinder the body's immune system defenses. Now researchers say people may be able to fight back with the stress-relieving techniques of self-hypnosis.

In a study of medical students under exam-time stress, investigators found that those who received "hypnotic-relaxation training" did not show the same reduction in key immune system components that their untrained counterparts did.

The researchers looked at 33 medical and dental students during relatively low-stress periods and around the time of the first major exam of the term. Half of the students attended sessions where they learned to relax through self-hypnosis.

The investigators found that during exam time, the self-hypnosis students launched stronger immune responses compared with students who did not learn the technique. And the more often students practiced the relaxation strategy, the stronger their immune response.

In previous studies, the researchers found that stressful times may impair the body's wound-healing process and response to vaccination. They and other researchers have also found that relaxation techniques may combat these effects by relieving stress and boosting the immune system.

The data from this study provide encouraging evidence that interventions may reduce the immunological dysregulation associated with acute stressors. Journal of Consulting and Clinical Psychology 2001;69

**RELAX AND LIVE LONGER: EMMA YOUNG:** Patients with Hodgkin's disease or non-Hodgkin's lymphoma live longer if they receive relaxation and hypnotherapy treatment along with standard chemotherapy. Similar approaches has resulted in mixed results for other

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cancers. eslie Walker of Hull University studied 63 patients with newly diagnosed cancers, all of whom were receiving chemotherapy and standard anti-nausea drugs. The patients were split into three groups. One group was given relaxation tapes, another received the tapes plus hypnotherapy to reinforce their effect. The third received neither. Walker followed up the patients 13 years after diagnosis. "We found that the patients who had received relaxation or relaxation and hypnotherapy lived significantly longer," he says.

**NEW LEASE OF LIFE:** On average, patients in the relaxation and hypnotherapy group lived an average of 10.7 years after diagnosis, patients who used only the tapes lived 8.7 years and patients with neither lived 7.8 years. But Walker stresses that the patients differed in age and the stage of disease when treatment started. So although the differences are significant, translating hypnotherapy plus relaxation into three extra years of life is not possible, he says. How the relaxation and hypnotherapy may increase survival is not clear. Other studies of cancer patients have found that similar treatments can boost levels of killer T cells. But researchers have not been able to link this rise with increased survival. "Chemotherapy and radiotherapy tend to suppress immune system functioning, so small interventions may help patients be more resistant to these effects," Walker says.

This research was presented at the British Psychological Society's Centenary Conference in Glasgow, UK. Submitted by Todd I. Stark, toddstark@aol.com, <http://ToddStark.com/>

**HYPNOSIS TRAILS: 1976 - 1998:** WS. Horne M. Taylor CB. **Expectation and the blood-pressure lowering effects of relaxation.** Psychosomatic Med. 1982; 44(4):389-95 In a study of the blood-pressure-lowering effects of relaxation training in patients with essential hypertension, instructions concerning the relaxation procedure were varied so that one group was told to expect delayed blood-pressure-lowering and the other group immediate lowering. The systolic blood pressure decrease during the training period in the immediate lowering group was 17.0 mm Hg, compared with 2.4 mm Hg for the delayed group ( $p = 0.001$ ). Diastolic blood pressure changes were not significantly different. Measures of therapy credibility and perceived relaxation failed to differentiate the groups. The implications of these findings for future research and for clinical practice are considered. Aikins Murphy P. Alternative therapies for nausea and vomiting of pregnancy. Obstetrics & Gynecology 1998;91(1):149-55

**OBJECTIVE:** To review available evidence about the effectiveness of alternative therapies for nausea and vomiting of pregnancy.

**DATA SOURCES:** MEDLINE and 13 additional US and international data bases were searched in 1996-1997 for papers that described use of alternative medicine in the treatment of pregnancy and pregnancy complications, specifically those addressing nausea, vomiting, and hyperemesis. Bibliographies of retrieved papers were reviewed to identify additional sources.

**METHODS OF STUDY SELECTION:** All relevant English language clinical research papers were reviewed. Randomized clinical trials addressing specifically the use of nonpharmaceutical and nondietary interventions were chosen for detailed review.

**TABULATION, INTEGRATION, AND RESULTS:** Ten randomized trials studying the effects of acupressure, ginger, and pyridoxine on nausea and vomiting of pregnancy were reviewed. Evidence of beneficial effects was found for these three interventions, although the data on acupressure are equivocal. Insufficient evidence was found for the benefits of hypnosis. Other interventions have not been studied.

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**CONCLUSION:** There is a dearth of research to support or to refute the efficacy of a number of common remedies for nausea and vomiting of pregnancy. The best-studied alternative remedy is acupressure, which may afford relief to many women; ginger and vitamin B6 also may be beneficial. [References: 36]

Allison DB, Faith MS. **Hypnosis as an adjunct to cognitive-behavioral psychotherapy for obesity: a meta-analytic reappraisal.** *Journal of Consulting & Clinical Psychology* 1996;64(3):513-6 I. Kirsch, G. Montgomery, and G. Sapirstein (1995) meta-analyzed 6 weight-loss studies comparing the efficacy of cognitive-behavior therapy (CBT) alone to CBT plus hypnotherapy and concluded that "the addition of hypnosis substantially enhanced treatment outcome" (p.214). Kirsch reported a mean effect size (expressed as d) of 1.96. After correcting several transcription and computational inaccuracies in the original meta-analysis, these 6 studies yield a smaller mean effect size (.26). Moreover, if 1 questionable study is removed from the analysis, the effect sizes become more homogeneous and the mean (.21) is no longer statistically significant. It is concluded that the addition of hypnosis to CBT for weight loss results in, at most, a small enhancement of treatment outcome.

Amigo I, Cuesta V, Fernandez A, Gonzalez A The effect of verbal instructions on blood pressure measurement. *Journal of Hypertension* 1993 Mar;11(3):293-6 **AIM:** To determine whether orally delivered instructions can modify the intensity and direction of blood pressure and heart rate fluctuation.

**METHODS:** The blood pressure of 120 subjects, 60 hypertensive and 60 normotensive, was measured before and after oral instructions. The normotensive subjects were selected from a sample of university students and the hypertensive patients were selected at a routine medical screening. Each sample of 60 subjects was randomly divided into four groups of 15. Each subject was left seated alone in a room for 5 min. The researcher then measured the subjects' blood pressure and heart rate. Following this, each group of normotensives and hypertensives was told that their blood pressure would diminish, or that it would not change or that it would increase. The control group was given no instructions. After 5 min the blood pressure and heart were measured again. **RESULTS:** In the normotensive and hypertensive groups who were told that their blood pressure would increase, systolic blood pressure increased by 4.3 and 2.5 mmHg, respectively. In the groups who were told that their blood pressure would decrease, systolic pressure fell by 7.8 and 7.4 mmHg, respectively. Those who were told that no change would occur showed a systolic pressure decrease of 3.5 and 1.8 mmHg, respectively. In the control groups systolic blood pressure decreased by 5.6 and 4.2 mmHg, respectively.

**CONCLUSIONS:** These results show that oral instructions are a source of variation in the assessment of blood pressure and emphasize the need for 24-h blood pressure monitoring to eliminate this type of variation.

Anderson JA, Basker MA, Dalton R Migraine and hypnotherapy *International Journal of Clinical & Experimental Hypnosis* 1975;23(1):48-58 **Compared the treatment of migraine by hypnosis and autohypnosis with the treatment of migraine by the drug prochlorperazine (Stemetil).** Random allocation of 47 patients was made to one or other prophylactic measure, followed by monthly assessments and independent evaluation of 1 yr of continuous care. Criteria of improvement were the number of attacks/month, number who had Grade 4 attacks, and complete remission. Results show that the number of attacks and the number who suffered blinding attacks were significantly lower for the group receiving hypnotherapy than for the



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group receiving prochlorperazine. For the group on hypnotherapy, these 2 measures were significantly lower when on hypnotherapy than when on previous treatment. Prochlorperazine seemed about as effective as previous treatment. 10 out of 23 patients on hypnotherapy achieved complete remission during the last 3 mo of the trial, compared to only 3 out of 24 on prochlorperazine. It is concluded that further trials of hypnotherapy are justified against some other treatment not solely associated with the ingestion of tablets. (German, French, & Spanish summaries)

Anderson JA. Dalton ER. Basker MA. **Insomnia and hypnotherapy.** Journal of the Royal Society of Medicine 1979;72(10):734-9

Andreychuk T, Scriver C **Hypnosis and biofeedback in the treatment of migraine headache.** Int J Clin Exp Hypn 1975; 23: 172-3

**HYPNOSIS FOR ASTHMA - A CONTROLLED TRAIL.** A report to the Research Committee of the British Tuberculosis Association. BMJ 1968;4(623):71-6 Investigated the use of hypnosis in the treatment of asthma in patients, 10-60 yr. old with paroxysmal attacks of wheezing or tight chest capable of relief by bronchodilators. 1 group was given hypnosis monthly and used autohypnosis daily for 1 yr. Comparisons were made with a control group prescribed a specially devised set of breathing exercises aimed at progressive relaxation. Treatment was randomly allocated and Subjects were treated by physicians in 9 centers. Results were assessed by daily diary recordings of wheezing and the use of bronchodilators, and by monthly recordings of forced expiratory volume (FEV) and vital capacity (VC). Independent clinical assessments were made by physicians unaware of Subjects' treatment. 176 out of 252 patients completed the program. Both treatment groups showed some improvement. Among men the assessments of wheezing score and use of bronchodilators showed similar improvement in the 2 groups; among women, however, those treated by hypnosis showed improvement similar to that observed in the men, but those given breathing exercises made much less progress, the difference between the 2 groups reaching statistical significance. Changes in FEV and VC between the control and hypnosis groups were closely similar. Independent clinical assessors considered the asthma to be better in 59% of the hypnosis group and in 43% of the controls, the difference being significant. There was little difference between the sexes. Physicians with previous experience of hypnosis obtained significantly better results than did those without such experience.

Ashton C Jr. Whitworth GC. Seldomridge JA. Shapiro PA. Weinberg AD. Michler RE. Smith CR. Rose EA. Fisher S. Oz MC. **Self-hypnosis reduces anxiety following coronary artery bypass surgery.** A prospective, randomized trial. Journal of Cardiovascular Surgery 1997;38(1):69-75 **OBJECTIVE:** The role of complementary medicine techniques has generated increasing interest in today's society. The purpose of our study was to evaluate the effects of one technique, self-hypnosis, and its role in coronary artery bypass surgery. We hypothesize that self-hypnosis relaxation techniques will have a positive effect on the patient's mental and physical condition following coronary artery bypass surgery.

**EXPERIMENTAL DESIGN:** A prospective, randomized trial was conducted. Patients were followed beginning one day prior to surgery until the time of discharge from the hospital.

**SETTING:** The study was conducted at Columbia Presbyterian Medical Center, a large tertiary care teaching institution.

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**PATIENTS:** All patients undergoing first-time elective coronary artery bypass surgery were eligible. A total of 32 patients were randomized into two groups.

**INTERVENTIONS:** The study group was taught self-hypnosis relaxation techniques preoperatively, with no therapy in the control group.

**MEASURES:** Outcome variables studied included anesthetic requirements, operative parameters, postoperative pain medication requirements, quality of life, hospital stay, major morbidity and mortality.

**RESULTS:** Patients who were taught self-hypnosis relaxation techniques were significantly more relaxed postoperatively compared to the control group ( $p=0.032$ ). Pain medication requirements were also significantly less in patients practising the self-hypnosis relaxation techniques than those who were noncompliant ( $p=0.046$ ). No differences were noted in intraoperative parameters, morbidity or mortality.

**CONCLUSION:** This study demonstrates the beneficial effects self-hypnosis relaxation techniques on patients undergoing coronary artery bypass surgery. It also provides a framework to study complementary techniques and the limitations encountered. Ashton RC Jr. Whitworth GC. Seldomridge JA. Shapiro PA. Michler RE. Smith CR. Rose EA. Fisher S. Oz MC. The effects of self-hypnosis on quality of life following coronary artery bypass surgery: preliminary results of a prospective, randomized trial. *Journal of Alternative & Complementary Medicine* 1995;1(3):285-90 The effects of complementary techniques and alternative medicine on allopathic therapies is generating much interest and research. To properly evaluate these techniques, well controlled studies are needed to corroborate the findings espoused by individuals practicing complementary medicine therapies. To this end, we evaluated the role of one of these therapies, self-hypnosis relaxation techniques, in a prospective, randomized trial to study its effects on quality of life after coronary artery bypass surgery. Subjects were randomized to a control group or a study group. Study group patients were taught self-hypnosis relaxation techniques the night prior to surgery. The control group received no such treatment. Patients then underwent routine cardiac management and care. The main endpoint of our study was quality of life, assessed by the Profile of Moods Scale. Results demonstrated that patients undergoing self-hypnosis the night prior to coronary artery bypass surgery were significantly more relaxed than the control group ( $p = 0.0317$ ). Trends toward improvement were also noted in depression, anger, and fatigue. This study demonstrates the beneficial effects of self-hypnosis relaxation techniques on coronary surgery. This study also identifies endpoints and a study design that can be used to assess complementary medicine therapies. Results of this preliminary investigation are encouraging and demonstrate a need for further well-controlled studies.

Attias J, Shemesh Z, Sohmer H, Gold S, Shoham C, Faraggi D **Comparison between self-hypnosis, masking and attentiveness for alleviation of chronic tinnitus.** *Audiology* 1993;32(3):205-12 The efficacy of self-hypnosis (SH), masking (MA) and attentiveness to the patient's complaints (AT) in the alleviation of tinnitus was evaluated. Forty-five male patients close in age with chronic tinnitus related to acoustic trauma were assigned to three matched subgroups: SH, AT or MA. The therapeutic stimuli in the SH and MA sessions, recorded on audio cassettes, were given to the patients for use when needed. SH significantly reduced the tinnitus severity; AT partially relieved the tinnitus; MA did not have any significant effect.

Aydin S. Ercan M. Caskurlu T. Tasci AI. Karaman I. Odabas O. Yilmaz Y. Agargun MY. Kara H. Sevin G. **Acupuncture and hypnotic suggestions in the treatment of non-**

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**organic male sexual dysfunction.** Scandinavian Journal of Urology & Nephrology 1997;31(3):271-4 We have examined the effects of acupuncture and hypnotic suggestions, and compared them with placebo in the treatment of male sexual dysfunction with no detectable organic cause. The study comprised 15 men (mean age 36.7 +/- 10.43 years) who received acupuncture treatment, 16 men (mean age 38.4 +/- 10.75 years) who underwent hypnosis (mean age 35.3 +/- 11.52 years) and 29 men (mean age 36.2 +/- 11.38 years) who served as controls. They were interviewed periodically; the patients' reports were verified by interviewing their partners. Men who received placebo had a 43-47% improvement in sexual function, while the rates of improvement in the treated groups were higher, but not significantly so. The success rates of acupuncture and hypnotic suggestions were 60% and 75% respectively. Although the improvement was not statistically significant, treatment with acupuncture could be used as an adjuvant therapy in non-organic male sexual dysfunction. The only treatment superior to placebo seemed to be hypnosis. A more effective treatment may be obtained by combining these therapeutic modalities, but this needs further study. Aydin S. Odabas O. Ercan M. Kara H. Agargun MY. Efficacy of testosterone, trazodone and hypnotic suggestion in the treatment of non-organic male sexual dysfunction. British Journal of Urology. 1996;77(2):256-60

**OBJECTIVE:** To examine the effects of hypnotic suggestions or the administration of testosterone or trazodone to impotent men with no detectable organic cause for the impotence. **PATIENTS AND METHODS:** The study comprised 79 men in whom clinical and laboratory examinations revealed no organic cause for their impotence: 20 men (mean age 38.7 +/- 11.47 years) received testosterone, 21 men (mean age 39.5 +/- 10.73 years) received trazodone, 20 men (mean age 34.2 +/- 11.69 years) underwent hypnosis and 18 men (mean age 39.1 +/- 11.46 years) served as controls. They were assessed by interview 4, 6 and 8 weeks after starting treatment: the patient's reports were verified by interviewing their partners.

**RESULTS:** Men who received a placebo had a 39% improvement in sexual function, while the rates of improvement in the treated groups were higher, but not significantly so. The success rates of testosterone and trazodone treatment and hypnotic suggestions were 60%, 67% and 80%, respectively.

**CONCLUSION:** Although the improvement was not statistically significant, treatment with testosterone and trazodone could be used as an adjuvant therapy in nonorganic male sexual dysfunction. The only treatment superior to placebo seemed to be hypnosis. A more effective treatment may be obtained by combining these therapeutic modalities, but this needs further study.

Baltar Lopez E La autorrelajacion como medio para reducir la algestesia en pruebas diagnosticas dolorosas Natura Medicatrix 1995;41:12-8 It taked place a study of painful perception and psycho-emotional component in two groups of patients in a random selection. It was made bone marrow biopsy and iliac crest myelogram in the patients. In the control group received a session of hypnosis of forty minutes; in this session were trained in autohypnosis technique to be applied in the moment of the painful tests. The comparison of outcomes shows a significant reduction of algesthesia and unpleasant emotions in the experimental group. The application of this technique was workable, effective and inexpensive.

Banerjee S. Srivastav A. Palan BM. **Hypnosis and self-hypnosis in the management of nocturnal enuresis: a comparative study with imipramine therapy.** American Journal of Clinical Hypnosis 1993;36(2):113-9 Various therapeutic modalities have been used for treating

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enuresis due to the lack of a single identifiable cause. We carried out a comparative study of imipramine and direct hypnotic suggestions with imagery used for the management of functional nocturnal enuresis. Enuretic children, ranging in age from 5 to 16 years, underwent 3 months of therapy with imipramine (N = 25) or hypnosis (N = 25). After termination of the active treatment, the hypnosis group continued practicing self-hypnosis daily during the follow-up period of another 6 months. Of the patients treated with imipramine, 76% had a positive response (all dry beds); for patients treated with hypnotic strategies, 72% responded positively. At the 9-month follow-up, 68% of patients in the hypnosis group maintained a positive response, whereas only 24% of the imipramine group did. Hypnosis and self-hypnosis strategies were found to be less effective in younger children (5-7 years old) compared to imipramine treatment. The treatment response was not related to the hypnotic responsivity of the patient in either group. Barabasz AF. Treatment of insomnia in depressed patients by hypnosis and cerebral electrotherapy. *American Journal of Clinical Hypnosis* 1976;19(2):120-2 Investigated the influence of suggestion on recovery in the treatment of sleep disturbances by cerebral electrotherapy (CET). 60 adult psychiatric outpatients (diagnostic classification--mild depressive neurosis) were randomly assigned to 4 groups. Group A received CET only; Group B received a CET placebo; Group C received CET with hypnosis; and Group D received a CET placebo with hypnosis. Group A reported a significantly higher recovery than Group B, Group C a significantly higher recovery than Group A, and Group D a significantly higher recovery than Group B. No significant differences were found between Group C and Group D or between Group A and Group D. Findings support suggestion via passive hypnosis with CET as a powerful variable in the treatment of sleep disturbances with depressed patients.

Barber TX. Wilson SC. **Hypnosis, suggestions, and altered states of consciousness: experimental evaluation of the new cognitive-behavioral theory and the traditional trance-state theory of "hypnosis"**. *Annals of the New York Academy of Sciences* 1977; 296:34-47 Sixty-six subjects were tested on a new scale for evaluating "hypnotic-like" experiences (The Creative Imagination Scale), which includes ten standardized test-suggestions (e.g. suggestions for arm heaviness, finger anesthesia, time distortion, and age regression). The subjects were randomly assigned to one of three treatment groups (Think- With Instructions, trance induction, and Control), with 22 subjects to each group. The new Cognitive-Behavioral Theory predicted that subjects exposed to preliminary instructions designed to demonstrate how to think and imagine along with the suggested themes (Think-With Instructions) would be more responsive to test-suggestions for anesthesia, time distortion, age regression, and so on, than subjects exposed to a trance- induction procedure. On the other hand, the traditional Trance State Theory predicted that a trance induction would be more effective than Think-With Instructions in enhancing responses to such suggestions. Subjects exposed to the Think-With Instructions obtained significantly higher scores on the test-suggestions than those exposed either to the traditional trance-induction procedure or to the control treatment. Scores of subjects who received the trance-induction procedure were not significantly different from those of the subjects who received the control treatment. The results thus supported the new Cognitive-Behavioral Theory and contradicted the traditional Trance State Theory of hypnosis. Two recent experiments, by De Stefano and by Katz, confirmed the above experimental results and offered further support for the Cognitive-Behavioral Theory. In both recent experiments, subjects

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randomly assigned to a "Think-With Instructions" treatment were more responsive to test-suggestions than those randomly assigned to a traditional trance-induction treatment.

Barkley RA. Hastings JE. Jackson TL. **The effects of rapid smoking and hypnosis in the treatment of smoking behavior.** International Journal of Clinical & Experimental Hypnosis 1977;25(1):7-17. 29 young adult volunteers were assigned to one of 3 treatment conditions and treated for their cigarette smoking over a 2-wk period. These conditions were group rapid smoking, group hypnosis, and an attention-placebo control group. All treatments produced significant reductions in average daily smoking rates during the treatment phase, but all Subjects returned to near baseline levels of smoking by the 6-wk follow-up. The rapid smoking and hypnosis groups did not differ from the control group in smoking rates at treatment termination or at the 6-wk follow-up. They also did not differ from the control group in the number of Subjects abstaining from smoking by treatment termination but did differ at follow-up. Eventually, at the 9-mo follow-up, only Subjects from the rapid smoking condition had significantly more abstainers than the control group. Results suggest that rapid smoking can work as effectively in group procedures as previous individualized approaches had demonstrated. Group hypnosis, while less effective than some previous individualized approaches had indicated, was only marginally less effective than the rapid smoking procedure. The use of abstinence rates as opposed to average rates of smoking is strongly recommended as the best measure of treatment effectiveness for future research in this area. (German, French & Spanish summaries)

Beaugerie L. Burger AJ. Cadranet JF. Lamy P. Gendre JP. Le Quintrec Y. Modulation of oro-caecal transit time by hypnosis. Gut 1991;32(4):393-4 **The ability of hypnosis to modulate the oro-caecal transit time of 10 g lactulose was tested in six healthy volunteers.** Oro-caecal transit time was measured by the hydrogen breath test during three periods in random order. During the control period the subjects remained throughout the test in a semirecumbent position without moving. During the hypnotic relaxation period subjects were hypnotised before lactulose ingestion and were instructed to experience relaxation till the oro-caecal transit time had elapsed. During the acceleration suggestion period subjects were hypnotized before lactulose ingestion and were repeatedly instructed to imagine the acceleration of lactulose through the intestine until transit time had elapsed. The mean oro-caecal transit time was significantly longer during the hypnotic relaxation period (mean (SEM) 133 (8) min) than during the control period (93 (13) min). The mean oro-caecal transit time during the acceleration suggestion period was 105 (26) minutes and was not significantly different from the mean transit time during the control period. The individual values during the acceleration suggestion period were scattered. We conclude that lactulose oro-caecal transit time is delayed during hypnotic relaxation.

Bennett HL. Davis HS. Giannini JA. **Non-verbal response to intraoperative conversation.** British Journal of Anaesthesia 1985;57(2):174-9 In a double-blind study, 33 patients (herniorrhaphy, cholecystectomy and orthopaedic) were randomly assigned to either suggestion or control groups. Under known clinical levels of nitrous oxide and enflurane or halothane anaesthesia, suggestion patients were exposed to statements of the importance of touching their ear during a postoperative interview. Compared with controls, suggestion patients did touch their ear (tetrachoric correlation 0.61, P less than 0.001) and they did so more frequently (Mann-Whitney U test, P less than 0.02). All suggestion patients were completely

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amnesic for the intraoperative spoken suggestion, despite inquiries which included hypnotic regression to the operation.

Benson H. Frankel FH. Apfel R. Daniels MD. Schniewind HE. Nemiah JC. Sifneos PE. Crassweller KD. Greenwood MM. Kotch JB. Arns PA. Rosner B. Treatment of anxiety: **A comparison of the usefulness of self-hypnosis and a meditational relaxation technique.** An overview. *Psychotherapy & Psychosomatics*. 1978;30(3-4):229-42 We have investigated prospectively the efficacy of two nonpharmacologic relaxation techniques in the therapy of anxiety. A simple, meditational relaxation technique (MT) that elicits the changes of decreased sympathetic nervous system activity was compared to a self-hypnosis technique (HT) in which relaxation, with or without altered perceptions, was suggested. 32 patients with anxiety neurosis were divided into 2 groups on the basis of their responsivity to hypnosis: moderate-high and low responsivity. The MT or HT was then randomly assigned separately to each member of the two responsivity groups. Thus, 4 treatment groups were studied: moderate-high responsivity MT; low responsivity MT; moderate-high responsivity HT; and low responsivity HT. The low responsivity HT group, by definition largely incapable of achieving the altered perceptions essential to hypnosis, was designed as the control group. Patients were instructed to practice the assigned technique daily for 8 weeks. Change in anxiety was determined by three types of evaluation: psychiatric assessment; physiologic testing; and self-assessment. There was essentially no difference between the two techniques in therapeutic efficacy according to these evaluations. Psychiatric assessment revealed overall improvement in 34% of the patients and the self-rating assessment indicated improvement in 63% of the population. Patients who had moderate-high hypnotic responsivity, independent of the technique used, significantly improved on psychiatric assessment ( $p = 0.05$ ) and decreased average systolic blood pressure from 126.1 to 122.5 mm Hg over the 8-week period ( $p = 0.048$ ). The responsivity scores at the higher end of the hypnotic responsivity spectrum were proportionately correlated to greater decreases in systolic blood pressure ( $p = 0.075$ ) and to improvement by psychiatric assessment ( $p = 0.003$ ). There was, however, no consistent relation between hypnotic responsivity and the other assessments made, such as diastolic blood pressure, oxygen consumption, heart rate and the self-rating questionnaires. The meditational and self-hypnosis techniques employed in this investigation are simple to use and effective in the therapy of anxiety.

Blankfield RP. Zyzanski SJ. Flocke SA. Alemagno S. Scheurman K. **Taped therapeutic suggestions and taped music as adjuncts in the care of coronary-artery-bypass patients.** *American Journal of Clinical Hypnosis*. 1995;37(3):32-42 A randomized, single-blinded, placebo-controlled trial examined the benefits of taped therapeutic suggestions and taped music in coronary-artery-bypass patients. Sixty-six patients listened to either suggestion tapes or music tapes, intraoperatively and postoperatively; 29 patients listened to blank tapes intraoperatively and listened to no tapes postoperatively. Half the patients who listened to a tape found it helpful. There were no significant differences between groups in length of SICU or postoperative hospital stay, narcotic usage, nurse ratings of anxiety and progress, depression, activities of daily living, or cardiac symptoms. There were no significant differences in these same outcomes between the patients who were helped by the tapes and the patients not helped. These results suggest that if taped therapeutic suggestions have a measurable effect upon cardiac surgery patients, demonstrating this effect will require more detailed patient evaluations to identify subgroups of patients responsive to this type of intervention.

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Block RI. Ghoneim MM. Sum Ping ST. Ali MA. **Efficacy of therapeutic suggestions for improved postoperative recovery presented during general anesthesia.** *Anesthesiology* 1991;75(5):746-55 There have been claims that the postoperative course of patients may be improved by presentation during general anesthesia of therapeutic suggestions which predict a rapid and comfortable postoperative recovery. This study evaluated the effectiveness of such therapeutic suggestions under double-blind and randomized conditions. A tape recording predicting a smooth recovery during a short postoperative stay without pain, nausea, or vomiting was played during anesthesia to about half the patients (N = 109), while the remaining, control patients were played a blank tape instead (N = 100). The patients were primarily undergoing operations on the fallopian tubes, total abdominal hysterectomy, vertical banding gastroplasty, cholecystectomy, and ovarian cystectomy or myomectomy. The anesthesia methods consisted of either isoflurane with 70% nitrous oxide in oxygen to produce end-tidal concentrations of 1.0, 1.3, or 1.5 MAC; or 70% nitrous oxide in oxygen combined with high or low doses of opioids. Assessments of the efficacy of the therapeutic suggestions in the recovery room and throughout the postoperative hospital stay included: the frequency of administration of analgesic and antiemetic drugs; opioid doses; the incidence of fever; nausea, retching, and vomiting; other gastrointestinal and urinary symptoms; ratings of pain; ratings of anxiety; global ratings of the patients' physical and psychological recoveries by the patients and their nurses; and length of postoperative hospital stay. There were no meaningful, significant differences in postoperative recovery of patients receiving therapeutic suggestions and controls. These negative results were not likely to be due to insensitivity of the assessments of recovery, as they showed meaningful interrelations among themselves and numerous differences in recovery following different types of surgery. Widespread utilization of therapeutic suggestions as a routine operating room procedure seems premature in the absence of adequate replication of previously published positive studies.

Boeke S. Bonke B. Bouwhuis-Hoogerwerf ML. Bovill JG. Zwaveling A. **Effects of sounds presented during general anaesthesia on postoperative course.** *British Journal of Anaesthesia* 1988;60(6):697-702 In a double-blind, randomized study, patients undergoing cholecystectomy were administered one of four different sounds during general anaesthesia: positive suggestions, nonsense suggestions, seaside sounds or sounds from the operating theater. The effect of these sounds on the postoperative course was examined to assess intraoperative auditory registration. No differences were found between the four groups in postoperative variables.

Bonke B, Schmitz PI, Verhage F, Zwaveling A **Clinical study of so-called unconscious perception during general anaesthesia.** *British Journal of Anaesthesia* 1986;58(9):957-64 Ninety-one patients undergoing biliary tract surgery were randomly assigned to one of three treatment groups in which different sounds were administered, by means of earphones, in a double-blind design. The effects of the administration of positive suggestions, noise or operating theater sounds on the postoperative course were studied. Results showed that exposure to positive suggestions during general anaesthesia, as compared with noise or operating theater sounds, protected patients older than 55 yr against prolonged postoperative stay in hospital.

Bonke B. Van Dam ME. Van Kleff JW. Slijper FM. **Implicit memory tested in children during inhalation anaesthesia.** *Anaesthesia* 1992;47(9):747-9 Memory for stimuli presented during inhalation anaesthesia was tested in 80 children undergoing eye surgery. Two

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groups were exposed, in a random double-blind study, to repeated neutral phrases including either the color orange or green. A postoperative coloring task was used as a test of implicit memory to detect any preference for the color named under anaesthesia. No color preference attributable to implicit memory could be demonstrated. One patient had a distinct preference for the named color. No patient remembered any intra-operative events.

Bornstein PH. Devine DA. Covert modeling-hypnosis in the treatment of obesity. *Psychotherapy: Theory, Research Practice* 1980;17(3):272-276. **Investigated the efficacy of a covert modeling/hypnosis treatment package in the control of obesity.** 48 overweight female volunteers (who had been administered the Harvard Group Scale of Hypnotic Susceptibility, Eating Patterns Questionnaire, and Rotter's Internal-External Locus of Control Scale) were randomly assigned to 1 of the following groups: (a) covert modeling/hypnosis, (b) covert modeling, (c) no-model scene control, and (d) minimal treatment (where Subjects received a shortened version of the covert modeling/hypnosis procedure following an 8-wk no-treatment period). Results indicate a significant effect for weight loss from pretreatment to follow-up across all groups combined. Proportion weight loss measures indicated significantly greater weight loss only for the covert modeling/hypnosis group as compared to the no-model controls. Implications for combining behavior therapy and hypnotic techniques are discussed. Boutin GE. Tosi DJ. Modification of irrational ideas and test anxiety through rational stage directed hypnotherapy RSDH. *Journal of Clinical Psychology* 1983;39(3):382-91 Examined the effects of four treatment conditions on the modification of Irrational Ideas and test anxiety in female nursing students. The treatments were Rational Stage Directed Hypnotherapy, a cognitive behavioral approach that utilized hypnosis and vivid-emotive-imagery, a hypnosis-only treatment, a placebo condition, and a no-treatment control. The 48 Ss were assigned randomly to one of these treatment groups, which met for 1 hour per week for 6 consecutive weeks with in-vivo homework assignments also utilized. Statistically significant treatment effects on cognitive, affective, behavioral, and physiological measures were noted for both the RSDH and hypnosis group at the posttest and at a 2-month follow-up. Post-hoc analyses revealed the RSDH treatment group to be significantly more effective than the hypnosis only group on both the post- and follow-up tests. The placebo and control groups showed no significant effects either at post-treatment or at follow-up.

Bregman NJ. McAllister HA. **Role of suggestions in digital skin temperature: implications for temperature biofeedback research.** *International Journal of Neuroscience* 1985;27(1-2):115-20 The purpose of the present experiment was to explore the role suggestions and assessment procedures play in affecting digital skin temperature. Four different types of suggestions were given subjects (warm, cool, pseudo (electronic terms), and no suggestions). Twenty-five subjects were randomly assigned to the four experimental conditions. The data were analyzed by three popular assessment procedures typically found in the literature. As predicted, subjects displayed significant decreases in skin temperature each day regardless of the training condition they were in. The assessment procedures produced differential results.

Brodeur JB, Kurtz RM, Strube MJ **Hypnotic susceptibility order effects in walking analgesia.** *Int J Clin Exp Hypn* 1998 Jul;46(3):240-9 This study reexamined Spanos, Hodgins, Stam, and Gwynn's (1984) contention that susceptibility testing order effects generated a relationship between walking analgesia pain reduction and level of hypnotic responsiveness. Undergraduate volunteers with no previous hypnosis experience were randomly assigned to 2



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groups. Group 1 (n = 69) first received a cold pressor pain protocol, and then was administered the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C). Group 2 (n = 69) was administered the SHSS:C prior to the cold pressor pain protocol. Our findings do not support Spanos, Hodgins et al.'s contention that susceptibility testing order effects generate the often reported relationship between walking analgesia and level of hypnotic responsiveness. We found significant partial correlation coefficients between the SHSS:C and nonhypnotic pain reduction regardless of order of susceptibility testing. Implications regarding the adequacy of design-generated expectancies to explain hypnotic analgesia phenomena were examined.

Bruck M. Ceci SJ. Francoeur E. Barr R. **"I hardly cried when I got my shot:"**

**Influencing children's reports about a visit to their pediatrician.** Child Development 1995;66(1):193-208 We examined, in 2 phases, the influence of postevent suggestions on children's reports of their visits to a pediatrician. Phase 1 examined the effect of giving one of 3 types of feedback to 5-year-old children immediately following their Diphtheria Pertussis Tetanus (DPT) inoculation. Children were given pain-affirming feedback (the shot hurt), pain-denying feedback (the shot did not hurt), or neutral feedback (the shot is over). 1 week later, they did not differ in their reports concerning how much the shot hurt or how much they cried. In Phase 2, the same children were visited approximately 1 year after their inoculation. During 3 separate visits, they were either given additional pain-denying or neutral feedback. They were also given misleading or nonmisleading information about the actions of the pediatrician and the assistant. Children given pain-denying feedback reported that they cried less and that the shot hurt less than did children given neutral feedback. Those who were given misleading information about the actions of the assistant and the pediatrician made more false allegations about their actions than did children who were not given this information. These results challenge the view that suggestibility effects are confined to peripheral, nonaction events; in this study children's reports about salient actions involving their own bodies in stressful conditions were influenced.

Buchser E. Burnand B. Sprunger AL. Clemence A. Lepage C. Martin Y. Chedel D. Guex P. Sloutskis D. Rumley R. **Hypnosis and self-hypnosis, administered and taught by nurses, for the reduction of chronic pain: a controlled clinical trial.** Schweizerische Medizinische Wochenschrift - Supplementum 1994;62:77-81 Hypnosis is a technique whereby an individual can reach a particular state, quite unrelated to sleep, characterized by aroused, attentive and focused concentration. Although there are numerous clinical applications of hypnosis, there are virtually no controlled clinical trials to support its effectiveness. We propose a controlled randomized clinical trial comparing a "control" group of chronic pain patients treated by a program including conventional oral medication combined with various nerve blocks and/or spinal administration of drugs, with a "treatment" group having a similar treatment program plus hypnosis carried out by nurses. Outcome measurements include mainly the variation of pain intensity, the amount of analgesic drug consumption, spontaneous physical activity, and the change in health-related quality of life. The assessment of the outcome variable is done at the initial workup, weekly for the first 3 weeks, and at 6 and 12 weeks. A follow-up survey is conducted at 6 months.

Campbell DF. Dixon JK. Sanderford LD. Denicola MA. **Relaxation: its effect on the nutritional status and performance status of clients with cancer.** Journal of the American Dietetic Association 1984;84(2):201-4 Relaxation was used to promote normal food

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consumption patterns among persons with cancer. As part of a larger study, 22 persons with cancer were randomly assigned to receive instruction and reinforcement in a relaxation technique to be used preprandially. The relaxation procedure included four components: (a) deep abdominal breathing, (b) tensing and relaxing of various body parts, (c) relaxation by autosuggestion, and (d) voluntary image control. Twelve clients complied with relaxation instructions in part, and 10 did not. Among compliers, 75% experienced desirable weight change over a six-week period. Performance status, measured by the Karnofsky scale, improved for 33% and worsened for 17% over eight weeks. Research has shown relaxation to be an effective measure in relation to pain, hypertension, and other conditions. These preliminary results now suggest that relaxation may also be effective in treating the eating problems of the person with cancer, leading to improvement in weight and performance status.

Cochrane G, Friesen J. Hypnotherapy in weight loss treatment. *Journal of Consulting & Clinical Psychology* 1986;54(4):489-92 **Investigated the effects of hypnosis as a treatment for weight loss among women.** The sample consisted of 60 women (aged 20-65 yrs) who were at least 20% overweight and were not in any other treatment program. Six client variables (suggestibility, self-concept, quality of family origin, age of obesity onset, education level, and socioeconomic status (SES)) and 1 process variable (multimodal imagery) were analyzed in relation to the dependent variable (weight loss). Two experimental groups, hypnosis plus audiotapes and hypnosis without audiotapes, and the control group were investigated for weight loss immediately after treatment and again after a 6-mo follow-up. The primary hypothesis that hypnosis is an effective treatment for weight loss was confirmed, but the 7 concomitant variables and the use of audiotapes were not significant contributors to weight loss.

Colgan SM, Faragher EB, Whorwell PJ **Controlled trial of hypnotherapy in relapse prevention of duodenal ulceration.** *Lancet* 1988;1(8598):1299-300 30 patients with rapidly relapsing duodenal ulceration were studied to assess the possible benefit of hypnotherapy in relapse prevention. After the ulcer had healed on treatment with ranitidine, the drug was continued for a further 10 weeks during which time patients received either hypnotherapy or no hypnotherapy. The two randomly selected groups were comparable in terms of age, sex, smoking habits, and alcohol consumption. Follow-up of both groups of patients was continued for 12 months after the cessation of ranitidine. After 1 year, 8(53%) of the hypnotherapy patients and 15(100%) of the control subjects had relapsed. The results of this study suggest that hypnotherapy may be a useful therapeutic adjunct for some patients with chronic recurrent duodenal ulceration. Council JR, Kirsch I, Vickery AR, Carlson D. "Trance" versus "skill" hypnotic inductions: the effects of credibility, expectancy, and experimenter modeling. *Journal of Consulting & Clinical Psychology* 1983;51(3):432-40 A hypnotic induction procedure based on social learning principles (skill induction) was compared with a traditional eye-fixation/relaxation trance induction, a highly credible placebo induction, and a no induction base rate control. The trance induction surpassed the skill induction only on the Field Inventory, a measure of hypnotic depth that contains items corresponding to suggestions contained in the trance induction. Experimenter modeling was not found to enhance the effectiveness of the skill induction. Skill and trance inductions elicited slightly higher behavioral scores on the Stanford Hypnotic Susceptibility Scale: Form C than did the placebo induction. However, this difference was not obtained on other measures of hypnotic responsivity and depth. Significant correlations were found between expectancy, absorption, and responsiveness on all dependent measures.

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Multiple regression analyses indicated that the relationship between absorption and responsivity was mediated by expectancy. The results are interpreted as supporting the hypotheses that hypnotic responses are elicited by the expectancy for their occurrence and that induction procedures are a means of increasing subjects' expectancies for hypnotic responses.

Crawford HJ. Allen SN. Paired-associate learning and recall of high and low imagery words: moderating effects of hypnosis, hypnotic susceptibility level, and visualization abilities. *American Journal of Psychology*. 1996;109(3):353-72 Relationships between recall of low and high imagery paired-associate (P-A) words and hypnotic susceptibility, and the influence of hypnosis on recall as moderated by hypnotic level were examined. Subjects were assessed on 2 hypnotic susceptibility scales [Harvard Group Scale of Hypnotic Susceptibility; Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C)]. Forty-one low (0-4 SHSS:C) and 41 highly (9-12 SHSS:C) hypnotizable college students were assigned to 1 of 4 experimental groups: waking-hypnosis, hypnosis-waking, waking-waking, or hypnosis-hypnosis. Recall was significantly better for high than low imagery words. In the more sensitive within-subjects design, high hypnotizables recalled more P-A words during hypnosis than waking, and lows did not differ. In the between-subjects design, hypnotic level was not a moderator of performance during hypnosis. Low hypnotizables recalled more words in the within-subjects design. Visualization ability was a poor moderator of imagery-mediated learning. High imagery recall correlated significantly with Marks's (1973) Vividness of Visual Imagery Questionnaire (.25) and Paivio and Harshman's (1983) Individual Differences Questionnaire (IDQ) Verbal scale (.29 1973;), but not with the IDQ Imagery scale, the Mental Rotations Test (Vandenberg & Kuse

Crawford HJ. Harrison DW. Kapelis L. Visual field asymmetry in facial affect perception: moderating effects of hypnosis, hypnotic susceptibility level, absorption, and sustained attentional abilities. *International Journal of Neuroscience*. 1995;82(1-2):11-23 Effects of hypnotic level, affect valence and cerebral asymmetry on reaction time (RT) in the discrimination of Ekman and Friesen's (1978) stimuli of angry and happy faces were studied in counterbalanced conditions of waking and hypnosis. Assessed previously on two hypnotic susceptibility scales [Harvard Group Scale of Hypnotic Susceptibility; Stanford Hypnotic Susceptibility Scale, Form C (SHSSC)], non-depressed subjects were 16 low (0-4 SHSSC) and 17 highly (10-12 SHSSC) hypnotizable, right-handed college students. Subjects were required to identify affects of faces, presented tachistoscopically to left (LVF) or right (RVF) visual fields, by using a forced-choice RT paradigm. Highs were significantly faster than lows in angry and happy affect recognition. Hypnosis had no significant effects. For highs only, angry emotional valence was identified faster when presented to the right hemisphere (RVF), but there were no significant hemispheric effects for happy emotional valence. For lows there were no hemispheric differences. Gender was a nonsignificant factor. Significant correlations showed that faster reaction times to angry and happy stimuli, in both LVF and RVF in waking and hypnosis, were obtained by subjects who reported more deeply absorbed and extremely focused and sustained attention on the Tellegen (1982) Absorption Scale and a subscale of the Differential Attentional Processes Inventory (Grumbles & Crawford, 1981). Vividness of Visual Imagery Questionnaire (Marks, 1973) and Affect Intensity Measure (Larsen, 1985), in general, did not correlate with RTs. The potential role of the fronto-limbic attentional system in the recognition of external visual sensory affect is discussed.

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Crawford HJ. Macdonald H. Hilgard ER. **Hypnotic deafness: a psychophysical study of responses to tone intensity as modified by hypnosis.** American Journal of Psychology 1979;92(2):193-214 Hypnotic deafness was suggested for 1000 Hz tones presented in random orders at seven intensities between 17 and 70 db. Subjects were 70 college students stratified into four levels of hypnotic susceptibility, ranging from low to high. Four conditions were presented within a single session. Two conditions tested normal hearing, one in waking and one in hypnosis; two tested reported loudness of the tones as reduced by hypnotic suggestion. The method of magnitude estimation was employed. Hearing reduction was found to correlate .59 with hypnotic susceptibility in the total sample. Few high hypnotizables reduced their hearing to zero; their mean residual hearing during the deafness conditions was 55% of normal. Power functions for the relationship between tone intensity and magnitude estimates for conditions of normal hearing and deafness were found to be relatively parallel and orderly, differing primarily in intercept value. Order effect anomalies are discussed. The "hidden observer" method showed that for 4 of the 70 subjects the covert hearing was found to be at least 20% greater than that reported overtly within hypnotic deafness and approached normal hearing. As in our previous hypnotic analgesia research, not all subjects who reduced their hearing significantly gave subsequent covert reports which differed from reported overt hearing. Discussion is given for evidence of two levels of information processing during hypnotically suggested perceptual distortions.

Crowther JH. **Stress management training and relaxation imagery in the treatment of essential hypertension.** Journal of Behavioral Medicine 1983;6(2):169-87 The present study compared the effectiveness of three procedures in the treatment of 34 individuals with essential hypertension: (1) stress management training plus relaxation imagery, which consisted of an adaptation of existing stress management techniques in conjunction with extensive relaxation training using relaxation imagery; (2) relaxation imagery alone; and (3) weekly blood pressure checks. The relaxation imagery technique involved visualization of a relaxing image along with concentration on suggestions of relaxation, heaviness, and warmth. Treatment was individualized and lasted 8 weeks. Results indicated stress management plus relaxation imagery and relaxation imagery alone were significantly more effective than blood pressure checks in reducing systolic and diastolic blood pressures during treatment and in maintaining diastolic blood pressure reductions during follow-up. However, no significant differences were found between the two treatment procedures. Clinical implications of these findings are discussed.

Cruise CJ. Chung F. Yogendran S. Little D. **Music increases satisfaction in elderly outpatients undergoing cataract surgery.** Canadian Journal of Anaesthesia 1997;44(1):43-8  
**PURPOSE:** Music has long been known to reduce anxiety, minimize the need for sedatives, and make patients feel more at ease. The purpose of the study was to evaluate the effect of music in elderly outpatients undergoing elective cataract surgery with retrobulbar block and monitored anaesthetic care using fentanyl or alfentanil and midazolam.  
**METHODS:** One hundred and twenty one patients were prospectively and randomly assigned to hear: relaxing suggestions, white noise, operating room noise or relaxing music via audio-cassette headphones. Vital signs were documented before and after retrobulbar block and every 15 min thereafter. Anxiety was assessed using the State-Trait Anxiety Inventory (STAI) before and after surgery. Visual analogue scales (VAS) were used to assess anxiety and patient satisfaction postoperatively with a standardized questionnaire. Between group comparisons were

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made using Chi-Square, or ANOVA, where appropriate. RESULTS: There were no differences between groups in STAI or anxiety VAS scores at any time. Differences were noted in systolic blood pressure, but not in other vital signs. Patients' ratings of the whole operative experience, satisfaction with the tape played, general level of relaxation and preference for the chosen tape for subsequent surgery were different (music > relaxing suggestions > white noise and OR noise,  $P < 0.05$ ).

CONCLUSIONS: Elderly patients undergoing cataract surgery under retrobulbar block were more satisfied with their experience if they heard relaxing music, rather than relaxing suggestions or white noise or OR noise. The type of auditory stimuli to which the patients were exposed did not influence the level of anxiety.

Dahlgren LA. Kurtz RM. Strube MJ. Malone MD. **Differential effects of hypnotic suggestion on multiple dimensions of pain.** *Journal of Pain & Symptom Management*. 1995;10(6):464-70 Within the framework of multidimensional pain assessment, this study extended an earlier finding that hypnotic analgesia and relaxation suggestions have differential effects on pain reduction by evaluating these strategies in subjects undergoing a cold pressor protocol. Thirty-two highly susceptible subjects were randomly assigned to an analgesia or a relaxation suggestion treatment group. Six pain reports were taken at 10-sec intervals for each experimental condition. The baseline measures served as covariates. A  $2 \times 2 \times 2 \times 6$  repeated-measures analysis of covariance (ANCOVA) revealed a significant group (analgesia, relaxation) by pain dimension (intensity, unpleasantness), by condition (suggestion alone, hypnotic induction plus suggestion) interaction. Analysis of the simple-simple main effects, holding both group and condition constant, revealed that application of hypnotic analgesia reduced report of pain intensity significantly more than report of pain unpleasantness. Conversely, hypnotic relaxation reduced pain unpleasantness more than intensity. The clinical implications of the study are discussed.

De Pascalis V. Caddia F. **Effect of suggestion on perception:** replication of Gheorghiu and Reyher's study. *Perceptual & Motor Skills* 1985;61(1):123-30 Gheorghiu and Reyher in 1982 described a Scale of Sensory Suggestibility consisting of an indirect-direct method of assessing suggestibility. In this study a further sample of 81 women was tested on Gheorghiu and Reyher's scale. The scale has tactual, auditory, and visual items. Each item was administered to the left and right sides of the body in random sequence and the method of presentation was varied. The scale is indirect in that the announced stimuli are never presented to participants, contrary to their expectations; it is direct because the subjects are cautioned that a stimulus might not actually be presented. The scale showed acceptable internal consistency. There were no right-left side differences. The methods of presentation were not equally successful. Progressive Intensification and Progressive Decrease in Intensification of stimulation were the most successful, whereas Expectation of series without objective stimuli was the least successful, contrary to Gheorghiu and Reyher's results. Finally, item analysis showed that all the items had high reliability coefficients, except two auditory and one visual items. Implications for clinical practice were discussed.

DeBenedittis G. Cigada M. Bianchi A. Signorini MG. Cerutti S. **Autonomic changes during hypnosis: a heart rate variability power spectrum analysis as a marker of sympatho-vagal balance.** *International Journal of Clinical & Experimental Hypnosis* 1994;42(2):140-52 Spectral analysis of beat-to-beat variability in electrocardiography is a

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simple, noninvasive method to analyze sympatho-vagal interaction. The electrocardiogram is analyzed by means of an automatic, autoregressive modeling algorithm that provides a quantitative estimate of R-R interval variability by the computation of power spectral density. Two major peaks are recognizable in this spectrum: a low-frequency peak (LF, -0.1 Hz), related to the overall autonomic activity (ortho+parasympathetic) and a high-frequency peak (HF, -0.25 Hz), representative of the vagal activity. The LF/HF ratio is an index of the sympatho-vagal interaction. This technique was applied, using a computer-assisted electrocardiograph, to 10 healthy volunteers (6 high and 4 low hypnotizable subjects as determined by the Stanford Hypnotic Susceptibility Scale, Form C) in randomized awake and neutral hypnosis conditions. Preliminary results indicated that hypnosis affects heart rate variability, shifting the balance of the sympatho-vagal interaction toward an enhanced parasympathetic activity, concomitant with a reduction of the sympathetic tone. A positive correlation between hypnotic susceptibility and autonomic responsiveness during hypnosis was also found, with high hypnotizable subjects showing a trend toward a greater increase of vagal efferent activity than did low hypnotizables.

Dikel W. Olness K. **Self-hypnosis, biofeedback, and voluntary peripheral temperature control in children.** *Pediatrics* 1980;66(3):335-40 Forty-eight children, aged 5 to 15 years, were tested for their ability to raise and lower their index finger temperature with self-hypnosis and/or biofeedback. Group A (self-hypnosis only) and group B (self-hypnosis with biofeedback) were children who had previous successful experience with self-hypnosis (eg, for the treatment of enuresis, pain, asthma, or obesity). Group C (biofeedback only) were children with no experience with hypnosis. All three groups showed significant success with warming and cooling. The range of warming for the three groups was 0 to 3.7 °F, and for cooling, 0 to 7.3 °F or 0 to 8.8 °F for attempts exceeding the ten-minute trial period. No significant difference in ability to warm or cool was noted when the children were compared by group, age, or sex. Some of the children in group A who had little or no success with hypnosis only were very successful with the addition of biofeedback monitoring, suggesting a synergistic effect between biofeedback and hypnosis. A significant temperature rise was also noted in groups A and B accompanying a neutral hypnotic induction relaxation-imagery exercise in which no mention of temperature change was made. This rise varied from 0 to 6 °F, averaging 1.7 °F. Possible therapeutic implications include the treatment of migraine headaches, Raynaud's syndrome, sickle cell anemia, and the use of temperature monitoring as a diagnostic and therapeutic adjunct to clinical hypnosis.

Disbrow EA. Bennett HL. Owings JT. **Effect of preoperative suggestion on postoperative gastrointestinal motility** *Western Journal of Medicine.* 1993;158(5):488-92 Autonomic behavior is subject to direct suggestion. We found that patients undergoing major operations benefit more from instruction than from information and reassurance. We compared the return of intestinal function after intra-abdominal operations in 2 groups of patients: the suggestion group received specific instructions for the early return of gastrointestinal motility, and the control group received an equal-length interview offering reassurance and nonspecific instructions. The suggestion group had a significantly shorter average time to the return of intestinal motility, 2.6 versus 4.1 days. Time to discharge was 6.5 versus 8.1 days. Covariates including duration of operation, amount of intraoperative bowel manipulation, and amount of postoperative narcotics were also examined using the statistical model analysis of covariance. An average savings of \$1,200 per patient resulted from this simple 5-minute intervention. In

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summary, the use of specific physiologically active suggestions given preoperatively in a believable manner can reduce the morbidity associated with an intra-abdominal operation by reducing the duration of ileus.

Donk LJ. Vingoe FJ. Hall RA. Doty R. **The comparison of three suggestion techniques for increasing reading efficiency utilizing a counterbalanced research paradigm.** *International Journal of Clinical & Experimental Hypnosis* 1970;18(2):126-133. Reports an experiment in which both Barber-type and alert-trance procedures significantly increased reading speed while maintaining comprehension when compared to a control group; a traditional hypnotic procedure followed by the specific suggestions failed to obtain these results. 32 volunteer undergraduates were randomly assigned to 4 groups in terms of a counterbalanced design. 2 groups were administered trance inductions (traditional and alert) followed by specific suggestions, a 3rd simply the suggestions, while the 4th served as control. Reading suggestions were to eliminate specific problems, increase speed, and increase or maintain comprehension. (Spanish & German summaries)

Dubreuil DL. Spanos NP. Bertrand LD. **Does hypnotic amnesia dissipate with time? Imagination, Cognition Personality.** 1982;832(2):103-113. Investigated, in 2 experiments, the hypothesis that hypnotic amnesia dissipates "spontaneously" over time. Subjects were 94 undergraduates (mean age 19 yrs) who obtained scores of 2 or above on the Objective dimension of a responsiveness to suggestion scale. Subjects were assigned at random to 4 groups. Subjects in the Remember More, Remember Less, and Retest control groups showed partial amnesia on the 1st of their 2 challenge trials. After the administration of a hypnotic amnesia suggestion for a previously learned word list, Retest Subjects in Exp I received 2 successive recall challenges before cancellation of the suggestion. Delay Subjects received only 1 challenge. It occurred at the same time that Retest Subjects received the 2nd challenge. No differences in amount of amnesia were found between the Delay trial and either of the Retest trials, thereby failing to provide support for the dissipation hypothesis. Exp II manipulated Subjects' expectations concerning the amount of amnesia typically shown on a 2nd challenge. Subjects in the Remember More or Remember Less conditions were led to believe that they would recall either more or less critical material on the 2nd amnesia challenge. Both Retest (no expectancy) and Remember More Subjects recalled significantly more words on the 2nd challenge than on the 1st one. However, a significantly greater proportion of Remember More Subjects than Retest Subjects showed recall increments on the 2nd challenge. Results do not support the dissipation hypothesis of hypnotic amnesia.

Eberhart LH. Doring HJ. Holzrichter P. Roscher R. Seeling W. **Therapeutic suggestions given during neurolept-anaesthesia decrease post-operative nausea and vomiting.** *European Journal of Anaesthesiology* 1998;15(4):446-52 A double-blind randomized study was performed in 100 patients undergoing thyroidectomy to evaluate the effect of positive therapeutic suggestions made during neurolept-anaesthesia. The classic droperidol-fentanyl-N<sub>2</sub>O technique was used as these drugs preserve the neurophysiological functions required to process the information in the therapeutic suggestions given during general anaesthesia. Patients in the suggestion group heard positive non-affirmative suggestions during the whole operation. An autoreverse tape player was used. The control group listened to an empty tape. Both groups were comparable with respect to demographic variables, anaesthetic technique, drug dosage, duration of anaesthesia and surgery. Patients in the suggestion group suffered significantly less

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from post-operative nausea or vomiting (suggestion: 47.2% vs. control: 85.7%) and required less anti-emetic treatment (suggestion: 30.6% vs. control: 68.6%). We conclude that therapeutic suggestions heard during neurolept-anaesthesia are processed and decrease post-operative nausea and vomiting in patients after thyroidectomy.

Echterling LG. Whalen J. **Stage hypnosis and public lecture effects on attitudes and beliefs regarding hypnosis.** American Journal of Clinical Hypnosis. 1995;38(1):13-21 Stage hypnosis shows, designed to entertain and amaze, and public lectures, designed to explain and educate, provide dramatically different introductions to hypnosis. This study examined how audience members' attitudes and beliefs regarding hypnosis are affected by these two different experiences. Two hundred and five college students completed pretest measures before either watching a stage hypnosis show, or attending a lecture on hypnosis, or participating in a control group. Subjects completed posttest measures between one to three weeks later. Both the stage hypnosis show and the lecture increased attendees' motivation to use hypnosis in treatment and decreased their belief that hypnotizability reflects lower intelligence. Moreover, the lecture also increased beliefs that hypnotizability reflects creativity and inner strength. Finally, while the lecture reduced the belief that a hypnotized person is robotlike and automatically acts on all suggestions, the stage hypnosis show increased this attitude among its audience members.

Enqvist B. Bjorklund C. Engman M. Jakobsson J. **Preoperative hypnosis reduces postoperative vomiting after surgery of the breasts.** A prospective, randomized and blinded study. Acta Anaesthesiologica Scandinavica 1997;41(8):1028-32

**BACKGROUND:** Postoperative nausea and vomiting (PONV) after general anesthesia and surgery may have an incidence as high as 70% irrespective of antiemetic drug therapy. The use of preoperative hypnosis and mental preparation by means of an audio tape was investigated in the prophylaxis of nausea and vomiting before elective breast reduction surgery. Similar interventions have not been found in the literature.

**METHODS:** Fifty women were randomized to a control group or a hypnosis group; the latter listened to an audio tape daily 4-6 days prior to surgery. A hypnotic induction was followed by suggestions as to how to relax and experience states incompatible with nausea and vomiting postoperatively (e.g. thirst and hunger). There was a training part on the tape where the patients were asked to rehearse their own model for stress reduction. Premedication and anesthetic procedures were standardized.

**RESULTS:** Patients in the hypnosis group had significantly less vomiting, 39% compared to 68% in the control group, less nausea and less need of analgesics postoperatively.

**CONCLUSIONS:** Preoperative relaxation and/or hypnotic techniques in breast surgery contribute to a reduction of both PONV and postoperative analgesic requirements. Enqvist B. Fischer K. Preoperative hypnotic techniques reduce consumption of analgesics after surgical removal of third mandibular molars: a brief communication. International Journal of Clinical & Experimental Hypnosis 1997;45(2):102-8 The effects of hypnosis in connection with surgery have been described in many clinical publications, but few controlled studies have been published. The aim of the present study was to evaluate the effects of preoperative hypnotic techniques used by patients planned for surgical removal of third mandibular molars. The patients were randomly assigned to an experimental (hypnotic techniques) or a control (no hypnotic techniques) group. During the week before the surgery, the experimental group listened to an audiotape containing a hypnotic relaxation induction. Posthypnotic suggestions of



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healing and recovery were given on the tape together with advice regarding ways to achieve control over stress and pain. The control group received no hypnotic intervention. Only one surgeon who was not aware of patient group assignments performed all the operations. Thirty-six patients in the control group were compared to 33 patients in the experimental group. Anxiety before the operation increased significantly in the control group but remained at baseline level in the experimental group. Postoperative consumption of analgesics was significantly reduced in the experimental group compared to the control group. Enqvist B. von Konow L. Bystedt H. Pre- and perioperative suggestion in maxillofacial surgery: effects on blood loss and recovery. *International Journal of Clinical & Experimental Hypnosis* 1995;43(3):284-94 The basic assumption underlying the present study was that emotional factors may influence not only recovery but also blood loss and blood pressure in maxillofacial surgery patients, where the surgery was performed under general anesthesia. Eighteen patients were administered a hypnosis tape containing preoperative therapeutic suggestions, 18 patients were administered hypnosis tapes containing pre- and perioperative suggestions, and 24 patients were administered a hypnosis tape containing perioperative suggestions only. The patients who received taped suggestions were compared to a group of matched control patients. The patients who received preoperative suggestions exhibited a 30% reduction in blood loss. A 26% reduction in blood loss was shown in the group of patients receiving pre- and perioperative suggestions, and the group of patients receiving perioperative suggestions only showed a 9% reduction in blood loss. Lower blood pressure was found in the groups that received pre- and perioperative and perioperative suggestions only. Rehabilitation was facilitated in the group of patients receiving perioperative suggestions only.

Ernst E. Rand JI. Stevinson C. **Complementary therapies for depression: an overview.** *Archives of General Psychiatry* 1998;55(11):1026-32 Depression is one of the most common reasons for using complementary and alternative therapies. The aim of this article is to provide an overview of the evidence available on the treatment of depression with complementary therapies. Systematic literature searches were performed using several databases, reference list searching, and inquiry to colleagues. Data extraction followed a predefined protocol. The amount of rigorous scientific data to support the efficacy of complementary therapies in the treatment of depression is extremely limited. The areas with the most evidence for beneficial effects are exercise, herbal therapy (*Hypericum perforatum*), and, to a lesser extent, acupuncture and relaxation therapies. There is a need for further research involving randomized controlled trials into the efficacy of complementary and alternative therapies in the treatment of depression. [References: 95]

Evans C, Richardson PH **Therapeutic suggestions during general anesthesia.** *Advances* 1988;5(4):6-11 Tested the hypothesis that the quality and duration of recovery from surgery would be improved by therapeutic suggestions made while patients were under general anesthesia, in a double-blind randomized controlled study of 39 adult hospital patients who were admitted for an abdominal hysterectomy. Results support the hypothesis.

Evans C. Richardson PH. **Improved recovery and reduced postoperative stay after therapeutic suggestions during general anaesthesia.** *Lancet*. 1988 Aug 27;2(8609):491-3. The clinical value of therapeutic suggestions during general anaesthesia was assessed in a double-blind randomized placebo-controlled study. 39 unselected patients were allocated to suggestion (n = 19) or control (n = 20) groups who were played either recorded therapeutic suggestions or a

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blank tape, respectively, during hysterectomy. The patients in the suggestion group spent significantly less time in hospital after surgery, suffered from a significantly shorter period of pyrexia, and were generally rated by nurses as having made a better than expected recovery. Patients in the suggestion group, unlike those in the control group, guessed accurately that they had been played an instruction tape.

Everett JJ. Patterson DR. Burns GL. Montgomery B. Heimbach D. Adjunctive interventions for burn pain control: comparison of hypnosis and ativan: the 1993 Clinical Research Award.

Journal of Burn Care & Rehabilitation. 1993;14(6):676-83 Thirty-two patients hospitalized for the care of major burns were randomly assigned to groups that received hypnosis, lorazepam, hypnosis with lorazepam, or placebo controls as adjuncts to opioids for the control of pain during dressing changes. Analysis of scores on the Visual Analogue Scale indicated that although pain during dressing changes decreased over consecutive days, assignment to the various treatment groups did not have a differential effect. This finding was in contrast to those of earlier studies and is likely attributable to the low baseline pain scores of subjects who participated. A larger number of subjects with low baseline pain ratings will likely be necessary to replicate earlier findings. The results are argued to support the analgesic advantages of early, aggressive opioid use via PCA or through careful staff monitoring and titration of pain drugs.

Ewer TC, Stewart DE **Improvement in bronchial hyper-responsiveness in patients with moderate asthma after treatment with a hypnotic technique: a randomized controlled trial.** BMJ Clinical Research Edition. 1986;293(6555):1129-32 A prospective, randomised, single blind, and controlled trial of a hypnotic technique was undertaken in 39 adults with mild to moderate asthma graded for low and high susceptibility to hypnosis. After a six week course of hypnotherapy 12 patients with a high susceptibility score showed a 74.9% improvement (p less than 0.01) in the degree of bronchial hyper-responsiveness to a standardized methacholine challenge test. Daily home recordings of symptoms improved by 41% (p less than 0.01), peak expiratory flow rates improved by 5.5% (p less than 0.01), and use of bronchodilators decreased by 26.2% (p less than 0.05). The improvement in bronchial hyper-reactivity occurred without a change in subjective appreciation of the degree of bronchoconstriction. A control group of 17 patients and 10 patients undergoing treatment with low susceptibility to hypnosis had no change in either bronchial hyper-responsiveness or any of the symptoms recorded at home. This study shows the efficacy of a hypnotic technique in adult asthmatics who are moderately to highly susceptible to hypnosis. Faymonville ME. Mambourg PH. Joris J. Vrijens B. Fissette J. Albert A. Lamy M. Psychological approaches during conscious sedation. Hypnosis versus stress reducing strategies: a prospective randomized study. Pain 1997;73(3):361-7 Stress reducing strategies are useful in patients undergoing surgery. Hypnosis is also known to alleviate acute and chronic pain. We therefore compared the effectiveness of these two psychological approaches for reducing preoperative discomfort during conscious sedation for plastic surgery. Sixty patients scheduled for elective plastic surgery under local anesthesia and intravenous sedation (midazolam and alfentanil upon request) were included in the study after providing informed consent. They were randomly allocated to either stress reducing strategies (control: CONT) or hypnosis (HYP) during the entire surgical procedure. Both techniques were performed by the same anesthesiologist (MEF). Patient behavior was noted during surgery by a psychologist, the patient noted anxiety, pain, perceived control before, during and after surgery, and postoperative nausea and vomiting (PONV). Patient satisfaction and surgical conditions

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were also recorded. Peri- and postoperative anxiety and pain were significantly lower in the HYP group. This reduction in anxiety and pain were achieved despite a significant reduction in intraoperative requirements for midazolam and alfentanil in the HYP group (alfentanil:  $8.7 \pm 0.9$  microg kg<sup>-1</sup>/h(-1) vs.  $19.4 \pm 2$  microg kg<sup>-1</sup>/h(-1),  $P < 0.001$ ; midazolam:  $0.04 \pm 0.003$  mg kg<sup>-1</sup>/h(-1) vs.  $0.09 \pm 0.01$  mg kg<sup>-1</sup>/h(-1),  $P < 0.001$ ). Patients in the HYP group reported an impression of more intraoperative control than those in the CONT group ( $P < 0.01$ ). PONV were significantly reduced in the HYP group (6.5% vs. 30.8%,  $P < 0.001$ ). Surgical conditions were better in the HYP group. Less signs of patient discomfort and pain were observed by the psychologist in the HYP group ( $P < 0.001$ ). Vital signs were significantly more stable in the HYP group. Patient satisfaction score was significantly higher in the HYP group ( $P < 0.004$ ). This study suggests that hypnosis provides better perioperative pain and anxiety relief, allows for significant reductions in alfentanil and midazolam requirements, and improves patient satisfaction and surgical conditions as compared with conventional stress reducing strategies support in patients receiving conscious sedation for plastic surgery.

Fellows BJ. Creamer M. **An investigation of the role of 'hypnosis', hypnotic susceptibility and hypnotic induction in the production of age regression.** British Journal of Social & Clinical Psychology 1978;17(2):165-71 In response to criticisms of the methodology of Barber's(1969)experiments, a 2x2 factorial design, varying hypnotic susceptibility and hypnotic treatment, was used to study the role of 'hypnosis' in the production of age regression by suggestion. Twenty subjects of high hypnotic susceptibility and 20 subjects of low hypnotic susceptibility were randomly allocated to one of two treatment conditions: hypnotic induction procedure or motivational instructions. Both treatments were followed by suggestions to regress to the age of seven years. Two measures of age regression were taken: the Draw-A-Man-Test and a subjective rating of the reality of the experience. The results showed significant effects of both variables, with high susceptibility and induction treatment producing better regression on both measures than low susceptibility and motivation treatment. Hypnotic susceptibility was the stronger of the two variables. The ranking of the four conditions corresponded with predictions of hypnotic depth from the state theory of hypnosis, but the findings were not inconsistent with the non-state theory. The drawings of all regressed groups were more mature than the norms for the age of seven and the drawings of a group of seven year old children.

Freeman RM. Macaulay AJ. Eve L. Chamberlain GV. Bhat AV. **Randomised trial of self hypnosis for analgesia in labor.** BMJ Clinical Research Edition. 1986;292(6521):657-8 We undertook a randomised trial to evaluate the effect of selfhypnosis on pain relief, satisfaction, and analgesic requirements for women in their first labour.

Gearan P. Kirsch I. **Response expectancy as a mediator of hypnotizability modification: a brief communication.** International Journal of Clinical & Experimental Hypnosis. 1993;41(2):84-91 The role of response expectancy in bringing about increases in hypnotic susceptibility by use of the Carleton Skill Training Program (CSTP) was assessed with 27 subjects selected for their low hypnotizability scores. Subjects were randomly assigned to one of two conditions: 13 received the CSTP to increase their hypnotic susceptibility, and 14 received no training. In addition to assessing hypnotizability, hypnotic response expectancies were assessed before and after training. With pretreatment hypnotizability controlled, subjects in the training group scored significantly higher than control subjects on all self-report measures of hypnotizability but not on a measure of observed behavioral response. Changes in response

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expectancy were found to be highly correlated with changes in hypnotizability. With changes in expectancy controlled, no significant differences between the trained and control groups were found.

Gearan P. Schoenberger NE. Kirsch I. **Modifying hypnotizability: a new component analysis.** *International Journal of Clinical & Experimental Hypnosis* 1995;43(1):70-89 The effects of the Carleton Skills Training Program (CSTP) on hypnotizability were compared to those of a modified training program in which instructions for physical enactment of the response were omitted. After training, subjects in the original CSTP reported an increase in the extent to which they intentionally enacted suggested behaviors. In contrast, subjects in the modified training program reported increased fantasy without voluntary physical enactment. Nevertheless, both training programs increased behavioral and subjective responsiveness to suggestion, and there were no significant differences in response enhancement between the two programs. Across conditions, increases in behavioral and subjective responses to suggestion were correlated with increased use of fantasy. In contrast, increases in enactment were correlated only with compliance. The modified training program is recommended as a means of enhancing suggestibility with less likelihood than the original CSTP of engendering compliance.

Godeby J. Erdt G. Canavan T. Revenstorf D. **Experimental hypermnesia: Effects of hypnosis on learning and memory processes.** *Experimentelle und Klinische Hypnose* 1993;9(2):71-95. Studied the effects of hypnosis on learning and memory to test the hypothesis that hypnotic trance facilitates learning and memory processes by changing the form and depth of verbal processing. Subjects included 36 normal male and female German adults (aged 21-45 yrs) (university students). Subjects were randomly assigned to 1 of 4 experimental groups. Group 1 learned a list of 48 neutral words in a waking state and had to recall it later under hypnosis. Group 2 learned the list under hypnosis and was tested during a waking state. Group 3 learned and recalled the list under hypnosis, and Group 4 learned and recalled the list in a waking state. Intergroup differences in recall performances were analyzed. (English abstract)

Goldmann L. Ogg TW. Levey AB. **Hypnosis and daycase anaesthesia. A study to reduce pre-operative anxiety and intra-operative anaesthetic requirements.** *Anaesthesia* 1988;43(6):466-9 Fifty-two female patients who underwent gynecological operations as day cases received either a short pre-operative hypnotic induction or a brief discussion of equal duration. Hypnotized patients who underwent vaginal termination of pregnancy required significantly less methohexitone for induction of anaesthesia. They were also significantly more relaxed as judged by their visual analogue scores for anxiety. Less than half of the patients were satisfied with their knowledge about the operative procedure even after discussions with the surgeon and anaesthetist. A significant correlation was found between anxiety and perceived knowledge of procedures. The results suggest that pre-operative hypnosis can provide a quick and effective way to reduce pre-operative patient anxiety and anaesthetic requirements for gynaecological daycase surgery.

Greenberg RP. Land JM. **Influence of some hypnotist and subject variables on hypnotic susceptibility.** *Journal of Consulting & Clinical Psychology* 1971;37(1):111-5 Randomly assigned 48 21-56 yr. Old females to 1 of 4 groups given different information with regard to a hypnotist's warmth and experience. The 6 male graduate student hypnotists had previously been judged on their objective warmth and competent appearance. Following structuring, all ss underwent individual hypnotic induction. As predicted, ss run by the

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objectively warmer, more competent appearing es obtained significantly higher susceptibility scores. Structured warmth produced significant differences only in ss run by the objectively less warm es. Both structured warmth and experience affected ss' subjective impressions of whether they thought they had been hypnotized. The complex relationship between antecedent variables and the various objective and subjective dependent indicators of hypnotic phenomena are discussed. Greenleaf M. Fisher S. Miaskowski C. DuHamel K. Hypnotizability and recovery from cardiac surgery. *American Journal of Clinical Hypnosis* 1992;35(2):119-28 We studied 32 coronary bypass patients to examine the effect of hypnosis on recovery from surgery. The patients were assessed for hypnotizability with the Hypnotic Induction Profile (HIP) and assigned to experimental groups with a random stratification procedure to equate for differences in hypnotizability, age, and severity of illness. We taught patients in groups one and two formal hypnosis with different treatment strategies; patients in group three were not taught formal hypnosis or a treatment strategy. Scores on the HIP were significant predictors of recovery, independent of experimental treatment with formal hypnosis. Patients who scored "Midrange" stabilized more quickly in the intensive care unit (ICU) than those who scored "High" or "Low" ( $p < .05$ ). Patients who scored "High" had more labile blood pressure in the ICU compared to the "Midrange" and "Lows" ( $p < .05$ ). Measured hypnotizability was associated with the recovery sequence from surgery.

Gregory J. Diamond MJ. **Increasing hypnotic susceptibility by means of positive expectancies and written instructions.** *Journal of Abnormal Psychology* 1973;82(2):363-7 Investigated the extent to which hypnotic susceptibility could be modified by means of induced positive expectancies and written instructions that were designed to correct misconceptions concerning hypnosis as well as to provide concrete methods for experiencing hypnosis. 40 undergraduates were given a baseline test of hypnotic susceptibility and then randomly assigned to 1 of 4 conditions. Subjects receiving the positive expectancy were given false personality test feedback that they were good hypnotic Subjects prior to a criterion hypnotic scale. Subjects receiving the written instructions were given 10 min to read the information prior to the hypnotic test. Other Subjects browsed through magazines prior to testing in hypnosis. Both positive expectancies and written instructions were significantly effective in increasing susceptibility in comparison with practice only. Theoretical explanations are advanced and the implications of these findings are considered. Griffiths RA, Channon-Little L The hypnotizability of patients with bulimia nervosa and partial syndromes participating in a controlled treatment outcome study *Contemporary Hypnosis* 1993;10(2):81-7 This is a report of the hypnotizability of a large sample of bulimia nervosa and partial syndromes ( $n = 113$ ) who participated in a controlled treatment outcome study. Data from the HGSHS:A (Harvard Group Scale of Hypnotic Susceptibility, Form A) confirmed previous findings of high hypnotizability in these patients compared with normal populations. Furthermore, there was evidence that the responses of bulimia nervosa and partial syndrome patients differed significantly to the responses of the normal population on seven of the 12 items of the HGSHS:A.

Griffiths RA, Hadzi Pavlovic D, Channon Little L **A controlled evaluation of hypnobeavioral treatment for bulimia nervosa: Immediate pre post treatment effects** *Eur Eating Disord Rev.* 1994;2(4):202-220 The study reports the pre post findings from a controlled comparative evaluation of treatments for bulimia nervosa. These pre post results allow comparison of the hypnobeavioral and cognitive behavioral treatments with a waiting list

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control group and a comparison of the immediate effects of the two modalities. One hundred and thirty subjects were screened to enter the study. Seventy eight subjects entered the investigation after being randomly allocated to either a waiting list control group, or to hypnobeavioral or cognitive behavioral groups. The treatments were delivered individually and matched in duration (8 weeks) and the number of sessions. Pre to posttreatment outcome indicated significant differences between the control group and the two treatments in reductions in bulimic behaviors and related eating pathology. The immediate effects of both treatments were equal. There were no differences at posttreatment between the treatments in abstinence from either bingeing or purging. The treatment effects were also similar to the immediate effects obtained by longer therapeutic approaches.

Grond M. Pawlik G. Walter H. Lesch OM. Heiss WD. **Hypnotic catalepsy-induced changes of regional cerebral glucose metabolism.** Psychiatry Research. 1995;61(3):173-9 In an attempt to elucidate the physiological basis of hypnosis, we investigated the changes of whole-brain and regional cerebral glucose metabolism, from a state of resting wakefulness to a hypnotized state with whole-body catalepsy, using positron emission tomography and the 2[18F]fluorodeoxyglucose method in 15 highly hypnotizable adults. Neither the random order of study conditions nor any of the other experimental factors had a measurable effect, and there was no statistically significant global activation or metabolic depression. However, repeated measures analysis of variance revealed a statistically significant heterogeneity of symmetric regional responses: Mainly the occipital areas, including visual and paraviscual cortex, became relatively deactivated, while some metabolic recruitment was found in structures involved in sensorimotor functions. The observed pattern of changes of regional cerebral activity corresponds with the shift of attention away from normal sensory input that hypnosis is known to produce.

Groth-Marnat G. Mitchell K. **Responsiveness to direct versus indirect hypnotic procedures: the role of resistance as a predictor variable.** International Journal of Clinical & Experimental Hypnosis 1998;46(4):324-33 Empirical research attempting to demonstrate that indirectly phrased hypnotic suggestions result in greater responsiveness than do direct approaches generally has not shown any differences on formal hypnotizability scales. However, empirical research in related areas along with clinical observation suggests that client resistance might be a crucial moderating variable. Specifically, participants with greater resistance would be expected to be more responsive to indirect approaches, whereas those with low levels of resistance would be more responsive to direct hypnotic procedures. To test this hypothesis, participants were given either a standardized test of hypnotic responsiveness that used direct suggestions (Harvard Group Scale of Hypnotizability) or a comparable indirect scale (Alman Wexler Indirect Hypnotic Susceptibility Scale) followed by administration of a measure of resistance (Therapeutic Reactance Scale). The hypothesis was not confirmed, in that those with higher (or lower) reactance/resistance did not score differently than those on either the indirect or direct hypnotizability measures.

Grunberger J. Linzmayer L. Walter H. Hofer C. Gutierrez-Lobos K. Stohr H. **Assessment of experimentally-induced pain effects and their elimination by hypnosis using pupillometry studies.** Wiener Medizinische Wochenschrift 1995;145(23):646-50 Hypnotherapeutical technique were often used for control of pain. However, an objective examination of this phenomenon was seldom carried out. The aim of the study was the

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psychophysiological objectivation of the effect of experimental induced pain and the elimination of pain by means of hypnosis. 22 healthy volunteers (11 female and 11 male) aged between 22 and 35 years participated in the study. In the 1st phase of the experiment static pupillometry was carried out before randomized presentation of a light stimulus (143 lux, 0.3 sec) and of a pain stimulus (coldness-spray, -50 degrees C, 0.5 sec) respectively. Afterwards the dynamic pupillary measurement was done. Additionally the Fourier analyses of pupillary oscillations reflecting central nervous activation during the static measurement (25,6 sec) was calculated. In the 2nd phase the subjects were investigated by means of the same techniques during hypnosis with specific suggestions for elimination of pain. Under light condition as well as after induction of pain an autonomic deactivation could be observed during hypnosis. Furthermore under pain condition a central deactivation could also be found, reflecting the depth of the hypnosis and the reduced perception of pain.

Haanen HC. Hoenderdos HT. van Romunde LK. Hop WC. Mallee C. Terwiel JP. Hekster GB. **Controlled trial of hypnotherapy in the treatment of refractory fibromyalgia.** Journal of Rheumatology 1991;18(1):72-5 In a controlled study, 40 patients with refractory fibromyalgia were randomly allocated to treatment with either hypnotherapy or physical therapy for 12 weeks with followup at 24 weeks. Compared with the patients in the physical therapy group, the patients in the hypnotherapy group showed a significantly better outcome with respect to their pain experience, fatigue on awakening, sleep pattern and global assessment at 12 and 24 weeks, but this was not reflected in an improvement of the total myalgic score measured by a dolorimeter. At baseline most patients in both groups had strong feelings of somatic and psychic discomfort as measured by the Hopkins Symptom Checklist. These feelings showed a significant decrease in patients treated by hypnotherapy compared with physical therapy, but they remained abnormally strong in many cases. We conclude hypnotherapy may be useful in relieving symptoms in patients with refractory fibromyalgia.

Haddock CK. Rowan AB. Andrasik F. Wilson PG. Talcott GW. Stein RJ. **Home-based behavioral treatments for chronic benign headache: a meta-analysis of controlled trials.** Cephalalgia 1997;17(2):113-8 Controlled clinical trials have consistently demonstrated that behavioral treatments for chronic benign headache produce clinically beneficial outcomes both post-treatment and at follow-up. Given these results there is interest in cost-reduction and redesign of these treatments to improve their accessibility. One promising approach in this regard is home-based headache treatment. These treatments seek to provide the same amount of treatment as clinic-based treatments; however, some of the material typically presented to the patient by a clinician is presented through home-study materials (e.g., manuals, audiotapes). To date, the published literature contains 20 controlled clinical trials which have examined the outcomes produced by home-based treatments. This article presents the first comprehensive meta-analysis of these clinical outcome studies. Results of the quantitative analyses suggest that home-based treatments produce comparable, or with certain outcome measures, superior results to clinic-based treatments. Moreover, cost effectiveness scores of home-based treatments were found to be more than five times larger than those of clinic-based therapies. Methodological analyses are also presented along with suggestions for future research. Hammarstrand G. Berggren U. Hakeberg M. Psychophysiological therapy vs. hypnotherapy in the treatment of patients with dental phobia. European Journal of Oral Sciences 1995;103(6):399-404 The aim of this study was to compare two different modes of behaviorally-oriented therapies for dental fear.

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The subjects were chosen consecutively from the waiting-list of a Dental Fears Research and Treatment Clinic. In addition, a control group was selected from patients treated under general anesthesia to compare levels of dental and general fear with the experimental groups. Twenty-two women, with a mean age of 31.8 yr, were included and randomly assigned to two groups. The median time of avoidance of dental care was 9.5 yr. One group received hypnotherapy (HT) and one group a behavioral treatment based on psychophysiological principles (PP). Both therapies included eight sessions followed by standardized conventional dental test treatments. Pre- and posttreatment measures were dental fear, general fear, mood, and patient behavior. Nine patients were not able to conclude the treatment sessions (6 HT and 3 PP); these patients did not differ significantly from the remaining patients before treatment. The PP group reported a statistically significant decrease in dental fear as well as a rise in mood during dental situations, as opposed to the HT group. General fear levels decreased but not significantly. Eleven patients completed conventional dental treatment according to a dentist's behavioral rating scale, indicating that they were relaxed, and no problems occurred during the treatments. These patients were referred to general practitioners within the community dental service. In conclusion, this small size study showed that a majority of the patients, who accomplished the behavioral therapy and the dental test treatments, became less fearful of dental care and were able to manage conventional dental care, including changing dentist.

Hammond DC. Haskins-Bartsch C. Grant CW= Jr. McGhee M. *Comparison of self-directed and tape-assisted self-hypnosis*. American Journal of Clinical Hypnosis 1988;31(2):129-37 48 inexperienced adult volunteers were hypnotized and taught self-hypnosis by posthypnotic suggestion and immediate practice in the office. Subjects were randomly assigned to 1 of 2 experimental orders to practice self-directed and tape-assisted self-hypnosis. No differences were found between heterohypnosis or either type of self-hypnosis in response to behavioral suggestions. Experiential ratings, however, consistently favored heterohypnosis over either type of self-hypnosis. Tape-assisted self-hypnosis was consistently evaluated as superior to self-directed practice by newly trained Subjects.

Harmon TM. Hyman MT. Tyre TE. **Improved obstetric outcomes using hypnotic analgesia and skill mastery combined with childbirth education**. Journal of Consulting & Clinical Psychology 1990;58(5):525-30 The benefits of hypnotic analgesia as an adjunct to childbirth education were studied in 60 nulliparous women. Subjects were divided into high and low hypnotic susceptibility groups before receiving 6 sessions of childbirth education and skill mastery using an ischemic pain task. Half of the Ss in each group received a hypnotic induction at the beginning of each session; the remaining control Ss received relaxation and breathing exercises typically used in childbirth education. Both hypnotic Ss and highly susceptible Ss reported reduced pain. Hypnotically prepared births had shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries than control Ss' births. Highly susceptible, hypnotically treated women had lower depression scores after birth than women in the other 3 groups. We propose that repeated skill mastery facilitated the effectiveness of hypnosis in our study.

Hartman BJ. **Hypnotizability as Affected by Attitudinal and Motivational Variables**. International Journal of Clinical & Experimental Hypnosis 1967;15(2):86-91 Attempted to discover whether task-motivated subjects would be more hypnotizable than those not given task-motivation instructions, and whether the attitude of the E would affect subjects' hypnotizability.



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The Barber suggestibility scale was employed for measuring susceptibility to hypnosis. Subjects were divided randomly into 6 groups of 10: task-motivated, E neutral; non-task-motivated, E neutral; task-motivated, E friendly; task-motivated, E harsh; non-task-motivated, E friendly; and non-task-motivated, E harsh. Analyses of variance, both for objective and subjective scores, did not yield significant results for the task-motivation variable but did yield significant results ( $p = .01$ ) for the variable dealing with E attitude.

Harvey RF. Hinton RA. Gunary RM. Barry RE. **Individual and group hypnotherapy in treatment of refractory irritable bowel syndrome.** *Lancet* 1989;1(8635):424-5 33 patients with refractory irritable bowel syndrome were treated with four 40-minute sessions of hypnotherapy over 7 weeks. 20 improved, 11 of whom lost almost all their symptoms. Short-term improvement was maintained for 3 months without further formal treatment. Hypnotherapy in groups of up to 8 patients was as effective as individual therapy.

Hendler CS, Redd WH Fear of hypnosis: **The role of labeling in patients' acceptance of behavioral interventions.** *Behav Ther.* 1986;17(1):2-13 One hundred and five outpatient cancer chemotherapy patients were interviewed to assess their attitudes toward hypnosis and relaxation as well as to determine their beliefs in and willingness to try a behavioral procedure. Patients were randomly assigned to groups receiving identical descriptions labeled 'hypnosis', 'relaxation', or 'passive relaxation with guided imagery'. The description stressed the behavioral components of hypnosis and relaxation rather than the nonbehavioral techniques often associated with hypnosis such as age regression and posthypnotic suggestion. Patients believed hypnosis to be a powerful process that involved loss of control and altered states of consciousness. When compared with a group of college students, patients held significantly more fearful, conservative views about hypnosis. Patients who received a description of an intervention labeled 'hypnosis' were significantly less likely to believe the procedure would effectively control their nausea and vomiting and were significantly less likely to state they would try the procedure than patients in the other two label conditions. This reaction to the label occurred independently of patients' degree of nausea, vomiting, and pain due to their chemotherapy treatments.

Hockenberry-Eaton MJ. Cotanch PH. **Evaluation of a child's perceived self-competence during treatment for cancer.** *Journal of Pediatric Oncology Nursing* 1989;6(3):55-62 The purpose of this study was to evaluate the effect of self-hypnosis on the perceived self-competence of children undergoing treatment for cancer and to determine longitudinal differences in perception of self-competence over time. Twenty-two children were randomized into an experimental group (taught self-hypnosis) and a control group (given standard care). Data were collected using the Harter Perceived Self-Competence Profile (HPSCP) during four courses of chemotherapy. A decrease in mean scores for the control group was found compared with the hypnosis group, which showed an increase in mean scores in five of six domains. Both groups showed a statistically significant increase in the scholastic cognitive domain and social acceptance domain from the time of diagnosis compared with the second test period. Ten children had a visible physical disability. These children were found to have significant decreases in the domains of athletic competence, social acceptance, and global self-worth. Decreases remained significant throughout all test periods in the athletic competence domain for the children with a visible physical disability. This study is unique in that the researchers evaluated children's perception of self-competence over time. These findings

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support previous studies and identify the need for nurses to become actively involved in helping children develop effective coping skills during chemotherapy for cancer.

Houle M. McGrath PA. Moran G. Garrett OJ. **The efficacy of hypnosis- and relaxation-induced analgesia on two dimensions of pain for cold pressor and electrical tooth pulp stimulation.** Pain 1988;33(2):241-51 This study evaluated the efficacy of hypnosis- and relaxation-induced suggestions for analgesia for reducing the strength and unpleasantness dimensions of pain evoked by noxious tooth pulp stimulation and by cold pressor stimulation. The Tellegen Absorption Questionnaire was used to assess hypnotic susceptibility for 28 subjects in order to match treatment groups according to sex and susceptibility scores. Tooth pulp stimulation consisted of a 1 sec train of 1 msec pulses at a frequency of 100 Hz, applied at 20 sec intervals to the central incisor. Six stimuli, selected between subject's pain and tolerance thresholds, were presented 3 times each in random order. Cold pressor stimulation consisted of forearm immersion in a circulating water bath maintained at 0-1 degrees C. Subjects made threshold determinations of pain and tolerance and used Visual Analogue Scales to rate the strength and the unpleasantness of both noxious stimuli before and after receiving either hypnosis- or relaxation-induced analgesia. There were no significant differences in pain reductions between hypnosis- and relaxation-induced interventions. However, the percent reduction in both strength and unpleasantness varied significantly as a function of the type of pain. Both hypnosis and relaxation significantly reduced the strength and the unpleasantness of tooth pulp stimulation, but only the unpleasantness dimension of cold pressor pain. The pain reductions were not correlated with subjects' hypnotic susceptibility levels. The results indicate that the extent and the quality of the analgesia produced by these cognitive-based therapies vary not only according to subjects' characteristics and the efficacy of the intervention, but also according to the nature of the noxious stimuli. Tooth pulp and cold pressor stimulation represent qualitatively different stimuli with respect to both the type of nerves activated and the mode of stimulus application. Discrete, randomly presented levels of noxious electrical stimulation to the teeth activate predominantly small fibers and produce brief pain sensations that vary unpredictably in intensity. In contrast, continuous cold stimulation to the forearm activates a variety of nociceptive and non-nociceptive fibers and produces progressive cold and pain sensations with a predictable increase in intensity from cold sensations to paresthesia and severe pain.

Howard WL. Reardon JP. **Changes in the self concept and athletic performance of weight lifters through a cognitive-hypnotic approach: an empirical study.** American Journal of Clinical Hypnosis 1986;28(4):248-57 Examined the effects of a cognitive-hypnotic-imagery approach (CHI), cognitive restructuring, and hypnosis only treatments on neuromuscular performance, muscular growth, reduction of anxiety, and enhancement of self-concept in 32 male weightlifter (mean age 22.5 yrs). Subjects were randomly assigned to 4 treatment conditions conducted over a 4-wk period. The CHI group showed significant treatment effects over the other groups on 6 dependent variables from pretest to post-test 1. From post-test 1 to posttest 2, a 1-mo period in which no treatment was conducted, self-concept and muscular growth measures for CHI Subjects showed significance. The CHI group was superior to the other conditions. Neuromuscular performance and muscular growth were positively modified by CHI. Data suggest that combining hypnotic relaxation and imagery with cognitive restructuring enhances both the immediate and long-range effects of treatment.

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Hughes JA. Sanders LD. Dunne JA. Tarpey J. Vickers MD. Reducing smoking. The effect of suggestion during general anaesthesia on postoperative smoking habits. *Anaesthesia*. 1994;49(2):126-8 In a double-blind randomized trial, 122 female smokers undergoing elective surgery were allocated to receive one of two prerecorded messages while fully anaesthetized. The active message was designed to encourage them to give up smoking whilst the control message was the same voice counting numbers. No patient could recall hearing the tape. Patients were asked about their postoperative smoking behavior one month later. Significantly more of those who had received the active tape had stopped or reduced their smoking ( $p < 0.01$ ). This would suggest a level of preconscious processing of information.

Hurley AE. **The effects of self-esteem and source credibility on self-denying prophecies.** *Journal of Psychology* 1997;131(6):581-94 Self-fulfilling prophecies are a well-studied phenomenon. The study of self-denying prophecies, however, is rare. Self-denying prophecies shift people's behavior in the direction opposite to the prophecy. The existence of self-denying prophecies was investigated in 222 students. The effects of self-esteem and the source of the prophecy were also investigated. The results suggest that self-denying prophecies exist and that self-esteem is an important moderator of self-denying prophecies. If managers and industrial/organizational psychologists had an understanding of self-denying prophecies, they might be better able to structure negative performance reviews in a way that could lead to improved employee performance. Hurley JD. Differential effects of hypnosis, biofeedback training, and trophotropic responses on anxiety, ego strength, and locus of control. *Journal of Clinical Psychology* 1980;36(2):503-7 Pretested 60 college students on three scales: The IPAT Anxiety Scale, the Barron Ego-strength scale, and the Rotter I-E scale. The Ss then were assigned randomly to one of four treatment groups designated: Hypnotic treatment, biofeedback treatment, trophotropic treatment, and control. Three of these groups met separately for 60 minutes once a week for 8 weeks. The control group did not meet during this time. During the sessions, each group was trained in a different technique for self-regulation. At the end of the 8-week period the scales were readministered to all groups. A series of covariance analyses indicated that hypnosis was a more effective self-regulatory technique for lowering anxiety levels when compared to biofeedback or trophotropic response procedures. With regard to increasing ego strength, both the hypnotic training group and the biofeedback training group proved to be significant. No significant difference was found between the experimental and control groups on the I-E scores.

Hyman GJ. Stanley RO. Burrows GD. Horne DJ. **Treatment effectiveness of hypnosis and behavior therapy in smoking cessation: a methodological refinement.** *Addictive Behaviors* 1986;11(4):355-65 Studies in smoking cessation have generally failed to adequately control for active treatment effects and have assumed that measures of smoking behavior (i.e., estimated smoking rate, self-monitoring and chemical analysis) are equally reliable measures. Sixty smokers were randomly assigned to one of four different smoking cessation treatment groups: hypnosis, focused smoking, attention placebo and a waiting list control. Subjects were asked to estimate and monitor their own smoking behavior. Blood samples were also taken for thiocyanate analysis before treatment. Smoking rates were similarly measured directly, at 3 months and 6 months after treatment. The results indicate that the three measures of smoking behavior were all highly correlated. No significant differences were found between treatments, directly after treatment or at the 3- and 6-month follow-ups. These results suggest that active

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treatment effects may not be responsible for behavioral change in a smoking cessation program. The implications of these findings are discussed.

Jacknow DS, Tschann JM, Link MP, Boyce WT. **Hypnosis in the prevention of chemotherapy-related nausea and vomiting in children: a prospective study.** *Journal of Developmental & Behavioral Pediatrics* 1994;15(4):258-64 To study the effectiveness of hypnosis for decreasing antiemetic medication usage and treatment of chemotherapy-related nausea and vomiting in children with cancer, we conducted a prospective, randomized, and controlled single-blind trial in 20 patients receiving chemotherapy for treatment of cancer. Patients were randomized to either hypnosis or standard treatment. The hypnosis group used hypnosis as primary treatment for nausea and vomiting, using antiemetic medication on a supplemental (p.r.n.) basis only, whereas the control group received a standardized antiemetic medication regimen. Nausea, vomiting, and p.r.n. antiemetic medication usage were measured during the first two courses of chemotherapy. Anticipatory nausea and vomiting were assessed at 1 to 2 and 4 to 6 months post-diagnosis. Patients in the hypnosis group used less p.r.n. antiemetic medication than control subjects during both the first ( $p < .04$ ) and second course of chemotherapy ( $p < .02$ ). The two groups did not differ in severity of nausea and vomiting. The hypnosis group experienced less anticipatory nausea than the control group at 1 to 2 months post-diagnosis ( $p < .02$ ). Results suggest self-hypnosis is effective for decreasing antiemetic medication usage and for reducing anticipatory nausea during chemotherapy.

Jacobs AL, Kurtz RM, Strube MJ **Hypnotic analgesia, expectancy effects, and choice of design: a reexamination.** *Int J Clin Exp Hypn* 1995 Jan;43(1):55-69 Previous research by Stam and Spanos suggests that if waking analgesia is followed by hypnotic analgesia, subjects refrain from maximally responding during the waking trial so they report less pain under hypnosis (i.e., a holdback effect). This hypothesis was re-examined using more stringent controls. Thirty-six highly susceptible subjects chosen by a combination of the Harvard Group Scale of Hypnotic Susceptibility, Form A and the Stanford Hypnotic Susceptibility Scale, Form C were randomly assigned to one of three treatment groups (waking analgesia followed by hypnotic analgesia, waking analgesia followed by waking analgesia, or hypnotic analgesia followed by waking analgesia). Each group received three 60-second immersions of cold pressor pain stimulation (baseline, Immersion 1, Immersion 2) and rated pain using a magnitude estimation and a category rating scale. The obtained results failed to support the hypotheses of a holdback effect or a reverse-order holdback effect. Properties of within-subjects and between-subjects designs were considered in explaining the superiority of hypnotic analgesia over waking analgesia typically found in within-subjects models.

Jansen CK, Bonke B, Klein J, van Dassel N, Hop WC. **Failure to demonstrate unconscious perception during balanced anaesthesia by postoperative motor response.** *Acta Anaesthesiologica Scandinavica* 1991;35(5):407-10 Eighty patients undergoing a standardized balanced anaesthesia were randomly assigned to either a suggestion group ( $N = 38$ ) or a control group ( $N = 42$ ), in a double-blind design. Anaesthesia was maintained with nitrous oxide, enflurane and fentanyl. Patients in the suggestion group were played seaside sounds, interrupted by statements of the importance of touching the ear during a postoperative visit, by means of a prerecorded audiotape and headphones. Tapes containing these suggestions were played from 30 min after the first incision, for a duration of 15 min. Patients in the control group were only played seaside sounds. There were no significant differences between the groups in either the

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number of patients touching their ears postoperatively or the number and duration of ear touches.

Jasiukaitis P. Nouriani B. Spiegel D. Left hemisphere superiority for event-related potential effects of hypnotic obstruction. *Neuropsychologia*. 1996;34(7):661-8 Twenty-two highly hypnotizable subjects were run in a visual target detection task which compared hypnotic obstruction of the left and right visual fields over separate blocks. The visual event-related potentials (ERPs) to non-target stimuli revealed that hypnotic obstruction reduced the P200 component to stimuli in the right hemifield, but did not affect P200 for stimulation in the left hemifield. The earlier P100 and N100 were also reduced to hypnotic obstruction but not as preferentially for either hemifield, while the P300 was not significantly changed. Right visual field left hemisphere P200 reduction predicted suppression of behavioral response (button press) to hypnotically obstructed targets in both hemifields. The results are discussed in terms of Farah's model of a left hemisphere mechanism for image generation, and how highly hypnotizable subjects might use this mechanism to comply successfully with the suggestion of a hallucinated visually opaque barrier. Javel AF. One-session hypnotherapy for smoking: a controlled study. *Psychological Reports* 1980;46(3 Pt 1):895-9 Not randomized Jeffrey LK. Jeffrey TB. Exclusion therapy in smoking cessation: a brief communication. *International Journal of Clinical & Experimental Hypnosis* 1988;36(2):70-4 Investigated the effect of exclusion therapy on the outcome of a 5-session treatment protocol for smoking cessation. 120 adult Subjects were randomly assigned to a group hypnotic and behavioral program that required 48 hrs of pretreatment abstinence from use of tobacco products, or to an identical treatment that encouraged, but did not include, this pretreatment stipulation. Results indicate no significant differences between groups in dropout rates or number of Subjects abstinent from smoking. For all Subjects, including dropouts, the abstinence rate was 59.2% upon completion of treatment. It was 45.5% and 36.7% at 1- and 3-mo follow-up, respectively.

Johnson LS. Johnson DL. Olson MR. Newman JP. **The uses of hypnotherapy with learning disabled children.** *J Clinical Psychology*. 1981; 37(2):291-9 Three hypnotic training sessions and instructions for 6 weeks of daily self-hypnotic practice that contained suggestions for imagery related to improvement in these areas were given to 15 children (12 males and 3 females, ages from 7 to 13), their reading teacher, and both their parents, and their responses were compared to a similar but untreated control group of 18. No overall differences were observed between groups. A multiple regression analysis revealed important predictors of self-esteem improvement for the experimental group. The child's hypnotic susceptibility score and self-hypnotic practice by children and parents were the most relevant. These LD children were at least as hypnotically susceptible as a normative sample. Hypnotherapy is seen as feasible in group administration by persons only moderately trained in hypnosis and of potential benefit to self-esteem improvement in LD children, depending on individual difference factors.

Johnson PR. Thorn BE. **Cognitive behavioral treatment of chronic headache: group versus individual treatment format.** *Headache* 1989;29(6):358-65 Two hypotheses were tested in this study: (1) that a short course of cognitive behavioral therapy (CBT) is effective in the treatment of chronic headache; and (2) that group CT is as effective as individually administered CBT. Twenty-two chronic headache sufferers were randomly assigned to one of three treatment conditions: group administered CBT, individually administered CBT, or no treatment (wait list) control. Wait list subjects ultimately received treatment identical to that

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offered to subjects in the group treatment condition. Treatment outcome measures included the Brief Symptom Inventory, the McGill Pain Questionnaire, and several measures calculated from self-monitoring data. Tentative support was found for the hypothesis that CBT as provided in this study is effective in the treatment of chronic headache. There was no evidence that group versus individually treated subjects differed significantly on any of the measures used, although the small N and large variance among subjects limit us to preliminary conclusions for our findings. Clinical implications and suggestions for future research are discussed.

Johnson RL, Johnson HC. **Effects of anxiety-reducing hypnotic training on learning and reading-comprehension tasks.** Journal of the National Medical Association 1984;76(3):233-235. 15 college students who reported having test-taking anxiety were randomly assigned to an experimental or a control group. The experimental group received hypnotic training to reduce anxiety prior to taking a learning and reading-comprehension test. No significant difference was found between the experimental and the control group on the simple-recall task. However, on the reading-comprehension test the experimental group scored significantly higher than the control group. Further examination of the total score revealed that the experimental group difference was due to superior performance on the inference items. There was no difference between groups on items that required the recall of information from the passage. Findings support the notion that hypnotic training may be useful to reduce anxiety and improve test performance.

Johnson VC, Walker LG, Heys SD, Whiting PH, Eremin O **Can relaxation training and hypnotherapy modify the immune response to stress, and is hypnotizability relevant?**

Contemporary Hypnosis 1996;13(2):100-8 A study was carried out with the following aims: (1) to evaluate the psychological and immunological effects of 3 weeks' relaxation practice; (2) to investigate the effects of relaxation training and hypnosis on the modulation of the immune response to an experimental stressor, and (3) to relate changes to hypnotic susceptibility. Twenty-four healthy volunteers were assigned, according to a stratified, permuted blocks, random allocation procedure, to relaxation training with hypnosis or to a control condition. Subjects attended of three occasions: day 1, day 21 and day 22 or 23. Various psychological tests were carried out on each of the occasions and, in addition, samples of urine and blood were collected for immunological and biochemical analysis. Two samples of blood were taken at the second visit, one before exposure to an experimental stressor on day 21 and one immediately thereafter. Relaxation had several effects including improvement on a number of measures of mental state and a reduction in lymphocyte responsiveness and IL-1 secretion. However, on exposure to the stressor, previous relaxation training and pre-exposure hypnotic suggestion led to increased lymphocyte responsiveness and IL-1 secretion. The extent to which IgA increased as a result of relaxation therapy for 3 weeks was positively correlated with Creative Imagination Scale (CIS) scores (changes in the control group during the same period were not correlated with CIS scores). Moreover, immediate changes in IL-1 following exposure to the stressor were positively correlated with CIS scores in the experimental groups and negatively in the control group. Hypnotizability, as assessed by the CIS, may be an important moderator of the psychoneuroimmunological response to relaxation training and exposure to acute stress.

Johnston M, Vogele C **Benefits of psychological preparation for surgery: A meta analysis.** Ann Behav Med. 1993;15(4):245-256 There is now substantial agreement that psychological preparation for surgery is beneficial to patients. It is important, however, to

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establish which benefits can be achieved by psychological preparation and if all forms of preparation are equally effective. The results of randomized controlled trials of psychological methods of preparing adult patients for surgery were analyzed in terms of eight outputs (negative affect, pain, pain medication, length of stay, behavioral and clinical indices of recovery, physiological indices, and satisfaction). In order to reduce publication bias, published as well as unpublished studies were included in the meta analysis. It was concluded that significant benefits can be obtained on all of the major outcome variables that have been explored. Procedural information and behavioral instructions show the most ubiquitous effects in improving measures of post-operative recovery. The results have implications for the improvement of patient care in surgical units.

Kaplan GM, Barabasz AF **Enhancing hypnotizability: differential effects of flotation restricted environmental stimulation technique and progressive muscle relaxation.**

Australian Journal of Clinical & Experimental Hypnosis 1988 May;16(1):39-51 Investigated the effectiveness of flotation restricted environmental stimulation technique (REST) for enhancing hypnotizability. 30 Subjects were randomly assigned to flotation REST, progressive muscle relaxation (PMR), or no-treatment control conditions. Subjects were tested with the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C), and readministered the SHSS:C after treatment and at follow-up. Results show that PMR enhanced hypnotizability more than no-treatment control. Flotation REST was not found to enhance hypnotizability more than PMR. Both REST and PMR Subjects significantly increased hypnotizability over time while control Subjects did not. The role of relaxation in hypnosis is discussed.

Katcher A. Segal H. Beck A. **Comparison of contemplation and hypnosis for the reduction of anxiety and discomfort during dental surgery.** American Journal of Clinical Hypnosis 1984;27(1):14-21 Used complex moving visual stimuli to induce states of relaxation, hypnosis, and reverie in 42 dental patients (aged 21-60 yrs). To test the efficacy of using aquarium contemplation to induce relaxation, Subjects were randomly assigned to 1 of 5 treatments prior to elective oral surgery: contemplation of an aquarium, contemplation of a poster, poster contemplation with hypnotic induction, aquarium contemplation with hypnosis, and a nonintervention control. Subjects were administered 5 tests of susceptibility adapted from the Stanford Hypnotic Susceptibility Scale; blood pressure, heart rate, and subjective and objective measures of anxiety were also taken. It was found that pretreatment with aquarium contemplation and hypnosis, either alone or in combination, produced significantly greater degrees of relaxation during surgery than poster contemplation or the control procedure. Two-way ANOVA demonstrated that a formal hypnotic induction did not augment the relaxation produced by aquarium contemplation. Findings suggest that aquarium contemplation can alter patients' subjective experiences and overt behavior during oral surgery. Other clinical applications of the contemplation procedure are discussed.

Katz ER. Kellerman J. Ellenberg L. **Hypnosis in the reduction of acute pain and distress in children with cancer.** Journal of Pediatric Psychology 1987;12(3):379-94 12 female and 24 male 6-11 yr olds with acute lymphoblastic leukemia who were undergoing repeated bone marrow aspirations (BMAs) were randomized to hypnosis or play comparison groups. Subjects were selected on their behavioral performance on baseline procedures and received interventions prior to their next 3 BMA procedures. Major results indicate an improvement in self-reported distress with both interventions. Girls exhibited more distress behavior than boys

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on 3 of 4 dependent measures. Suggestions of an interaction effect between sex and treatment groups were noted. The role of rapport between patient and therapist in therapeutic outcome is discussed. Katz NW. Hypnotic inductions as training in cognitive self-control. *Cognitive Therapy Research* 1978;2(4):365-369. Compared the efficacy of the traditional trance induction, the author's cognitive training induction, and a combination of cognitive training and active-alert instructions. In the context of a guest lecture on hypnosis, volunteer undergraduates were randomly assigned to 1 of 3 groups. The Harvard Group Scale of Hypnotic Susceptibility and a measure of attitudes toward hypnosis and conceptions of the hypnotic process were used. Results show the following: (a) The 2 inductions containing training procedures were significantly more effective than the trance induction in enhancing suggestibility but did not differ from each other. (b) Subjects exposed to the combined training and fantasy inductions saw themselves as more hypnotizable in the future than Subjects exposed to training alone.

Kaufert JM. Rabkin SW. Syrotuik J. Boyko E. Shane F. **Health beliefs as predictors of success of alternate modalities of smoking cessation: results of a controlled trial.** *Journal of Behavioral Medicine* 1986;9(5):475-89 The primary objective of this study was to determine whether health beliefs influenced the outcome of the three alternate modalities of reducing cigarette consumption. The study randomized volunteers either to a control group or to one of three cessation programs, using behavior modification, health education, or hypnosis. A questionnaire was used to document health beliefs, demographic characteristics, and smoking history. Blood samples were taken before and after the completion of intervention programs to measure changes in serum thiocyanate. A follow-up questionnaire was used to assess smoking behavior after 6 months. Statistically significant decreases in serum thiocyanate levels followed participation in each of the three programs. Factor analysis and reliability tests were used to identify four scales reflecting major variable dimensions in the health belief model. Significant correlations between change in serum thiocyanate and two of the scales (general health concern and perceived vulnerability) were found only for the group randomly assigned to the health education intervention program.

Kirsch I. **Hypnotic enhancement of cognitive-behavioral weight loss treatments--another meta-reanalysis.** *Journal of Consulting & Clinical Psychology* 1996;64(3):517-9 In a 3rd meta-analysis of the effect of adding hypnosis to cognitive-behavioral treatments for weight reduction, additional data were obtained from authors of 2 studies, and computational inaccuracies in both previous meta-analyses were corrected. Averaged across posttreatment and follow-up assessment periods, the mean weight loss was 6.00 lbs. (2.72 kg) without hypnosis and 11.83 lbs. (5.37 kg) with hypnosis. The mean effect size of this difference was 0.66 SD. At the last assessment period, the mean weight loss was 6.03 lbs. (2.74 kg) without hypnosis and 14.88 lbs. (6.75 kg) with hypnosis. The effect size for this difference was 0.98 SD. Correlational analyses indicated that the benefits of hypnosis increased substantially over time ( $r = .74$ ).

Kirsch I. Montgomery G. Sapirstein G. **Hypnosis as an adjunct to cognitive-behavioral psychotherapy: a meta-analysis.** *Journal of Consulting & Clinical Psychology* 1995;63(2):214-20 A meta-analysis was performed on 18 studies in which a cognitive-behavioral therapy was compared with the same therapy supplemented by hypnosis. The results indicated that the addition of hypnosis substantially enhanced treatment outcome, so that the average client receiving cognitive-behavioral hypnotherapy showed greater improvement than at least 70% of clients receiving nonhypnotic treatment. Effects seemed particularly pronounced



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for treatments of obesity, especially at long-term follow-up, indicating that unlike those in nonhypnotic treatment, clients to whom hypnotic inductions had been administered continued to lose weight after treatment ended. These results were particularly striking because of the few procedural differences between the hypnotic and nonhypnotic treatments. Klein KB. Spiegel D. Modulation of gastric acid secretion by hypnosis. *Gastroenterology* 1989;96(6):1383-7 The ability of hypnosis to both stimulate and inhibit gastric acid secretion in highly hypnotizable healthy volunteers was examined in two studies. In the first, after basal acid secretion was measured, subjects were hypnotized and instructed to imagine all aspects of eating a series of delicious meals. Acid output rose from a basal mean of  $3.60 \pm 0.48$  to a mean of  $6.80 \pm 0.02$  mmol H<sup>+</sup>/h with hypnosis, an increase of 89% ( $p = 0.0007$ ). In a second study, subjects underwent two sessions of gastric analysis in random order, once with no hypnosis and once under a hypnotic instruction to experience deep relaxation and remove their thoughts from hunger. When compared to the no-hypnosis session, with hypnosis there was a 39% reduction in basal acid output ( $4.29 \pm 0.93$  vs.  $2.60 \pm 0.44$  mmol H<sup>+</sup>/h,  $p$  less than 0.05) and an 11% reduction in pentagastrin-stimulated peak acid output ( $28.69 \pm 2.34$  vs.  $25.43 \pm 2.98$  mmol H<sup>+</sup>/h,  $p$  less than 0.05). We have shown that different cognitive states induced by hypnosis can promote or inhibit gastric acid production, processes clearly controlled by the central nervous system. Hypnosis offers promise as a safe and simple method for studying the mechanisms of such central control.

**Kohen DP Relaxation-mental imagery (self-hypnosis) for childhood asthma: behavioral outcomes in a prospective, controlled study.** *Hypnos* 1995 Sep;22(3):132-44 Twenty-eight (28) 7-12 yr old children entered a controlled study of the effects of self-hypnosis on asthma. Asthma belief and behavioural inventories were collected before, and at one and two yrs after intervention. Asthma diaries were kept daily and mailed monthly. Subjects were randomly assigned to (1) Experimental (self-hypnosis), (2) Waking suggestion (no Hypnosis), (3) attention placebo (no hypnosis or asthma discussion), or (4) traditional control groups. Twenty four (24) completed 1 month follow-up, 16 completed 6 months, and 13 completed 2 yrs. Results included fewer Emergency Room visits in the experimental group ( $p$  greater than 0.05); (2) less school missed in the experimental group compared to the traditional controlled group ( $p$  greater than 0.001) and to the waking suggestion group ( $p$  greater than 0.005); (3) no differences in psychological evaluations between groups, and (4) surprising findings regarding hypnotic and hypnotic-like experiences among subjects.

**Kohen DP Relaxation/mental imagery (self-hypnosis) for childhood asthma: behavioral outcomes in a prospective, controlled study.** *Australian Journal of Clinical & Experimental Hypnosis* 1996 May;24(1):12-28 Twenty-eight 7-12-year-old children entered a controlled study of the effects of self-hypnosis on asthma. Asthma belief and behavioral inventories were collected before, and at one and two years after intervention. Asthma diaries were kept daily and mailed monthly. Subjects were randomly assigned to (a) experimental (self-hypnosis), (b) waking suggestion (no hypnosis), (c) attention placebo (no hypnosis or asthma discussion) or (d) traditional control groups. Twenty-four completed one-month follow-up, 16 completed six months, and 13 completed two years. Results included: (a) fewer emergency room visits in the experimental group; (b) less school missed in the experimental group compared to the traditional control group and to the waking suggestion group; (c) no difference

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in psychological evaluations between groups; and (d) surprising findings regarding hypnotic and hypnotic-like experiences among subjects.

Kurtz RM. Strube MJ. **Multiple susceptibility testing: is it helpful?** American Journal of Clinical Hypnosis. 1996;38(3):172-84 This study explored whether or not the use of combined group and individually administered susceptibility tests improve the predictive power over the use of a singly administered test. Two hundred and eighty undergraduates were assigned to one of five groups: Group 1 received the HGSHS: A and then the SHSS:C; Group 2 the CIS and SHSS:C; Group 3 the HGSHS: A and the SHCS:A; Group 4 received the CIS and the SHCS:A; and Group 5 was tested on the SHSS:C alone. After the susceptibility screening the subjects were hypnotized and tested on four types of target hypnotic behaviors. From the RSPSHS:I&II the following four factors were chosen (1) cognitive distortion, (2) positive hallucination, (3) negative hallucination, (4) dreams and regression. The items were matched on difficulty level. The data were subjected to a series of stepwise multiple regression and logistic regression analyses. The results confirmed previous research; i.e., (1) The SHSS:C is the best single measure, (2) the SHCS:A is a poor substitute for the SHSS:C; (3) the HGSHS:A is not adequate substitute for SHSS:C; (4) the CIS is weak in predictive power compared to the HGSHS:A; (5) Only for a weak measure such as SHCS:A does combined testing produce an advantage; (6) There appear to be no warm-up effects for SHSS:C when preceded by HGSHS:A.

Kuttner L. Bowman M. Teasdale M. **Psychological treatment of distress, pain, and anxiety for young children with cancer.** Journal of Developmental & Behavioral Pediatrics 1988;9(6):374-81 The study compared the efficacy of hypnotic "imaginative involvement," behavioral distraction and standard medical practice for the reduction of pain, distress and anxiety in children with leukemia, during bone marrow aspirations. Two age groups of children, 3 to 6, and 7 to 10 years, were randomized to the three treatment groups. Two intervention sessions were given. At first intervention, observational ratings of distress indicated significant reductions for the younger group in the hypnotic treatment, whereas the older group achieved significant reductions in both treatment conditions for observer-rated pain and anxiety. At second intervention, all groups showed reductions and the control group appeared to be contaminated. The hypnotic method with its internal focus had an all-or-none effect, whereas distraction appeared to require that coping skills be learned over one session or more. Lambe R. Osier C. Franks P. A randomized controlled trial of hypnotherapy for smoking cessation. Journal of Family Practice 1986;22(1):61-5 A randomized controlled study in a family practice setting was conducted on the use of hypnosis in helping people quit smoking. In the hypnosis group 21 percent of patients quit smoking by the three month follow-up compared with 6 percent in the control group. By six months there were no significant differences between the two groups, and at one year 22 percent in the hypnosis group and 20 percent in the control group had quit. The only significant predictor of success with quitting was having a college education.

Lambert SA. **The effects of hypnosis/guided imagery on the postoperative course of children.** Journal of Developmental & Behavioral Pediatrics. 1996;17(5):307-10 Hypnosis, guided imagery, and relaxation have been shown to improve the postoperative course of adult surgical patients. Children have successfully used hypnosis/guided imagery to significantly reduce the pain associated with invasive procedures and to improve selected medical conditions. The purpose of this study was to examine the effect of hypnosis/guided imagery on the

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postoperative course of pediatric surgical patients. Fifty-two children (matched for sex, age, and diagnosis) were randomly assigned to an experimental or control group. The experimental group was taught guided imagery by the investigator. Practice of the imagery technique included suggestions for a favorable postoperative course. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient. Lang EV. Joyce JS. Spiegel D. Hamilton D. Lee KK. Self-hypnotic relaxation during interventional radiological procedures: effects on pain perception and intravenous drug use. *International Journal of Clinical & Experimental Hypnosis* 1996;44(2):106-19 The authors evaluated whether self-hypnotic relaxation can reduce the need for intravenous conscious sedation during interventional radiological procedures. Sixteen patients were randomized to a test group, and 14 patients were randomized to a control group. All had patient-controlled analgesia. Test patients additionally had self-hypnotic relaxation and underwent a Hypnotic Induction Profile test. Compared to controls, test patients used less drugs (0.28 vs. 2.01 drug units;  $p < .01$ ) and reported less pain (median pain rating 2 vs. 5 on a 0-10 scale;  $p < .01$ ). Significantly more control patients exhibited oxygen desaturation and/or needed interruptions of their procedures for hemodynamic instability. Benefit did not correlate with hypnotizability. Self-hypnotic relaxation can reduce drug use and improve procedural safety. Larison G. Exploring an experimental method for producing the spontaneous repressions of impulses. *Proceedings of the 81st Annual Convention of the American Psychological Association*, Montreal Canada 1973;8:1097-1098. Attempted to identify the necessary and sufficient conditions for producing psychopathology upon the posthypnotic motivation of anger in a study with 16 female Subjects. Subject's feelings and amnesia for the paramnesia serving as a matrix for the anger were assessed. A paramnesia which previously had not produced psychopathology was used in a  $2 \times 2$  randomized design. Mild symptoms of psychopathology were elicited, but neither of the variables was significant. However, the amnesia condition was associated with significantly greater repression of the posthypnotically activated anger and significantly less GSRs. The success in producing psychopathology is discussed in the light of earlier failures with this paramnesia.

Lee DY. Barak A. Uhlemann MR. Patsula P. **Effects of preinterview suggestion on counselor memory, clinical impression, and confidence in judgments.** *Journal of Clinical Psychology* 1995;51(5):666-75 This study examined the effects of schematic preinterview suggestion on counselors' (a) recognition memory of the information presented by the client; (b) clinical impression rating of the client; and (c) confidence in rating clinical impression. Fifty-two Master's-level counselor-trainees were assigned randomly to two conditions of preinterview suggestion about the status of the client (i.e., depression and no depression). After subjects had received appropriate preinterview information (i.e., depression or no-depression content) and had viewed a videotaped counseling interview, information was gathered from them. The results indicated that the preinterview suggestion (a) did not affect counselor-trainees' clinical impression rating of the client; (b) did not affect confidence of rating; and (c) yielded a weak, but significant, confirmatory memory. Implications for the interview setting are discussed.

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Lieberman J. Lavoie G. Brisson A. **Suggested amnesia and order of recall as a function of hypnotic susceptibility and learning conditions in chronic schizophrenic patients.** *International Journal of Clinical & Experimental Hypnosis* 1978;26(4):268-280.

Investigated the influence on suggested amnesia of hypnotic susceptibility and active vs passive learning. 36 chronic schizophrenic patients, 18 low in hypnotic susceptibility and 18 medium or high in hypnotic susceptibility, were randomly assigned to active or passive learning conditions. Subjects were first tested in a hypnosis condition (Day 1) and were retested in a nonhypnosis condition (Day 2) with the presence of waking suggestion. Results for the hypnosis condition indicate that (a) there were no differences between low and medium-high susceptible Subjects on recall amnesia and reversibility, (b) recall amnesia and reversibility were significantly higher in passive than active learning conditions, and (c) in all conditions recall was consistently ordered. Results for the nonhypnosis condition were similar, except that reversibility was not significantly higher in passive than active learning conditions. A secondary analysis, which partitioned high susceptible from medium susceptible Subjects, revealed that reversibility was significantly higher in the high than in the low susceptible Subjects; medium susceptible Subjects did not differ from either high or low susceptible Subjects. The data suggest that the chronic schizophrenics' failure to recall hypnotic events may involve different mechanisms from those that account for posthypnotic amnesia in normal Subjects. (German, French & Spanish summaries)

Lieberman LR. Fisher JR. Thomas R. King W. **Use of tape recorded suggestions as an aid to probationary students.** *American Journal of Clinical Hypnosis* 1968;11(1):35-41. A controlled study of the effectiveness of tape recorded hypnotic-like techniques on probationary students was performed. 35 pairs of probationary students, matched in curriculum predicted grade, sex, marital status, and age, were randomly assigned to control and experimental conditions. Both groups were tested for intelligence and hypnotic susceptibility; no differences were found. Results showed no significant difference in final grades for the 2 groups; however, there were significantly more experimental Subjects (14 to 8) removed from probation at the end of the quarter. Linton CP, Sheehan PW The relationship between interrogative suggestibility and susceptibility to hypnosis *Australian Journal of Clinical & Experimental Hypnosis* 1994 May;22(1):53-64 Using the Gudjonsson Suggestibility Scale (GSS; Gudjonsson, 1984) and Harvard Group Scale of Hypnotic Susceptibility (HGSHS:A, Shor and Orne, 1962) as measures of interrogative suggestibility and hypnotic susceptibility, 117 subjects were tested to examine the hypothesis that a relationship exists between these two measures of suggestibility. Subjects were assigned randomly to conditions within a 2 (susceptibility: high, low) x 2 (state instruction: hypnosis, waking) x 2 (feedback on the GSS: neutral, negative) design. The data suggest that the two types of suggestibility are, in fact, associated. Analyses indicated that suggestibility scores on the GSS differed appreciably for high versus low susceptible subjects, and the HGSHS:A was significantly correlated with yield scores on the interrogative suggestibility scale. Results challenge previous claims that the two types of suggestibility are independent of one another and have forensic implications that may be usefully explored.

Liu WH. Standen PJ. Aitkenhead AR. **Therapeutic suggestions during general anaesthesia in patients undergoing hysterectomy.** *British Journal of Anaesthesia* 1992;68(3):277-81 In a double-blind, randomized study, we have examined the influence of positive therapeutic suggestions, presented to anaesthetized patients undergoing total abdominal

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hysterectomy, on postoperative morbidity and duration of hospital stay. Seventy-five patients were allocated randomly to be exposed to one of three tapes containing positive therapeutic suggestions, a modified history of the Queen's Medical Centre, or no message. We found that neither therapeutic suggestions nor the presence of a voice during anaesthesia improved postoperative outcome or reduced duration of hospital stay after total abdominal hysterectomy.

Llaneza-Ramos ML. **Hypnotherapy in the treatment of chronic headaches.** Philippine Journal of Psychology 1989;22:17-25. 35 chronic headache patients were assessed on frequency, duration, intensity, amount of medication, and number of difficulties associated with headaches. 25 Subjects were randomly assigned to 2 psychotherapists who administered Ericksonian hypnotherapy; 10 Subjects became the comparison group. Prior to treatment, all 25 Subjects were nonsignificantly different on their baseline measures. Post-treatment measures showed all Subjects with complete relief from headaches. Two months later, 20 Subjects experienced complete recovery while 5 had a single attack of headache. For the 2 experimental groups, there were no significant differences in symptomatic manifestations before and after treatment. At the delayed post-treatment period, post hoc test analysis evidenced a shared pattern of significant differences between each of the 2 treatment groups and the comparison group. Locke SE. Ransil BJ. Zachariae R. Molay F. Tollins K. Covino NA. Danforth D. Effect of hypnotic suggestion on the delayed-type hypersensitivity response. JAMA. 1994;272(1):47-52  
**OBJECTIVE**--To determine whether individuals selected for good general health, high hypnotizability, and the ability to alter skin temperature under hypnotic suggestion can influence the delayed-type hypersensitivity (DTH) response to varicella-zoster (VZ) antigen under hypnotic suggestion.

**DESIGN**--A blinded clinical trial using a repeated measures design with subjects serving as their own controls. Subjects were randomly assigned to undergo a predetermined sequence of four different experimental conditions, occurring at weekly intervals, with each condition including VZ skin testing: (1) hypnosis with suggestions to enhance the DTH response to VZ antigen; (2) hypnosis with suggestions to suppress the DTH response; (3) hypnosis with suggestions for relaxation only; and (4) skin testing without hypnosis.

**SETTING**--A National Institutes of Health-supported clinical research center in a teaching hospital. **SUBJECTS**--A stratified sample of 24 ambulatory, healthy, highly hypnotizable, volunteer college students selected for their above-average ability to alter skin temperature after hypnotic suggestions and their positive baseline responses to VZ antigen. There were 11 males and 13 females with a mean  $\pm$  SD age of 22  $\pm$  6 years. The mean  $\pm$  SD hypnotizability score (Harvard Group Scale of Hypnotic Susceptibility) was 11  $\pm$  1.

**INTERVENTIONS**--Intradermal skin testing with VZ antigen (Mantoux method) and hypnotic suggestion.

**MAIN OUTCOME MEASURES**--Areas of induration of the DTH response measured at 24 and 48 hours after injection of antigen. **RESULTS**--The area of the DTH response was not affected by the experimental interventions. The area of erythema was likewise unaffected.

**CONCLUSIONS**--Our subjects were unable to alter their DTH responses using hypnotic suggestion.

Long N. **Labeling relaxation procedures: impact on adolescent's self-report of effectiveness.** Journal of Adolescent Health 1992;13(8):686-92 Adolescents are being taught relaxation techniques by health-care professionals with increased frequency. The present study

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examined the effect, on self-reported relaxation, of labeling passive relaxation techniques as "hypnotic relaxation" or as "relaxation training." Subjects were 64 adolescent college students who scored above the 50th percentile, from a subject pool of 189 potential subjects, on the Spielberger Trait Anxiety Inventory. A two by two by two factorial design was utilized with sex, label (hypnotic relaxation versus relaxation training) and relaxation technique (hypnotic induction versus autogenic training) as the independent variables. Under the guise of an investigation of the physiologic correlates of relaxation, subjects were assigned at random to one of four groups. Manipulations of label and relaxation technique were presented on tape via an intercom system. The dependent variable, perceived degree of relaxation, was obtained using a form presented as a "double check" of the accuracy of the physiologic monitoring equipment to which subjects seemingly were attached. Results indicate that the label attached to relaxation techniques can have a significant effect on an individual's subjective report of relaxation depending on the subject's sex.

MacHovec FJ. Man SC. **Acupuncture and hypnosis compared: fifty-eight cases.** American Journal of Clinical Hypnosis 1978;21(1):45-7 Fifty-eight volunteers seeking to eliminate cigarette smoking were treated in a general hospital "smoking clinic" by being divided into five groups: placebo-site acupuncture; correct-site acupuncture; group hypnosis; individual hypnosis; untreated control. Six months after treatment, correct-site acupuncture and individual hypnosis proved to be the most effective treatment. Differing rates of improvement suggest these interventions are separate and distinct rather than involving suggestion or reinforcement of already existing motivation. (Referenced in ter Riet et al. A meta-analysis of studies into the effect of acupuncture on addiction. Br J Gen Pract 1990;40:379-82 Scored 43 point, positive result)

Maher-Loughnan GP, McDonald M, Mason AA, Fry L **Controlled trial of hypnosis in the symptomatic treatment of asthma.** BMJ 1962; ii: 371-6 Manganiello AJ. A comparative study of hypnotherapy and psychotherapy in the treatment of methadone addicts. American Journal of Clinical Hypnosis 1984;26(4):273-9 This study sought to examine the effects of hypnotherapy on the ability of methadone maintained patients to reduce and/or eliminate their drug taking behavior. Seventy adult volunteers at a methadone maintenance program were randomly assigned to experimental and control groups. The experimental group received hypnotherapy for six months in addition to the psychotherapy offered as standard clinic treatment. The control group received only psychotherapy. After treatment, a six month follow up was conducted by interviews. Groups were compared to determine significant differences in the number of successful withdrawals, the mean change in methadone dose level, incidence of illicit drug use, and degree of discomfort. Significant differences were found on all measures. The experimental group had significantly less discomfort and illicit drug use, and a significantly greater number of withdrawals. At six month follow up, 94% of the subjects in the experimental group who had achieved withdrawal remained narcotic free.

Mann BJ. Sanders S. **The effects of light, temperature, trance length, and time of day on hypnotic depth.** American Journal of Clinical Hypnosis. 1995;37(3):43-53 We evaluated predictions derived from the ultradian theory of hypnosis regarding the effects of temperature, light, trance length, and time of day on reported trance depth in 95 college undergraduates. Temperature and light showed no relation to trance depth. However, as predicted by ultradian theory, subjects who were kept in trance for 15 minutes reported greater trance depth than those

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who experienced a 5-minute trance. Time of day interacted with subjects' self-reported time of peak alertness in the following way: Subjects who reported greatest alertness in the morning achieved greater trance depth in the morning than in the evening, whereas those subjects who reported greater evening alertness reported deeper trance in the evening than in the morning. This latter finding was inconsistent with ultradian theory and prior research. Alternative explanations for this finding are discussed. Overall, the results from the present study do not provide strong support for Rossi's ultradian theory of hypnosis.

Marks NJ. Karl H. Onisiphorou C. **A controlled trial of hypnotherapy in tinnitus.** *Clinical Otolaryngology* 1985;10(1):43-6 A group of 14 patients with unilateral tinnitus were selected because of the constant nature of their tinnitus, and its resistance to all other forms of therapy. They were subjected to hypnosis in three forms in random order. The induction of a trance state alone formed the control arm of the trial. Compared to this were the effects of 'ego boosting' and active suppression of tinnitus whilst in a trance state. One of the 14 patients showed a highly significant response to the latter treatment as judged by visual analogue scales. Five of the 14 patients (36%) found the induction of a hypnotic state of value. This seemed to help them tolerate their tinnitus better, although its loudness and quality were unaltered. Maroof M. Ahmed SM. Khan RM. Bano SJ. Haque AW. Intra-operative suggestions reduce incidence of post hysterectomy emesis. *JPMA - Journal of the Pakistan Medical Association* 1997;47(8):202-4 The influence of therapeutic intraoperative auditory suggestions on the incidence and severity of emetic episodes was investigated in 50 adults ASA I and II patients undergoing elective abdominal hysterectomy. The patients were randomly divided into two groups, each consisting of 25 patients. In group I, a blank tape was played and in group II, positive suggestion was played via headphones throughout the anaesthetic period. It was observed that there was statistically significant difference ( $P < 0.05$ ) between the incidence of vomiting in group I (60%) and group II (36%). The number of vomiting episodes per patient in group I was  $3.1 \pm 1.2$  as compared to  $1.7 \pm 0.6$  in group II. This difference was statistically significant. The patients requiring rescue antiemetic was significantly higher ( $P < 0.05$ ) in group I (66.6%) as compared to group II (22.2%). It is concluded that positive therapeutic suggestion may be considered as an alternative to antiemetic therapy.

Mason JD. Rogerson DR. Butler JD. **Client centred hypnotherapy in the management of tinnitus--is it better than counseling?** *Journal of Laryngology & Otology.* 1996;110(2):117-20 The aim of this study was to assess whether client centered hypnotherapy (CCH) which required three sessions with a trained therapist was superior to a single counseling session in reducing the impact of tinnitus. Patients were randomly allocated to receive either counseling ( $n = 42$ ) or CCH ( $n = 44$ ). The outcome measures were: tinnitus loudness match, subjective tinnitus symptom severity score, trend of linear analogue scale, request for further therapy and whether the patient had an impression of improvement in their tinnitus after treatment. CCH was no better than counseling in reducing the impact of tinnitus using the three quantitative measures of tinnitus, and requests for further follow up. The only significant difference between the two therapies was that 20 (45.5 per cent) of the CCH group reported a general sense of improvement compared to six (14.3 per cent) in the counselling group, this is significant  $p < 0.01$ . The study did not demonstrate whether this was a genuine hypnotic effect or simply a response to the additional attention from the therapist.

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McCabe MP. et . al. **The role of sex of therapist and group vs. individual therapy in treatment outcome using hypnosis with obese female patients:** A research note. Australian Journal of Clinical & Experimental Hypnosis 1983;11(2):10-109. 44 18-66 yr old obese females were randomly assigned to either a male or female therapist and either to group (with 5 Subjects in each group) or individual therapy. The treatment program involved 10 therapy sessions with interspersed measurement sessions. There were 2 components of clinical sessions: (1) counseling focused on modification of current maladaptive behaviors related to obesity, and (2) a standardized hypnotic session using the Macquarie Hypnotic Script C (W. L. Walker et al (see PA, Vol 70:10892)). The hypnotic session covered the areas of general motivating suggestions; acquisition of new habits and attitudes related to eating, diet, and exercise; and the promotion of coping skills and an increased sense of inner locus of control. ANOVA revealed no differences in Subjects' weight loss due to therapist gender or type of therapy.

McCauley JD. Thelen MH. Frank RG. Willard RR. Callen KE. **Hypnosis compared to relaxation in the outpatient management of chronic low back pain.** Arch Phys Med Rehab 1983;64(11):548-52 Chronic low back pain (CLBP) presents a problem of massive dimensions. While inpatient approaches have been evaluated, outpatient treatment programs have received relatively little examination. Hypnosis and relaxation are two powerful techniques amenable to outpatient use. Seventeen outpatient subjects suffering from CLBP were assigned to either Self-Hypnosis (n = 9) or Relaxation (n = 8) treatments. Following pretreatment assessment, all subjects attended a single placebo session in which they received minimal EMG feedback. One week later the subjects began eight individual weekly treatment sessions. Subjects were assessed on a number of dependent variables at pretreatment, following the placebo phase, one week after the completion of treatment, and three months after treatment ended. Subjects in both groups showed significant decrements in such measures as average pain rating, pain as measured by derivations from the McGill Pain Questionnaire, level of depression, and length of pain analog line. Self-Hypnosis subjects reported less time to sleep onset, and physicians rated their use of medication as less problematic after treatment. While both treatments were effective, neither proved superior to the other. The placebo treatment produced nonsignificant improvement.

McGarry J **Mesmerism vs hypnosis: a comparison of relaxation responses and evaluation of mental and psychophysiological outcomes.** Aust J Clin Hypnother Hypn 1987 Nov;8(1):7-36 Examined the concept put forward by L. Pulos (see PA, Vol 66:5078) that a distinction may be made between hypnotic and mesmeric phenomena. To test for psychophysiological differences in these 2 states, 45 undergraduates were randomly allocated to 1 of 3 groups that received a hypnotic induction, a hypnotic induction with mesmeric passes, or no induction and no passes. It was found that the mesmerism group showed a relaxation response similar to the hypnosis group in terms of muscle tension. However, heart rate readings for the groups were divergent, and both groups differed from the control group on both measures. Subjective reports also indicated a difference between mesmerism and hypnosis. Findings demonstrate that hypnosis alone does not produce the same physiological measures as hypnosis and mesmerism combined.

McKelvie SJ. Pullara M. **Effects of hypnosis and level of processing on repeated recall of line drawings.** Journal of General Psychology 1988;115(3):315-29 Moderately susceptible subjects (N = 30) initially judged 30 line drawings of objects for pleasantness (deep processing) and 30 line drawings for visual complexity (shallow processing), after which they



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were given two immediate recall tests. Following a 48-hr delay, subjects were allocated randomly to hypnosis, simulation, or neutral control conditions and were tested four more times. Subjects produced more correct and incorrect responses over the six trials and gave a higher number of correct responses for deep items than for shallow items. Over the last four trials, hypnosis had no general facilitative effect relative to the other two treatments, but the effect of depth was strongest for hypnotized subjects, who recalled more deep items than did the controls. Finally, both hypnotized and simulating subjects rated their recall as more involuntary and their experimental treatment as more helpful than did the controls. Caution is urged in the forensic use of hypnosis as a retrieval device.

### McLintock TT, Aitken H, Downie CF, Kenny GN. **Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions.** BMJ

1990;301(6755):788-90 **OBJECTIVE**--To establish whether positive suggestions given to a patient under general anaesthesia reduce postoperative pain and analgesic requirements.

**DESIGN**--Prospective double blind randomized study.

**SETTING**--Operating theater and gynecology ward of a teaching hospital.

**PATIENTS**--63 Woman undergoing elective abdominal hysterectomy were randomized to be played either a tape of positive suggestions or a blank tape during the operation through a personal stereo system.

**INTERVENTIONS**--Three women were withdrawn from the study. Anaesthesia was standardized for all of the women. Postoperative analgesia was provided through a patient controlled analgesia system for the first 24 hours. Pain scores were recorded every six hours.

**MAIN OUTCOME MEASURES**--Morphine consumption over the first 24 hours after the operation; pain scores. **RESULTS**--Mean morphine requirements were 51.0 mg (95% confidence interval 42.1 to 60.0 mg in the women played positive suggestions; and 65.7 mg (55.6 to 75.7 mg) in those played a blank tape. The point estimate (95% confidence interval) for the difference of means was 14.6 mg (22.4%) (1.9 (2.9%) to 27.3 mg (41.6%)] ( $p = 0.028$ ). Pain scores were similar in the two groups.

**CONCLUSION**--Positive intraoperative suggestions seem to have a significant effect in reducing patients' morphine requirements in the early postoperative period.

### McWilliams JL. **Using hypnotic suggestions to reduce postoperative nausea and pain following lumbar laminectomies** Unpublished: MISSISSIPPI STATE UNIVERSITY 1990

PH.D. The purpose of this study was to predict the effectiveness of general anesthesia and hypnotic suggestions in reducing pain and nausea in the postoperative period for patients having lumbar laminectomy surgery. The 60 subjects were patients at the Mississippi Baptist Medical Center in Jackson, Mississippi. The subjects were randomly assigned to treatment in the order that they were scheduled for surgery. The 30 experimental subjects listened to prerecorded hypnotic suggestions and environmental sounds, under general anesthesia, via a tape player equipped with ear phones. The instructions given to the experimental group included suggestions regarding reduction of nausea and pain following lumbar laminectomy surgery while the 30 subjects in the control group listened only to environmental sounds during anesthesia. For the purpose of statistical analysis, a multivariate analysis of variance was used. The multivariate F-value ( $F(6,49) = 4.03$ ,  $p < .05$ ) for the group effect (experimental versus control) indicated a significant difference between the mean vectors of the six dependent variables which were the nurses' patient postoperative questionnaire, the patient postoperative

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self-rating questionnaire, the measures of nausea and pain medication for patients (intramuscular and oral), and the total number of times patients touched their ear postoperatively when in contact with the experimental team. The univariate F-ratios reveal which of the dependent variables are contributing (ear touch) to the multivariate significance and, thus, provide tests for the specific hypotheses of the study. The significant difference in the mean number of ear touches for the experimental and control groups ( $p < .001$ ) supports the position that patients do, at some level "hear" suggestions given under anesthesia. However, the present study failed to find statistical support for the contention that patients receiving suggestions experience a "better" postoperative recovery from those who did not receive suggestions, at least as that recovery was characterized by the dependent variables used in this experiment to measure pain and nausea reduction. (Scientific symbols modified where possible in accordance with CINAHL policy.)

Megas JC. Coe WC. **Hypnosis as role-enactment: the effect of positive information about hypnosis on self-role congruence.** American Journal of Clinical Hypnosis 1975;18(2):132-7 Evaluated the effect on self-role congruence of providing favorable information about hypnosis while establishing rapport on the Stanford Hypnotic Susceptibility Scale (SHSS), Form A. A questionnaire was developed to assess 66 undergraduates' congruence with the hypnotic role before they were hypnotized. Subjects were divided into high, medium, and low congruence samples, and 1/2 of each sample was randomly assigned to 1 of 2 conditions: (a) Information condition Subjects were administered the SHSS in the standardized manner. (b) No-information Subjects were administered the SHSS with the usual rapport section omitted. All Subjects were reassessed with the self-role congruence questionnaire before they were hypnotized. Results show that positive information had no significant effect on congruence scores, and positive information had no effect on hypnotic susceptibility.

Melis PM. Rooimans W. Spierings EL. Hoogduin CA. **Treatment of chronic tension-type headache with hypnotherapy: a single-blind time controlled study.** Headache 1991;31(10):686-9 We investigated the effectiveness of a special hypnotherapy technique in the treatment of chronic tension-type headache. A waiting list control group was used to control for the changes in headache activity due to the passage of time. The results showed significant reductions in the number of headache days ( $p$  less than 0.05), the number of headache hours ( $p$  less than 0.05) and headache intensity ( $p$  less than 0.05). The improvement was confirmed by the subjective evaluation data gathered with the use of a questionnaire and by a significant reduction in anxiety scores ( $p$  less than 0.01).

Melnick J. Russell RW. **Hypnosis versus systematic desensitization in the treatment of test anxiety.** Journal of Counseling Psychology 1976;23(4):291-295. Assessed the comparative effectiveness of systematic desensitization (SD) and the directed experience hypnotic technique (HT) in reducing self-reported test anxiety and increasing the academic performance of 36 test-anxious undergraduates. Subjects were assigned randomly to either the HT or SD conditions or to 1 of 2 control groups. All Subjects had previously scored above the 50th percentile on Sarason's Test Anxiety Questionnaire (TAQ) and below the 85th percentile on a midterm exam. Results indicate that only the SD treatment significantly reduced TAQ scores. No significant improvement in academic performance was observed for either treatment. An additional analysis of high- vs moderate-anxious subgroups failed to show differential treatment effects on either dependent measure.

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Michael AM Hypnosis in childbirth BMJ 1952; 1: 734-7

Millar K. **Efficacy of therapeutic suggestions presented during anaesthesia: re-analysis of conflicting results.** British Journal of Anaesthesia 1993;71(4):597-601 Re-analysis has been made of two clinical studies which used similar methodologies but found different effects of so-called therapeutic suggestions presented to anaesthetized patients undergoing abdominal hysterectomy. The re-analysis suggested that when data from the two studies were examined jointly, it was uncertain if positive suggestions had a reliable influence upon the recovery measure of "days to discharge". The supposed positive effect reported in one of the studies may arise from a rather different distribution of data in the control group. It is proposed that the effect may be attributable to chance bias in allocation of patients to the control group, or to some other chance anomaly in the composition of the group as a result of relatively small sample size. The importance of sample size is discussed in relation to detection of effects when only a few patients may be in a state susceptible to intra-anaesthetic suggestions. The importance of presenting data distributions in addition to summary statistics is also emphasized. Miller LS, Cross-HJ Hypnotic susceptibility, hypnosis, and EMG biofeedback in the reduction of frontalis muscle tension Int J Clin Exp Hypn. 1985;33(3):258-272 Biofeedback and hypnosis have been used in the treatment of similar disorders. While each has been useful, it is unclear whether they involve similar or conflicting processes. Bowers and Kelly (1979) have hypothesized that high hypnotizable Ss are more likely to benefit from hypnosis and similar procedures, than moderate and low hypnotizable individuals. In contrast, Qualls and Sheehan (1979, 1981a, b, c) have argued that hypnosis and biofeedback involve antithetical abilities. In the present study, high, moderate, and low hypnotizable individuals (N = 60) were randomly assigned to either EMG biofeedback or hypnosis conditions and instructed to relax. It was found that the mean percent reduction in frontalis muscle tension over the last 5 trials was significantly greater for the high hypnotizable Ss during hypnosis than the moderate and low hypnotizable Ss. The moderate and low hypnotizable Ss demonstrated greater reductions in frontalis muscle tension during EMG biofeedback than during hypnosis. These findings are partly supportive of the predictions of Qualls and Sheehan (1979, 1981a, b, c) that hypnosis and biofeedback involve antithetical processes.

Miller ME. Bowers KS. **Hypnotic analgesia and stress inoculation in the reduction of pain.** Journal of Abnormal Psychology 1986;95(1):6-14 The influence of hypnotic ability on three methods of reducing cold pressor pain was investigated. Following a baseline immersion, 30 high and 30 low hypnotizable undergraduates were randomly assigned to one of three treatment groups: stress inoculation training, stress inoculation training defined as hypnosis, or hypnotic analgesia. Analysis of pain reports indicated a significant Hypnotic Ability X Treatment interaction. Among subjects receiving hypnotic analgesia, high hypnotizables reported significantly less intense pain than lows. There was no differential response for high and low hypnotizable subjects receiving stress inoculation training, whether or not it was defined as hypnotic. Moreover, subjects in the stress inoculation condition (whether or not defined as hypnosis) reported using cognitive strategies to reduce pain, whereas this was not the case for subjects in the hypnotic analgesia condition. The present findings seem inconsistent with the social psychological account of hypnosis and are discussed from a dissociation perspective, which views hypnosis as involving changes in the way information is processed.

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Moller AT. Kotze HF. Sieberhagen KJ. **Comparison of the effects of auditory subliminal stimulation and rational-emotive therapy, separately and combined, on self-concept.** *Psychological Reports*. 1993;72(1):131-45 The present study investigated the effects on self-concept of Rational-Emotive Therapy and auditory subliminal stimulation (separately and in combination) on 141 undergraduate students with self-concept problems. They were randomly assigned to one of four groups receiving either Rational-Emotive Therapy, subliminal stimulation, both, or a placebo treatment. Rational-Emotive Therapy significantly improved scores on all the dependent measures (cognition, self-concept, self-esteem, anxiety), except for behavior. Results for the subliminal stimulation group were similar to those of the placebo treatment except for a significant self-concept improvement and a decline in self-concept related irrational cognitions. The combined treatment yielded results similar to those of Rational-Emotive Therapy, with tentative indications of continued improvement in irrational cognitions and self-concept from posttest to follow-up.

Montgomery G. Kirsch I. **The effects of subject arm position and initial experience on Chevreul pendulum responses.** *American Journal of Clinical Hypnosis*. 1996;38(3):185-90 Some clinicians maintain that responses to the Chevreul pendulum illusion are facilitated by resting one's elbow on a table. Others claim the reverse. We compared these two methods in a counterbalanced crossover design by having 32 university students perform the Chevreul pendulum illusion with their elbows supported on a table and with their elbows unsupported. Although there was no main effect for method (elbow supported versus elbow unsupported), subjects who rested their elbows on a table on the first trial were more successful in responding on both trials. This suggests that supporting the elbow does facilitate responding, but only on the initial trial. Performance on subsequent trials is determined by degree of success on the first trial. Similar data from a previous study comparing different hypnotic inductions suggests that this phenomenon is generalizable beyond the Chevreul pendulum illusion and supports the hypothesis that the test-retest reliability of suggestibility scales may be due to a stabilization of response expectancy by a person's first experience of imaginative suggestions.

Moore LE. Wiesner SL. **Hypnotically-induced vasodilation in the treatment of repetitive strain injuries.** *American Journal of Clinical Hypnosis*. 1996;39(2):97-104 The study examined the effectiveness of behaviorally-induced vasodilation (hypnosis with biofeedback and autogenics) in the treatment of upper extremity repetitive strain injuries (RSI). Thirty patients with recent onset of upper extremity RSI symptoms were randomly assigned to 1 of 2 treatment conditions, i.e., hypnotically-induced vasodilation or a waiting-list control. Treatments were given on an individual basis, once a week for 6 weeks. Patients in the treatment condition showed highly significant increases in hand temperature between pre- and post-treatment. Patients in the treatment condition also showed highly significant reductions in pain in comparison to the waiting list condition.

Moore ME. Berk SN. **Acupuncture for chronic shoulder pain. An experimental study with attention to the role of placebo and hypnotic susceptibility.** *Annals of Internal Medicine* 1976;84(4):381-4 One half of 42 subjects treated for painful shoulders received classic acupuncture, and one half received a placebo in which the needles did not penetrate the skin. Half of each of these groups was treated in a positive setting to encourage the subject, and half in a negative setting designed to keep encouragement at a minimum. All patients were independently rated for susceptibility to hypnosis. Although range of motion did not improve,

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the majority of patients reported significant improvement in shoulder discomfort to a blind evaluator after treatment; placebo and acupuncture groups did not differ in this respect, however. The positive and negative settings did not affect treatment outcome. In all groups, those who were not rated as highly susceptible to hypnosis tended to fail to achieve the highest levels of relief, but such differences were not statistically significant.

Moret V, Forster A, Laverriere MC, Lambert H, Gaillard RC, Bourgeois P, Haynal A, Gemperle M, Buchser E **Mechanism of analgesia induced by hypnosis and acupuncture: is there a difference?** Pain 1991 May;45(2):135-40 Hypnosis and acupuncture can alleviate experimentally induced pain but the mechanism of analgesia remains unclear for both techniques. Experimental pain was induced by cold pressor test (CPT) in 8 male volunteers. Analgesic effect of hypnosis (HA) and acupuncture (AA) was assessed before and after double-blind administration of placebo or naloxone, in a prospective, cross-over study. We found that pain intensity was significantly lower with HA as compared with AA, both with naloxone ( $P$  less than 0.001) and placebo ( $P$  less than 0.001). Within HA or AA groups, pain scores did not differ significantly when naloxone or placebo was administered. During AA, however, pain scores were similar to control values when naloxone was given ( $P = 0.05$ ) but decreased significantly with placebo ( $P$  less than 0.002). Analog scales for pain intensity and pain relief showed a good correlation ( $r = 0.94$ ). Plasma levels of beta-endorphins did not change significantly in any combination. Heart rate, peripheral arterial blood pressure and skin conductance were very insensitive indices to assess pain intensity or relief, as well as intensity of acupuncture stimulation or depth of hypnotic trance. We conclude: (1) HA and AA can significantly reduce pain from CPT, and HA is more effective than AA: (2) HA and AA are not primarily mediated by the opiate endorphin system; and (3) plasmatic levels of beta-endorphins are not significantly affected by either HA or AA nor by naloxone or placebo administration.

Mount GR. et al. **The effects of relaxation techniques on normal blood pressure.** Behavioral Engineering 1978;5(1):1-4. Randomly assigned 30 normotensive and medication-free college students to 1 of 2 control and 4 treatment groups. Control Group 1 relaxed for 20 min while control Group 2 received noncontingent EMG feedback via a hidden tape recorder. Treatment Group 1 received contingent EMG feedback, Group 2 received hypnosis with A. A. Meares' (1960) suggestions for well-being, Group 3 received hypnosis and EMG feedback in a counterbalanced presentation, and Group 4 received E. Jacobson's (1938) deep muscle relaxation training. All Subjects attended 6 sessions during a 3-wk period. Pre/post blood pressure readings were taken for all Subjects. Results indicate that both diastolic and systolic blood pressure scores decreased significantly for all groups across the 6 sessions. Pre- minus postscore analysis failed to show significant differences in blood pressure scores. Myles PS. Cessation of smoking following tape suggestion under anaesthesia. Anaesthesia & Intensive Care 1992;20(4):540-1

Myles PS, Hendrata M, Layher Y, Williams NJ, Hall JL, Moloney JT, Powell J. **Double-blind, randomized trial of cessation of smoking after audiotape suggestion during anaesthesia.** British Journal of Anaesthesia. 1996;76(5):694-8 We studied the use of intraoperative tape suggestion to improve the rate of cessation of smoking in 363 smokers who wanted to stop smoking. They were allocated randomly to hear a taped message encouraging them to stop smoking or to a blank tape, played during general anaesthesia. Overall 56 patients (15.4%, 95% confidence interval (CI) 11.7-19.1%) had claimed to have stopped smoking at 2

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months and 29 patients (8.0%, 95% CI 5.9-10.1%) were confirmed to have stopped smoking at 6 months. There was no significant difference between the groups at either 2 or 6 months (risk ratios 1.06 and 1.09, respectively,  $P = 0.78$ ). A preoperative:postoperative ratio of a visual analogue scale measuring the patient's motivation to stop smoking was not significantly different (control group 1.13 vs message group 1.10,  $P = 0.55$ ). This study does not support the hypothesis that intraoperative tape suggestion can change smoking behaviour. Neild JE. Cameron IR. Bronchoconstriction in response to suggestion: its prevention by an inhaled anticholinergic agent. *BMJ Clinical Research Edition*. 1985;290(6469):674

Neumann W. Kugler J. Seelbach H. Kruskemper GM. **Effects of nondirective suggestions on pain tolerance, pain threshold and pain intensity perception.** *Perceptual & Motor Skills* 1997;84(3 Pt 1):963-6 In this experiment, we followed the issue whether nondirective suggestions have an effect on pain threshold, pain tolerance, and perception of pain intensity. 48 healthy subjects consented to take part. At intake into the study (t1), pain threshold and pain tolerance were assessed in all subjects using a pressure algometer. Perception of maximum pain intensity perception was rated on a scale of 0 to 25. Seven days later, the session was repeated (t2). Subjects were randomly assigned to one of two groups. One group received nondirective suggestions as pretreatment. Subjects listened to a tape of 20 min. which consisted of general information about pain theory. In this context, suggestions for coping with pain were placed. The other group served as a control and received no pretreatment. Analysis showed that pain tolerance was significantly prolonged in the group who received nondirective suggestions, while pain threshold and perception of maximum pain intensity did not differ across groups. This study demonstrates that nondirective suggestions are effective in prolonging pain tolerance. It can be stated that, beside information, cues on coping with pain may be helpful in clinical practice.

Newcombe PA. Siegal M. **Explicitly questioning the nature of suggestibility in preschoolers' memory and retention.** *Journal of Experimental Child Psychology* 1997;67(2):185-203 In research designed to investigate children's suggestible responses on memory tests, 190 preschoolers were read a short story. The same day or six days later, they were exposed to information that was either consistent with the original story details or inconsistent and misleading. One and seven weeks after hearing the story, the children were tested on two types of recognition tasks that involved a choice either between the original and misleading information or between the original and new information with questions that were either explicit or nonexplicit as to the time of the information to be reported. At the 1-week test, children who were exposed to misleading information were significantly less accurate under nonexplicit questioning in recognizing the original from the misleading information than were children presented with consistent information. With explicit questioning, this difference was not significant. When the choice for the children was between original and new items following exposure to delayed misleading postevent information, explicit questioning resulted in significantly more accurate responses at the 7-week test than did nonexplicit questioning. Children questioned explicitly rather than nonexplicitly were more likely to maintain correct responses on both tests. The results are discussed in terms of conversational processes and competing forms of representation in memory retention.

Nikles CD= 2nd. Brecht DL. Klinger E. Bursell AL. **The effects of current-concern- and nonconcern-related waking suggestions on nocturnal dream content.** *Journal of*

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Personality & Social Psychology 1998;75(1):242-55 In previous research, presleep suggestions influenced nocturnal dream content. It was hypothesized that suggesting topics associated with participants' current concerns would influence dream content more than suggesting other topics. Ten students spent 4 nights in a sleep laboratory: an adaptation night, a baseline night, and 2 nights under suggestions to dream about a concern-related or other topic. Concern-related suggestions influenced dream content--largely its central imagery--more than did other suggestions, which did not differ from nonsuggestion. Number of transformations within dreams was uncorrelated with dream vividness, contrary to extended activation-synthesis theory. Thus, the concern-related status of suggestions moderates their effectiveness and, inconsistent with extended activation-synthesis theory but consistent with current-concerns and distributed-activation theories, motivational and volitional processes actively influence dream content.

Nilsson KM. **The effect of subject expectations of "hypnosis" upon vividness of visual imagery.** International Journal of Clinical & Experimental Hypnosis 1990;38(1):17-24 This study explored how the expectation of hypnosis and the expectation of relaxation affected the vividness of visual imagery. 63 Ss who volunteered for a visual imagination study were randomly assigned to 4 groups. Ss were administered the vividness subscale (VS) of the Vividness and Control of Imagery Scale twice. In the 3 experimental groups, expectations were varied during the 2 VS administrations. All 3 groups were presented with a relaxation exercise between VS administrations. In 2 groups, it was labeled "hypnosis," and in the third group it was correctly labeled "relaxation." A control group listened to a neutral tape between their VSs. All groups were administered the Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor & E. C. Orne, 1962) after the 2 imagery tests. The results indicated that the vividness of visual imagery was significantly enhanced (equally) in the experimental groups but not in the control group.

O'Brien RM. **Hypnosis and task-motivation instructions for "post-experimental"-post-hypnotic suggestions.** Perceptual & Motor Skills 1977;45(3 Pt 2):1274 16 college students who had scored well on the Stanford Hypnotic Susceptibility Scale (Form C) were randomly assigned to hypnotic and nonhypnotic task motivation groups. All Subjects were given a suggestion for a response to occur to a cue word at the end of the session. They were then given the cue 4 times into the next day by a friend-confederate. The 2 groups did not differ significantly in the number of responses to the post-experimental cue.

O'Brien RM. Kramer CE. Chiglinsky MA. Stevens GE. Nunan LJ. Fritzo JA. **Moral development examined through hypnotic and task motivated age regression.** American Journal of Clinical Hypnosis 1977;19(4):209-13 Thirty 17-28 yr old volunteers who had scored above 8 on the Stanford Hypnotic Susceptibility Scale, Form C, were randomly assigned to 3 groups (hypnosis, task motivation, and control). The 2 treatment groups were age regressed to the 1st grade. They were then examined through 5 moral dilemma stories to ascertain their level of functioning on L. Kohlberg's (1968) stage theory of moral development. The control group experienced the same examination without age regression. Results show that both treatment groups were at a significantly lower moral stage than the control group but that there was no significant difference between the 2 groups of age-regressed Subjects. In addition, it was found that a group of 10 actual 1st graders gave answers that were at a much lower level than those of the age-regressed Subjects. These results demonstrate cognitive age regression on Kohlberg's

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stages of moral development. They also suggest that task motivation situations are as efficient as hypnosis in producing this phenomenon.

O'Brien RM. Rabuck SJ. **Experimentally produced self-repugnant behavior as a function of hypnosis and waking suggestion: a pilot study.** American Journal of Clinical Hypnosis 1976;18(4):272-6 Randomly assigned 7 19-40 yr old females who had scored above 9 on the Stanford Hypnotic Susceptibility Scale, Form C, to 1 of 3 treatment groups (hypnosis, posthypnotic suggestion, and waking suggestion). Subjects in all 3 groups were asked to make a verbal homosexual approach to a female they had not previously met. Only the 2 waking-suggestion Subjects carried out the instructions. Hypnosis may be less effective than waking-suggestion in eliciting a self-repugnant response when attitudinal and motivational variables are maximized.

Oddby-Muhrbeck E. Jakobsson J. Enquist B. **Implicit processing and therapeutic suggestion during balanced anaesthesia.** Acta Anaesthesiologica Scandinavica 1995;39(3):333-7 The effect of therapeutic suggestion--implicit processing during balanced anaesthesia was studied in 70 female patients scheduled for elective breast surgery. The patients were randomly allocated to listen to a message with reassuring information focused on minimizing postoperative nausea and vomiting, or just a blank tape during surgery. Occurrence of nausea and vomiting was studied during the postoperative period. No patient recalled any explicit memories during the peroperative period. No major differences were observed in the number of patients who experienced nausea or vomiting during the 24 hour observation period. The patients exposed to positive suggestion did, however, have a lower frequency of recall for nausea and vomiting compared to those just listening to the blank tape. We did not observe any major effect of peroperative suggestion for postoperative nausea and vomiting. However, we cannot rule out some implicit processing during balanced anaesthesia.

Olness K. Culbert T. Uden D. **Self-regulation of salivary immunoglobulin A by children.** Pediatrics 1989;83(1):66-71 In a prospective randomized controlled study, the possibility that children could regulate their own salivary immunoglobulins was investigated using cyberphysiologic techniques. Fifty-seven children were randomly assigned to one of three groups. Group A subjects learned self-hypnosis with permission to increase immune substances in saliva as they chose; group B subjects learned self-hypnosis with specific suggestions for control of saliva immunoglobulins; group C subjects were given no instructions but received equal attention time. At the first visit, saliva samples (baseline) were collected, and each child looked at a videotape concerning the immune system and was tested with the Stanford Children's Hypnotic Susceptibility Scale. At the second visit, an initial saliva sample was collected prior to 30 minutes of self-hypnosis practice or conversation. At the conclusion of the experiment, a third saliva sample was obtained. Salivary IgA and IgG levels for all groups were stable from the first to the second sampling. Children in group B demonstrated a significant increase in IgA ( $P$  less than .01) during the experimental period. There were no significant changes in IgG. Stanford Children's Hypnotic Susceptibility Scale scores were stable across groups and did not relate to immunoglobulin changes.

Olness K, Hall H, Schmidt W, Theoharides T **Mast cell activation in child migraine patients before and after training in self regulation.** Alternative Therapies in Health and Medicine 1997;3(2):100-1 Olness K. MacDonald JT. Uden DL. Comparison of self-hypnosis and propranolol in the treatment of juvenile classic migraine. Pediatrics 1987;79(4):593-7 In a



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prospective study we compared propranolol, placebo, and self-hypnosis in the treatment of juvenile classic migraine. Children aged 6 to 12 years with classic migraine who had no previous specific treatment were randomized into propranolol (at 3 mg/kg/d) or placebo groups for a 3-month period and then crossed over for 3 months. After this 6-month period, each child was taught self-hypnosis and used it for 3 months. Twenty-eight patients completed the entire study. The mean number of headaches per child for 3 months during the placebo period was 13.3 compared with 14.9 during the propranolol period and 5.8 during the self-hypnosis period. Statistical analysis showed a significant association between decrease in headache frequency and self-hypnosis training ( $P = .045$ ). There was no significant change in subjective or objective measures of headache severity with either therapy.

Papp LA. Welkowitz LA. Martinez JM. Klein DF. Browne S. Gorman JM. **Instructional set does not alter outcome of respiratory challenges in panic disorder.** Biological Psychiatry 1995;38(12):826-30 In an attempt to reproduce the findings of Rapee et al (1986) that instructional set could alter the anxiogenic effects of carbon dioxide inhalation, 45 patients with panic disorder received two sets of instructions and then underwent a series of respiratory challenges (room air hyperventilation, 5% and 7% CO<sub>2</sub> inhalation). The instructions failed to alter the anxiogenic response to any of the interventions.

Passchier J. Hunfeld JA. Jellic M. Verhage F. **Suggestibility and headache reports in schoolchildren: a problem in epidemiology.** Headache 1993;33(2):73-5 In a sample from the general population of school children of 15 years of age, we studied whether receiving information about the prevalence of headaches had any effect on their subsequent headache report. Sixty children in the fourth year at four secondary schools were allocated at random to two conditions: a biased condition emphasizing the high prevalence of headaches and a neutral condition. Subjects in the biased condition reported more headaches but they did not report more other physical symptoms than the subjects in the neutral condition. The results are discussed in terms of Pennebaker's theory on reporting symptoms. It is concluded that epidemiological research using the general population should deal more explicitly with the way in which subjects are motivated to participate.

Patterson DR. Ptacek JT. **Baseline pain as a moderator of hypnotic analgesia for burn injury treatment.** Journal of Consulting & Clinical Psychology 1997;65(1):60-7 Sixty-one patients hospitalized for severe burns were randomly assigned to conditions in which they received either hypnosis or a control condition in which they received attention, information, and brief relaxation instructions from a psychologist. The posttreatment pain scores of the 2 groups did not differ significantly when all patients were considered. However, when a subset of patients who reported high levels of baseline pain were examined, it was found that patients in the hypnosis group reported less post-treatment pain than did patients in the control group. The findings are used to replicate earlier studies of burn pain hypnoanalgesia, explain discrepancies in the literature, and highlight the potential importance of motivation with this population.

Pederson LL, Schrimgeour WG, Lefcoe NM **Incorporation of rapid smoking in a community service smoking withdrawal program.** International Journal of the Addictions 1980;15(5):615-29 Post-treatment abstinence rates of 50% had been found in a smoking withdrawal program which included group hypnosis and group counseling. A session of rapid smoking was added to the procedures with the intention of further increasing abstinence rates.

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Only 13% of the smokers exposed to the combined program quit smoking as compared to 38% of the smokers who participated in the same program but with the session of group hypnosis excluded. Possible explanations of the obtained results include motivational reduction, procedural deviations, and medical screening. Suitability of rapid smoking for community service programs is discussed.

Pederson LL. Scrimgeour WG. Lefcoe NM. **Comparison of hypnosis plus counseling, counseling alone, and hypnosis alone in a community service smoking withdrawal program.** *Journal of Consulting & Clinical Psychology* 1975;43(6):920 Pederson LL. Scrimgeour WG. Lefcoe NM. Variables of hypnosis which are related to success in a smoking withdrawal program. *International Journal of Clinical & Experimental Hypnosis* 1979;27(1):14-20 65 habitual smokers were randomly assigned to 1 of 4 groups: live hypnosis plus counseling, videotape hypnosis plus counseling, relaxation hypnosis plus counseling, and counseling alone. The content and mode of presentation of the hypnosis session varied among the 1st 3 groups. At 6 mo post-treatment, the live hypnosis plus counseling group contained significantly more abstainers than the other 3 groups. The importance of the specific content of the hypnosis session and the presence of the hypnotherapist for the effectiveness of the procedure is discussed. (German, French & Spanish summaries)

Podolnick EE. Field PB. **Emotional involvement, oral anxiety, and hypnosis.** *International Journal of Clinical & Experimental Hypnosis* 1970;18(3):194-210. 48 undergraduates were randomly assigned to either a high or low emotional arousal manipulation and then underwent a tape-recorded hypnotic induction and test of depth. The high-arousal group was exposed to infantile oral objects and were led to believe that they would have to suck on them as part of a physiological psychology experiment in which the cutaneous sensitivity of the human mouth was being mapped. The low-arousal group believed they only had to blow on whistles or pipes. While both groups were anticipating these experiences, hypnosis was induced. Subjects in the high-arousal group were significantly more hypnotizable ( $p < .001$ ) than their counterparts in the low-arousal group. Subjects in the high-arousal group were significantly less anxious after hypnosis than they were before hypnosis, while the low-arousal Subjects did not show a reduction in anxiety. The groups did not differ on several background personality tests given as checks on the randomization. (Spanish & German summaries)

Puente AE. Beiman I. **The effects of behavior therapy, self-relaxation, and transcendental meditation on cardiovascular stress response.** *Journal of Clinical Psychology* 1980;36(1):291-5 Compared Behavior Therapy (BT), self-relaxation (SR), transcendental meditation (TM), and a waiting-list control group (WL) on measures of cardiovascular and subjective stress response. Male and female respondents ( $N = 60$ ) to an ad for therapy were evaluated in assessment sessions before and after treatment. The results indicate that BT and SR were more effective than either TM or WL in reducing cardiovascular stress response. These data were interpreted as resulting from therapeutic suggestion and positively reinforced client progress.

Rabkin SW. Boyko E. Shane F. Kaufert J. **A randomized trial comparing smoking cessation programs utilizing behavior modification, health education or hypnosis.** *Addictive Behaviors* 1984;9(2):157-73 The purpose of this study was to determine the efficacy of hypnosis, health education, and behavior modification programs for cigarette smoking cessation. A randomized clinical trial comparing these three programs and a control group was conducted

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in 168 volunteers. Follow-up data three weeks after completion was available in 140 subjects. Each program showed significant reductions in reported cigarette consumption and serum thiocyanate levels, an indicator of long-term cigarette consumption, compared to entry and to the control group. However, there were no significant differences between the hypnosis, health education, or behavior modification groups with respect to the proportion who reported quitting smoking, the number cigarettes smoked or change in serum thiocyanate levels. Reported cigarette consumption ascertained six months later again showed no significant differences between these three approaches. Factors such as subject age, age at starting cigarette smoking, educational level, marital status, spouse or partners smoking did not identify subgroups with differences between treatment responses. Thus, hypnosis, health education, and behaviour modification are each effective programs for changing cigarette smoking and each is equally effective in this regard.

Radtke-Bodorik HL. Spanos NP. Haddad MG. **The effects of spoken versus written recall on suggested amnesia in hypnotic and task-motivated subjects.** *American Journal of Clinical Hypnosis* 1979;22(1):8-16 80 undergraduates and other volunteers chosen for moderate to high scores on the Harvard Group Scale of Hypnotic Susceptibility were randomly assigned to 1 of 4 treatments in a 2 \* 2 factorial design (hypnosis/task-motivation \* spoken/written recall). Subjects were administered the learning-amnesia suggestion sequence employed by N. P. Spanos and H. L. Bodorik (1977). Partially amnesic Subjects who wrote their recall had continued visual access to the words they had already recalled. It was hypothesized that the written words would serve as cues and facilitate further recall. Therefore, it was predicted that Subjects in the written recall condition would show less partial amnesia than those in the spoken recall condition. Results fail to confirm the prediction; Subjects in written and spoken recall conditions were equally likely to exhibit partial amnesia. However, previous findings replicated are as follows: (a) Hypnotic Subjects showed more amnesia than task-motivated Subjects; (b) partially amnesic Subjects showed disorganized recall, whereas full recall Subjects did not; (c) nonrecall Subjects obtained higher susceptibility scores than full recallers; and (d) hypnotic Subjects rated themselves as more deeply hypnotized than task-motivated Subjects.

Rankin EJ. Gilner FH. Gfeller JD. Katz BM. **Efficacy of progressive muscle relaxation for reducing state anxiety among elderly adults on memory tasks.** *Perceptual & Motor Skills* 1993;77(3 Pt 2):1395-402 Cognitively intact anxious elderly subjects were randomly assigned to either a progressive muscle relaxation-training condition or control condition (ns = 15) and then completed selected subtests from the Wechsler Memory Scale--Revised. Despite significant reductions in state anxiety in the relaxation group, no significant differences were detected between the two groups on memory measures. These results are discussed within the context of previous research, and suggestions for further research are made.

Rapkin DA. Straubing M. Holroyd JC. **Guided imagery, hypnosis and recovery from head and neck cancer surgery: an exploratory study.** *International Journal of Clinical & Experimental Hypnosis* 1991;39(4):215-26 The value of a brief, preoperative hypnosis experience was explored with a sample of 36 head and neck cancer surgery patients. 15 patients volunteered for the experimental hypnosis intervention. 21 patients who received usual care (no hypnosis) were followed through their hospital charts and were used as a comparison group. Hypnotic intervention and usual care groups were comparable in terms of relevant demographic variables. Postoperative hospitalizations for the hypnotic intervention group were significantly

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shorter than for the usual care group. Within the hypnotic intervention group, hypnotizability was negatively correlated with surgical complications and there was a trend toward a negative correlation between hypnotizability and blood loss during surgery. Findings suggest that imagery-hypnosis may be prophylactic, benefitting patients by reducing the probability of postoperative complications and thereby keeping hospital stay within the expected range. Recommendations are presented for a controlled, randomized, clinical trial with a sufficiently large sample to provide the opportunity for statistical analysis with appropriate power.

Ready DJ. Bothwell RK. Brigham JC. **The effects of hypnosis, context reinstatement, and anxiety on eyewitness memory.** International Journal of Clinical & Experimental Hypnosis. 1997;45(1):55-68 The effects of hypnosis, context reinstatement, and motivational instructions on accuracy of recall for factual information and facial recognition accuracy following a stressful event were assessed. None of the three techniques had a significant effect on factual memory or susceptibility to suggestion as assessed by true-false and multiple-choice tests. However, participants high in hypnotic susceptibility showed somewhat better memory on the true-false test, and hypnosis affected performance on the two photograph line-ups. In addition, hypnosis appeared to enhance facial recognition accuracy for participants who were low in anxiety, but not for those high in anxiety. Finally, there was evidence of a curvilinear relationship between self-reported anxiety at time of retrieval and facial recognition accuracy.

Reed SB. Kirsch I. Wickless C. Moffitt KH. Taren P. **Reporting biases in hypnosis: suggestion or compliance?** Journal of Abnormal Psychology. 1996;105(1):142-5 The tendency of highly hypnotizable participants to bias their retrospective perceptual reports in response to instructional demands was reexamined with the addition of low-hypnotizable control participants instructed to simulate hypnosis. Mean scores of high-hypnotizable participants and simulators did not differ, but the responses of simulators to the demand instruction was less variable than those of high-hypnotizable participants, and the shape of the response distribution was different. Unlike simulators, some high-hypnotizable participants who had reported changes in perception that were consistent with a hypnotic suggestion subsequently reported changes opposite to those suggested by a demand instruction. These data were interpreted as suggesting that the responses of high-hypnotizable participants to both the demand instruction and the preceding hypnotic suggestion were not entirely due to compliance.

Reich BA. Non-invasive treatment of vascular and muscle contraction headache: a comparative longitudinal clinical study. Headache 1989;29(1):34-41 The purpose of this investigation was to evaluate the long-term course of non-invasively treated chronic headache. A total of 1015 adult patients with primary diagnosis of vascular/migraine or muscle contraction headache participated in the study investigating symptom frequency and severity over a 36 month period after receiving treatment. Treatment consisted of either: relaxation training (stepwise relaxation/hypnosis/autogenic training/cognitive behavior therapy); biofeedback (thermal/photoplethysmograph/EMG); micro-electrical therapy (TENS/Neurotransmitter Modulation) or multimodal treatment (combination of any of the above two treatments). Seven hundred and ninety-three patients returned sufficient data to be included in the analysis. Patients were randomly assigned to treatment groups and received either short term intervention (15 or less treatments) or long term intervention (greater than 15 treatments). Results indicate that all treatment conditions significantly reduced frequency and intensity of cephalalgia. Repeated measure analysis of variance indicated that grouping variables of Biofeedback treatment,

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symptoms being evidenced less than 2 years and receiving over 15 treatment sessions best predicted successful intervention.

Reid WH, Ahmed I, Levie CA. **Treatment of sleepwalking: a controlled study.** American Journal of Psychotherapy 1981;35(1):27-37 A single-blind, rater-blind, modified crossover design was used to evaluate a simple, practical method of clinical treatment of sleepwalking. Subjects who had severe somnambulism, but were otherwise free of psychiatric illness, responded well to six brief sessions of specialized hypnotherapy. Follow-up at one year has revealed lasting improvement of both subjective and objective symptoms. A brief review of the subject of sleepwalking, as well as detailed information concerning histories of sleep symptoms and emotional problems in these and other sleepwalkers, is presented.

Richardson MA, Post-White J, Grimm EA, Moye LA, Singletary SE, Justice B. **Coping, life attitudes, and immune responses to imagery and group support after breast cancer treatment.** Alternative Therapies in Health and Medicine 1997;3(5):62-70 B

ACKGROUND: The pilot study used clinical trial methodology to differentiate the effects of imagery and support on coping, life attitudes, immune function, quality of life, and emotional well-being after breast cancer.

METHODS: Women (N = 47) who completed treatment for primary breast cancer, excluding stage IV, were randomly assigned to standard care (n = 15) or six weekly support (n = 16) or imagery (n = 16) sessions. Self-report measures included Ways of Coping-Cancer, Life Attitude Profile, Quality of Life (FACT-B), Profile of Mood States, and Functional Support. Immune measures included natural killer cell activity, plasma neopterin, interferon-gamma, interleukins 1 alpha, 1 beta, and 2, and beta-endorphin levels. Differences between groups over time were tested using general linear models, adjusted for pretest score and covariates (age, stage, and months posttreatment). RESULTS: For all women, interferon-gamma increased, neopterin decreased, quality of life improved, and natural killer activity remained unchanged. Compared with standard care, both interventions improved coping skills (seeking support) and perceived social support, and tended to enhance meaning in life. Support boosted overall coping and death acceptance. When comparing imagery with support, imagery participants tended to have less stress, increased vigor, and improved functional and social quality of life.

CONCLUSION: Although imagery reduced stress and improved quality of life, both imagery and support improved coping, attitudes, and perception of support. The clinical implications of these changes warrant further testing.

Ruzyla-Smith P, Barabasz A, Barabasz M, Warner D. **Effects of hypnosis on the immune response: B-cells, T-cells, helper and suppressor cells.** American Journal of Clinical Hypnosis. 1995;38(2):71-9 This study tested the effects of hypnosis on the immune response. High and low hypnotizable Ss were exposed to hypnosis, relaxation or control conditions. Blood samples obtained before treatment and twice thereafter were subjected to flow cytometry analysis. Significant alteration of the immune response as measured by B-cells and helper T-cells was shown only for highly hypnotizable Ss exposed to hypnosis. Ryan ML, Sheehan PW. Reality testing in hypnosis: Subjective versus objective effects. International Journal of Clinical & Experimental Hypnosis 1977;25(1):37-51. 64 undergraduates and 26 graduate students were assigned randomly to a 2 \* 3 (Request for Honesty \* Suggestibility Instruction) factorial design to test the hypothesis that hypnotic Subjects would show pronounced impairment of reality testing by expressing a degree of conviction substantially out of phase with their objective

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performance. T. X. Barber's (1969) operational model of hypnosis was adopted to test the prediction on an unusually distinctive auditory comprehension task, administered to the Subjects prior to the Barber Suggestibility Scale. The 2 interdependent measures, confidence and accuracy, were highly positively related, indicating that, generally speaking, hypnotic Subjects performed adaptively as did task motivated and control Subjects. Results for the difficult aspects of the task were distinctive. Here, degree of confidence about behavior as expressed by Subjects who performed well on the suggestibility tests was relatively greater than the confidence expressed by those who performed poorly; further, hypnotic Subjects were distinctively willing to respond on the least intelligible parts of the task. The inconsistent nature of certain features of hypnotic behavior is discussed in detail. (German, French & Spanish summaries)

Sabourin M. Brisson MA. Deschambault A. **Evaluation of hypnotically-suggested selective deafness by heart-rate conditioning and reaction time.** Psychological Reports 1980;47(3 Pt 1):995-1002 20 undergraduates highly susceptible to hypnosis were randomly assigned to 1 of 4 groups: hypnotic, posthypnotic, motivational, and control. After the establishment of the heart-rate conditioned response, a suggestion of selective deafness for the CS was given, followed by 15 trials of extinction; subsequently, the suggestion was lifted and 15 additional trials were given. Results show that the suggestion did not influence the heart-rate CR, nor did it influence RT.

Sackeim HA. Paulhus D. Weiman AL. **Classroom seating and hypnotic susceptibility.** Journal of Abnormal Psychology 1979;88(1):81-4 Conducted 2 experiments to investigate the relations among hypnotic susceptibility (Stanford Hypnotic Susceptibility Scale), lateralization of actual seating behavior, and seating preference. In Exp I, it was found that females who sat on the right side of a classroom were more hypnotically susceptible than females who sat on the left. Males who preferred right-side seating were more susceptible than males with left-side p In Exp II, 55 Subjects were randomly assigned to seats to determine whether seating location itself affected responsiveness to hypnosis. No association between lateralization of actual seating and hypnotic susceptibility was found. Replicating Exp I, males who preferred right-side seating were more hypnotically susceptible than males with left-side p Lateralization of seating behavior has been found previously to be a function of hemisphericity. The results of both experiments indicate that lateralization of seating behavior may be used to investigate the relation between hemisphericity and hypnotic susceptibility.

Sakata KI. Anderson JP. **The effects of posthypnotic suggestion on test performance.** International Journal of Clinical & Experimental Hypnosis 1970;(1):61-71. Tested 45 undergraduates preselected for hypnotizability on 2 learning tasks by E and retested on the tasks by other Es a mo. later. Before being retested Subjects were randomly assigned to 1 of 3 treatment conditions: (a) a posthypnotic suggestion condition, (b) a waking suggestion condition, and (c) a hypnosis-no-suggestion condition in which Subjects were merely dehypnotized without exhortative instructions. Es were blind to the experimental design. Analyses of covariance indicate that the posthypnotic suggestion group performed more rapidly and accurately on a Rational Learning Test (RLT), but not on a Digit Symbol Test (DST), than the waking suggestion group. The posthypnotic suggestion group did not differ from the hypnosis-no-suggestion group, which also performed more accurately but not more rapidly than the waking suggestion group on the RLT. There were indications that posthypnotic suggestions had interfered with performance on the DST, which involved motor manipulations. Findings

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supported previous studies indicating differences between a posthypnotic and waking suggestion group in task performance. No definite conclusions to account for the differences could be offered. (Spanish & German summaries)

Schlutter LC. Golden CJ. Blume HG. **A comparison of treatments for prefrontal muscle contraction.** British Journal of Medical Psychology. 1980;53(1):47-52 A comparison of hypnotic analgesia, frontalis electromyographic feedback, and frontalis electromyographic feedback in conjunction with Jacobson progressive relaxation for treating chronic prefrontal muscle contraction headache was done. There were four 1-hour treatment sessions for each type, and a follow-up. Measures were the number of headache hours per week, a subjective estimate of pain intensity, and an objective ratio of pain intensity found by using the submaximum tourniquet technique. No significant differences were found between treatments on these dependent measures, although all produced significant change in the desired direction. The current study utilized 48 patients with chronic prefrontal headache, and was performed in a clinical situation. Certain responses to the Headache Questionnaire used in screening were significantly correlated with improvement in headache. The current study controlled for class of medication the patient may have been taking for headache, thereby giving a more realistic assessment of the effectiveness of psychological treatments in a clinic.

Schnyer DM. Allen JJ. **Attention-related electroencephalographic and event-related potential predictors of responsiveness to suggested posthypnotic amnesia.** International Journal of Clinical & Experimental Hypnosis 1995;43(3):295-315 Higher frequency electroencephalographic (EEG) activity around 40 Hz has been shown to play a role in cognitive functions such as attention. Furthermore, event-related brain potential (ERP) components such as N1 and P1 are sensitive to selective attention. In the present study, 40-Hz EEG measures and early ERP components were employed to relate selective attention to hypnotic response. Participants were 20 low hypnotizable individuals, half assigned as simulators, and 21 high hypnotizable individuals. Each of these groups was subsequently divided into two groups based on recognition amnesia scores. The four groups differed in 40-Hz (36-44 Hz) EEG spectral amplitude recorded during preinduction resting conditions but not in EEG amplitude postinduction. The groups also differed in N1 amplitudes recorded during hypnosis. Regression analysis revealed that these effects only distinguish the high hypnotizable participants who experienced recognition amnesia from all other groups. The findings support the role of selective attention in hypnotic responsiveness, and the utility of subdividing high hypnotizable individuals is discussed.

Schreiber EH. **Use of group hypnosis to improve college students' achievement.** Psychological Reports 1997;80(2):636-8 To examine whether group hypnosis would improve college students' achievement examination grades, including a midterm and final test of 30 educational psychology students who were hypnotized were compared with those of two control groups of 34 and 32 students. Analysis indicated for these intact classes the hypnotized group had a significantly higher mean score on final examination than those of the control groups, although differences in examination scores were nonsignificant at midterm. Suggestions for further research are made.

Schubert DK. **Comparison of hypnotherapy with systematic relaxation in the treatment of cigarette habituation.** J Clinical Psychology. 1983;39(2):198-202 Because of the methodological deficiencies in this area of research, it is impossible to make any valid

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conclusions about whether hypnosis itself is effective in the treatment of cigarette habituation. In this study, 87 volunteers who wanted to quit cigarette smoking were assigned randomly to the experimental hypnosis group, the comparison relaxation group, and the waiting list control group. Ss in the treatment groups had four weekly 50-minute, individual sessions. Four months after the completion of treatment, Ss were administered a questionnaire and a hypnotic susceptibility scale. Ss in the hypnosis group who were in the upper two-thirds of the group in terms of hypnotic susceptibility reduced their cigarette consumption substantially more than Ss in the relaxation group who were in the upper two-thirds of the group in terms of hypnotic susceptibility. Therefore, the hypnotic state appears to be therapeutic for individuals who can enter medium or deep states of hypnosis.

Sellick SM, Zaza C **Critical review of 5 nonpharmacologic strategies for managing cancer pain.** *Cancer Prev Control* 1998 Feb;2(1):7-14 Purpose: Health care professionals at 2 Ontario cancer centres were surveyed to determine their familiarity with, perceptions of and interest in learning more about nonpharmacological strategies for the management of cancer pain. Evidence-based education sessions were subsequently developed for the 5 strategies in which participants were most interested. This article presents the results of critical literature reviews concerning the effectiveness of the 5 strategies: acupuncture, massage therapy, hypnosis, therapeutic touch and biofeedback. Methods: The databases MEDLINE (1966 to June 1997) CINAHL (1982 to June 1997) and PsycholINFO Lit (1980 to June 1979) were searched systematically for randomized controlled trials (RCTs) of the 5 nonpharmacologic strategies. The authors' personal files and reference lists of relevant papers and main texts were also searched. The quality of the trials was reviewed according to established criteria. Results: The search yielded 1 RCT of acupuncture, 1 of massage therapy and 6 of hypnosis. The studies of hypnosis suggested that there is much support for its use in the management of cancer pain. The evidence was either lacking or less clear for the other therapies examined. Conclusion: Because patients use a wide variety of nonpharmacologic strategies regardless of their effectiveness, clinicians need to be familiar with available research and able to discuss those strategies for which the evidence is strong, weak or nonexistent. More research on the effectiveness of nonpharmacologic strategies for pain management is needed.

Sellick SM. Zaza C. **Critical review of 5 nonpharmacologic strategies for managing cancer pain.** *Cancer Prevention & Control* 1998;2(1):7-14

PURPOSE: Health care professionals at 2 Ontario cancer centres were surveyed to determine their familiarity with, perceptions of and interest in learning more about nonpharmacologic strategies for the management of cancer pain. Evidence-based education sessions were subsequently developed for the 5 strategies in which participants were most interested. This article presents the results of critical literature reviews concerning the effectiveness of the 5 strategies: acupuncture, massage therapy, hypnosis, therapeutic touch and biofeedback.

METHODS: The databases MEDLINE (1966 to June 1997), CINAHL (1982 to June 1997) and PsychoINFO Lit (1980 to June 1997) were searched systematically for randomized controlled trials (RCTs) of the 5 nonpharmacologic strategies. The authors' personal files and reference lists of relevant papers and main texts were also searched. The quality of the trials was reviewed according to established criteria.



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**RESULTS:** The search yielded 1 RCT of acupuncture, 1 of massage therapy and 6 of hypnosis. The studies of hypnosis suggested that there is much support for its use in the management of cancer pain. The evidence was either lacking or less clear for the other therapies examined.

**CONCLUSION:** Because patients use a wide variety of nonpharmacologic strategies regardless of their effectiveness, clinicians need to be familiar with available research and able to discuss those strategies for which the evidence is strong, weak or nonexistent. More research on the effectiveness of nonpharmacologic strategies for pain management is needed. [References: 35]

Serewel A, Haggie JA, Cade D. **A randomised controlled trial of medroxyprogesterone acetate in mastalgia.** *Annals of the Royal College of Surgeons of England* 1990;72(4):273 Sharav Y, Tal M Masseter inhibitory periods and sensations evoked by electrical tooth-pulp stimulation in subjects under hypnotic anesthesia *Brain Res* 1989; 479(2): 247-54 Sensation and masseter inhibitory periods (MIP) to electrical tooth pulp stimulation were recorded under hypnotic anesthesia and placebo to local anesthesia. In the first experiment, 8 subjects were tested for the effect of hypnotic anesthesia on sensory detection and MIP at non painful stimulus levels ( $x = 42.1 \mu A$ ) and painful levels ( $x = 86.5 \mu A$ ). The percentage of detection for non-painful stimuli changed from 94.3% to 14.1% and for painful stimuli from 100% to 28%; both changes were significant ( $P < 0.001$ ). Hypnotic anesthesia blocked sensation without interrupting the initiation of the early component of the MIP, but did suppress its late component. In the second experiment, 8 subjects were tested for the perceived intensity of 5 levels of electrical tooth pulp stimulation under hypnotic anesthesia and placebo. Sensory intensity was measured by the visual analog scale (VAS). Hypnotic anesthesia was significantly more effective than placebo ( $P < 0.001$ ) in reducing sensation. The differential effect of hypnotic anesthesia on the early and late component of the MIP lends further support to the hypothesis that hypnotic anesthesia operates primarily at suprasegmental, higher levels in the brain.

Simon MJ, Salzberg HC **The effect of manipulated expectancies on posthypnotic amnesia.** *Int J Clin Exp Hypn.* 1985;33(1):40-51 The effects of manipulated S expectancy and direct suggestions for amnesia on posthypnotic amnesia were assessed. 120 undergraduate students were randomly assigned to 6 groups: negative expectancy (for amnesia)/suggestions (for amnesia); no expectancy/suggestions; negative expectancy/no suggestions; no expectancy/no suggestions; and 2 control groups. The results indicated that the expectancy manipulation had no effect on the occurrence of posthypnotic amnesia measured by the Stanford Hypnotic Susceptibility Scale, Form A (Weitzenhoffer & Hilgard, 1959), whereas suggestions for amnesia were found to have a significant effect. Hypnotized suggestion and no suggestion Ss remembered significantly less than Ss in the nonhypnotized control groups. The implications of the findings were discussed.

Sokel B, Kent CA, Lansdown R, Atherton D, Glover M, Knibbs J **A comparison of hypnotherapy and biofeedback in the treatment of childhood atopic eczema.** *Contemporary Hypnosis* 1993;10(3):145-54 44 children (aged 5-15 yrs) with atopic eczema took part in a controlled trial in which they were treated with hypnotherapy or encouraged to use a biofeedback device based on galvanic skin resistance (as relaxation techniques) to control their symptoms. A 3rd group discussed the problems of having eczema without being given specific suggestions to help reduce the symptoms. Complete data were available for 31 Subjects. The total amount of body surface affected by eczema was not altered in any of the groups. 20 wks

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after entry to the trial, Subjects in the 2 relaxation groups showed a significant reduction in the severity of surface damage and lichenification compared with the control group. Girls in the hypnotherapy group showed greater improvement than the girls in other groups and showed greater improvement than the boys in the hypnotherapy group.

Spanos NP. De Groh M. Structure of communication and reports of involuntariness by hypnotic and nonhypnotic subjects. *Perceptual & Motor Skills* 1983;57(3 Pt 2):1179-86 We hypothesized that phrasing a communication to move the arm as either a suggestion, a directive, or an instruction would differentially affect subjects' interpretations of the movement. 45 hypnotic and 45 nonhypnotic subjects who responded positively to a suggestion tended to describe the movement as involuntary both on open-ended questionnaires and later on an explicit involuntariness scale. Subjects given a directive to move the arm, or an instruction to reach for a pencil, rarely described their experience as involuntary on the open-ended questionnaires but sometimes rated it as involuntary on the scale. The ratings of involuntariness by subjects given suggestions seem likely to reflect interpretations made concurrently with the movement suggested. However, such ratings by subjects given directives or instructions are likely to reflect retrospective interpretations cued by the instrument used to assess subjects' experiences.

Spanos NP, de Groot HP, Tiller DK **Trance logic duality and hidden observer responding in hypnotic-imagination control, and simulating subjects: a social psychological analysis.** *Journal of Abnormal Psychology* 1985;94(4):611-23 Tested the hypothesis that a tolerance for logical incongruity characterizes hypnotic responding and is related to reports of duality experiences during age regression and hidden-observer responding during suggested analgesia. 30 undergraduates (the "reals") with high scores on a responsiveness-to-suggestion scale were randomly assigned to hypnotic or imagination control treatments, while 15 undergraduates with low scores were assigned to a simulation treatment in which they were instructed to fake hypnosis. Subjects were assessed on 6 indicators of logical incongruity, given age-regression suggestions and perception tasks, administered a suggestion for analgesia and hidden observer instructions, and interviewed. Results do not support the hypothesis. The differences in responding that did emerge between reals and simulators were accounted for by the different task demands to which Subjects were exposed. These behavioral differences, which have been previously interpreted in terms of intrinsic characteristics of hypnosis, may instead reflect a combination of between-treatments differences in demands and between-Subjects differences in the interpretation of those demands and in the ability to fulfill them.

Spanos NP. Gottlieb J. Rivers SM. **The effects of short-term meditation practice on hypnotic responsivity.** *Psychological Record* 1980;30(3):343-8. 81 male undergraduates were pretested on absorption and 3 measures of hypnotic responsiveness and were then randomly assigned to 1 of 3 conditions: meditation for 8 sessions, attendance at lectures on hypnosis for 8 sessions, and no treatment. Subjects were posttested on absorption, hypnotic responsivity, and Harvard Group Scale of Hypnotic Susceptibility, Form A, measures. Degree of meditating remained stable across sessions, and meditating Subjects were much more likely than those who listened to lectures to report intrusions into their attending. Neither the meditation nor the listening treatments enhanced hypnotic responsivity or absorption.

Spanos NP. McNeil C. Gwynn MI. Stam HJ. **Effects of suggestion and distraction on reported pain in subjects high and low on hypnotic susceptibility.** *Journal of Abnormal Psychology* 1984;93(3):277-84 84 18-30 yr old undergraduates high or low in hypnotic

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susceptibility (the Carleton University Responsiveness to Suggestion Scale) immersed an arm in ice water on 2 separate trials. Within susceptibility levels, Subjects were randomly assigned to 3 groups, with an equal number in each group. Between trials, Subjects in 1 group were administered a suggestion to imagine their hand as numb and insensitive, those in a 2nd group practiced a distraction task to be used during the 2nd trial (shadowing words), and those in a 3rd group (controls) received no special instructions. The suggestion significantly lowered rated pain in high but not in low susceptibles. Contrary to dissociation accounts of hypnotic susceptibility and suggested analgesia, low-susceptible shadowers showed as much reduction in rated pain as high susceptibles given suggestion. The social psychology of the experimental pain assessment situation is discussed.

Spanos NP, Mondoux TJ, Burgess CA **Comparison of multi-component hypnotic and non-hypnotic treatments for smoking.** Contemporary Hypnosis 1995;12(1):12-9 Cigarette smokers who volunteered to participate in a free smoking session programme were administered a two session multi-component hypnotic or non-hypnotic treatment, a two session psychological placebo treatment, or no treatment. All subjects monitored the number of cigarettes they smoked during the three month period. The hypnotic and non-hypnotic treatment produced a significant, but temporary reduction in smoking. Placebo and control subjects did not report significant changes in smoking.

Spanos NP. Saad CL. **Prism Adaptation in hypnotically limb-anesthetized subjects: more disconfirming data.** Perceptual & Motor Skills 1984;59(2):379-86 Two experiments assessed the effect of hypnotically suggested arm anesthesia on adaptation to displacing prisms. In Study 1, 30 highly susceptible subjects adapted to prisms by pointing at a visual target for 2 min. with their hypnotically anesthetized dominant arm. Suggestion and hypnosis were then "lifted," and subjects were randomly assigned to three groups: subjects in one group were asked to move the hand slowly during the posttest (slow motion); those in a second group were told that hypnotic anesthesia would enable them to overcome displacement aftereffects (hypothesis informed); the remaining subjects (controls) were given no special instructions. During posttesting, all groups showed a significant displacement aftereffect, with no differences occurring between groups. Study 2 followed the same procedure except that during adaptation the usual target was removed and subjects pointed towards a homogeneous backboard. 20 highly susceptible subjects were assigned to an hypothesis-informed or control group immediately before post-testing. All subjects showed a significant displacement aftereffect. Both studies provide further evidence that hypnotic suggestions do not influence automatic perceptual processes. The results of Exp. 2 contradict the suggestion that hypnotic limb anesthesia eliminates the displacement aftereffect when the target is removed during adaptation trials.

Spanos NP. Williams V. Gwynn MI. **Effects of hypnotic, placebo, and salicylic acid treatments on wart regression.** Psychosomatic Medicine 1990;52(1):109-14 Subjects with warts on their hands and/or feet were randomly assigned to a hypnotic suggestion, topical salicylic acid, placebo, or no treatment control condition. Subjects in the three treated groups developed equivalent expectations of treatment success. Nevertheless, at the six-week follow-up interval only the hypnotic subjects had lost significantly more warts than the no treatment controls. Theoretical implications are discussed.

Spiegel D. Albert LH. **Naloxone fails to reverse hypnotic alleviation of chronic pain.** Psychopharmacology 1983;81(2):140-3 The hypothesis that the alleviation of chronic pain with

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hypnosis is mediated by endorphins was tested. Six patients with chronic pain secondary to peripheral nerve irritation were taught to control the pain utilizing self-hypnosis. Each subject was tested at 5-min intervals during four 1-h sessions for the amount of reduction of pain sensation and suffering associated with hypnosis while being given, in a random double-blind crossover fashion, an IV injection of either 10 mg naloxone or a saline placebo through an indwelling catheter. The patients demonstrated significant alleviation of the pain with hypnosis, but this effect was not significantly diminished in the naloxone condition. These findings contradict the hypothesis that endorphins are involved in hypnotic analgesia. Spiegel D. Bloom JR. Group therapy and hypnosis reduce metastatic breast carcinoma pain. *Psychosomatic Medicine* 1983;45(4):333-9 The pain and mood disturbance of 54 women with metastatic carcinoma of the breast were studied over the course of one year. A random sample was offered weekly group therapy during the year, with or without self-hypnosis training directed toward enhancing their competence at mastering pain and stress related to cancer. Both treatment groups demonstrated significantly less self-rated pain sensation ( $t = 2.5$   $p$  less than 0.02) and suffering ( $t = 2.17$ ,  $p$  less than 0.03) than the control sample. Those who were offered the self-hypnosis training as well as group therapy fared best in controlling the pain sensation ( $F = 3.1$ ,  $p$  less than 0.05). Pain frequency and duration were not affected. Changes in pain measures were significantly correlated with changes in self-rated total mood disturbance on the Profile of Mood States and with its anxiety, depression, and fatigue subscales. Possible mechanisms for the effectiveness of these interventions are discussed.

Spiegel D. Bloom JR. Kraemer HC. Gottheil E. **Effect of psychosocial treatment on survival of patients with metastatic breast cancer.** *Lancet* 1989;2(8668):888-91 The effect of psychosocial intervention on time of survival of 86 patients with metastatic breast cancer was studied prospectively. The 1 year intervention consisted of weekly supportive group therapy with self-hypnosis for pain. Both the treatment ( $n = 50$ ) and control groups ( $n = 36$ ) had routine oncological care. At 10 year follow-up, only 3 of the patients were alive, and death records were obtained for the other 83. Survival from time of randomization and onset of intervention was a mean 36.6 (SD 37.6) months in the intervention group compared with 18.9 (10.8) months in the control group, a significant difference. Survival plots indicated that divergence in survival began at 20 months after entry, or 8 months after intervention ended.

Spinhoven P. Linssen AC. **Education and self-hypnosis in the management of low back pain: a component analysis.** *British Journal of Clinical Psychology* 1989;28 (Pt 2):145-53 The aim of this study was to conduct a component analysis of a group programme for chronic low back pain patients. Forty-five patients participated in the pain control course, consisting of education about pain and a training in self-hypnosis. A pain diary was used as a measure of pain intensity, up-time and use of pain medication. Psychoneuroticism and depression were assessed using the Symptom Checklist-90 (SCL-90). No evidence was found for a differential efficacy of education or self-hypnosis on pain diary and SCL-90 scores. On completion of the total treatment package, patients manifested statistically significant changes on all measures except reported pain intensity. It is suggested that the pain control course is a non-invasive, inexpensive means of treatment which could be of some value in teaching even more severely disabled low back pain patients to cope more adequately with their pain problem. For this group of patients, a better adjustment to continuing pain may prove to be a more realistic therapy goal than pain reduction.

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Staats P. Hekmat H. Staats A. **Suggestion/placebo effects on pain: negative as well as positive.** *Journal of Pain & Symptom Management* 1998;15(4):235-43. This study explores the effect of positive and negative placebo suggestions on pain induced by hand exposures to ice water. Thirty-six participants were randomly assigned to one of the following interventions: (a) positive placebo suggestion, (b) negative placebo suggestion, and (c) control. The positive placebo-suggestion participants were given favorable messages about the beneficial effects of ice-water hand immersion. The negative placebo-suggestion group was given messages depicting the negative effects of exposure to ice water. The control groups were given neutral messages about exposure to ice water. Participants rehearsed the messages and focused on them during their second hand exposures. Results indicate that both the positive and negative placebo-suggestion interventions significantly altered participants' pain threshold, pain tolerance, and pain endurance. Participants exposed to a positive placebo condition tolerated pain better than a neutral condition. Participants exposed to a negative placebo did not tolerate pain as well as participants with a neutral condition.

Stam HJ. McGrath PA. Brooke RI. **The effects of a cognitive-behavioral treatment program on temporo-mandibular pain and dysfunction syndrome.** *Psychosomatic Medicine* 1984;46(6):534-45 Sixty-one patients clearly diagnosed as suffering from Temporo-Mandibular Pain and Dysfunction Syndrome (TMPDS) were randomly assigned to one of three groups, 1) hypnosis and cognitive coping skills, 2) relaxation and cognitive coping skills, or 3) a no-treatment control group. All patients were evaluated with a standard hypnotic susceptibility scale before treatment. The two treatment groups received four weekly sessions of their respective treatments. Patients in the hypnosis and relaxation groups reported equivalent decrements in pain, abnormal sounds in the temporomandibular joint, and limitations of jaw mobility. Hypnotic susceptibility was significantly correlated with reductions in reported pain for the treatment groups. Patients' age and the duration of pain before treatment were not related to treatment outcome. Patients who dropped out of treatment had fewer limitations in jaw movement but did not differ in any other variable from patients who remained in treatment. These findings are discussed in relation to the hypothesis that Temporo-Mandibular Pain and Dysfunction Syndrome is stress-related muscular pain and dysfunction.

Stanton HE **A comparison of the effects of an hypnotic procedure and music on anxiety level.** *Australian Journal of Clinical & Experimental Hypnosis* 1984 Nov;12(2):127-32 A hypnotic procedure involving a relaxing induction, positive suggestion, and mental imagery was compared with music as a means of reducing anxiety level defined in terms of scores on the Willoughby Questionnaire. Sixty adults seeking help in handling their anxiety were divided, at random, into three groups, one experiencing three weekly half hour sessions of the hypnotic procedure, another listening to music for the same amount of time, and the third serving as a non treatment control. Results indicated that both experimental treatments reduced anxiety level with the hypnotic procedure being significantly more effective. A 6 months follow up confirmed this superiority.

Stanton HE **Overcoming fear of public speaking with the diagnostic trance.** *Australian Journal of Clinical & Experimental Hypnosis* 1991 May;19(1):41-7 24 male executives (aged 34-53 yrs) were matched on their fear of public speaking thermometer scores and allocated at random to either an experimental or a control group. Controls read articles describing how performance anxiety might be overcome, while the experimental Subjects had 2

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treatment sessions learning a diagnostic trance procedure. After the 1st stage of the study had been completed, controls experienced the same 2 treatment sessions as had the experimental group. Subjects in both the experimental group of the 1st stage and the control group of the 2nd stage were able to reduce their fear of public speaking level significantly through use of the diagnostic trance procedure. Three months later, this improvement had been maintained.

Stanton HE **Self-hypnosis: one path to reduced test anxiety.** Contemporary Hypnosis 1994;11(1):14-8 Examined the efficacy of a 5-step self-hypnosis technique in reducing test anxiety among 40 high school students (aged 12-15 yrs). Subjects were paired on the basis of sex and scores on the Test Anxiety Scale for Children (TASC), and were randomly allocated to experimental and control groups. Subjects in the experimental group learned the self-hypnosis technique in 2 50-min sessions, spaced 1 wk apart. The TASC was administered following the intervention period and once again 6 mo later. Results indicate a significant reduction of TASC scores in the experimental group, maintained over a 6-mo period, which was not matched by the control group.

Stanton HE. Is hypnotic induction really necessary?: **A study of ego-enhancing suggestions and their effects.** Psychotherapy Psychosomatics 1975;26(6):330-336. 60 university students in an experiment involving ego enhancement through the use of positive suggestion were randomly allocated to 3 groups. Group A experienced a hypnotic induction before hearing a series of ego-enhancing suggestions, Group B simply closed their eyes and listened, and the control group had no exposure to suggestions. All Subjects completed the Willoughby Questionnaire, the Assertiveness Scale (A. A. Lazarus, 1971), and 2 social interaction scales before and after the experiment which involved 4 20-min sessions over a period of 2 wks. Subjects of the 2 experimental groups experienced significant gains, as operationalized by inventory scores. Differences between these groups were apparent only on the social interaction scales, where Group A showed significantly greater improvement. Reasons for this are discussed, and implications for hypnotherapy outlined. Stanton HE. Reduction of performance anxiety in music students. Australian Psychologist 1994;29(2):124-127. Investigated the use of hypnotherapy for music students with stage fright. 40 2nd- and 3rd-yr students at a music conservatory were paired by their scores on the Performance Anxiety Inventory (PAI) by J. Nagle et al (1981). One member of each pair was randomly assigned to the experimental group (EG), and the other was placed in the control group (CG). The EG Subjects received 2 50-min treatment sessions (TSs) of hypnotic relaxation suggestions, 1 wk apart. The TSs included breathing induction, visual imagery (clouds and a lake), and verbal suggestions linking the images to increased mental control. The CG met for 2 50-min discussion sessions. The PAI was administered before and after the TSs and 6 mo later. A significant improvement in the EG PAI scores was noted after the TSs, but not in the CG scores. Follow-up scores showed a modest improvement by the CG and continued improvement by the EG.

Stanton HE. **Hypnosis and rational-emotive therapy--a de-stressing combination: a brief communication.** International Journal of Clinical & Experimental Hypnosis 1989;37(2):95-9 It has been suggested that teacher stress might be reduced through cognitive restructuring which is aimed at improving the rationality of their thinking. To test this hypothesis, 40 high school teachers were paired on their level of reasonable thinking, operationalized in terms of scores on the Teacher Idea Inventory (Bernard, Joyce, & Rosewarne, 1983), and allocated at random to one of 2 groups. They also completed the Face Valid Stress

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Test. The experimental group participated in 4 weekly treatment sessions involving a hypnotic induction and suggestions derived from key elements of Rational-Emotive Therapy. These focused on the reduction of what Ellis (Ellis & Grieger, 1977), the originator of this treatment, calls "irrational thinking." The control group spent the same amount of time discussing stress reduction methods. Both the Face Valid Stress Test and the Teacher Idea Inventory were re-administered at the end of this period and again 12 months after conclusion of the experiment. Results indicated that both the experimental and control groups significantly reduced their levels of irrational thinking and stress, although the former's improvement was more marked, particularly at the 12-month follow-up. Stanton HE. Hypnotic relaxation and the reduction of sleep onset insomnia. *International Journal of Psychosomatics* 1989;36(1-4):64-8 In the present study, a hypnotic relaxation technique was compared to stimulus control and placebo conditions as a means of reducing sleep onset latency (SOL). Forty-five subjects (Ss) were matched on their baseline SOL as measured through sleep diaries. They were randomly assigned to one of three groups: hypnotic relaxation; stimulus control; and placebo. These groups experienced four weekly sessions of 30-minutes duration with demand effects being controlled through the use of counter-demand instructions. Data generated by the study suggested that the particular hypnotic relaxation treatment used was effective in helping Ss go to sleep more quickly. Neither stimulus control nor placebo groups recorded similar improvement.

Stanton HE. **Gurdjieff and ego-enhancement: a powerful alliance.** *American Journal of Clinical Hypnosis* 1997;40(1):376-84 24 housewives wishing to take more control over their lives were matched on their Control of Life Thermometer scores, one member of each pair being randomly allocated to either an Experimental or a Control group. While this latter group read material on how they might achieve the increased control they desired, the Experimental group had two 50-minute sessions during which they learned how to embed suggestions derived from the work of Gurdjieff into a framework designed to maximize their acceptance. The Control of Life Thermometer was administered on two further occasions, one immediately after completion of the second training session and one as a follow-up six months later. After completion of this first stage of the study, Control group housewives experienced the same two treatment sessions as had the Experimental group. Results indicated that control of life, as operationally defined by the Thermometer, was significantly greater both immediately after treatment and at the six month follow-up. Stern GS. Miller CR. Ewy HW. Grant PS. Perceived control: bogus pulse rate feedback and reported symptom reduction for individuals with accumulated stressful life events. *Biofeedback & Self Regulation* 1980;5(1):37-49 The present investigation tested the hypothesis that perceived control reduces reported symptom incidence for individuals with stressful life events. Subjects (undergraduate psychology students from an urban university) were divided into two groups, high and low in stress, based on their life change unit scores as measured by the Schedule of Recent Events (Holmes & Rahe, 1967).

Subjects participated in a study in which they attempted to reduce pulse rate (PR) and were informed of their successes (i.e., PR reductions) through bogus feedback. High and low stress subjects were assigned randomly to one of the following conditions: bogus ascending success feedback (AS), wherein successes were concentrated more in the later stage of a PR reduction period; bogus equally distributed success feedback (EDS), wherein successes were equally distributed in the early and later stages of a PR reduction period; or no feedback (NF). The study consisted of three sessions held on 3 consecutive days. Each session consisted of a 3-

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minute baseline (nonfeedback) period followed by a 10-minute PR reduction period. Self-reports on 13 symptom items were measured 2 weeks before the study (pretest), after the final session of the study (posttest), and 3 weeks after the study (follow-up).

Results indicated that on 5 of the 13 symptom items, the AS condition produced a significant reduction in reported symptom incidence for high-stress subjects only, and this effect was maintained for 3 weeks after the experiment. Results are discussed in terms of the effect perceived control may have on perceptions of physical health. Suggestions are made regarding the use of biofeedback treatment as a method by which perceptions of symptom distress may be reduced for individuals exposed to cumulative stressful experiences.

Stradling J. Roberts D. Wilson A. Lovelock F. **Controlled trial of hypnotherapy for weight loss in patients with obstructive sleep apnoea.** International Journal of Obesity & Related Metabolic Disorders 1998;22(3):278-81 **OBJECTIVE:** To assess if hypnotherapy assists attempts at weight loss. **DESIGN:** Randomised, controlled, parallel study of two forms of hypnotherapy (directed at stress reduction or energy intake reduction), vs dietary advice alone in 60 obese patients with obstructive sleep apnoea on nasal continuous positive airway pressure treatment. **SE**

**SETTING:** National Health Service hospital in the UK.

**MEASURES:** Weight lost at 1, 3, 6, 9, 12, 15 and 18 months after dietary advice and hypnotherapy, as a percentage of original body weight.

**RESULTS:** All three groups lost 2-3% of their body weight at three months. At 18 months only the hypnotherapy group (with stress reduction) still showed a significant ( $P < 0.02$ ), but small (3.8 kg), mean weight loss compared to baseline. Analysed over the whole time period the hypnotherapy group with stress reduction achieved significantly more weight loss than the other two treatment arms ( $P < 0.003$ ), which were not significantly different from each other.

**CONCLUSIONS:** This controlled trial on the use of hypnotherapy, as an adjunct to dietary advice in producing weight loss, has produced a statistically significant result in favor of hypnotherapy. However, the benefits were small and clinically insignificant. More intensive hypnotherapy might of course have been more successful, and perhaps the results of the trial are sufficiently encouraging to pursue this approach further.

Sullivan DS. Johnson A. Bratkovitch J. **Reduction of behavioral deficit in organic brain damage by use of hypnosis.** Journal of Clinical Psychology 1974;30(1):96-8 Assessed the effects of "catastrophic anxiety" on the functioning of organically brain-damaged 15-35 yr olds. Subjects were randomly assigned to either a control group, a relaxation group, or a hypnosis group. All Subjects were pre- and posttested on the Bender-Gestalt Test and the WAIS Picture Completion subtest. On the WAIS, the hypnosis group performed significantly better than the other 2 groups. On the Bender-Gestalt, there were similar differences between groups when those Subjects who were less susceptible to hypnosis were not included in the analysis. There was a highly significant correlation between hypnotic susceptibility and improvement on the dependent measures.

Syrjala KL, Cummings C, Donaldson GW **Hypnosis or cognitive behavioral training for the reduction of pain and nausea during cancer treatment: a controlled clinical trial.** Pain 1992; 48(2): 137-46 Few controlled clinical trials have tested the efficacy of psychological techniques for reducing cancer pain or post-chemotherapy nausea and emesis. In this study, 67 bone marrow transplant patients with hematological malignancies were randomly assigned to



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one of four groups prior to beginning transplantation conditioning: (1) hypnosis training (HYP); (2) cognitive behavioral coping skills training (CB); (3) therapist contact control (TC); or (4) treatment as usual (TAU; no treatment control). Patients completed measures of physical functioning (Sickness Impact Profile; SIP) and psychological functioning (Brief Symptom Inventory; BSI), which were used as covariates in the analyses. Biodemographic variables included gender, age and a risk variable based on diagnosis and number of remissions or relapses. Patients in the HYP, CB and TC groups met with a clinical psychologist for two pre-transplant training sessions and ten in-hospital "booster" sessions during the course of transplantation. Forty-five patients completed the study and provided all covariate data, and 80% of the time series outcome data. Analyses of the principal study variables indicated that hypnosis was effective in reducing reported oral pain for patients undergoing marrow transplantation. Risk, SIP, and BSI pre-transplant were found to be effective predictors of inpatient physical symptoms. Nausea, emesis and opioid use did not differ significantly between the treatment groups. The cognitive behavioral intervention, as applied in this study, was not effective in reducing the symptoms measured.

Talone JM, Diamond MJ, Steadman C. **Modifying hypnotic performance by means of brief sensory experiences.** *International Journal of Clinical & Experimental Hypnosis* 1975;23(3):190-199. Examined the extent to which hypnotic performance could be modified by means of 2 types of prehypnosis sensory experiences: (a) auditory stimulation in the form of recorded music and (b) a variant of sensory restriction in the form of a short period of silence with eyes closed. 39 university students were administered the Harvard Group Scale of Hypnotic Susceptibility, Form A, as a baseline test of susceptibility and were then randomly assigned to 1 of 3 conditions. Subjects in the music and silence groups were exposed to 10 min of either recorded music or silence prior to completing an adaptation of the tape recorded posttest version of the Stanford Scale of Hypnotic Susceptibility, Form C. Control-group Subjects were exposed only to the hypnotic test scale. All Subjects reported their experienced hypnotic sensations. Music- and silence-group Subjects completed a self-report scale assessing the role played by relaxation and receptive perception in the manipulation. Although the results were not consistent, both music and silence were significantly effective in increasing responsivity in comparison with practice only. Findings are discussed with reference to possible mediating mechanisms, and implications of these findings with regard to modifying hypnotic ability, along with the need for replication studies, are considered.

Tamalons AM, Mitchell J **An empirical comparison of Ericksonian and traditional hypnotic procedures.** *Aust J Clin Hypnother Hypn* 1997 Mar;18(1):5-16 Researchers have investigated the effect of direct and indirect hypnotic procedures upon performance of various tasks. None, however, had used thoroughly stringent controls nor examined the effect of these procedures upon improving memory of visual stimuli. This study compares these procedures with a memory task using 80 high to low susceptible female subjects randomly assigned to 4 experimental groups. Taped traditional hypnosis (TH); taped Ericksonian hypnosis (EH); Ericksonian hypnosis presented by an experimenter (LEH) and control group (CG). The visual data recalled was significantly greater in the EH and LEH than that of the TH and CG groups. These results are discussed in terms of how a conversational induction with an indirect suggestion phase which accessed prior unconsciousness associations contributes to the power of

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the Ericksonian technique. Directions for further research and implications for more effective hypnosis are discussed.

Taylor DN. **Effects of a behavioral stress-management program on anxiety, mood, self-esteem, and T-cell count in HIV positive men.** *Psychological Reports*. 1995;76(2):451-7  
This study evaluated the effects of a behavioral stress-management program on anxiety, mood, self-esteem, and T-cell count in a group of HIV-positive men who were asymptomatic except for T-cell counts below 400. The program consisted of 20 biweekly sessions of progressive muscle relaxation and electromyograph biofeedback-assisted relaxation training, meditation, and hypnosis. Ten subjects were randomly assigned to either a treatment group or a no-treatment control group, and the 2 groups were compared on pre- to posttreatment changes in the dependent measures. Analysis showed that, compared with the no-treatment group, the treatment group showed significant improvement on all the dependent measures, which was maintained at a 1-mo. follow-up. Since stress is known to compromise the immune system, these results suggest that stress management to reduce arousal of the nervous system and anxiety would be an appropriate component of a treatment regimen for HIV infection.

Tebecis AK. Provins KA. **Further studies of physiological concomitants of hypnosis: skin temperature, heart rate and skin resistance.** *Biological Psychology* 1976;4(4):249-58  
Forehead skin temperature, heart rate and palmar skin resistance were recorded during passive hypnosis and compared with corresponding data obtained during the resting awake condition in a group of highly hypnotizable subjects experienced in self-hypnosis. Similar physiological measures were also monitored during experimental periods when subjects were experiencing suggested environmental conditions of cold and heat in hypnosis as compared with imagining the stress conditions. The data from these subjects were also compared with those obtained from a randomly selected group of people who were low in waking suggestibility and had never been hypnotized. The results indicate that the differences in mean physiological parameters were greatest between the two subject groups, although some notable differences were also apparent between hypnosis and the awake condition within the experimental group.

Kuile MM. Spinhoven P. Linssen AC. van Houwelingen HC. **Cognitive coping and appraisal processes in the treatment of chronic headaches.** *Pain* 1996;64(2):257-64  
The purpose of the present study was to investigate the active cognitive ingredients of change in psychological treatments for long-term chronic headache complaints. The primary questions this study addressed were: (1) Is a cognitive self-hypnosis training which explicitly attempts to change appraisal and cognitive coping processes more effective in producing these changes than a relaxation procedure, and (2) are changes in pain appraisal and cognitive coping related to changes in pain and adjustment in the short and long term? A total of 144 patients were assigned at random to a cognitive self-hypnosis (CSH) treatment or autogenic training (AT) with a duration of 7 weeks. Measures used were: Headache Index (HI), Symptom Checklist-90 (SCL-90), Coping Strategy Questionnaire (CSQ), Multidimensional Locus of Pain Control Questionnaire (MLPC) and treatment expectations. The results indicated that patients successfully changed their use of coping strategies and pain appraisals. Cognitive therapy was more effective than relaxation training in changing the use of cognitive coping strategies which were the direct targets of treatment. However, treatment effects were only related with changes in the use of coping strategies and appraisal processes to a limited extent and the mediational role of cognitive processes in pain reduction and better adjustment was inconclusive.

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Kuile MM. Spinhoven P. Linssen AC. Zitman FG. Van Dyck R. Rooijmans HG. **Autogenic training and cognitive self-hypnosis for the treatment of recurrent headaches in three different subject groups.** *Pain.* 1994;58(3):331-40 The aims of this study were to (a) investigate the efficacy of autogenic training (AT) and cognitive self-hypnosis training (CSH) for the treatment of chronic headaches in comparison with a waiting-list control (WLC) condition, (b) investigate the influence of subject recruitment on treatment outcome and (c) explore whether the level of hypnotizability is related to therapy outcome. Three different subjects groups (group 1, patients (n = 58) who were referred by a neurological outpatient clinic; group 2, members (n = 48) of the community who responded to an advertisement in a newspaper; and group 3, students (n = 40) who responded to an advertisement in a university newspaper) were allocated at random to a therapy or WLC condition. During treatment, there was a significant reduction in the Headache Index scores of the subjects in contrast with the controls. At post-treatment and follow-up almost no significant differences were observed between the 2 treatment conditions or the 3 referral sources regarding the Headache Index, psychological distress (SCL-90) scores and medication use. Follow-up measurements indicated that therapeutic improvement was maintained. In both treatment conditions, the high-hypnotizable subjects achieved a greater reduction in headache pain at post-treatment and follow-up than did the low-hypnotizable subjects. It is concluded that a relatively simple and highly structured relaxation technique for the treatment of chronic headache subjects may be preferable to more complex cognitive hypnotherapeutic procedures, irrespective of the source of recruitment. The level of hypnotic susceptibility seems to be a subject characteristic which is associated with a more favorable outcome in subjects treated with AT or CSH.

Thorne DE. **Amnesia and hypnosis.** *International Journal of Clinical & Experimental Hypnosis* 1969;17(4):225-241. Explored the relative effects of 2 factors on short-term memory for a paired-associate learning task. 36 undergraduate and graduate paid volunteers were stratified, according to their Harvard Group Scale of Hypnotic Susceptibility, Form A scores, into 3 groups of 12 Subjects each. The Subjects within each of the 3 groups were then evenly but randomly assigned to 3 treatment conditions, which differed in terms of the kind of motivational procedure in which suggestions of amnesia for a recently learned paired-associate task were given. Results did not directly support or were sometimes contrary to predictions derived from popular hypnosis theories, which assert that posthypnotic amnesia is a reliable behavioral criterion for the "hypnotic state." (Spanish & German summaries)

Thorne DE. **Is the hypnotic trance necessary for performance of hypnotic phenomena?** *Journal of Abnormal Psychology* 1967;72(3):233-9 The performance of 2 so-called hypnotic phenomena (selective awareness and auditory hallucinations) were compared between highly susceptible subjects in the waking or hypnotic states. 40 subjects (from an original 148 paid, volunteer, university students) were trained in deep hypnosis and subsequently assigned randomly to 4 groups of 10 subjects each. Each group was tested on its performance of the 2 "hypnotic phenomena" while experiencing 1 of 4 combinations of 2 variables, namely, the waking or hypnotized state of each subject, and the suggestion to hallucinate during or after exposure to a paired-associate word list given audibly to each s. Quantitative and qualitative changes in subject responses to 2 separate administrations of a word-association test were used as an index of each subject's level of awareness to the paired-associate word list, and his objective and subjective effectiveness in auditory hallucinations.

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Results indicate no differences attributable to state, but significant differences attributable to the suggested time of hallucinating.

Thorne DE. Hall HV. **Hypnotic amnesia revisited.** *International Journal of Clinical & Experimental Hypnosis* 1974;22(2):7-178. Randomly assigned 60 high- and 60 low-susceptible undergraduates (12 groups of 10 Subjects each) to 6 experimental procedures which differed in terms of the type of amnesia suggestions given (i.e., permissively or authoritatively worded amnesia suggestions) and the kind of motivation accompanying the amnesia suggestions (i.e., hypnotic motivation, waking motivation, and waking nonmotivation). High susceptible Subjects performed more effectively in the direction of the amnesia suggestions, but these suggestions were not totally effective for any of the 12 groups. There were no differences in response either to permissively or authoritatively worded amnesia suggestions or to hypnotic or waking procedures, but there were differences in response to task-motivating and non-task-motivating procedures (task-motivated Subjects were ostensibly more amnesic). (German, French, & Spanish summaries)

Timm HW. **Effect of posthypnotic suggestions on the accuracy of preemployment polygraph testing.** *Journal of Forensic Sciences* 1991;36(5):1521-1535. Examined the efficacy of both a posthypnotic (PTH) polygraph countermeasure suggestion and a PTH ideomotor lie detection suggestion within an analog preemployment screening context. 45 Subjects (aged 18-37 yrs) were randomly assigned to 1 of 3 equal-sized groups, controlling for their performance on the Harvard Group Scale of Hypnotic Susceptibility, Form A. Subjects assigned to one of the groups received the PTH suggestion that the Subject's index finger would rise whenever he or she lied during the polygraph test; Subjects in another group were given a PTH countermeasure designed to help them appear innocent whenever they lied; and those in the 3rd group were not given either hypnotic intervention. None of the Subjects given the ideomotor suggestion raised his or her finger when he or she lied during the polygraph test. The countermeasure suggestion also was ineffective, as was demonstrated by its failure to produce significantly more false negative responses.

Trussell JE. Kurtz RM. Strube MJ. **Durability of posthypnotic suggestions: type of suggestion and difficulty level.** *American Journal of Clinical Hypnosis*. 1996;39(1):37-47 This study investigated the impact of Difficulty Level and Type of Suggestion upon the durability of posthypnotic suggestion over an 8-week period. Seventy-eight highly susceptible subjects selected by both the Harvard Group Scale of Hypnotic Susceptibility: Form A (HGS: A) and Stanford Hypnotic Scale of Susceptibility: Form C (SHSS: C) were assigned to six groups (two levels of Difficulty x three Types of Suggestion). S's were tested for posthypnotic suggestion at 1, 3, 6, and 8 weeks. A 2 x 3 x 4 (Difficulty x Suggestion x Time) factorial ANOVA was conducted, with Time treated as a repeated-measure. The outcome variable at each time was either pass or fail for relevant suggestion. We found a significant Time effect, a significant Difficulty effect, and a significant Time x Difficulty interaction. Fewer subjects passed the difficult suggestions than passed the easy suggestions; fewer passed suggestions at a latter time; and the decay in pass rate was more pronounced for the easy suggestion condition, due largely to the higher initial pass rate. Type of Suggestion was not significant, nor were any of the other interactions. Clinical implications were discussed.

Turtz JS **The effects of stress management training on stress level, death anxiety for persons with type II diabetes mellitus.** *Dissertation Abstracts International*, 1986;47(3):1289,

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University of Southern California This study examined the effects of stress management training on stress level, general anxiety, diabetic control, mental health, and death anxiety for persons with Type II diabetes. This study also sought to determine the relationships among the dependent variables. The 21 subjects who completed the study were female Type II diabetics ranging in age from 51.94 years to 77.50 years. All were volunteers, and all were obtained from a physician's private practice in the Century City area of Los Angeles. The subjects were randomly assigned to either the experimental group (n=10) or the waiting list control group (n=11). The treatment given to the members of the experimental group consisted of an 8-week stress management course that included instruction in diaphragmatic breathing, progressive muscle relaxation, a Hatha Yoga technique, Autogenics, and self-hypnosis. Level of stress was measured by the Hassles Scale; general anxiety was measured by the State-Trait Anxiety Inventory; diabetic control was measured by the glycosylated hemoglobin test, a test of long-term blood sugar control; mental health was measured by the Mental Health Inventory; death anxiety was measured by the Templer-McMordie Scale. All subjects were pretested before the treatment and posttested after the treatment. The ANCOVA procedure was used to test for the treatment effects on the dependent variables. Pearson Product-Moment Correlation Coefficients were used to test for the relationships among the dependent variables at the time of pretesting. The level of significance for all statistical analyses was set at  $p = \text{less than } 0.05$ . The findings indicated that the only dependent variable that was significantly affected by the treatment was state anxiety. Although no significant increase in diabetic control was found, a trend toward lowered glycosylated hemoglobin values in the experimental group was observed. Significant correlations among the dependent variables at the time of pretesting occurred between stress level and general anxiety, stress level and diabetic control, state anxiety and diabetic control, frequency of hassles and mental health, and general anxiety and mental health.

Valbo A. Eide T. **Smoking cessation in pregnancy: the effect of hypnosis in a randomized study.** Addictive Behaviors. 1996;21(1):29-35 At Buskerud Central Hospital in Norway, a county hospital with 2000 deliveries per year, an intervention study, using hypnosis, aimed at smoking cessation and reduction among pregnant women still smoking around 18th week of pregnancy was carried out during the period 1992-1993. Two sessions (each lasting 45 minutes) using conventional induction into a superficial nonsomnambulistic stage of trance were performed. A tape was played, encouraging the pregnant woman's wish to quit smoking and her capacity to do so. Relaxation techniques together with self-hypnotic methods were introduced to combat craving. Changes in smoking pattern were investigated at delivery time. No significant effect on smoking cessation or smoking reduction was obtained ( $p > 0.05$ ). We recorded a 10% quit rate in both intervention group and control group, and 42% and 31% reduced their smoking in the intervention group and control group, respectively. van der Laan WH. van Leeuwen BL. Sebel PS. Winograd E. Baumann P. Bonke B. Therapeutic suggestion has no effect on postoperative morphine requirements. Anesthesia & Analgesia. 1996;82(1):148-52 This study was designed to confirm the effect of therapeutic intraoperative auditory suggestion on recovery from anesthesia, to establish the effect of preoperative suggestion, and to assess implicit memory for intraoperative information using an indirect memory task. Sixty consenting unpremedicated patients scheduled for elective gynecologic surgery were randomly divided into three equal groups: Group 1 received a tape of therapeutic suggestions preoperatively, and the story of Robinson Crusoe intraoperatively; Group 2 heard the story of Peter Pan preoperatively

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and therapeutic suggestions intraoperatively; Group 3 heard the Crusoe story preoperatively and the Peter Pan story intraoperatively. A standardized anesthetic technique was used with fentanyl, propofol, isoflurane, and nitrous oxide. After surgery, all patients received patient-controlled analgesia (PCA) with a standardized regimen. In the 24 h postsurgery, morphine use was recorded every 6 h and at 24 h an indirect memory test (free association) was used to test for memory of the stories. Anxiety scores were measured before surgery and at 6 and 24 h postsurgery. There were no significant differences between groups for postoperative morphine use, pain or nausea scores, anxiety scores, or days spent in hospital after surgery. Seven of 20 patients who heard the Pan story intraoperative gave a positive association with the word "Hook," whereas 2 of 20 who did not hear the story gave such an association. Indirect memory for the Pan story was established using confidence interval (CI) analysis. (The 95% CI for difference in proportion did not include zero). No indirect memory for the Crusoe story could be demonstrated. This study did not confirm previous work which suggested that positive therapeutic auditory suggestions, played intraoperatively, reduced PCA morphine requirements. In contrast, a positive implicit memory effect was found for a story presented intraoperatively.

Van Dyck R. Spinhoven P. **Depersonalization and derealization during panic and hypnosis in low and highly hypnotizable agoraphobics.** *International Journal of Clinical & Experimental Hypnosis*. 1997;45(1):41-54 The primary aim of the present study was to investigate the association between spontaneous experiences of depersonalization or derealization (D-D) during panic states and hypnosis in low and highly hypnotizable phobic individuals. Secondly, the association among level of hypnotizability, capacity for imaginative involvement, and severity of phobic complaints was also assessed. S 1987;ixty-four patients with panic disorder with agoraphobia according to the DSM-III-R (American Psychiatric Association, Proneness to experience D-D during hypnosis was positively related to hypnotizability, but only for agoraphobic patients who had already experienced these perceptual distortions during panic episodes. Correlations of level of hypnotizability and capacity for imaginative involvement with severity of agoraphobic complaints were not significant. These findings suggest that hypnotizability may be a mediating variable between two different, although phenotypically similar, perceptual distortions experienced during panic states and hypnosis. Implications for both theory and clinical practice are discussed. Van Dyck R. Spinhoven P. Does preference for type of treatment matter? A study of exposure in vivo with or without hypnosis in the treatment of panic disorder with agoraphobia. *Behavior Modification* 1997;21(2):172-86 There is evidence that preference for a given therapy may influence results. Literature also suggests that hypnotizability may be elevated in agoraphobic patients, making hypnosis a potentially powerful method for treatment. Agoraphobic patients (N = 64) were treated with either exposure in vivo or exposure combined with hypnosis in a crossover design. Half of the patients started with the treatment they preferred and the other half received the other treatment first. Although patients' preference clearly shifted in favor of the combined therapy in the course of the study, no effect of preference on outcome was evident. Although hypnotizability clearly correlated to outcome in the combined therapy, no difference in effect between the two therapies was found on behavioral, self-report, and observer measures. No additional effect of hypnosis could be shown and preference was not found to be a powerful mediator of effect.

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VanDyck R. Zitman FG. Linssen AC. Spinhoven P. **Autogenic training and future oriented hypnotic imagery in the treatment of tension headache: outcome and process.** *International Journal of Clinical & Experimental Hypnosis* 1991;39(1):6-23 The aim of the present study was (a) to investigate the relative efficacy of autogenic training and future oriented hypnotic imagery in the treatment of tension headache and (b) to explore the extent to which therapy factors such as relaxation, imagery skills, and hypnotizability mediate therapy outcome. Patients were randomly assigned to the 2 therapy conditions and therapists. 55 patients (28 in the autogenic therapy condition and 27 in the future oriented hypnotic imagery condition) completed the 4 therapy sessions and 2 assessment sessions. No significant main effect or interaction effects for treatment condition or therapist was revealed. A significant effect for time in analyzing scores for headache pain, pain medication usage, depression, and state anxiety was found. In the self-hypnosis condition, pain reduction proved to be associated with depth of relaxation during home practice (as assessed with diaries) and capacity to involve in imagery (as assessed with the Dutch version [van der Velden & Spinhoven, 1984] of the Creative Imagination Scale [Barber & Wilson, 1978/79; Wilson & Barber, 1978]). After statistically controlling for relaxation and imagery, hypnotizability scores (as assessed with the Dutch version [Oyen & Spinhoven, 1983] of the Stanford Hypnotic Clinical Scale [Morgan & J.R. Hilgard, 1975, 1978/79]) were significantly correlated with ratings of pain reduction. Results are discussed in the context of the neo-dissociation and social-cognitive model of hypnoanalgesia. The clinical relevance and the methodological shortcomings of the present study are also critically assessed. Velten E= Jr. A laboratory task for induction of mood states. *Behavior Research & Therapy* 1968;6(4):473-82 Administered to 100 female college students the Harvard Group Scale of Hypnotic Susceptibility, Form A, to provide a measure of primary suggestibility. In a 2nd hr., each Subject was randomly assigned to 1 of 5 individual treatments of 20 Subjects each. 1 group read and concentrated upon 60 self-referent statements intended to be elating; a 2nd group read 60 statements intended to be depressing. A 3rd group read 60 statements which were neither self-referent nor pertaining to mood. This group controlled for the effects of reading and experimental participation per se. 4th and 5th groups received demand characteristics control treatments designed to produce simulated elation and simulated depression, respectively. 2 measures of pretreatment mood level were obtained from each Subject at the beginning of her individual treatment. Following treatment, as criteria for elation and depression, seven behavioral task measures were obtained. 4 of these distinguished significantly among the treatment groups. The comparative performance of Subjects in the 3 control groups indicated that the obtained mood changes could not be attributed to artifactual effects. Moreover, postexperimental questionnaire data strongly supported the conclusion that Elation and Depression treatments had indeed respectively induced elation and depression.

Vingoe FJ, Hobro N, Milner-Whitaker I **Response to a modified hypnosis experience questionnaire (HEQ-44) following alert and relaxation hypnotic procedures.** *Contemporary Hypnosis* 1993;10(3):159-65 40 patients were randomly assigned in a counterbalanced design to 2 recorded hypnotic inductions (alert-relaxation or relaxation-alert). Following each induction, Subjects were required to complete a modified version of the Hypnosis Experience Questionnaire, which included an Alert subscale. Subjects also rated which procedure was best for them in terms of focusing on pleasant experience. Differences were found only on the Relaxation subscale in favor of the relaxation procedure. While no difference between

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procedures was found on the Alert subscale, because 13 of 40 Subjects selected the alert procedure as being best for them as a component of treatment, further research with alerting procedures is suggested.

Voss H. Meyer H. **Relationships between trait and state measures of anxiety and curiosity under conditions of self-appraised risk.** *Psychologische Beitrage* 1981;23(1):97-114. 96 college students (50% males) were randomly assigned to 1 of 4 conditions (control, hypnosis, shock, or drug). State and trait measures of curiosity and anxiety were administered. Results showed medium negative correlations between both state and trait measures. Measures of both curiosity and anxiety were positively intercorrelated, whereas correlation coefficients between the 2 types of measures were low. Results are seen as a partial confirmation that increasing stress over situations is related to increasing anxiety state (linear trend) and to an increase followed by a decrease or to a decrease in state curiosity. The modulating effects of cognitive processes, leading to reappraisal of the given situation and therefore mediating between states and overt behavior, are discussed. (French abstract) Wagstaff GF, Mercer K Does hypnosis facilitate memory for deep processed stimuli *Contemporary Hypnosis* 1993;10(2):59-66 Evidence previously presented by I. W. Shields and V. J. Knox (see PA, Vol 74:12488) suggests that hypnosis can facilitate recall and recognition memory for target words deep processed in terms of the levels of processing theory of F. I. Craik and R. S. Lockhart (1972). No facilitation effect is indicated, however, for shallow processed words. The present study attempted to replicate this finding, using 20 undergraduates in the hypnotic condition and 2 nonhypnotic control groups (10 undergraduates each) who were unaware they were participating in a hypnosis experiment. The findings of the present study failed to confirm those of Shields and Knox. The untreated control group recalled fewer shallow processed words than the other hypnotic and waking conditions and produced fewer intrusions than the relaxed/motivated waking group. It is concluded that Shields and Knox's findings may have resulted from underperformance by their waking control groups.

Wagstaff GF, Royce C **Hypnosis and the treatment of nail biting: a preliminary trial.** *Contemporary Hypnosis* 1994;11(1):9-13 Examined the efficacy of hypnotherapeutic suggestions alone or preceded by hypnotic induction in the treatment of nail biting. The influences of motivation to improve, belief in effectiveness of treatment, and level of imaginative involvement were also examined. Subjects were 17 undergraduates (aged 19-22 yrs). Results indicate that only suggestions preceded by hypnotic induction resulted in symptom improvement. Belief in efficacy predicted treatment success better than motivation, hypnotic induction, or scores on the Creative Imagination Scale. Within the group receiving hypnotic induction, hypnotic depth scores significantly correlated with treatment success.

Wall VJ. Womack W. **Hypnotic versus active cognitive strategies for alleviation of procedural distress in pediatric oncology patients.** *American Journal of Clinical Hypnosis* 1989;31(3):181-91 This study provided a differential comparison of the efficacy of standardized instruction in hypnosis or active cognitive strategy for provision of relief from procedurally induced pain and anxiety. Subjects were instructed to self-direct in the use of strategies during medical procedures. Twenty pediatric oncology patients participated in the study. They were not informed that hypnosis was one of the strategies. Subjects were screened for hypnotizability and randomly assigned to treatments. Demographic data were collected. Pre-strategy training observations were made during a Bone Marrow Aspiration or Lumbar Puncture (BMA/LP)



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using visual analog scales, the McGill Pain Questionnaire, State-Trait Anxiety Inventory, pulse and temperature readings, and interview. Following strategy training, data were collected during a second BMA/LP using the same measures as employed pre-intervention. Results indicated that both strategies were effective in providing pain reduction. Neither technique provided for anxiety reduction. Hypnotizability scale scores failed to correlate with degree of pain reduction.

Whitehouse WG. Dinges DF. Orne EC. Keller SE. Bates BL. Bauer NK. Morahan P. Haupt BA. Carlin MM. Bloom PB. Zaugg L. Orne MT. **Psychosocial and immune effects of self-hypnosis training for stress management throughout the first semester of medical school.** *Psychosomatic Medicine*. 1996;58(3):249-63 This study was a 19-week prospective conducted to determine the effectiveness of a self-hypnosis/relaxation intervention to relieve symptoms of psychological distress and moderate immune system reactivity to examination stress in 35 first-year medical students. Twenty-one subjects were randomly selected for training in the use of self-hypnosis as a coping skill and were encouraged to practice regularly and to maintain daily diary records related to mood, sleep, physical symptoms, and frequency of relaxation practice. An additional 14 subjects received no explicit training in stress-reduction strategies, but completed similar daily diaries. Self-report psychosocial and symptom measures, as well as blood draws, were obtained at four time points: orientation, late semester, examination period, and postsemester recovery. It was found that significant increases in stress and fatigue occurred during the examination period, paralleled by increases in counts of B lymphocytes and activated T lymphocytes, PHA-induced and PWM-induced blastogenesis, and natural killer cell (NK) cytotoxicity. No immune decreases were observed. Subjects in the self-hypnosis condition reported significantly less distress and anxiety than their nonintervention counterparts, but the two groups did not differ with respect to immune function. Nevertheless, within the self-hypnosis group, the quality of the exercises (ie, relaxation ratings) predicted both the number of NK cells and NK activity. It was concluded that stress associated with academic demands affects immune function, but immune suppression is not inevitable. Practice of self-hypnosis reduces distress, without differential immune effects. However, individual responses to the self-hypnosis intervention appear to predict immune outcomes.

Whitehouse WG. Dinges DF. Orne EC. Orne MT. **Hypnotic hypermnesia: enhanced memory accessibility or report bias?** *Journal of Abnormal Psychology* 1988;97(3):289-95 Laboratory studies of hypnotic hypermnesia have yielded inconsistent evidence of memory enhancement, and the process responsible for the occasional positive findings have eluded identification. The present experiment assessed delayed recall for filmed material under conditions in which subjects were required to answer all questions, by guessing if necessary. They also rated confidence in the accuracy of each response. After an initial wake-baseline forced-recall test, subjects were randomly assigned to hypnosis or waking conditions for a second forced-recall test. Both groups of subjects recalled additional correct details on the second test, but the magnitude of this hypermnesia was no greater for subjects exposed to the hypnosis treatment. Hypnotized subjects did, however, exhibit a significantly greater increase in confidence for responses designated as "guesses" on the prior waking test--a finding consistent with the view that hypnosis engenders a shift in the subjective criterion for what constitutes a "memory." Implications of these findings for the use of hypnosis in forensic situations are discussed.

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Whorwell PJ. Houghton LA. Taylor EE. Maxton DG. **Physiological effects of emotion: assessment via hypnosis.** *Lancet* 1992;340(8811):69-72 Assessment of the physiological effects of physical and emotional stress has been hampered by a lack of suitable laboratory techniques. Since hypnosis can be used safely to induce specific emotional states of considerable intensity, we studied the effect on distal colonic motility of three hypnotically induced emotions (excitement, anger, and happiness) in 18 patients aged 20-48 years with irritable bowel syndrome. Colonic motility index was reduced by hypnosis on its own (mean change 19.1; 95% CI 0.8, 37.3;  $p$  less than 0.05) and this change was accompanied by decreases in both pulse (12; 8, 15) and respiration (6; 4, 8) rates ( $p$  less than 0.001 for both). Anger and excitement increased the colonic motility index (50.8; 29.4, 72.2; and 30.4; 8.9, 51.9, respectively;  $p$  less than 0.01 for both), pulse rate (26; 22, 30; and 28; 24, 32;  $p$  less than 0.001 for both), and respiration rate (14; 12, 16; and 12; 10, 14;  $p$  less than 0.001 for both). Happiness further reduced colonic motility although not significantly from that observed during hypnosis alone. Changes in motility were mainly due to alterations in rate than in amplitude of contractions. Our results indicate that hypnosis may help in the investigation of the effects of emotion on physiological functions; this approach could be useful outside the gastrointestinal system. Our observation that hypnosis strikingly reduces fasting colonic motility may partly explain the beneficial effects of this form of therapy in functional bowel disorders.

Whorwell PJ. Prior A. Colgan SM. **Hypnotherapy in severe irritable bowel syndrome: further experience.** *Gut* 1987;28(4):423-5 Fifteen patients with severe intractable irritable bowel syndrome previously reported as successfully treated with hypnotherapy, have now been followed up for a mean duration of 18 months. All patients remain in remission although two have experienced a single relapse overcome by an additional session of hypnotherapy. Experience with a further 35 patients is reported giving a total group of 50. This group was divided into classical cases, atypical cases and cases exhibiting significant psychopathology. The response rates were 95%, 43%, and 60% respectively. Patients over the age of 50 years responded very poorly (25%) whereas those below the age of 50 with classical irritable bowel syndrome exhibited a 100% response rate. This study confirms the successful effect of hypnotherapy in a larger series of patients with irritable bowel syndrome and defines some subgroup variations.

Whorwell PJ. Prior A. Faragher EB. **Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome.** *Lancet* 1984;2(8414):1232-4 30 patients with severe refractory irritable-bowel syndrome were randomly allocated to treatment with either hypnotherapy or psychotherapy and placebo. The psychotherapy patients showed a small but significant improvement in abdominal pain, abdominal distension, and general well-being but not in bowel habit. The hypnotherapy patients showed a dramatic improvement in all features, the difference between the two groups being highly significant. In the hypnotherapy group no relapses were recorded during the 3-month follow-up period, and no substitution symptoms were observed.

Wickramasekera I. **Effects of sensory restriction on susceptibility to hypnosis: a hypothesis and more preliminary data.** *Journal of Abnormal Psychology* 1970;76(1):69-75 Randomly assigned 45 young adult white male prisoners to 1 of 3 groups of equal size. Experimental Subjects (Groups 2 and 3) were exposed to 1 hr. of sensory restriction. Subjects in Group 2 were given a set of neutral instructions prior to sensory restriction, and Subjects in

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Group 3 were given a set of nonneutral instructions. Controls (Group 1) were exposed to conditions similar to experimentals, but without sensory restriction per se. All Subjects were tested before and after the above procedures with the Stanford Hypnotic Susceptibility Scale. On posttesting, experimental Subjects appeared to have increased in hypnotizability.

Wigal JK. Stout C. Kotses H. Creer TL. Fogle K. Gayhart L. **Hatala J. Experimenter expectancy in resistance to respiratory air flow.** *Psychosomatic Medicine* 1997;59(3):318-22

**OBJECTIVE:** The effect of experimenter expectancy was investigated on the resistance to respiratory air flow, measured as total respiratory resistance (Rt) in healthy individuals.

**METHOD:** Each of three naive experimental assistants collected air flow resistance responses from 30 subjects who they had been told were either likely or unlikely to respond to the suggestion of breathing difficulty.

**RESULTS:** The subjects were assigned to the two conditions at random. The subjects who were described to the experimenters as being likely to respond exhibited greater Rt increases to bronchoconstriction suggestion than did the subjects who were described as unlikely to respond.

**CONCLUSIONS:** These findings confirmed the presence of a source of variance that has not been considered previously in suggestion studies. Williams AR. Hind M. Sweeney BP. Fisher R. The incidence and severity of postoperative nausea and vomiting in patients exposed to positive intra-operative suggestions. *Anaesthesia*. 1994;49(4):340-2 In a double-blind study, the effects of positive intra-operative suggestions on the incidence and severity of postoperative nausea and vomiting were studied in 60 patients randomly selected to undergo routine major gynaecological surgery. Patients who received positive suggestions suffered significantly less nausea and vomiting in the 24 h after surgery.

Williams JM. Hall DW. **Use of single session hypnosis for smoking cessation.**

*Addictive Behaviors* 1988;13(2):205-8 Twenty of sixty volunteers for smoking cessation were assigned to single-session hypnosis, 20 to a placebo control condition, and 20 to a no-treatment control condition. The single-session hypnosis group smoked significantly less cigarettes and were significantly more abstinent than a placebo control group and a no treatment control group at posttest, and 4-week, 12-week, 24-week and 48-week follow-ups. Wojcikiewicz A, Orlick T The effects of post-hypnotic suggestion and relaxation with suggestion on competitive fencing anxiety and performance *Int J Sport Psychol* 1987;18(4):303-13 Investigated the relative effectiveness of (1) post-hypnotic suggestion and (2) relaxation with suggestion, induced on site preceding a national competition. 33 fencers were randomly assigned to 1 of 3 groups: experimental hypnotic, experimental relaxation, and control. Subjects were tested and retested during 2 consecutive competitions on perceived anxiety, perception of task difficulty, and competition performance. Significant differences were found between the hypnotic group and the control group for perceived level of competition anxiety. On the estimated level of task difficulty, significant differences were found for both the hypnotic and the relaxation groups when compared with the control group. No significant differences were found on fencing performance measures. (French, Spanish, German & Italian abstracts)

Wolff BB. Horland AA. **Effect of suggestion upon experimental pain: a validation study.** *Journal of Abnormal Psychology* 1967;72(5):402-7 Investigated Gelfand's Hypnosis That pain threshold and tolerance have different loadings of physiological and psychological components. It was postulated that nonpermissive instructions (suggestion) should significantly increase pain tolerance compared to permissive instructions (no suggestions), but that there

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should be no significant changes in pain threshold. 34 healthy subjects were divided randomly into 2 equal groups. 1 started with permissive and the other with nonpermissive instructions using electrical stimulation, and after 5 trials instructions were reversed in both groups. The results supported the hypothesis for ascending pain threshold and pain tolerance, but not for descending pain threshold. The latter was explained by suggesting that pain relief is an emotional state interfering with sensory discrimination.

Zachariae R. Bjerring P. **Laser-induced pain-related brain potentials and sensory pain ratings in high and low hypnotizable subjects during hypnotic suggestions of relaxation, dissociated imagery, focused analgesia, and placebo.** *International Journal of Clinical & Experimental Hypnosis*. 1994; 42(1):56-80 Pain reports and amplitudes of painful argon laser-induced brain potentials were obtained for 10 high and 10 low hypnotizable volunteers following placebo and a randomized sequence of four hypnotically induced conditions of (a) neutral hypnosis, (b) deep relaxation, (c) pleasant dissociated "out of body" imagery, and (d) focused analgesia of the hand. Both high and low hypnotizable subjects exhibited significant reductions of reported pain during conditions of neutral hypnosis, relaxation, dissociated imagery, and focused analgesia. High hypnotizable subjects displayed significantly greater reductions than low hypnotizables in all conditions except placebo. Both high and low hypnotizables exhibited significant reductions of reported pain in all five conditions as well as in the posthypnotic condition, when amplitudes of evoked potentials were compared to the prehypnotic baseline. Only the high hypnotizable group showed significant reductions in amplitudes when the data were recalculated to reflect relative changes compared to the average amplitude of the pre- and postconditions to compensate for a possible habituation effect indicated by the significantly lowered amplitudes in the posthypnotic condition. The results are discussed in light of a number of hypotheses concerning mechanisms of hypnotic analgesia.

Zachariae R. Bjerring P. Arendt-Nielsen L. Nielsen T. Gotliebsen K. **The effect of hypnotically induced emotional states on brain potentials evoked by painful argon laser stimulation.** *Clinical Journal of Pain* 1991;7(2):130-8 The relationship between pain perception and emotional states is well known. However, the nature of this relationship and how different emotional states affect sensory and cognitive dimensions of pain remains uncertain. Results from experimental investigations are often contradictory, which may be due to methodological difficulties in inducing pain and monitoring physiological responses. In addition, most studies have focused on a single emotion, and data on the relative effects of different emotional states are lacking. In the present study we attempted to eliminate some of these methodological problems. Laser evoked potentials were used as a quantitative correlate to pain perception and were measured in 12 highly hypnotically susceptible subjects during seven conditions: (a) a prehypnotic baseline condition; (b) a neutral hypnotic control condition; (c-e) hypnotically recalled anger, fear, and depression in randomized order; (f) a hypnotically recalled happy condition, and (g) a posthypnotic awake control condition. The pain evoked potentials were significantly decreased in the angry condition and significantly increased in the depressed condition compared with baseline. No differences could be detected for either the happy or the fear-related condition compared with the baseline or neutral hypnotic condition. A significant positive correlation between the subjective intensity of depression and the increase in evoked potentials was found, but none for the other three emotions. The results support earlier findings

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that clinical depression is related to increased pain perception, and findings that the expression of anger can inhibit the experience of pain.(ABSTRACT TRUNCATED AT 250 WORDS)

Zachariae R. Hansen JB. Andersen M. Jinquan T. Petersen KS. Simonsen C. Zachariae C. Thestrup-Pedersen K. **Changes in cellular immune function after immune specific guided imagery and relaxation in high and low hypnotizable healthy subjects.** *Psychotherapy & Psychosomatics* 1994;61(1-2):74-92 This article presents the results of two investigations, each measuring cellular immune function on 3 investigation days 1 week apart in 15 high and 15 low hypnotizable healthy subjects randomly selected for three groups: (1) a guided imagery group receiving instructions to enhance cellular immune function: (2) a relaxation group which did not receive instructions regarding the immune system, and (3) a control group. Study 1 investigated changes in monocyte chemotaxis (MC) and lymphocyte proliferative response (LPR) to three mitogens, while natural killer cell activity (NKCA) was measured in study 2. The results show similar patterns of brief decreases in LPR and NKCA immediately after intervention on all investigation days in both the imagery and relaxation groups. Increases in MC were found in both intervention groups on day 1. On a follow-up investigation day in study 2, a brief stress task yielded a slight increase in NKCA. In study 2, the control group showed decreases in NKCA similar to those observed in the two intervention groups. In general there were no significant changes in preintervention immune function throughout the investigation period. When comparing the effects in high and low hypnotizable subjects, we found that high hypnotizables showed greater decreases in LPR and NKCA than low hypnotizables. There are several inconsistencies between the results of the limited number of investigations studying the effects of guided imagery and relaxation on immune function. These differences may in part be explained by differences in methodology, time intervals between blood sampling, and subject characteristics such as age, health status and hypnotizability. The inconsistent results make it premature to make inferences about possible benefits of the application of these techniques in the treatment of immune related diseases, and further investigations are needed.

Zachariae R. Oster H. Bjerring P. **Effects of hypnotic suggestions on ultraviolet B radiation-induced erythema and skin blood flow.** *Photodermatology, Photoimmunology & Photomedicine* 1994;10(4):154-60 Results from both animal and human studies have indicated that inflammatory skin reactions such as the flare response to histamine prick test involve a neurogenic regulatory component. It is still unknown to which degree inflammation induced by ultraviolet (UV) radiation may be mediated by the central nervous system. To investigate this, the effect of hypnotic suggestions to increase and decrease the response to UVB radiation on erythema and cutaneous blood flow was investigated in 10 highly hypnotizable subjects. The results showed a significant effect of hypnotic suggestions on cutaneous blood flow compared with the responses of a control group. For erythema no conclusive evidence was found. The results indicate the possibility of separate regulatory mechanisms behind central nervous system influence on UVB-induced erythema and skin blood flow respectively, and further investigations are needed.

Zachariae R. Oster H. Bjerring P. Kragballe K. **Effects of psychologic intervention on psoriasis: a preliminary report.** *Journal of the American Academy of Dermatology.* 1996;34(6):1008-15,

BACKGROUND: Case reports have indicated that psychologic treatments may have a beneficial effect on psoriasis activity.

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**OBJECTIVE:** Our purpose was to further investigate the hypothesis that psychologic intervention has a beneficial effect on psoriasis activity in a blinded, controlled manner.

**METHODS:** Fifty-one patients with psoriasis vulgaris were randomly assigned to a treatment or a control group. Patients in the treatment group participated in seven individual psychotherapy sessions in 12 weeks. Intervention techniques included stress management, guided imagery, and relaxation. The Psoriasis Area Severity Index (PASI), Total Sign Score (TSS), and Laser Doppler Skin Blood Flow (LDBF) of a selected reference plaque was measured in a blinded fashion at baseline (week 0), week 4, week 8, and after treatment (week 12). **RESULTS:** Slight, but significant, changes in TSS and LDBF were found in the treatment group but not in the control group. When analyses were performed for both groups separately, the treatment group displayed significant reductions for all three psoriasis activity measures, whereas no changes were seen in the control group. **CONCLUSION:** Our preliminary results suggest that psychologic intervention may have a moderate beneficial effect on psoriasis activity.

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Zeltzer L. LeBaron S. **Hypnosis and nonhypnotic techniques for reduction of pain and anxiety during painful procedures in children and adolescents with cancer.** Journal of Pediatrics 1982;101(6):1032-5 Hypnosis was compared with nonhypnotic behavioral techniques for efficacy in reducing pain and anxiety in 27 children and adolescents during bone marrow aspiration and in 22 children and adolescents during lumbar puncture. The patients and independent observers each rated (scale of 1 to 5) pain and anxiety during one to three procedures prior to intervention and one to three procedures with intervention. Prior to intervention for both groups, pain during bone marrow aspiration was rated as more severe ( $P$  less than 0.01) than pain during lumbar puncture. During bone marrow aspiration pain was reduced to a large extent by hypnosis ( $P$  less than 0.001) and to a smaller but significant extent by nonhypnotic techniques ( $P$  less than 0.01), and anxiety was significantly reduced by hypnosis alone ( $P$  less than 0.001). During lumbar puncture only hypnosis significantly reduced pain ( $P$  less than 0.001); anxiety was reduced to a large degree by hypnosis ( $P$  less than 0.001) and to a smaller degree by nonhypnotic techniques ( $P$  less than 0.05). Thus hypnosis was shown to be

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more effective than nonhypnotic techniques for reducing procedural distress in children and adolescents with cancer.

Zeltzer L. LeBaron S. Zeltzer PM. **The effectiveness of behavioral intervention for reduction of nausea and vomiting in children and adolescents receiving chemotherapy.** *Journal of Clinical Oncology* 1984;2(6):683-90 Fifty-one children 6-17 years of age rated the severity of nausea, vomiting, and the extent to which chemotherapy bothered them during each course of chemotherapy. Sixteen patients had no symptoms and the doses administered to 16 others were not constant so that matched courses could not be assessed. After baseline measurement of two matched courses, the remaining 19 patients were randomized to receive hypnosis or supportive counseling during two more matched courses. An additional course with no intervention was assessed in half of the patients. No significant reduction of symptoms was demonstrated prior to intervention. However, intervention with both hypnosis and supportive counseling was associated with significant reductions in nausea, vomiting, and the extent to which these symptoms bothered patients (all  $p$  less than 0.001). Also, after termination of intervention, symptom ratings remained significantly lower than baseline. The data indicate that chemotherapy-related nausea and emesis in children can be reduced with behavioral intervention and that reductions are maintained after intervention has been discontinued.

Zeltzer LK. Dolgin MJ. LeBaron S. LeBaron C. **A randomized, controlled study of behavioral intervention for chemotherapy distress in children with cancer.** *Pediatrics* 1991;88(1):34-42 Fifty-four pediatric cancer patients were studied to determine the relative efficacy of two forms of behavioral intervention for reducing chemotherapy-related distress. Following baseline assessment, subjects were randomly assigned to receive either hypnosis, non-hypnotic distraction/relaxation, or attention placebo (control) during the subsequent identical chemotherapy course. Observational and interview measures of anticipatory and postchemotherapy nausea, vomiting, distress, and functional disruption served as outcome data. Results indicated that treatment condition was the single best predictor of change from baseline to intervention, with children in the hypnosis group reporting the greatest reduction of both anticipatory and postchemotherapy symptoms. The cognitive distraction/relaxation intervention appeared to have a maintenance effect in which symptoms did not get much worse or much better, while children in the control group had symptoms that consistently became worse over time. Emetic potential of the chemotherapy and the prophylactic use of antiemetics each appeared to contribute to the overall severity of symptoms. While the efficacy of hypnosis in the management of chemotherapy distress is supported, the complexities of interacting biologic and psychologic factors are highlighted.

Zeltzer LK. Fanurik D. LeBaron S. **The cold pressor pain paradigm in children: feasibility of an intervention model (Part II).** *Pain* 1989;37(3):305-13 The purpose of this study was to examine the feasibility of testing a psychological approach (hypnosis) to pain reduction in children using the cold pressor paradigm. Children's pain ratings at 10 sec intervals and duration of arm immersion (40 sec maximum) in 15 degrees C ( $n = 37$ ) and 12 degrees C water ( $n = 29$ ) were assessed in 6-12-year-old children during 2 baseline trials (alternating arms), followed by 2 more trials after randomization to a control or hypnosis treatment condition. Hypnosis was found to reduce pain significantly more than the control condition in both 15 degrees C and 12 degrees C water. Hypnotic susceptibility was not strongly related to hypnotic pain reduction. However, age was significant, with younger children showing higher

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pain ratings and early arm withdrawal rates and less response to hypnosis than older children. In 15 degrees C water, females had higher pain ratings and early withdrawal rates than males, but this sex discrepancy disappeared in 12 degrees C water. This study demonstrated the feasibility of the cold pressor paradigm for testing intervention strategies and its potential for enhancing our understanding of pain in children.

Zitman FG. van Dyck R. Spinhoven P. Linssen AC. **Hypnosis and autogenic training in the treatment of tension headaches: a two-phase constructive design study with follow-up.** Journal of Psychosomatic Research 1992;36(3):219-28 Tension headaches can form a chronic (very long duration) condition. EMG biofeedback, relaxation training and analgesia by hypnotic suggestion can reduce the pain. So far, no differences have been demonstrated between the effects of various psychological treatments. In a constructively designed study, we firstly compared an abbreviated form of autogenic training to a form of hypnotherapy (future oriented hypnotic imagery) which was not presented as hypnosis and secondly we compared both treatments to the same future oriented hypnotic imagery, but this time explicitly presented as hypnosis. The three treatments were equally effective at post-treatment, but after a 6-month follow-up period, the future oriented hypnotic imagery which had been explicitly presented as hypnosis was superior to autogenic training. Contrary to common belief, it could be demonstrated that the therapists were as effective with the treatment modality they preferred as with the treatment modality they felt to be less remedial.

## 6. MEDICAL HYPNOSIS STUDIES

Hypnosis is the original mind/body medicine and every year many clinical trials are conducted to prove the usefulness of hypnosis in specific situations. Here are some recent outcomes:

Would you take a pill that promised to speed you through surgery? Would you take a pill that's been tested on hundreds of surgical patients and all but one of them maintained stable vital signs during their operation - no sudden high blood pressure - and all needed far less pain medication than patients who did not take the pill-much reduced pain after surgery, and there's more. The surgeons were able to complete the operation quicker in the patients who had the pill. I suspect if there was such a pill every HMO would insist upon it. After all, they'd save money on medications and on time spent in the operating room. The 'pill' that's been proved to have this effect is hypnosis!

In the April 29, 2000 edition of the scholarly medical journal, the Lancet, Dr. Elvira Lang of Harvard University published her study of clinical trials using hypnosis before **surgery**. People who had been hypnotized prior to surgery needed less pain medication, left the operating room sooner, and had more stable vital signs during their operation.

A study of children with **trichotillomania** appeared in the medical journal, Acta Paediatrica, 88 (4) pp. 407-410. Children who were hypnotized to stop pulling their hair remained able to refrain from doing so for 16 months, after just a few hypnotic sessions. The authors, H. Cohen, A. Barzilal, and E. Lahat at the Pediatric Ambulatory Center, in Petach Tikva, Israel, suggest that doctors consider hypnosis and not medication as the primary treatment for compulsive hair pulling.

Research was done to determine the effectiveness of hypnosis in treating **trichotillomania**, compulsive hair pulling, in children. The children were hypnotized and then



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taught self-hypnosis so they could re-hypnotize themselves at home on a daily basis. The children who had trichotillomania without depression recovered well. Those who had depression were only partially successful. This study was done by Dr. Daniel Kohen, University of Minnesota in Minneapolis.

Patients with **migraine headaches** had a group hypnosis session and then were given pre-recorded self-hypnosis tapes to take home. On the self-hypnosis tapes they were given imagery of wearing a helmet that was very cold because it had freezer coils inside it. They were also taught how to relax themselves using hypnosis. Before joining this research study all the patients agreed to keep written records for three months. During those three months they listed every migraine they had and how long it lasted, how severe it was, and how much medication they needed.

For three months the patients listened to their hypnosis tapes, which put them into a hypnotic state. At the end of three months the data from the first three months was compared to the data of the three months during which they used self-hypnosis.

- \* During those last three months:
- \* The headaches occurred less often
- \* When the headaches did appear they went away quicker
- \* The headaches were less severe
- \* Medication use was cut in half

Hypnosis is an effective treatment for migraine headaches.

Before having **dental surgery** patients listened to a 20 minute hypnosis audio tape. The tape put them into a hypnotic state and then told them that during the procedure they would be able to control bleeding from their gums, they would heal rapidly, and would easily cope with pain. Patients were told to listen to their tape every day for one week prior to the surgery. The dental surgeon performed similar operations on patients who listened to the tape and patients who were not given a tape. The dentist did not know which patients had tapes and which did not. After the surgery it was determined that patients who had been hypnotically prepared experienced less anxiety, and needed much less pain medication. This study proves that a properly designed audio tape can be an effective intervention. This study was conducted by Bjorn Enqvist, DDS, in Stockholm, Sweden.

Fifty patients suffering from **irritable bowel syndrome** were asked to fill out questionnaires about their symptoms. Half of the patients were hypnotized and half were not. After a few months new questionnaires determined that the patients who had been hypnotized had less abdominal pain, less bloating, less nausea, less gas pain, and fewer backaches. Additionally, the hypnotized patients said they felt more in control of their lives and did not call in sick as often as they did before having the hypnosis. Also, they did not need to visit their doctors as often as they did before the hypnosis. The patients in the study who did not receive hypnosis did not show these improvements. This study proves that hypnosis not only relieves symptoms of irritable bowel syndrome, but also improves quality of life for those patients. This study was conducted by Dr. Whorwell, University Hospital of South Manchester, in the United Kingdom.

Patients suffering from **irritable bowel syndrome** were treated with hypnosis. Eighty two percent of the patients improved. Patients were less anxious, had less abdominal pain, less bloating, less constipation and less gas. Even those patients who were not very hypnotizable had

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good results. Hypnosis is an effective treatment for irritable bowel syndrome. For more information, please contact: Dr. Edward Blanchard Center for Stress and Anxiety Disorders 1535 Western Avenue Albany, NY 12203

Patients suffering from **psoriasis** were hypnotized and some patients had quite an improvement. The patients who improved were those who were very hypnotizable. Those who were moderately hypnotizable did not improve. Hypnosis may be useful with psoriasis patients who are very hypnotizable. For more information, please contact: Dr. Francisco Tausk Department of Dermatology Johns Hopkins School of Medicine 601 N. Caroline Street Baltimore, MD 21287

**Pregnant women** who begin to go into labor long before their ninth month are said to have preterm labor. Patients who had preterm labor were hypnotized and given suggestions to keep their cervix firm and hard to hold the baby in the uterus. Hypnosis was continued until the contractions stopped. Patients were seen for hypnosis two or three times each day and then given audio tapes to play several times a day. Seventy percent of the hypnotized patients were able to prolong their pregnancies. Only twenty percent of the women who were not hypnotized were able to prolong their pregnancies. Hypnosis can help prevent premature births. Dr. Donald Brown, Nova Scotia, Canada, can be reached at: Dcbrown@is.dal.ca.

Hypnosis has been used to **help bereaved people** get through mourning. In this article a widow is treated with hypnosis. Hypnotic relaxation is recommended for the first stages of grief, then supportive suggestions, and finally a new way to look at her relationship with her husband is recommended. All the above is done with the aid of hypnosis, and then the patient is hypnotized to strengthen her ego and look toward the future. Hypnosis is an effective tool in bereavement counseling. Dr. Gary Elkins is the author of this paper. He can be reached at: gelkins@bellnet.tamu.edu.

Prior to **surgery twenty six children** were hypnotized and twenty six others, who were the same age and having the same surgery, were not hypnotized. The hypnosis group was taught self-hypnosis (guided imagery) and given the hypnotic suggestion that they would recover easily and quickly. After all the children were recovered it was determined that those who had been hypnotized had less pain, needed fewer pain killers, and went home days earlier than those in the non-hypnosis group. Also, those in the hypnosis group were calm, while those in the other group were anxious, even after the surgery. This study was done by Sally Lambert at the Rainbow Babies and Children's Hospital in Cleveland, Ohio.

Patients who were healthy, but had a **broken bone** in their foot, were recruited from an orthopedic emergency room. They all received regular orthopedic care, but half of them were given hypnosis, too. The hypnosis consisted of individual sessions and a hypnosis audio tape to be played at home. After 9 weeks, x-rays and clinical assessments of the foot showed that the patients who were hypnotized were healing faster. The hypnotized patients had improved ankle mobility, an easier time walking down stairs, and had a decreased need for painkillers. Hypnosis can be used to enhance fracture healing. This study is from: C.S. Ginandes Dept. of Psychiatry Harvard Medical School Cambridge, MA

Severely **burned patients** were hypnotized to feel less pain, in addition to receiving their regular dosages of morphine and other pain medications. The patients who most benefitted from hypnosis were those who were in the most pain. Hypnosis worked best when it was administered by the hypnotist and didn't work as well when the patient was told to rely on self-hypnosis.

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Hypnosis is an effective adjunct to treatment in burn patients. This study was done by Dr. David Patterson at the University of Washington School of Medicine, Seattle, Washington.

**Value of hypnosis Spiegel:** "If this were a drug, everyone would be using it," says David Spiegel, MD, a psychiatrist at Stanford University. "Changing your mental set can change what's going on in your body." "Most patients benefit from the use of hypnotic suggestion for pain relief," says Guy Montgomery, PhD, a behavioral scientist at the Mount Sinai School of Medicine in New York. (Montgomery published a meta-analysis on the subject in the April 2, 2000 issue of the International Journal of Clinical and Experimental Hypnosis.)

Results from several papers have recently furnished compelling new evidence for the powers of hypnosis. The April 29, 2000, issue of the journal *The Lancet* reported that hypnosis reduced pain, anxiety, and blood pressure complications in patients undergoing invasive medical procedures. (Hypnosis was compared with standard care and supportive attention, such as encouragement and active listening.) In addition, the procedures took significantly less time in the hypnosis treatment group, probably because the healthcare workers didn't have to interrupt their activities to deal with the patients' pain or to stabilize blood pressure, says Spiegel. Patients in the hypnosis group also required less than half as much painkilling medication as those in the standard group. Patients most commonly employ the technique in addition to other treatments, but it can also be used by itself. Alexander A. Levitan, MD, MPH, a medical oncologist in Minneapolis, has participated in numerous surgeries, including hysterectomies and tracheostomies, in which hypnosis was used as the sole agent for pain control.

The Harvard Medical School conducted research on the use of hypnosis to enhance physical healing. Twelve people with a recent bone fracture were divided into two groups. One group received hypnosis and the other group served as control. Both groups received standard orthopedic treatment. The hypnosis group had individual hypnotic sessions and listened to audiotapes designed to increase bone healing. X-ray and orthopedic evaluations were made during the 12 weeks of the experiment.

The results showed a faster healing for the hypnosis group at week 9 of the experiment. X-rays revealed a notable difference at the edge of the fracture at week 6 of the experiment. The hypnosis group also had better mobility and used less pain killers.

The researchers conclude by saying that "despite a small sample size.....these data suggest that hypnosis may be capable of enhancing both anatomical and functional fracture healing, and that further investigation of hypnosis to accelerate healing is warranted."

Treatment of anorexia nervosa is biological, nutritional, behavioral, family-oriented, and psychotherapeutic, and includes hypnotherapy. Only with this multi-modal comprehensive intervention can this potentially lethal disorder show positive response. Psychodynamic psychotherapy has not been shown to be effective (Rollins and Blackwell, 1968; Bruch, 1970). Crasileck and Hall (1975) report that more than half of 70 cases treated with hypnosis showed marked improvement. Initially, suggestions for increased food intake were given and once patients began to eat and to show stabilization of their medical condition, explorative and supportive psychotherapy using hypnosis was applied. In many patients with anorexia nervosa, however, there is no overt acknowledgment of the disease and no cooperation or motivation to work hypnotically.

**PAIN, MISCELLANEOUS:**

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1. Ernest Hilgard (1977) and coworkers: in extensive investigations, using experimental paradigms to induce pain (typically either a tourniquet cutting off the circulation to a limb or plunging the limb into cold water), they have demonstrated that various types of pain can be reduced by Hypnotically induced analgesia. In these studies, 66% of the high susceptibility group, but only 13% of the lower and 17% of the medium susceptibility groups, were able to reduce their pain by 1/3 or more. Twenty-six percent of the high, 57% of the medium, and 31% of the low susceptibility groups were able to reduce their pain by 10-32% when compared to controls.
2. Experimentally induced pain, while undeniably noxious, is different from the experience of patients in the clinical setting. Whereas experimental pain is brief, undergone voluntarily, and can be terminated at any time by the subject, in the clinical setting, pain is often longterm, comes against the wishes of the individual and is usually experienced as being outside of personal control. Moreover, it is a part of a disease process that directly alters both physical and mental functioning.
3. In a neurochemical study of Hypnotic control of pain conducted by Domangue (1985), patients suffering arthritic pain showed a correlation among levels of pain, anxiety and depression. Anxiety and depression were inversely related to plasma norepinephrine levels. Depression was correlated with dopamine levels and negatively correlated with levels of serotonin and beta endorphin. Following Hypnotherapy, there were clinically and statistically significant decreases in depression, anxiety and pain, and increases in beta endorphin-like substances.
4. The relationship between pain and endorphins is a complicated one. In his study, Guerra (1982) found that only particular forms of the beta endorphins found in peripheral blood during painful experience are associated with the Hypnotic response.
5. Hilgard (1982) studied children with cancer. He found Hypnosis to be effective in reducing the pain and discomfort associated with repeated unpleasant medical interventions.
6. Stam (1986) reports that patients with chronic facial pain show a greater responsiveness to suggestion as measured by the Carleton University Responsiveness to Suggestion Scale (CURSS) than do normal controls. These patients had higher Hypnotic susceptibility scores than did controls, showing a high susceptibility score to be a good predictor of response to Hypnotic treatment among such patients.
7. Domangue (1985) conducted a study of 19 patients with a variety of musculoskeletal disorders. He reported significant reductions of pain and dysphoria following Hypnosis. The reductions were associated with significant increases in plasma beta endorphin.
8. Barabasz and Barabasz (1989) studied sample of 20 patients with a variety of chronic pain syndromes. They utilized an Hypnotic technique known as Restricted Environmental Stimulation Therapy (REST). All of the patients were initially rated as having low Hypnotic susceptibility on the Stanford Hypnotic Susceptibility Scale (SHSS). Following exposure to the training technique, the subjects demonstrated significant increases in both SHSS scores and in pain reduction when compared to controls.

### **HEADACHE PAIN:**

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9. Evidence accumulated to date suggests that a number of Hypnotherapeutic approaches are highly effective in the treatment of patients with chronic migraine headaches. Although no one Hypnotherapeutic technique has been demonstrated to be most effective, all the methods appear to be superior to a standard treatment relying on pharmacological approaches alone.

10. In a study conducted by Anderson (1975), migraine patients treated with Hypnosis had a significant reduction in the number of attacks and in their severity compared to a control group who were treated with traditional medications. The difference did not become statistically significant until the second six-month follow-up period. In addition, at the end of one year, the number of patients in the Hypnosis group who had experienced no headaches for over three months was significantly higher.

11. In a controlled trial conducted by Olness (1987), self-Hypnosis was shown to be significantly more effective than either propranolol or placebo in reducing the frequency of migraine headaches in children between the ages of six and twelve years of age.

12. In a research conducted by Schlutter (1980), Hypnosis was also found to effective in dealing with the relief of tension headache.

13. Alladin (1988) reviewed the literature on Hypnosis, identifying fully a dozen different Hypnotic techniques that have been used in the treatment of chronic migraine headaches. Of these, Hypnotic

training emphasizing relaxation, hand warming (which, according to Anderson, 1975) seems the simplest method of establishing increased voluntary control of the sensitive vasomotor system) and direct Hypnotic suggestions of symptom removal have all been shown to be effective in reducing the duration, intensity and frequency of migraine attacks during a ten-week treatment course and at thirteen-month follow-up when compared to controls.

14. A study (Gutfeld, G. and Rao, L., 1992) was conducted on 42 patients suffering from chronic headaches. These patients, all of whom had responded poorly to conventional treatments, were split into two groups. One received Hypnotherapy to relieve their daily headaches; the rest acted as a comparison group. The Hypnotherapy group experienced reduced frequency and duration of headaches, cutting the intensity by about 30%. "These results are impressive in such a difficult, hard-to-treat group of patients," commented Egilius Spierings, M.D., Ph.D. director of the headache section, division of neurology at Brigham and Women's Hospital.

### **CANCER:**

15. Spiegel and Bloom (1983b) reported that a study of women with metastatic breast cancer showed that patients who received group therapy with training in Hypnosis over a one-year period were able

to reduce their pain experience by 50% when compared to a control group.

16. In addition, at a 10-year follow-up of these same women, the Hypnosis treatment group had a mean survival rate of 36.6 months compared to 18.9 months for the controls. This suggests that the

intervention may be both important quantitative and important qualitative effects (Spiegel 1989a).

17-18. Both adolescent and adult cancer patients undergoing chemotherapy were reported by Cotanch (1985) and by Zeltzer (1984), in separate research, to have fewer symptoms of anticipatory nausea and vomiting following Hypnotic interventions.

### **CARDIOVASCULAR CONDITIONS, GENERAL:**

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19. In research by Bernardi (1982), hypertensive patients showed themselves to be significantly more effective at controlling cardiovascular responses to stressors in Hypnosis than they were in the normal waking state. This was particularly true for subjects with more marked Hypnotic ability.

20. In a study by Sletvold (1986), normotensive subjects were shown able to either increase or decrease their blood pressure significantly with Hypnosis.

21. In a 1979 research study by Jackson, subjects with Hypnotic ability were shown to improve their aerobic performance significantly in response to post-hypnotic suggestion. In addition, subjects with high Hypnotic susceptibility significantly improved their performance in physical exercise using post-hypnotic suggestion.

### **HYPERTENSION & STRESS:**

22. Kuttner (1988) found that a Hypnotic approach emphasizing storytelling and imagery was significantly more effective than behavioral techniques or standard medical practice in alleviating distress during bone marrow aspirations in young children with leukemia.

23. Hypertensive subjects were found to have characteristic patterns of increased cerebral blood flow that were most marked in the left hemisphere. During Hypnosis, they could reduce cerebral blood flow more dramatically than could normotensive controls. The changes noted in this research by Galeazzi (1982) were associated with decreases in vascular resistance and diastolic blood pressure in the rest of the body.

24-25. Friedman and Taub (1977, 1978) reported the results of a trial comparing Hypnosis with biofeedback or a combination of both in essential hypertension. At the end of four weeks of treatment, all groups showed a significant reduction in blood pressure. But at six-month follow-up only the patients receiving Hypnosis had maintained the reduction.

26-27. Generally speaking, literature review supports the value of Hypnosis in analgesia and stress reduction in a number of disorders, whether following the dissociative formulation (Miller, 1986) or a social psychology approach (Noland, 1987).

### **RESPIRATORY CONDITIONS:**

28-29. In studies by Maher-Loughnan (1962, 1970), Hypnosis was shown to alleviate the subjective distress of patients with asthma. This change was measured either by the number of attacks or the amount of medication that was needed when compared to supportive therapy.30. In further study by Maher-Loughnan (1970) asthmatic subjects were randomly assigned to either Hypnosis or relaxation therapy. The results showed both treatment modalities of benefit to the patients, but the improvement in the Hypnotherapy group was significantly greater. There was a peak of improvement between the seventh and twelfth weeks of treatment. In addition, only the Hypnotic subjects showed improvement in physiologic measures of respiration (forced expiratory volume).

31. Ewer and Stewart (1986) reported a randomized control trial of Hypnosis in patients with moderate asthma. Patients with a high Hypnotic susceptibility showed a 74.9% improvement in bronchial hyper-responsiveness (to methacholine challenge), a 5.5% increase in peak expiratory flow rate, a 26.2% decrease in the use of bronchodilator and a 41% improvement in daily ratings outside of the clinic. Twelve patients with a high Hypnotic susceptibility score showed a 75% improvement. However, a control group of 17 patients and a second group of 10 patients with a low level of Hypnotic susceptibility showed no change in either objective or subjective measures.

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32. A study by Olness (1985) showed that children trained in self-Hypnosis could significantly alter their tissue levels of oxygen as measured by transcutaneous PO<sub>2</sub> measures.

### **STRENGTHENING THE IMMUNE SYSTEM:**

33. Hypnosis strengthens the disease-fighting capacity of two types of immune cells, reports Patricia Ruzyla-Smith and her co-workers at Washington State University in Pullman. Thirty-three college students who achieved a Hypnotic trance easily and 32 students who had great difficulty doing so were recruited for the study. Students who underwent Hypnosis displayed larger jumps in two important classes of white blood cells than participants who received relaxation or no method. The greatest immune enhancement occurred among highly Hypnotizable students in the Hypnosis group.

### **INTESTINAL CONDITIONS:**

34-35. Whorwell (1984) reported successful treatment of Irritable Bowel Syndrome using Hypnosis in a controlled study of a group of patients who had a severe chronic form of the disorder and had not responded to conventional therapies. Patients were randomly allocated to either psychotherapy or Hypnotherapy groups. The psychotherapy patients showed a significant improvement in measures of pain, distension and in general well-being despite a lack of change in bowel habit. In contrast, the Hypnotherapy patients showed a dramatic improvement in all measures which persisted at a two-year follow-up. (Whorwell, 1987). Hypnotherapy, including suggestions for improved gastrointestinal function and pain reduction, was significantly better than Hypnosis for simple deep muscle relaxation.

36. Harvey (1989) reported a similar improvement following Hypnotherapy in 20 of the 33 patients with refractory Irritable Bowel Syndrome at three-month follow-up.

37. Colgan (1988) reported a randomized trial of 30 patients with frequently relapsing duodenal ulcer disease. The subjects were treated for ten weeks with either Hypnotherapy or ranitidine or the drug alone. At a twelve-month follow-up, all of the drug-only patients, but only half of the drug-plus-Hypnotherapy patients, had relapsed.

### **HEMOPHELIA:**

38. Swirsky-Saccetti (1986) reported on research with hemophiliacs. Over an eighteen-week follow-up, a group of hemophiliac patients who were taught self-Hypnosis significantly reduced both their level of self-reported distress and the amount of the factor concentrate they required to control bleeding when compared with a control group of patients who did not undergo Hypnosis.

39. A 30-month follow-up by LaBaw (1975) with hemophiliac patients demonstrated the effectiveness of group procedures for self-Hypnosis in reducing distress and the amount of blood products required when compared to control groups in patients ranging from five to forty-eight years of age.

### **SURGERY:**

40. Patients undergoing head and neck surgery who were trained with preoperative Hypnosis had significantly shorter postoperative hospitalizations than did matched controls (Rapkin, 1988).

41. Swedish researchers studied 50 women prior to surgery. Twenty-five of the women were assigned to the experimental group who were briefly Hypnotized each day for several days before their scheduled operations. Twenty-five were assigned to a control groups who were not Hypnotized. While in a Hypnotic state, the women in the experimental group heard suggestions

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to relax and feel hungry. After surgery only 10 had nausea (15 experienced no nausea), compared to 17 in the no-Hypnosis control group (8 experienced no nausea).

### **CHILDBIRTH:**

42. In 1963, Schwartz reported on a study in which Hypnotherapy was used successfully to prolong pregnancy and prevent premature delivery.

43-45. Omer (1986a, 1986b, 1987a) found that frequency of physical complaints and the general level of anxiety were correlated with premature labor and premature contractions. A brief technique emphasizing the use of self-Hypnosis was employed as an adjunct to pharmacological treatment. The prolongation of pregnancy was significantly higher for this group than for the medication-along control group, and infant weight was also significantly greater.

### **MISCELLANEOUS CONDITIONS:**

46. In a careful single-case controlled study of a patient with Raynaud's disease, Conn (1984) showed a rapid and dramatic vasodilatation in response to Hypnotic suggestion.

47. In research reported by Spanos (1988), a pair of randomized, carefully designed studies were conducted with a group of people who had warts. Subjects who were given Hypnotic or non-hypnotic suggestions were significantly more likely to achieve wart regression than placebo or no-treatment groups.

48-49. In a report by David Spiegel in the Harvard Mental Health Letter, the following research was cited: a) Several controlled experiments have shown that Hypnosis can be effectively used to eliminate warts; and b) Studies have been done on persons suffering from pseudoseizures, in which they lose consciousness or motor control and make jerking movements typical of epilepsy (but without the associated brain damage). Such patients have been taught to limit or eliminate these symptoms by using Hypnosis.

## 7. MIND OVER MATTER CANCER PROBE: LESLIE WALKER

### **Can positive thinking help cancer?** [Professor Leslie Walker, University of Hull]

Cancer patients are to be studied to see if visualizing their tumors being destroyed can make them feel better. Around 200 bowel cancer patients will take part in a three-year study to see if "positive thinking" can improve quality of life and minimize treatment side effects. Patients learn relaxation techniques, and are then asked to visualize their bodies fighting the cancer. They might imagine their white blood cells, or the chemotherapy, fighting the cancer, or their body being healed. 'Psychological wellbeing' A previous study of the "guided imagery" technique with breast cancer patients has already shown it is effective. We want to compare the effects of relaxation and imagery, alone and in combination

In patients who practiced positive thinking, and relaxation techniques, there were signs that the treatment helped the body's white blood cells fight the cancer cells. They also reported a better quality of life and fewer side effects during their treatment than those who had not been taught these methods. Professor Leslie Walker, director of the Oncology Health Centres at Hull University's Postgraduate Medical Institute, said: "We have good scientific evidence that this treatment can promote psychological wellbeing in women with breast cancer, and now we want to learn if men and women with bowel cancer will get similar benefits. "We also want to compare the effects of relaxation and imagery, alone and in combination."



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## 8. USE OF HYPNOSIS IN PAIN MANAGEMENT MEDICAL JOURNAL ABSTRACTS: M. T. DEFECHEREUX: 1999:

**"HYPNOSIS with conscious sedation instead of general anaesthesia?** Applications in cervical endocrine surgery." *Acta Chir Belg* 99(4): 151-8. Between April 1994 and June 1997, 197 thyroidectomies and 21 cervical explorations for hyperparathyroidism were performed under hypnosédation (HYP) and compared to the operative data and postoperative courses of a closely-matched population (n = 121) of patients operated on under general anaesthesia (GA).

Conversion from HYPNOSIS to GA was needed in two cases (1%). All surgeons reported better operating conditions for cervicotomy using HYP. All patients having HYP reported a very pleasant experience and had significantly less postoperative pain while analgesic use was significantly reduced in this group. Hospital stay was also significantly shorter, providing a substantial reduction of the medical care costs. The postoperative convalescence was significantly improved after HYP and full return to social or professional activity was significantly shortened. We conclude that HYP is a very efficient technique providing physiological, psychological and economic benefits to the patient. 1 Wright, B. R. and P. D. Drummond (2000).

**"Rapid induction analgesia for the alleviation of procedural pain during burn care."** *Burns* 26(3): 275-82. **Burn patients must often endure intense pain during their regular dressing changes.** The aim of the present study was to investigate the therapeutic effect of rapid induction analgesia (RIA) on resting and procedural pain, anticipatory anxiety, relaxation levels and medication consumption in 30 hospitalized burn patients. Patients rated levels of pain and relaxation for four burn care sessions. RIA was conducted twice on 15 patients, whereas dressing changes proceeded as usual in 15 control patients. When asked to recall pain during the dressing changes, patients remembered an experience which was worse in its entirety than the average of spot ratings taken during the burn care procedure. However, self-reported ratings of the sensory and affective components of pain decreased significantly during and after RIA, particularly in patients who became readily absorbed, and relaxation increased during burn care. Anticipatory anxiety decreased before dressing changes in the RIA group, and analgesic intake decreased between treatment sessions. The promising outcome of this study confirms RIA as a viable adjunct to narcotic treatment for pain control during burn care.

Ohrbach (1998). **"HYPNOSIS after an adverse response to opioids in an ICU burn patient."** *Clin J Pain* 14(2): 167-75.

**OBJECTIVE:** Burn injuries produce severe wound care pain that is ideally controlled on intensive burn care units with high-dosage intravenous opioid medications. We report a case illustrating the use of HYPNOSIS for pain management when one opioid medication was ineffective.

**SETTING:** Intensive burn care unit at a regional trauma center.

**PATIENT:** A 55-year-old man with an extensive burn suffered from significant respiratory depression from a low dosage of opioid during wound care and also experienced uncontrolled pain.

**INTERVENTION:** Rapid induction hypnotic analgesia.

**OUTCOME MEASURES:** Verbal numeric pain scale, and pain and anxiolytic medication usage.

**RESULTS:** The introduction of HYPNOSIS, supplemented by little or no opioids, resulted in excellent pain control, absence of need for supplemental anxiolytic medication, shortened length of wound care, and a positive staff response over a 14-day period.

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**CONCLUSIONS:** This case illustrates that HYPNOSIS can not only be used easily and quite appropriately in a busy medical intensive care unit environment, but that sometimes this treatment may be a very useful alternative when opioid pain medication proves to be dangerous and ineffective. This case also illustrates possible clinical implications both pain relief and side-effect profiles for opioid receptor specificity. Although this report does not provide data regarding hypnotic mechanisms, it is clear that with some patients nonopioid inhibitory mechanisms can be activated in a highly effective manner, that clinical context may be important for the activation of those pathways, and that those mechanisms may be accessed more easily than opioid mechanisms.

Ginandes, C. S. and D. I. Rosenthal (1999). **"Using HYPNOSIS to accelerate the healing of bone fractures: a randomized controlled pilot study."** *Altern Ther Health Med* 5(2): 67-75.

**CONTEXT:** HYPNOSIS has been used in numerous medical applications for functional and psychological improvement, but has been inadequately tested for anatomical healing.

**OBJECTIVE:** To determine whether a hypnotic intervention accelerates bodily tissue healing using

bone fracture healing as a site-specific test.

**DESIGN:** Randomized controlled pilot study.

**SETTING:** Massachusetts General Hospital, Boston, Mass, and McLean Hospital, Belmont, Mass.

**PATIENTS:** Twelve healthy adult subjects with the study fracture were recruited from an orthopedic emergency department and randomized to either a treatment (n = 6) or a control group (n = 6). One subject, randomized to the treatment group, withdrew prior to the intervention.

**INTERVENTION:** All 11 subjects received standard orthopedic care including serial radiographs and clinical assessments through 12 weeks following injury. The treatment group received a hypnotic intervention (individual sessions, audiotapes) designed to augment fracture healing.

**MAIN OUTCOME MEASURES:** Radiological and orthopedic assessments of fracture healing 12 weeks following injury and hypnotic subjects' final questionnaires and test scores on the Hypnotic Induction Scale. **RESULTS:** Results showed trends toward faster healing for the HYPNOSIS group through week 9 following injury. Objective radiographic outcome data revealed a notable difference in fracture edge healing at 6 weeks. Orthopedic assessments showing trends toward better healing for HYPNOSIS subjects through week 9 included improved ankle mobility; greater functional ability to descend stairs; lower use of analgesics in weeks 1, 3, and 9; and trends toward lower self-reported pain through 6 weeks.

**CONCLUSION:** Despite a small sample size and limited statistical power, these data suggest that HYPNOSIS may be capable of enhancing both anatomical and functional fracture healing, and that further investigation of HYPNOSIS to accelerate healing is warranted.

Faymonville, M. E., S. Laureys, et al. (2000). **"Neural mechanisms of antinociceptive effects of HYPNOSIS."** *Anesthesiology* 92(5): 1257-67.

**BACKGROUND:** The neural mechanisms underlying the modulation of pain perception by

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HYPNOSIS remain obscure. In this study, we used positron emission tomography in 11 healthy volunteers to identify the brain areas in which HYPNOSIS modulates cerebral responses to a noxious stimulus.

**METHODS:** The protocol used a factorial design with two factors: state (hypnotic state, resting state, mental imagery) and stimulation (warm non-noxious vs. hot noxious stimuli applied to right thenar eminence). Two cerebral blood flow scans were obtained with the 15O-water technique during each condition. After each scan, the subject was asked to rate pain sensation and unpleasantness. Statistical parametric mapping was used to determine the main effects of noxious stimulation and hypnotic state as well as state-by-stimulation interactions (i.e., brain areas that would be more or less activated in HYPNOSIS than in control conditions, under noxious stimulation).

**RESULTS:** HYPNOSIS decreased both pain sensation and the unpleasantness of noxious stimuli. Noxious stimulation caused an increase in regional cerebral blood flow in the thalamic nuclei and anterior cingulate and insular cortices. The hypnotic state induced a significant activation of a right-sided extrastriate area and the anterior cingulate cortex. The interaction analysis showed that the activity in the anterior (mid-)cingulate cortex was related to pain perception and unpleasantness differently in the hypnotic state than in control situations.

**CONCLUSIONS:** Both intensity and unpleasantness of the noxious stimuli are reduced during the hypnotic state. In addition, hypnotic modulation of pain is mediated by the anterior cingulate cortex.

Anbar, R. D. (2000). **"Self-HYPNOSIS for patients with cystic fibrosis."** *Pediatr Pulmonol* 30(6): 461-5. This report documents the utility of self-HYPNOSIS in patients with cystic fibrosis (CF). Sixty-three patients 7 years of age or older were offered the opportunity to be taught self-HYPNOSIS by their pulmonologist. Forty-nine agreed to learn it. Patients generally were taught HYPNOSIS in one or two sessions. The outcome was determined by patients' answers to open-ended questions regarding their subjective evaluation of the efficacy of HYPNOSIS. The average age of the 49 patients who were taught and used self-HYPNOSIS was 18.1 years (range, 7-49 years). Many of the patients used HYPNOSIS for more than one purpose, including relaxation (61% of patients), relief of pain associated with medical procedures (31%), headache relief (16%), changing the taste of medications to make the flavor more palatable (10%), and control of other symptoms associated with CF (18%). The patients successfully utilized self-HYPNOSIS 86% of the time. No symptoms worsened following . Sixteen patients chose to practice HYPNOSIS on their own for a half year or longer. In conclusion, with the use of self-HYPNOSIS, patients with CF can quickly learn to enhance their control over discomforts associated with therapy and their disease. Consideration should be given to making instruction in self-HYPNOSIS available to patients with CF.

Nickelson, C., J. O. Brende, et al. (1999). **"What if your patient prefers an alternative pain control method? Self-HYPNOSIS in the control of pain."** *South Med J* 92(5): 521-3. Despite the availability of specialized treatments for chronic pain, including biofeedback training, relaxation training, and hypnotic treatment, most physicians rely on the traditional approaches of surgery or pharmacotherapy. The patient in this case study had severe and chronic pain but found little relief from pain medications that also caused side effects. She then took the initiative to learn and practice self-HYPNOSIS with good results. Her physician in the resident's internal medicine clinic supported her endeavor and encouraged her to continue self-

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**HYPNOSIS.** This patient's success shows that self-HYPNOSIS can be a safe and beneficial approach to control or diminish the pain from chronic pain syndrome and can become a useful part of a physician's therapeutic armamentarium.

Wright, B. R. and P. D. Drummond (2001). **"The effect of Rapid Induction Analgesia on subjective pain ratings and pain tolerance."** *Int J Clin Exp Hypn* 49(2): 109-22. The effect of Rapid Induction Analgesia (RIA) on pain tolerance and ratings of mechanically induced pain in the pain-sensitized forearm was investigated in 58 undergraduates. Posthypnotic suggestions of relaxation and analgesia did not influence pain ratings or tolerance, but relaxation ratings increased after RIA. When suggestions for analgesia were made throughout pain testing, ratings of pain unpleasantness at the pain tolerance point decreased more in the RIA group than in the attention control group. However, RIA did not influence pain threshold or tolerance. It was concluded that RIA was more effective in reducing subjective reports of pain (particularly the affective component) than in altering pain tolerance, and that maintenance of hypnotic suggestions was more effective than posthypnotic suggestions of comfort and relaxation in alleviating the affective component of pain.

Rosen, G., F. Willoch, et al. (2001). **"Neurophysiological processes underlying the phantom limb pain experience and the use of HYPNOSIS in its clinical management: an intensive examination of two patients."** *Int J Clin Exp Hypn* 49(1): 38-55. In a pilot study with 2 patients suffering from phantom limb pain (PLP), hypnotic suggestions were used to modify and control the experience of the phantom limb, and positron emission tomography (PET) was used to index underlying pathways and areas involved in the processing of phantom limb experience (PLE) and PLP. The patients' subjective experiences of pain were recorded in a semistructured protocol. PET results demonstrated activation in areas known to be responsible for sensory and motor processing. The reported subjective experiences of PLP and movement corresponded with predicted brain activity patterns. This work helps to clarify the central nervous system correlates of phantom limb sensations, including pain. It further suggests that HYPNOSIS can be incorporated into treatment protocols for PLP.

Hofbauer, R. K., P. Rainville, et al. (2001). **"Cortical representation of the sensory dimension of pain."** *J Neurophysiol* 86(1): 402-11. It is well accepted that pain is a multidimensional experience, but little is known of how the brain represents these dimensions. We used positron emission tomography (PET) to indirectly measure pain-evoked cerebral activity before and after hypnotic suggestions were given to modulate the perceived intensity of a painful stimulus. These techniques were similar to those of a previous study in which we gave suggestions to modulate the perceived unpleasantness of a noxious stimulus. Ten volunteers were scanned while tonic warm and noxious heat stimuli were presented to the hand during four experimental conditions: alert control, HYPNOSIS control, hypnotic suggestions for increased-pain intensity and hypnotic suggestions for decreased-pain intensity. As shown in previous brain imaging studies, noxious thermal stimuli presented during the alert and HYPNOSIS-control conditions reliably activated contralateral structures, including primary somatosensory cortex (S1), secondary somatosensory cortex (S2), anterior cingulate cortex, and insular cortex. Hypnotic modulation of the intensity of the pain sensation led to significant changes in pain-evoked activity within S1 in contrast to our previous study in which specific modulation of pain unpleasantness (affect), independent of pain intensity, produced specific changes within the ACC. This double dissociation of cortical modulation indicates a relative specialization of the

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sensory and the classical limbic cortical areas in the processing of the sensory and affective dimensions of pain.

Sandrini, G., I. Milanov, et al. (2000). **"Effects of HYPNOSIS on diffuse noxious inhibitory controls."** *Physiol Behav* 69(3): 295-300. The neurophysiological mechanisms of hypnotic analgesia are still under debate. It is known that pain occurring in one part of the body (counterstimulation) decreases pain in the rest of the body by activating the diffuse noxious inhibitory controls (DNICs). The aim of this study was to explore the effects of HYPNOSIS on both pain perception and heterotopic nociceptive stimulation. The A forms of both the Harvard Group Scale of Hypnotic Susceptibility and the Stanford Hypnotic Susceptibility Scale were administered to 50 healthy students. Twenty subjects were selected and assigned to two groups: group A, consisting of 10 subjects with high hypnotic susceptibility; and group B, consisting of 10 subjects with low hypnotic susceptibility. The subjects were then randomly assigned first to either a control session or a session of hypnotic analgesia. The nociceptive flexion reflex (RIII) was recorded from the biceps femoris muscle in response to stimulation of the sural nerve. The subjective pain threshold, the RIII reflex threshold, and the mean area with suprathreshold stimulation were determined. Heterotopic nociceptive stimulation was investigated by the cold-pressor test (CPT). During and immediately after the CPT, the subjective pain threshold, pain tolerance, and mean RIII area were determined again. The same examinations were repeated during HYPNOSIS. HYPNOSIS significantly reduced the subjective pain perception and the nociceptive flexion reflex. It also increased pain tolerance and reduced pain perception and the nociceptive reflex during the CPT. These effects were found only in highly susceptible subjects. However, the DNIC's activity was less evident during HYPNOSIS than during the CPT effects without HYPNOSIS. Both HYPNOSIS and DNICs were able to modify the perception of pain. It seems likely that DNICs and HYPNOSIS use the same descending inhibitory pathways for the control of pain. The susceptibility of the subject is a critical factor in hypnotically induced analgesia.

Patel, B., C. Potter, et al. (2000). **"The use of HYPNOSIS in dentistry: a review."** *Dent Update* 27(4): 198-202. HYPNOSIS is a valuable technique in patient management. With appropriate training, general dental practitioners can widen the treatment options they can offer to patients, especially those who are dentally anxious. This article provides a brief theoretical and historical overview, and a review of the literature pertaining to the clinical uses of HYPNOSIS in dentistry.

Martin-Herz, S. P., C. A. Thurber, et al. (2000). **"Psychological principles of burn wound pain in children. II: Treatment applications."** *J Burn Care Rehabil* 21(5): 458-72; discussion 457. The pain involved in acute burn care can be excruciating and intractable. Even the best pharmacologic pain control efforts often fail to adequately control pain, especially procedure-related pain, in pediatric patients with burn injuries. Nonpharmacologic (hypnosis) interventions have been found to be effective in reducing pain in both children and adults and can be extremely important adjuvants to standard pharmacologic analgesia in the burn care setting. In the first article in this series, we outlined psychological factors that influence the emotions, cognitions, and behaviors of children during wound care. Building on this theoretical framework, we now present a detailed discussion of the implementation of nonpharmacologic intervention strategies in the burn care setting. Because accurate measurement of discomfort is imperative for the development of interventions and for the evaluation of their efficacy, we begin

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with a brief review of pain measurement techniques. We follow this with suggestions for tailoring interventions to meet specific patient needs and conclude with a detailed and practical discussion of specific intervention techniques and the implementation of those techniques.

Meurisse, M. (1999). **"Thyroid and parathyroid surgery under HYPNOSIS: from fiction to clinical application]."** Bull Mem Acad R Med Belg 154(2): 142-50; discussion 150-4. Since 1992, we have used HYPNOSIS routinely in more than 1400 procedures in plastic surgery. Our clinical success and experience with this technique led us to test whether HYPNOSIS using active patient collaboration, could be used as an effective adjunct to conscious intravenous sedation ("hypnosedation", (HS)) for endocrine surgery, as an alternative to general anaesthesia. On a total of 1905 cervical endocrine surgical procedures performed between 1995 and 1998, 296 thyroidectomies and 33 cervical explorations for hyperparathyroidism were conducted under HS. Conversion to GA was needed in three cases (0.9%). All patients having HS reported a very pleasant experience and had significantly less postoperative pain while analgesic use was significantly reduced in this group. Hospital stay was also significantly shorter, providing a substantial reduction of the costs of medical care. The postoperative convalescence was significantly improved after HS and full return to social or professional activity was significantly shortened. We conclude that HS is a very efficient technique that provide physiological, psychological and economic benefits to the patient.

Lioffi, C. and P. Hatira (1999). **"Clinical HYPNOSIS versus cognitive behavioral training for pain management with pediatric cancer patients undergoing bone marrow aspirations."** Int J Clin Exp Hypn 47(2): 104-16. A randomized controlled trial was conducted to compare the efficacy of clinical HYPNOSIS versus cognitive behavioral (CB) coping skills training in alleviating the pain and distress of 30 pediatric cancer patients (age 5 to 15 years) undergoing bone marrow aspirations. Patients were randomized to one of three groups: HYPNOSIS, a package of CB coping skills, and no intervention. Patients who received either HYPNOSIS or CB reported less pain and pain-related anxiety than did control patients and less pain and anxiety than at their own baseline. HYPNOSIS and CB were similarly effective in the relief of pain. Results also indicated that children reported more anxiety and exhibited more behavioral distress in the CB group than in the HYPNOSIS group. It is concluded that HYPNOSIS and CB coping skills are effective in preparing pediatric oncology patients for bone marrow aspiration.

Faymonville, M. E., M. Meurisse, et al. (1999). "Hypnosedation: a valuable alternative to traditional anaesthetic techniques." Acta Chir Belg 99(4): 141-6. **HYPNOSIS has become routine practice in our plastic and endocrine surgery services.** Revivication of pleasant life experiences has served as the hypnotic substratum in a series of over 1650 patients since 1992. In retrospective studies, followed by randomized prospective studies, we have confirmed the usefulness of hypnosedation (HYPNOSIS in combination with conscious IV sedation) and local anaesthesia as a valuable alternative to traditional anaesthetic techniques. The credibility of hypnotic techniques and their acceptance by the scientific community will depend on independently-confirmed and reproducible criteria of assessing the hypnotic state. Based on the clinical success of this technique, we were interested in confirming this phenomenon in healthy volunteers. The revivication of pleasant life experiences thus served as the cornerstone of a basic research program developed to objectify the neurophysiological attributes of the hypnotic state. We compared HYPNOSIS to normal alertness with similar thought content. In our experience,

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the activation profile obtained during the hypnotic state was completely different from simple remembrance of the same subject matter during normal alertness. This represents an objective and independent criteria by which to assess the hypnotic state.

Defechereux, T., M. Meurisse, et al. (1999). **"Hypnoanesthesia for endocrine cervical surgery: a statement of practice."** *J Altern Complement Med* 5(6): 509-20.

**OBJECTIVES:** To assess the feasibility of endocrine cervical surgery under hypnoanesthesia as a valuable, safe, efficient, and economic alternative to general anesthesia.

**METHODS:** Between April 1994 and June 1997, 197 thyroidectomies and 21 cervical explorations for hyperparathyroidism were performed under hypnoanesthesia (HYP) using Erikson's method. Operative data and postoperative course of this initial series were compared to a contemporary population of patients (n = 119) clinically similar except that they declined HYP or were judged unsuitable for it, and who were therefore operated on under general anesthesia (GA).

**RESULTS:** The surgeons all reported better operating conditions for cervicotomy using HYP. Conversion from HYPNOSIS to GA was needed in two cases (1%). All patients having HYP reported a pleasant experience and, keeping in mind that the GA group is not a randomly assigned control group, both had significantly less postoperative pain and analgesic use. Hospital stay was also significantly shorter, providing a substantial reduction in the costs of medical care. The postoperative convalescence was significantly improved after HYP and a full return to social or professional activity was significantly quicker. **CONCLUSION:** From this study, we conclude that HYP is an effective technique for providing relief of intraoperative and postoperative pain in endocrine cervical surgery. The technique results in high patient satisfaction and better surgical convalescence. This technique can therefore be used in most well-chosen patients and reduces the socioeconomic impact of hospitalization.

Botta, S. A. (1999). **"Self-HYPNOSIS as anesthesia for liposuction surgery."** *Am J Clin Hypn* 41(4): 299-301; discussion 302. This article demonstrates how the surgeon performs a major surgical procedure on himself using self-HYPNOSIS as the means of anesthesia and pain control. The hypnotic techniques used by the author for self HYPNOSIS are reviewed. These include glove anesthesia and transference; the switch technique; dissociation; positive imagery; as well as the specific post-hypnotic suggestions used by the surgeon during the operative procedure.

Danziger, N., E. Fournier, et al. (1998). **"Different strategies of modulation can be operative during hypnotic analgesia: a neurophysiological study."** *Pain* 75(1): 85-92. Nociceptive electrical stimuli were applied to the sural nerve during hypnotically-suggested analgesia in the left lower limb of 18 highly susceptible subjects. During this procedure, the verbally reported pain threshold, the nociceptive flexion (RIII) reflex and late somatosensory evoked potentials were investigated in parallel with autonomic responses and the spontaneous electroencephalogram (EEG). The hypnotic suggestion of analgesia induced a significant increase in pain threshold in all the selected subjects. All the subjects showed large changes (i.e., by 20% or more) in the amplitudes of their RIII reflexes during hypnotic analgesia by comparison with control conditions. Although the extent of the increase in pain threshold was similar in all the subjects, two distinct patterns of modulation of the RIII reflex were observed during the hypnotic analgesia: in 11 subjects (subgroup 1), a strong inhibition of the reflex was observed whereas in the other seven subjects (subgroup 2) there was a strong facilitation of the

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reflex. All the subjects in both subgroups displayed similar decreases in the amplitude of late somatosensory evoked cerebral potentials during the hypnotic analgesia. No modification in the autonomic parameters or the EEG was observed. These data suggest that different strategies of modulation can be operative during effective hypnotic analgesia and that these are subject-dependent. Although all subjects may shift their attention away from the painful stimulus (which could explain the decrease of the late somatosensory evoked potentials), some of them inhibit their motor reaction to the stimulus at the spinal level, while in others, in contrast, this reaction is facilitated.

Spiegel, D. and R. Moore (1997). **"Imagery and HYPNOSIS in the treatment of cancer patients."** *Oncology (Huntingt)* 11(8): 1179-89; discussion 1189-95. Many patients with cancer often seek some means of connecting their mental activity with the unwelcome events occurring in their bodies, via techniques such as imagery and HYPNOSIS. HYPNOSIS has been shown to be an effective method for controlling cancer pain. The techniques most often employed involve physical relaxation coupled with imagery that provides a substitute focus of attention for the painful sensation. Other related imagery techniques, such as guided imagery, involve attention to internally generated mental images without the formal use of HYPNOSIS. The most well-known of these techniques involves the use of "positive mental images" of a strong army of white blood cells killing cancer cells. Despite claims to the contrary, no reliable evidence has shown that this technique affects disease progression or survival. Studies evaluating more broadly defined forms psychosocial support have come to conflicting conclusions about whether or not these interventions affect survival of cancer patients. However, 10-year follow-up of a randomized trial involving 86 women with cancer showed that a year of weekly "supportive/expressive" group therapy significantly increased survival duration and time from recurrence to death. This intervention encourages patients to express and deal with strong emotions and also focuses on clarifying doctor-patient communication. Numerous other studies suggest that suppression of negative affect, excessive conformity, severe stress, and lack of social support predict a poorer medical outcome from cancer. Thus, further investigation into the interaction between body and mind in coping with cancer is warranted.

Ashton, C., Jr., G. C. Whitworth, et al. (1997). **"Self-HYPNOSIS reduces anxiety following coronary artery bypass surgery. A prospective, randomized trial."** *J Cardiovasc Surg (Torino)* 38(1): 69-75.

**OBJECTIVE:** The role of complementary medicine techniques has generated increasing interest in today's society. The purpose of our study was to evaluate the effects of one technique, self-HYPNOSIS, and its role in coronary artery bypass surgery. We hypothesize that self-HYPNOSIS relaxation techniques will have a positive effect on the patient's mental and physical condition following coronary artery bypass surgery.

**EXPERIMENTAL DESIGN:** A prospective, randomized trial was conducted. Patients were followed beginning one day prior to surgery until the time of discharge from the hospital.

**SETTING:** The study was conducted at Columbia Presbyterian Medical Center, a large tertiary care teaching institution.

**PATIENTS:** All patients undergoing first-time elective coronary artery bypass surgery were eligible. A total of 32 patients were randomized into two groups.

**INTERVENTIONS:** The study group was taught self-HYPNOSIS relaxation techniques preoperatively, with no therapy in the control group.



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**MEASURES:** Outcome variables studied included anesthetic requirements, operative parameters, postoperative pain medication requirements, quality of life, hospital stay, major morbidity and mortality. **RESULTS:** Patients who were taught self-HYPNOSIS relaxation techniques were significantly more relaxed postoperatively compared to the control group ( $p=0.032$ ). Pain medication requirements were also significantly less in patients practising the self-HYPNOSIS relaxation techniques than those who were noncompliant ( $p=0.046$ ). No differences were noted in intraoperative parameters, morbidity or mortality.

**CONCLUSION:** This study demonstrates the beneficial effects self-HYPNOSIS relaxation techniques on patients undergoing coronary artery bypass surgery. It also provides a framework to study complementary techniques and the limitations encountered.

## 9. HYPNOSIS FOR RADIOLOGY: EVIRA LANG AND MAX ROSEN

### **Vascular and Interventional Radiology: Cost Analysis of Adjunct Hypnosis with Sedation during Outpatient Interventional Radiologic Procedures<sup>1</sup>**

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**PURPOSE:** To compare the cost of standard intravenous conscious sedation with that of sedation with adjunct self-hypnotic relaxation during outpatient interventional radiologic procedures.

**MATERIALS AND METHODS:** Data were reviewed from a prospective randomized study in which patients undergoing vascular and renal interventional procedures underwent either standard sedation ( $n = 79$ ) or sedation with adjunct hypnosis ( $n = 82$ ). These data were used to construct a decision analysis model to compare the cost of standard sedation with the cost of sedation with adjunct hypnosis. Multiple sensitivity analyses were performed to assess the applicability of these results to other institutions with different cost structures with respect to the following variables: cost of the hypnosis provider, cost of room time for interventional radiologic procedure, hours of observation after the procedure, and frequency and cost of complications associated with over- or undersedation.

**RESULTS:** According to data from this experience, the cost associated with standard sedation during a procedure was \$638, compared with \$300 for sedation with adjunct hypnosis, which resulted in a savings of \$338 per case with hypnosis. Although hypnosis was known to reduce room time, hypnosis remained more cost-effective even if it added an additional 58.2 minutes to the room time.

**CONCLUSION:** Use of adjunct hypnosis with sedation reduces cost during interventional radiologic procedures.

Hypnotic and behavioral interventions have been shown to be effective in reducing pain and anxiety associated with invasive medical procedures. Although authors of several reports allude to the cost-effectiveness of these interventions, it is difficult to find supportive numeric data that would favor generalized introduction into clinical practice. Results of a recent prospective randomized study showed that adjunct self-hypnotic relaxation provided to patients

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during interventional radiologic procedures was associated with greater patient comfort, fewer adverse side effects, and shorter room times than when patients underwent only intravenous conscious sedation. The purpose of our study was to compare the cost of standard intravenous conscious sedation with that of sedation with adjunct self-hypnotic relaxation during outpatient interventional radiologic procedures.

**MATERIALS AND METHODS:** Patients: Input data originated from a prospective randomized study in which the authors assessed the effect of adjunct self-hypnotic relaxation on patient comfort during percutaneous vascular and renal procedures. The patient pool included consecutive consenting patients referred to the Section of Vascular and Interventional Radiology at the University of Iowa Hospital and Clinics, Iowa City, in 1997 and 1998. The study was approved by the investigational review board for human use and the hospital's nursing committee, and all patients signed an informed consent form prior to enrollment.

Patients were enrolled in the study if they had been referred for any of the following interventional radiologic procedures: diagnostic arteriography, diagnostic venography, thrombolysis, angioplasty, vascular stent placement, placement of vena cava filters, transjugular hepatic biopsy, nephrostomy or nephroureterostomy. Exclusion criteria were severe chronic obstructive pulmonary disease, psychosis, intolerance of midazolam or fentanyl, pregnancy, or inability to hear or understand English. Patients underwent screening with the Mini-Mental State Examination. If they passed with a score of at least 24 of a maximum of 30 points, they were randomly assigned to one of three groups. Levels of anxiety or hypnotizability were neither inclusion nor exclusion criteria.

Seventy-nine patients (36 men, 43 women; age range, 18–92 years; median age, 57 years) were randomly assigned to a group undergoing standard intravenous conscious sedation; 82 patients (38 men, 44 women; age range, 19–82 years; median age, 54 years) were randomly assigned to a hypnosis group having additional self-hypnotic relaxation. The physical status classification, according to the American Society of Anesthesiologists, of the patients ranged from 1 to 4, with a mean of 2.23, defined as follows:

- 1, healthy patient;
  - 2, mild systemic disease;
  - 3, severe systemic disease;
  - 4, acute life-threatening condition.
- There were no significant differences in group composition with regard to age, weight, sex, disease category, type and complexity of procedure, number of prior procedures, and baseline pain and anxiety levels.

**Standard Intravenous Conscious Sedation:** All patients were attended by a special procedures nurse and had access to patient-controlled anesthesia with delivery of 0.5 mg of midazolam and 25 µg of fentanyl per request for as many as four requests, with lockout times (when the patient could not access medication) of 5 minutes, followed by a lockout time of 15 minutes. Patients indicated the desire for medication with activation of a bell that signaled the attending nurse to deliver the drugs. Medication was withheld when the systolic pressure was less than 89 mm Hg, oxygen saturation was less than 89%, or patients developed slurred speech or became difficult to arouse.

The patient-controlled analgesia model was chosen to reduce the possibility of unblinded experimenter bias toward using more drugs in control patients and to ensure that all patients had the same access to drugs. Patient-controlled anesthesia is well suited for acute pain management

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during and after medical procedures and is thought to enhance comfort while providing patients with a means of control. In a pilot trial (Lang EV, unpublished observation, 1995) prior to this study, use of a patient-controlled anesthesia pump was tested but was found to be potentially hazardous. Since drug-induced cardiorespiratory emergencies are treated differently from those induced by other causes, rapid knowledge of the drug history becomes important, and entering the recording mechanism of a patient-controlled anesthesia pump could cause undue delay. Therefore, patients were given a reusable attention bell (cost, \$3.50 at office supply stores) that signaled the attending nurse, rather than a machine, to deliver drugs through an indwelling intravenous access route.

To ensure that patients who would hesitate to use the bell would not undergo undue distress, rules for overriding patient-determined analgesia were defined and agreed on by the study and procedure personnel prior to the study. Overriding criteria included de novo increase in systolic blood pressure beyond 180 mm Hg, spontaneous complaints, verbal request for drugs, or significant perceived distress. In addition, all patients received 1% lidocaine for local anesthesia for all access sites—typically 10 mL for vascular access and 30–40 mL for percutaneous renal access.

**Self-hypnotic Relaxation:** The self-hypnotic relaxation intervention was structured in the procedure room by one of four providers (one nurse, one psychology graduate student, two medical students) and has been described in detail previously. It included the following standardized behaviors: matching the patient's verbal and nonverbal communication pattern (ie, preference for modes of expression, sitting next to rather than towering over a supine patient); attentive listening; provision of control; swift response to patient requests; encouragement; use of emotionally neutral descriptors ("What are you experiencing?"); avoidance of negative descriptors ("How bad is your pain?"); and reading of a hypnotic induction script, with a provision for management of anxiety and pain, if needed. In summary, patients were instructed to roll their eyes upward, close their eyes, breathe deeply, concentrate on a sensation of floating, and immerse themselves in a safe and comfortable place (for full text, see reference 14). The completion time of the hypnotic induction script was 5–10 minutes, and hypnosis was performed while the patient was prepared for the procedure. Since all hypnotic inductions were performed in the procedure suite, the time involved was included in the overall procedure time and, thus, in the cost analysis. All patient-provider interactions were videotaped, and 60 (25%) of 240 were randomly selected to check for adherence to the protocol. Fidelity of treatment administration was invariably high among the providers, and thus not significantly different.

Analysis of variance showed that there was no difference among providers with respect to room time; analysis was performed by using the logarithmic transformation of the procedure times because of skewness of distribution of the raw time data. To assess for theoretic differences among future providers, the reader can refer to two sensitivity analyses (described later) that would reflect the skill of the provider structuring the hypnosis: a sensitivity analysis performed for the effect of room time with hypnosis and another sensitivity analysis for the effect of undersedation with hypnosis. **Decision Analysis Model**

The cost of the hypnosis treatment, compared with that of standard treatment, was assessed with a decision analysis model by using commercial software (DATA; TreeAge, Williamstown, Mass). For both treatments, with the decision analysis model the following possible outcomes were used for outpatient interventional radiologic procedures:

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- (a) uncomplicated sedation,
- (b) oversedation, or
- (c) undersedation.

Uncomplicated sedation was assumed to be associated with no additional cost. Oversedation or undersedation could result in

- (a) no additional cost,
- (b) cost associated with additional intense observation,
- (c) cost associated with sustained observation, or
- (d) cost associated with hospital admission. Probabilities of occurrence and associated cost for each of these scenarios were derived from our prior experience with the 161 patients. Costs of materials administered during treatment of oversedation or undersedation were omitted because of their negligible contribution—for example, costs for oxygen tubing, emesis basins, and drugs such as nifedipine or atropine were all less than \$1. The analysis was conducted from the perspective of the hospital.

**Basic Decision Tree:** Since the goal of this study was to provide a generalizable cost assessment for outpatient interventional radiologic procedures, input data for cost were derived from year 2000 costs at Beth Israel Deaconess Medical Center, Boston, Mass, analyses were included to allow for extrapolation to cost structures at other institutions. For the basic decision analysis tree, the assumption was made that all patients would leave the hospital after a 4-hour recovery period unless extended observation or admission were required.

Room time encompassed the period from the patients' entry into the procedure suite until their transfer to the recovery unit. Average procedure time was 78 minutes in the standard group and 61 minutes in the hypnosis group. Costs for room time included equipment amortization and personnel cost based on local salaries and fringe benefits for one physician, one nurse, one technologist, and one optional additional provider structuring the hypnotic intervention.

The basic decision tree assumptions were that the nurse already present structured the hypnosis intervention and, thus, the cost for an optional additional hypnosis provider would be \$0. To allow for the possibility of an additional hypnosis provider in a subsequent sensitivity analysis (Materials and Methods, last section), the cost of one additional health care provider, a psychologist, was included in the room time. In either event, the cost of nursing time was included for the duration of the entire procedure. Recovery cost included four possible components:

- (a) immediate postprocedure time (eg, sheath removal, groin compression);
- (b) basic recovery time (eg, monitoring vital signs);
- (c) additional intense recovery time, when required; and
- (d) sustained observation time, when required. We assumed that one physician and one nurse were required for the immediate postprocedure care and that one nurse was able to monitor up to four patients during the basic recovery time. All patients required immediate postprocedure time and basic recovery time.

If over- or undersedation occurred, we assumed that patients would require additional intense recovery time and that this would have to be monitored by a nurse and physician. The following times were assumed for additional intense recovery time for complications of sedation with hypnosis: oversedation leading to sustained observation or admission, 15 or 30 minutes, respectively; undersedation leading to sustained observation or admission, 30 or 60 minutes,

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respectively. The following times were assumed for additional intense recovery time for complications of sedation with standard care: oversedation leading to sustained observation or admission, 30 or 60 minutes, respectively; undersedation leading to sustained observation or admission, 45 or 60 minutes, respectively.

If after the intense recovery time the patients still exhibited the effects of over- or undersedation, we allowed for an additional 30–60 minutes of sustained observation time monitored by a nurse. After the time in the interventional radiologic recovery area, all patients either were sent to the day care unit for an additional 4 hours of "outpatient" observation or, if complications necessitated, were admitted to the hospital.

To calculate admission cost for undersedation, we used the average cost weights of diagnosis-related group (DRG) 130, peripheral vascular disorders with complications (cost weight, 0.9427) and DRG 131, peripheral vascular disorders without complications (cost weight, 0.6067). The average cost weight for undersedation was 0.7747. To calculate admission cost caused by oversedation, we used the average cost weight of DRG 99, respiratory signs and symptoms with complications (cost weight, 0.6738) and DRG 100, respiratory signs and symptoms without complications (cost weight, 0.5150). The average cost weight for oversedation was 0.5944. In both instances, the Medicare blended rate paid to Beth Israel Deaconess Medical Center, Boston, in 1999 (\$4,273) was assumed. The blended rate included technical but not professional fees. The cost weight is the severity factor assigned to each DRG by the Health Care Financing Administration, or HCFA. It is multiplied by the blended rate—the standardized rate that each hospital is paid—to calculate the exact reimbursement for a specific DRG. For example, if a DRG has a cost weight of 2 and a blended rate of \$5,000, the hospital would be paid \$10,000 for that DRG. An average of two cost weights was used in the basic decision tree to account for institutional variations in DRG coding. Subsequently (Materials and Methods, last section), sensitivity analyses were performed to assess the effect that specific DRG coding of complications may have on our conclusions. The two cost weights for each complication defined the range of the sensitivity analyses. Oversedation included all events associated with depression of cardiorespiratory or mental status. Oxygen desaturation was included only when a decrease to less than 89% persisted longer than 2 minutes and required placement of a nasal oxygen cannula.

**Standard group.**—Sixteen (20%) of 79 patients showed signs of oversedation. Six patients with oxygen desaturation incurred no additional cost, except for the nasal oxygen cannula, which was considered a no-cost item. Six patients required intense observation because of prolonged hypoxemia with or without associated cardiovascular depression ( $n = 5$ ) and slow resolution of slurred speech ( $n = 1$ ). Four patients qualified for admission—three because of drowsiness and/or unresponsiveness and one because of continued bradycardia, hypotension, and recurrent bleeding from the puncture site.

**Hypnosis group.**—**Oversedation** affected nine (11%) of 82 patients and required no treatment in five patients, except for a nasal cannula. Four patients needed intense observation—one for prolonged hypoxemia with distracting behavior during the procedure, one for transient hypoxemia in recovery, one for being poorly arousable in recovery, and one for bradycardia.

**Undersedation:** Undersedation included all events associated with incidents requiring staff attention, such as discomfort in recovery, persistent new hypertension, and distracting, attention-seeking patient behavior.

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**Standard group.—Undersedation** was observed in 24 (30%) of 79 patients. One patient did not need further treatment for transient tachycardia. Twenty-one patients required intense observation for distracting behavior (n = 10), discomfort (n = 6), hypertension (n = 3), or recurrent bleeding from the puncture site (n = 2). Two patients qualified for admission because of recurrent bleeding.

**Hypnosis group.—Undersedation** was encountered in eight (10%) of 82 patients because of discomfort (n = 4), hypertension (n = 1), and distracting behavior (n = 3). All incidents required intense observation.

**Sensitivity Analyses:** Sensitivity analyses were performed to address how changes in individual input parameters would affect overall outcome and to extrapolate the applicability of these results to those of other institutions with different cost structures. Outcome was considered not sensitive to a parameter if change in the value of this parameter over a given range did not affect overall cost superiority of a treatment (ie, standard or hypnosis treatment). If outcome was sensitive to a parameter, a threshold analysis was performed to determine at what value one strategy became preferable to the other.

**Sensitivity analyses were performed for the following parameters:**

- (a) cost of an additional hypnosis provider of \$0–\$10/min;
- (b) room time for use of hypnosis of 25–200 minutes;
- (c) hours of additional observation after the procedure for complications related to over- or undersedation of 0–5 hours;
- (d) probability of oversedation with standard treatment with P values between .00 and .50;
- (e) probability of undersedation with hypnosis treatment with P values between .00 and .50;
- (f) cost for admission caused by undersedation of \$0–\$10,000;
- (g) cost weight for admission caused by undersedation of 0.6067–0.9427;
- (h) cost for admission due to oversedation of \$0–\$10,000;
- (i) cost weight for admission due to oversedation of 0.5150–0.6738;
- (j) a blended rate of \$2,500–\$10,000; and (k) hourly cost of the procedure room of \$2.50–\$10/min.

**Basic Decision Tree:** Illustrates the decision analysis tree with the associated probabilities of each outcome. Average sedation cost for standard treatment was \$638 and for hypnosis treatment was \$300, which resulted in an average savings of \$338 per case with hypnosis.

**Sensitivity Analyses:** The sensitivity analysis allowed us to calculate the effect that changing one variable would have on the total costs associated with hypnosis or standard therapy. The lower and upper boundaries correspond to the lowest and highest values assumed for each variable tested. These boundaries were chosen to reflect a reasonable range of variation that may be encountered in different clinical practices. In most cases, the range was chosen so that the baseline value was near the center of the range.

**Effect of an additional hypnosis provider.**—When an additional provider is included to structure the hypnosis treatment, savings realized by using hypnosis decrease to a threshold of a salary of \$5.50/min; when the salary is greater than this amount, standard treatment is more cost-effective. The threshold of \$5.50/min corresponds to \$330/h, or \$633,600/y plus 30% fringe benefits. When the basic decision tree is recalculated for a scenario that includes a staff

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psychologist at an annual salary of \$70,000 plus fringe benefits, the sedation cost with hypnosis is \$348. This still leaves a cost superiority of \$290 (\$638 minus \$348) per case.

**Effect of room time and postprocedure observation time.**—When sensitivity analysis was performed with room time of 25–200 minutes while keeping all other variables constant, a threshold value of 136.2 minutes resulted for adjunct hypnosis. Thus, as long as average room time with hypnosis does not exceed 136.2 minutes, for a case that would take 78 minutes with standard conditions, hypnosis remains less costly on average. Hypnosis was always more cost-effective over a range of postprocedure observation times of 0–5 hours because of complications of over- or undersedation.

Graph shows the effect of room time in minutes required for an interventional radiologic procedure by using hypnosis divided by the expected value, which is the cost in dollars for standard therapy ( ) versus that for hypnosis ( ). The cost of standard therapy is constant at an average procedure duration of 78 minutes. According to conditions of the basic decision tree, a procedure with hypnosis lasts, on average, 61 minutes. The threshold value is the room time at which the cost of hypnosis is equal to the cost of standard therapy. As long as interventional radiologic procedures performed with hypnosis require fewer than 136.2 minutes, it is more cost-effective to perform hypnosis than to perform standard therapy.

**Effect of the probability of oversedation during standard treatment.**—Standard treatment was always more expensive than hypnosis treatment over a range of probability between 0% and 50% of oversedation from standard therapy. When the probability of oversedation from standard therapy is 0%, standard therapy costs \$189 more than hypnosis. When the probability of oversedation from standard therapy is 50%, the cost of standard therapy is \$558 more than the cost of hypnosis.

**Effect of the probability of undersedation with hypnosis treatment.**—Standard treatment was always more expensive than hypnosis treatment over a range of probability of 0%–50% of undersedation from hypnosis therapy. When the probability of undersedation from hypnosis therapy is 0%, standard therapy costs \$352 more than hypnosis. When the probability of undersedation from hypnosis therapy is 50%, the cost of standard therapy is \$290 more than the cost of hypnosis.

**Effect of blended rates and cost weights.**—The savings with hypnosis increase with an increase in the blended rate, ranging from \$250 (\$550 for standard therapy minus \$300 for hypnosis) at a blended rate of \$2,500 and reaching \$623 (\$923 minus \$300) at a blended rate of \$10,000. We then tested whether the use of the specific DRG used to estimate the cost of complications associated with oversedation or undersedation had an effect on our results. If the cost weight for the DRG used for complications from oversedation increases from 0.5150 (DRG 100) to 0.6738 (DRG 99), the savings from the use of hypnosis increase from \$321 to \$356. If the cost weight for the DRG used for complications associated with undersedation increases from 0.6067 (DRG 131) to 0.9427 (DRG 130), the savings from the use of hypnosis increase from \$320 to \$357. Thus, as the costs of complications increase, the net savings associated with the use of hypnosis, compared with those associated with standard therapy, increase. **Effect of the hourly procedure room cost.**—Our base case assumption was that each minute in the procedure room cost \$4.50. As the cost of procedure room time varied between \$2.50 and \$10 per minute, the savings realized by using hypnosis increased from \$304 per case to \$431 per case.

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**DISCUSSION:** With use of adjunct hypnosis, the savings, on average, was \$338 per case in conditions of the basic decision tree. The savings depended strongly on the Medicare blended rate of the institution, which ranged from \$250 per case at a blended rate of \$2,500 to \$623 per case at a blended rate of \$10,000. Thus, high-cost academic centers with high Medicare blended rates are expected to gain most from use of the hypnotic intervention.

The basic decision tree assumption was that hypnosis was provided by an interventional team member, such as a specially trained nurse or technologist. Members of surgical teams can be highly effective in structuring hypnosis during invasive medical procedures and may be superior to outside personnel. If an additional person were to be added to structure hypnosis, cost savings would be less, but still remain substantial at \$290 per case. This latter number was derived from a decision tree by using the equivalent of a staff psychologist's salary of \$70,000/y plus 30% fringe benefits. Sensitivity analysis showed that adjunct hypnosis is less costly than standard sedation unless the additional person were to demand more than \$330/h. This rate of reimbursement surpasses by far that of most nonphysician specialists and interventionalists, making even their participation in hypnosis worth their time.

If procedure personnel structure hypnosis, the cost of training and continued support should be accounted for. Typically, 24 hours of classroom instruction, supervised clinical instruction, and a second 8-hour workshop suffice for medical personnel to achieve sufficient skills in the methods. Continued supervision through a psychologist or a physician experienced in hypnosis on a biweekly basis is highly desirable.

Whether using procedure personnel is more resource-sensitive than adding a psychologist, who does not need additional training and supervision, depends on personnel turnover and recurrent training cost. The up-front costs of establishing a procedure team-based hypnosis program depend on the level of participation rate of the personnel desired. The cheapest alternative may be to have individual procedure personnel trained at a hypnosis course administered by one of the hypnosis societies (eg, Society for Clinical and Experimental Hypnosis, American Society of Clinical Hypnosis, New England Society of Hypnosis) or other accredited continuing medical education programs. Training an entire team for the procedure has the advantage of creating a supportive climate and providing team members enhanced communication skills that can also be used in nonpatient interactions.

On the basis of which model is chosen and how many persons are selected for training or whether outside trainers are invited, up-front costs are an estimated \$3,000–\$15,000 (estimated on the basis of the prior training cost incurred). From a hospital perspective, these costs are recuperated after using self-hypnotic relaxation in 10–50 patients.

When offered hypnosis training, personnel commonly voice concerns that inducing and maintaining hypnosis in the procedure suite is performed may prolong room time. In the case of adjunct hypnosis, as was used in this study, room time actually decreased from 78 to 61 minutes despite the fact that hypnosis was induced in the procedure suite. However, even if hypnosis were to add time to the procedure, it would still be less costly than standard sedation. Specifically, hypnosis could add up to an additional 58.2 minutes to the procedure time and still have a cost superiority, compared with the cost of standard treatment. These results should dispel concerns that introduction of the self-hypnotic intervention would reduce efficiency or be too costly.



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Costs of standard conscious sedation are heavily influenced by the probability of oversedation with intravenously administered sedatives and narcotics. The average amount of sedatives and narcotics administered in standard sedation in patients in this study (1.9 drug units; with one drug unit equaling 1 mg of midazolam or 50 µg of fentanyl) is well within the range of doses commonly used for similar procedures and within the customary range of drugs used in the institution of this study for these types of procedures. Higher doses risk higher probabilities of oversedation; lower doses may result in a less cooperative patient. Hypnotic adjuncts are clinically helpful in that they can provide comfort with less need for intravenous drugs (0.9 units in this study) and thus less risk of oversedation. On the other hand, individuals who are not responsive to the hypnotic intervention may either demand more drugs, and thus be exposed to the risk of oversedation, or remain undersedated. Undersedation with hypnosis also affects cost. Sensitivity analysis shows that even if the probability of undersedation were to reach 80%, hypnosis would still be less costly than standard therapy, with a savings of \$86.

One potential limitation is the use of DRGs to estimate the cost of complications related to over- and undersedation. Although the DRG may not directly correspond to the actual cost of care provided by the hospital, we believe that it is a reasonable proxy. In addition, the use of DRGs incorporates the blended rate paid to each hospital. The blended rate takes into account the hospital's patient population and regional variations in cost. Thus, by varying the severity of the blended rate, our analysis can be easily generalized to other institutions.

The superior clinical effect of hypnosis has already been described in the original article from which the cost data of this study are derived. Thus, this current analysis does not aim at demonstrating the effect of hypnosis on clinical well-being (ie, its effectiveness) but merely on the effect of hypnosis on cost. Several of these events labeled as oversedation or undersedation do not qualify as complications in the sense of morbidity reporting but rather represent a highly self-critical reporting of any event in deviation of an ideal equilibrium among comfort level, dose of medication, and side effects of medication.

A second limitation is that the cost of room time for the procedure varies among institutions. However, the sensitivity analysis performed on the cost of the procedure room demonstrates that the cost superiority of hypnosis persisted at all values tested from \$2.50 to \$10 per minute (base case, \$4.50/min). We have previously shown that adjunct hypnosis with intravenous conscious sedation during interventional radiologic procedures is effective in reducing pain, anxiety, and procedure time. Findings of this cost analysis show substantial cost savings when adjunct hypnosis is used. Therefore, the choice between greater patient comfort and lower cost need not be made. Medical benefits of hypnosis for the patient notwithstanding, adjunct hypnosis during procedures is a clinically feasible and cost-saving practice.

## 10. WARTS

Warts are benign tumors of the skin caused by infection with the human papilloma virus. More than 50 types of such viruses have been identified (e.g., *Verruca vulgaris*, *Verruca plantaris*, *Verruca plana juvenilis*, etc.). It is not understood why they locate in a particular area (i.e., plantar, venereal, etc.), and why their course is characterized by spontaneous regression and reoccurrence. The conventional medical treatments of warts have included chemical burning, electrocautery, freezing, interferon injections, laser therapy, and surgical removal. The psychological treatments of warts have included the analysis of the meaning of warts, waking

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suggestions for wart removal, heterohypnosis, imagery, and self-hypnosis. There are anecdotal reports that hypnotic treatments result in reduced itching and discomfort, structural changes, and reduction of skin lesions.

Spanos, Stenstrom, and Tohnston (1988) and Spanos, Williams, and Gwynn (1990) conducted a series of well-controlled experiments to investigate the role of hypnosis and hypnotizability in wart regression. One hundred and eighty individuals participated in three studies. In each of the studies, the participants were included on the basis of having at least one wart. They were randomly assigned to experimental and control conditions, with the number of participants ranging from 10 to 24 per condition. The hypnotic treatment consisted of a 2-minute protocol that contained a hypnotic induction followed by direct suggestions for wart elimination. Participants were instructed to count their warts daily and vividly imagine tingling sensations and warmth in their warts, followed by images of warts shrinking and falling off. The control conditions consisted of: cold laser placebo and no-treatment/waiting list (Spanos et al., 1988, Study 1); suggestions for wart elimination following relaxation instructions, suggestions for wart elimination alone (i.e., without relaxation or hypnosis induction), and no-treatment/waiting list (Spanos et al., 1988, Study 2); and topical placebo, topical salicylic acid, and no-treatment/waiting list (Spanos et al., 1990, Study 3). Treatment outcome was measured by number of warts lost and by the percentage of wart loss at a 6-week follow-up after the initiation of treatment (Spanos et al., 1988; Spanos et al., 1990).

In order to avoid inadvertent effects of hypnotizability testing on treatment results, participants' hypnotizability was assessed at the end of the follow-up period with the Carleton University Responsiveness to Suggestion Scale (CURSS; Spanos, Radtke, Hodgins, Stam, & Bertrand, 1983). Spanos et al. (1988) reported a cure rate of 50% in the participants who received hypnotic suggestions for wart removal, which was significantly higher than in the placebo and no-treatment control groups. However, the cure rate was comparable across the groups of participants who received direct suggestions for wart removal with and without hypnotic induction or relaxation instructions (Spanos et al., 1988).

Ewin (1992) reported on 41 case studies of patients previously clinically diagnosed with warts who had 1 to 12 failed medical therapeutic interventions. The hypnotherapeutic treatment employed by Ewin was highly idiosyncratic. It included: (a) ideomotor signaling to elicit a patient's preference for a particular type of suggestions (e.g., "warm," "cold," or "tingling"); (b) direct suggestions in hypnosis (DSIH) aimed at wart removal; (c) analysis, with hypnotic age regression to the time of onset, and exploration of secondary gains and meaning of warts; and (d) suggestions for healing. The duration of the treatment was variable, ranging from 2 to 16 weekly sessions. The outcome of hypnotherapy was determined through visual inspection and comparisons of pictures taken pretreatment, at the conclusion of treatment, and at 6-month follow-up. Ewin reported a cure rate of 80%. Patients' hypnotizability was not measured.

## 11. RESEARCH ON GUIDED IMAGERY, HYPNOSIS, & RELAXATION TECHNIQUES

Department of Anesthesiology, Medical College of Wisconsin, Milwaukee 53226, USA.  
<mailto:jhudetz@uwm.edu> **This study tested the hypothesis that relaxation by guided imagery improves working-memory performance of healthy participants.** 30 volunteers (both sexes, ages 17-56 years) were randomly assigned to one of three groups and administered the WAIS-III

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Letter-Number Sequencing Test before and after 10-min. treatment with guided imagery or popular music. The control group received no treatment. Groups' test scores were not different before treatment. The mean increased after relaxation by guided imagery but not after music or no treatment. This result supports the hypothesis that working-memory scores on the test are enhanced by guided imagery and implies that human information processing may be enhanced by prior relaxation. *J Music Ther* 1999; 36(1):39-55. The Effects of Guided Imagery and Music Therapy on Reported Change in Normal Adults. Maack C, Nolan P. Hamburg, Germany.

**This study explores the main changes gained from Guided Imagery and Music (GIM) therapy as described by former clients.** It also explores whether gains are integrated into the clients' lives and if those changes stabilize over periods of time after finishing GIM therapy. Questionnaires were sent to GIM therapists who forwarded them to former GIM clients. Twenty-five former GIM clients returned questionnaires directly to the researcher. Results show that the main gains reported by former clients of GIM therapy are (a) getting more in touch with one's emotions, (b) gaining insights into some problems, (c) spiritual growth, (d) increased relaxation, and (e) discovering new parts of oneself. Results also show that GIM therapy might be helpful for clients with symptoms of anxiety and/or fear, and for clients who want to increase their self-esteem. Changes gained during GIM therapy appear to stabilize over a period of time after finishing GIM therapy. They improved after termination of therapy, especially in the mental and transpersonal

*The Journal of Invasive Cardiology*. April 1999 Vol 11. Number 4. Tusek, Diane. **This article emphasized the many uses of guided imagery in health care.** It discusses how it can significantly reduce stress, pain, side effects of treatments, blood pressure, headaches and strength immune functioning. Patients are encouraged to be active participants in their care. Patients, family members, and staff have demonstrated positive benefits.

*The Journal of Head and Face Pain*. May 1999, Vol. 39, Number 5. Effect of Guided Imagery on Quality of Life for Patients with Chronic Tension-Type Headache. Mannix L, Tusek D., Solomon G.: Dr. Mannix from the Headache Wellness Center, Greensboro, NC. discussed the positive effects guided imagery had on the severity of headaches and quality of life. The study was conducted at The Cleveland Clinic Foundation. *Journal of the National Cancer Institute*, 7/00. **STRESS AND CANCER:** Few events are as stressful as a diagnosis of cancer. But reducing stress may be key to survival. Stanford University doctors found that among women with metastatic breast cancer, those with high daytime levels of the stress hormone cortisol—a marker for psychological stress—died on average one year sooner than those with normal levels of the hormone. Meditation, guided imagery, even listening to music are among the many mind-body techniques that can help contain stress. The calming influence of meditation, for example, has been shown to reduce flare-ups of psoriasis, lower blood pressure, lessen addictive cravings, and mitigate depression. And other techniques, such as yoga and breathing exercises, are now employed at a number of clinics to ease the stress of infertility and boost fertility rates

*Nurs Clin North Am* 1995 Dec; 30(4):697-709 (ISSN: 0029-6465): **Relaxation and the relief of cancer pain.** Sloman R. University of Sydney, Faculty of Nursing, Australia. Progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain. The techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. The techniques

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can be taught by nurses and readily learned by patients. The techniques provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient.

Annu Rev Nurs Res 1999; 17:57-84 (ISSN: 0739-6686) **Guided imagery interventions for symptom management.** Eller LS For the past several decades, papers in the nursing literature have advocated the use of cognitive interventions in clinical practice. Increasing consumer use of complementary therapies, a cost-driven health care system, and the need for evidence-based practice all lend urgency to the validation of the efficacy of these interventions. This review focuses specifically on guided imagery intervention studies identified in the nursing, medical and psychological literature published between 1966 and 1998. Included were 46 studies of the use of guided imagery for management of psychological and physiological symptoms. There is preliminary evidence for the effectiveness of guided imagery in the management of stress, anxiety and depression, and for the reduction of blood pressure, pain and the side effects of chemotherapy.

**Insomnia: Web MD: Cognitive-Behavioral Techniques: Cognitive-behavioral techniques are helpful for retraining healthy sleep patterns. Such techniques combine sleep hygiene, relaxation techniques, and changing the habits and thought patterns that might cause wakefulness. Combinations may work best.** A 1993 study reported that after only ten weeks, people with insomnia who used sleep restriction therapy, sleep hygiene, and relaxation techniques achieved a 75% reduction in the time taken to fall asleep (an average of 19 minutes). Such behavioral methods are also effective in elderly patients and, in fact, work better than drugs in this population as well as other age groups. If treating underlying problems and establishing proper sleep hygiene do not relieve sleeplessness, the patient may need to experiment with different behavioral approaches.

**Immunity: STUDY: RELAXATION TECHNIQUES HELP CANCER PATIENTS** LONDON (Reuters): April 15, 2000, 10:34 AM: **Cancer patients can think themselves to a stronger immune system using relaxation and guided imagery techniques, a British researcher said on Saturday.** Professor Leslie Walker, the director of the Institute of Rehabilitation and Oncology Health at the University of Hull in northern England, said the psychological techniques can also help patients to cope better with the disease. "Our results show that relaxation and guided imagery can bring about measurable changes in the body's own immunological defenses," he said in a statement. "However, the study provides strong evidence that, for some patients, relaxation and imagery have a very beneficial effect on quality of life," he said.

Walker and his colleagues tested relaxation techniques on 80 women suffering from breast cancer. They presented their findings to the annual meeting of the British Psychological Society. All of the women received standard medical treatments for breast cancer, but half were randomly selected for training in muscular relaxation, guided imagery and cue-controlled relaxation. Guided imagery involves imagining the body's natural defenses battling the cancerous cells. In cue-controlled relaxation patients learn to relax by thinking of special words. When the researchers tested all the women, they found that those practicing the relaxation techniques had higher numbers of important immune system cells.

Richardson MA, Post-White J, Grimm EA, Moye LA, Singletary SE, Justice B. Center for Alternative Medicine Research, University of Texas-Houston School of Public Health, USA.

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**BACKGROUND:** The pilot study used clinical trial methodology to differentiate the effects of imagery and support on coping, life attitudes, immune function, quality of life, and emotional well-being after breast cancer. **METHODS:** Women (N = 47) who completed treatment for primary breast cancer, excluding stage IV, were randomly assigned to standard care (n = 15) or six weekly support (n = 16) or imagery (n = 16) sessions. Self-report measures included Ways of Coping-Cancer, Life Attitude Profile, Quality of Life (FACT-B), Profile of Mood States, and Functional Support.

Immune measures included natural killer cell activity, plasma neopterin, interferon-gamma, interleukins 1 alpha, 1 beta, and 2, and beta-endorphin levels. Differences between groups over time were tested using general linear models, adjusted for pretest score and covariates (age, stage, and months posttreatment). **RESULTS:** For all women, interferon-gamma increased, neopterin decreased, quality of life improved, and natural killer activity remained unchanged. Compared with standard care, both interventions improved coping skills (seeking support) and perceived social support, and tended to enhance meaning in life. Support boosted overall coping and death acceptance. When comparing imagery with support, imagery participants tended to have less stress, increased vigor, and improved functional and social quality of life.

**CONCLUSION:** Although imagery reduced stress and improved quality of life, both imagery and support improved coping, attitudes, and perception of support. The clinical implications of these changes warrant further testing.

**Pain Management:** Annu Rev Nurs Res 1999; 17:57-84 (ISSN: 0739-6686) **Guided imagery interventions for symptom management.** Eller LS. For the past several decades, papers in the nursing literature have advocated the use of cognitive interventions in clinical practice. Increasing consumer use of complementary therapies, a cost-driven health care system, and the need for evidence-based practice all lend urgency to the validation of the efficacy of these interventions. This review focuses specifically on guided imagery intervention studies identified in the nursing, medical and psychological literature published between 1966 and 1998. Included were 46 studies of the use of guided imagery for management of psychological and physiological symptoms. There is preliminary evidence for the effectiveness of guided imagery in the management of stress, anxiety and depression, and for the reduction of blood pressure, pain and the side effects of chemotherapy.

The Journal of Invasive Cardiology. April 1999 Vol 11. Number 4. Tusek, Diane. **This article emphasized the many uses of guided imagery in health care.** It discusses how it can significantly reduce stress, pain, side effects of treatments, blood pressure, headaches and strength immune functioning. Patients are encouraged to be active participants in their care. Patients, family members, and staff have demonstrated positive benefits.

Slooman R: University of Sydney, Faculty of Nursing, Australia. **Progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain.** The techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. The techniques can be taught by nurses and readily learned by patients. The techniques provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient.

**Cancer:** Journal of the National Cancer Institute, 7/00. **STRESS AND CANCER:** Few events are as stressful as a diagnosis of cancer. But reducing stress may be key to survival.

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Stanford University doctors found that among women with metastatic breast cancer, those with high daytime levels of the stress hormone cortisol—a marker for psychological stress—died on average one year sooner than those with normal levels of the hormone.

**Meditation, guided imagery, even listening to music are among the many mind-body techniques that can help contain stress.** The calming influence of meditation, for example, has been shown to reduce flare-ups of psoriasis, lower blood pressure, lessen addictive cravings, and mitigate depression. And other techniques, such as yoga and breathing exercises, are now employed at a number of clinics to ease the stress of infertility and boost fertility rates

**STUDY: RELAXATION TECHNIQUES HELP CANCER PATIENTS LONDON**  
(Reuters): April 15, 2000, 10:34 AM: Cancer patients can think themselves to a stronger immune system using relaxation and guided imagery techniques, a British researcher said on Saturday.

Professor Leslie Walker, the director of the Institute of Rehabilitation and Oncology Health at the University of Hull in northern England, said the psychological techniques can also help patients to cope better with the disease. "Our results show that relaxation and guided imagery can bring about measurable changes in the body's own immunological defenses," he said in a statement. "However, the study provides strong evidence that, for some patients, relaxation and imagery have a very beneficial effect on quality of life," he said.

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When the researchers tested all the women, they found that those practicing the relaxation techniques had higher numbers of important immune system cells.

Alternative & Complementary Medicine. 1999, American Health Consultants. Oncology (Huntingt) 1997 Aug;11(8):1179-89; discussion 1189-95. **Guided Imagery as Supportive Therapy in Cancer Treatment.** Many challenges face the clinician providing supportive care to cancer patients. Psychological problems and deterioration of quality of life caused by severe nausea, cachexia, and pain are just a few of the hurdles faced by those fighting this disease. Guided Imagery, a cognitive intervention, has been implemented with increasing frequency as a therapeutic option for many encountering these difficulties.

**Imagery and hypnosis in the treatment of cancer patients.** Spiegel D, Moore R Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, California, USA. Many patients with cancer often seek some means of connecting their mental activity with the unwelcome events occurring in their bodies, via techniques such as imagery and hypnosis. Hypnosis has been shown to be an effective method for controlling cancer pain. The techniques most often employed involve physical relaxation coupled with imagery that provides a substitute focus of attention for the painful sensation. Other related imagery techniques, such as guided imagery, involve attention to internally generated mental images without the formal use of hypnosis. The most well-known of these techniques involves the use of "positive mental images" of a strong army of white blood cells killing cancer cells. However, 10-year follow-up of a randomized trial involving 86 women with cancer showed that a year of weekly

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"supportive/expressive" group therapy significantly increased survival duration and time from recurrence to death. This intervention encourages patients to express and deal with strong emotions and also focuses on clarifying doctor-patient communication. Numerous other studies suggest that suppression of negative affect, excessive conformity, severe stress, and lack of social support predict a poorer medical outcome from cancer. Thus, further investigation into the interaction between body and mind in coping with cancer is warranted.

Sloman R. University of Sydney, Faculty of Nursing, Australia. **Progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain.** The techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. The techniques can be taught by nurses and readily learned by patients. The techniques provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient.

Syrjala KL, Donaldson GW, Davis MW, Kippes ME, Carr JEFred Hutchinson **Cancer Research Center**, Seattle, WA 98104, USA. Few controlled clinical trials of psychological interventions for cancer pain relief exist in spite of frequent support for their importance as adjuncts to medical treatment. This study compared oral mucositis pain levels in 4 groups of cancer patients receiving bone marrow transplants (BMT): (1) treatment as usual control, (2) therapist support, (3) relaxation and imagery training, and (4) training in a package of cognitive-behavioral coping skills which included relaxation and imagery. A total of 94 patients completed the study which involved two training sessions prior to treatment and twice a week 'booster' sessions during the first 5 weeks of treatment. Results confirmed our hypothesis that patients who received either relaxation and imagery alone or patients who received the package of cognitive-behavioral coping skills would report less pain than patients in the other 2 groups. The hypothesis that the cognitive-behavioral skills package would have an additive effect beyond relaxation and imagery alone was not confirmed.

Average visual analogue scale (VAS) report of pain within the therapist support group was not significantly lower than the control group ( $P = 0.103$ ) nor significantly higher than the training groups. Patient reports of relative helpfulness of the interventions for managing pain and nausea matched the results of VAS reports. From these results, we conclude that relaxation and imagery training reduces cancer treatment-related pain; adding cognitive-behavioral skills to the relaxation with imagery does not, on average, further improve pain relief.

Baider L, Uziely B, De-Nour AK. Department of Oncology, Hadassah University Hospital, Jerusalem, Israel. The aim of this study was to gather information on the immediate and long-term effects of six sessions of group Progressive Muscle Relaxation with Guided Imagery on the psychological distress of self-referred cancer patients. **Patients' psychological distress and coping with cancer were assessed by three self-reports:** the Multiple Locus of Control, the Impact of Events Scale (IES), and the Brief Symptom Inventory (BSI). Of the 123 patients who started group therapy, 37 dropped out during its course. The 86 patients who completed the intervention showed marked improvement on both BSI and IES, an improvement maintained over the next 6 months in 58 patients who continued assessment through the follow up period. Immune System Imagery | Chemotherapy

**Radiation Therapy: STUDY: RELAXATION TECHNIQUES HELP CANCER PATIENTS LONDON (Reuters):** Cancer patients can think themselves to a stronger immune system using relaxation and guided imagery techniques, a British researcher said on Saturday.

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Kolcaba K, Fox C. College of Nursing, University of Akron, Ohio, USA.

**PURPOSE/OBJECTIVES:** To measure the effectiveness of customized guided imagery for increasing comfort in women with early stage breast cancer.

**DESIGN:** Experimental longitudinal, random assignment to groups.

**SETTING:** Two urban radiation oncology departments.

**SAMPLE:** 53 women (26 in the experimental group, 27 in the control group) aged 37-81; 80% European and 10% African American with stage I or II breast cancer about to begin radiation therapy.

**METHODS:** The experimental group was to listen to a guided imagery audiotope once a day for the duration of the study. The Radiation Therapy Comfort Questionnaire was self-administered at three time points: prior to the introduction of intervention and the beginning of radiation therapy (Time 1), three weeks later (Time 2), and three weeks after completing radiation therapy (Time 3). The State Anxiety Inventory was administered at Time 1 only.

**MAIN RESEARCH VARIABLES:** The effect of use of guided imagery on comfort with anxiety as a control variable.

**FINDINGS:** Pooled data indicated a significant overall increase in differences in comfort between the treatment and control group, with the treatment group having higher comfort over time. The data also revealed a significant linear trend in differences between groups. No significant interaction of group and time existed.

**CONCLUSIONS:** Guided imagery is an effective intervention for enhancing comfort of women undergoing radiation therapy for early stage breast cancer. The intervention was especially salient in the first three weeks of therapy.

**IMPLICATIONS FOR NURSING PRACTICE:** Guided imagery audiotapes specifically designed for this population were resource effective in terms of cost, personnel, and time.

**Chemotherapy:** Walker LG, Walker MB, Ogston K, Heys SD, Ah-See AK, Miller ID, Hutcheon AW, Sarkar TK, Eremin O Behavioral Oncology Unit, University of Aberdeen, Medical School, Foresterhill, UK. **The diagnosis and treatment of breast cancer are stressful, and stress may be associated with a poorer response to chemotherapy.** There is a need, therefore, to develop and evaluate interventions that might enhance quality of life and,



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possibly, improve treatment response. The effects of relaxation combined with guided imagery (visualizing host defenses destroying tumor cells) on quality of life and response to primary chemotherapy, to date, have not been adequately evaluated. Ninety-six women with newly diagnosed large or locally advanced breast cancer ( $T_2 > 4$  cm,  $T_3$ ,  $T_4$ , or  $T_xN_2$  and  $M_0$ ) took part in a prospective, randomized controlled trial. Patients were randomized following diagnosis to a control condition (standard care) or to the experimental condition (standard care plus relaxation training and imagery). Psychometric tests to evaluate mood and quality of life were carried out before each of the six cycles of chemotherapy and 3 weeks after cycle 6: tests of personality and coping strategy were carried out prior to cycles one and six. Clinical response to chemotherapy was evaluated after six cycles of chemotherapy using standard UICC criteria and pathological response was assessed from the tissue removed at surgery. As hypothesized, patients in the experimental group were more relaxed and easy going during the study (Mood Rating Scale). Quality of life was better in the experimental group (Global Self-assessment and Rotterdam Symptom Checklist). The intervention also reduced emotional suppression (Courtauld Emotional Control Scale). The incidence of clinically significant mood disturbance was very low and the incidence in the two groups was similar. Finally, although the groups did not differ for clinical or pathological response to chemotherapy, imagery ratings were correlated with clinical response. These simple, inexpensive and beneficial interventions should be offered to patients wishing to improve quality of life during primary chemotherapy.

### **STUDY: RELAXATION TECHNIQUES HELP CANCER PATIENTS LONDON**

**(Reuters): Cancer patients can think themselves to a stronger immune system using relaxation and guided imagery techniques, a British researcher said on Saturday.** Professor Leslie Walker, the director of the Institute of Rehabilitation and Oncology Health at the University of Hull in northern England, said the psychological techniques can also help patients to cope better with the disease. "Our results show that relaxation and guided imagery can bring about measurable changes in the body's own immunological defenses," he said in a statement. "However, the study provides strong evidence that, for some patients, relaxation and imagery have a very beneficial effect on quality of life," he said.

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Walker LG, Heys SD, Walker MB, Ogston K, Miller ID, Hutcheon AW, Sarkar TK, Ah-See AK, Eremin O Institute of Rehabilitation, University of Hull, U.K. **This study evaluated the possible value of psychological variables in predicting clinical and pathological response to primary chemotherapy.** 96 women with newly diagnosed large, or locally advanced, breast cancer ( $T_2 > 4$  cm,  $T_3$ ,  $T_4$ ,  $N_2$  and  $M_0$ ) participated in a prospective, randomized trial to evaluate the effects of relaxation training with guided imagery and L-arginine on response to primary chemotherapy. Before the first of six cycles of primary chemotherapy, women were assessed using the Hospital Anxiety and Depression Scale (HADS) and the

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Eysenck Personality Questionnaire (EPQ). The primary outcomes were clinical response (evaluated using standard International Union Against Cancer (UICC) criteria) and pathological response (graded by means of a previously published 5-point scale) following primary chemotherapy. Stepwise linear regressions were used to estimate the predictive value of age, menopausal status, clinical nodal status, tumour size at diagnosis, oestrogen receptor status, dietary supplementation (L-arginine versus placebo), personality (EPQ-L scores), mood (HADS scores) and a psychological intervention. HADS depression score was a significant independent predictor of pathological response to chemotherapy. HADS anxiety score was a significant independent predictor of clinical response. Because the original tumor size before chemotherapy (also a significant predictor of clinical and pathological responses) was taken into account in the analyses, the results cannot be explained in terms of psychobiological factors related to tumor size. This study supports the importance of psychological factors as independent predictors of response to primary chemotherapy in patients with breast cancer. If they can be replicated, these findings have major implications for the management of women with breast cancer.

Psychological factors need to be assessed and evaluated in future trials of chemotherapy.

Annu Rev Nurs Res 1999; 17:57-84 (ISSN: 0739-6686). **Guided imagery interventions for symptom management.** Eller LS For the past several decades, papers in the nursing literature have advocated the use of cognitive interventions in clinical practice. Increasing consumer use of complementary therapies, a cost-driven health care system, and the need for evidence-based practice all lend urgency to the validation of the efficacy of these interventions. This review focuses specifically on guided imagery intervention studies identified in the nursing, medical and psychological literature published between 1966 and 1998. Included were 46 studies of the use of guided imagery for management of psychological and physiological symptoms. There is preliminary evidence for the effectiveness of guided imagery in the management of stress, anxiety and depression, and for the reduction of blood pressure, pain and the side effects of chemotherapy..

Lyles JN, Burish TG, Krozely MG, et al.: **Efficacy of relaxation training and guided imagery in reducing the aversiveness of cancer chemotherapy.** Journal of Consulting and Clinical Psychology 50(4): 509-524, 1982. Fifty cancer patients receiving chemotherapy, 25 by push injection and 25 by drip infusion, were assigned to one of three conditions for their chemotherapy treatments: (a) progressive muscle-relaxation training plus guided-relaxation imagery; (b) therapist control, in which a therapist was present to provide support and encouragement but did not provide systematic relaxation training; and (c) no-treatment control. Patients participated in one pretraining, three training, and one follow-up session. Results indicated that during the training sessions, patients who received relaxation training, relative to patients in either of the other two conditions, (a) reported feeling significantly less anxious and nauseated during chemotherapy, (b) showed significantly less physiological arousal (as measured by pulse rate and systolic blood pressure) and reported less anxiety and depression immediately after chemotherapy, and (c) reported significantly less severe and less protracted nausea at home following chemotherapy. The attending nurses' observations during chemotherapy confirmed patient reports. In general, patients in the therapist control condition and the no-treatment control condition did not differ significantly from each other. The differences among conditions generally remained significant during the follow-up session. The data suggest that relaxation

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training may be an effective procedure for helping cancer patients cope with the adverse effects of their chemotherapy. (28 Refs)

**All Surgery:** The Journal of Cardiovascular Management. March/April 1999. Tusek, Cwynar, Cosgrove: Reported the results of a recent study at The Cleveland Clinic Foundation with patients undergoing cardiac surgery. Patients that listened to the guided imagery tape had a significant decrease in pain, stress and anxiety. Patients even left the hospital two days sooner than the patients that did not listen.

Advances in Mind-Body Medicine 14, 207-222, 1998.) Mind-body interventions for surgery: evidence and exigency. Dreher H In his recent review article, Henry Dreher, author and scholar, states that "several hundred studies involving thousands of patients confirm that relatively simple behavioral interventions prior to surgery can demonstrably improve postoperative outcomes in such measures as reduced need for pain medication, shorter hospital stays, less blood loss, and fewer surgical complications."

Dis Colon Rectum 1997 Feb; 40(2):172-8 (ISSN: 0012-3706). **Guided imagery: a significant advance in the care of patients undergoing elective colorectal surgery.** Tusek DL; Church JM; Strong SA; Grass JA; Fazio VW Department of Colorectal Surgery, The Cleveland Clinic Foundation, Ohio 44195, USA.

**PURPOSE:** Guided imagery uses the power of thought to influence psychologic and physiologic states. Some studies have shown that guided imagery can decrease anxiety, analgesic requirements, and length of stay for surgical patients. This study was designed to determine whether guided imagery in the perioperative period could improve the outcome of colorectal surgery patients.

**METHODS:** We conducted a prospective, randomized trial of patients undergoing their first elective colorectal surgery at a tertiary care center. Patients were randomly assigned into one of two groups. Group 1 received standard perioperative care, and Group 2 listened to a guided imagery tape three days preoperatively; a music-only tape during induction, during surgery, and postoperatively in the recovery room; a guided imagery tape during each of the first six postoperative days. Both groups had postoperative patient-controlled analgesia. All patients rated their levels of pain and anxiety daily, on a linear analog scale of 0 to 100. Total narcotic consumption, time to first bowel movement, length of stay, and number of patients with complications were also recorded.

**RESULTS:** Groups were similar in age and gender distribution, diagnoses, and surgery performed. Median baseline anxiety score was 75 in both groups. Before surgery, anxiety increased in the control group but decreased in the guided imagery group (median change, 30;  $P < 0.001$ ). Postoperatively, median increase in the worst pain score was 72.5 for the control group and 42.5 for the imagery group ( $P < 0.001$ ). Least pain was also significantly different ( $P < 0.001$ ), with a median increase of 30 for controls and 12.5 for the imagery group. Total opioid requirements were significantly lower in the imagery group, with a median of 185 mg vs. 326 mg in the control group ( $P < 0.001$ ). Time to first bowel movement was significantly less in the imagery group (median, 58 hours) than in the control group (median, 92 hours;  $P < 0.001$ ). The number of patients experiencing postoperative complications (nausea, vomiting, pruritus, or ileus) did not differ in the two groups. **CONCLUSION:** Guided imagery significantly reduces postoperative anxiety, pain, and narcotic requirements of colorectal surgery and increases patient

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satisfaction. Guided imagery is a simple and low-cost adjunct in the care of patients undergoing elective colorectal surgery.

Tusek D, Church JM, Fazio VW. **Guided Imagery Program, Cleveland Clinic Foundation, USA.** Patients who undergo surgery usually experience fear and apprehension about their surgical procedures. Guided imagery is a simple, low-cost therapeutic tool that can help counteract surgical patients' fear and anxiety. The authors randomly assigned 130 patients undergoing elective colorectal surgical procedures into two groups. Members of one group received routine perioperative care. Members of the other group listened to guided imagery tapes for three days before their surgical procedures, during anesthesia induction, intraoperatively, in the postanesthesia care unit, and for six days after surgery. The authors measured patients' anxiety levels, pain perceptions, and narcotic medication requirements. The patients in the guided imagery group experienced considerably less preoperative and postoperative anxiety and pain, and they required almost 50% less narcotic medications after their surgical procedures than patients in the control group.

The Journal of Invasive Cardiology. April 1999 Vol 11. Number 4. Tusek, Diane. **This article emphasized the many uses of guided imagery in health care.** It discusses how it can significantly reduce stress, pain, side effects of treatments, blood pressure, headaches and strength immune functioning. Patients are encouraged to be active participants in their care. Patients, family members, and staff have demonstrated positive benefits.

J Dev Behav Pediatr 1996 Oct; 17(5):307-10 **The effects of hypnosis/guided imagery on the postoperative course of children.** Lambert SA. University Hospitals of Cleveland, Rainbow Babies and Children's Hospital, Frances Payne Bolton School of Nursing, Case Western Reserve University, Cleveland, Ohio 44106, USA. Hypnosis, guided imagery, and relaxation have been shown to improve the postoperative course of adult surgical patients. Children have successfully used hypnosis/guided imagery to significantly reduce the pain associated with invasive procedures and to improve selected medical conditions. The purpose of this study was to examine the effect of hypnosis/guided imagery on the postoperative course of pediatric surgical patients. Fifty-two children (matched for sex, age, and diagnosis) were randomly assigned to an experimental or control group. The experimental group was taught guided imagery by the investigator. Practice of the imagery technique included suggestions for a favorable postoperative course. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient. Bone Marrow & Stem Cell Transplant: Cancer Nurs 2000 Aug; 23(4): 277-85 The effectiveness of the comprehensive coping strategy program on clinical outcomes in breast cancer autologous bone marrow transplantation.

Gaston-Johansson F, Fall-Dickson JM, Nanda J, Ohly KV, Stillman S, Krumm S, Kennedy MJ International and Extramural Programs, Johns Hopkins University School of Nursing, Baltimore, Maryland 21205-2110, USA. **Patients with breast cancer** who undergo autologous bone marrow/peripheral blood stem cell transplantation (ABMT) cope not only with a life-threatening medical treatment, but also with multiple, interrelated symptoms including pain, fatigue, psychological distress, and nausea. The purpose of this study was to determine, in a randomized controlled clinical trial, whether a comprehensive coping strategy program (CCSP)

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was effective in significantly reducing pain, fatigue, psychological distress, and nausea in patients with breast cancer who underwent ABMT. The CCSP was composed of preparatory information, cognitive restructuring, and relaxation with guided imagery. Randomization placed 52 patients in the CCSP treatment group and 58 patients in the control group. The CCSP was found to be effective in significantly reducing nausea as well as nausea combined with fatigue 7 days after the ABMT when the side effects of treatment were most severe. These results are important given the high incidence of nausea and fatigue in the ABMT population. The CCSP-treated group experienced mild anxiety as compared with the control group who reported moderate anxiety. The greatest effectiveness of CCSP may correspond to the time of the greatest morbidity for patients with breast cancer who have undergone ABM.

Can Oncol Nurs J 1996 Feb; 6(1): 20-5. **The research utilization process: the use of guided imagery to reduce anxiety.** Royle JA, Blythe J, Ingram C, DiCenso A, Bhatnager N, Potvin C. School of Nursing, Faculty of Health Sciences, McMaster University, Hamilton, Ontario. In the rapidly changing health care environment, nurses need to keep current with developments, assess their applicability to practice, and make changes where appropriate. There is evidence that nursing research is underutilized and that a considerable gap exists between nursing research and practice (Bostrum & Suter, 1993; Brett, 1987; Sokop & Coyle, 1990). The objectives of a study carried out on a bone marrow transplant unit in a teaching hospital were to: (1) by introducing a framework for research-based care, enhance research utilization in a selected setting, and (2) evaluate the outcomes of research utilization on a specific clinical nursing problem chosen by nurses and researchers. This paper describes the research utilization process and its outcomes, presents an evaluation of the participatory approach from the perspective of the participating nurses, and discusses facilitators and barriers to research utilization. Guided imagery was the intervention used to decrease patient anxiety.

Pain 1995 Nov; 63(2): 189-98. **Relaxation and imagery and cognitive-behavioral training reduce pain during cancer treatment: a controlled clinical trial.** Syrjala KL, Donaldson GW, Davis MW, Kippes ME, Carr JE. Fred Hutchinson Cancer Research Center, Seattle, WA 98104, USA. Few controlled clinical trials of psychological interventions for cancer pain relief exist in spite of frequent support for their importance as adjuncts to medical treatment. This study compared oral mucositis pain levels in 4 groups of cancer patients receiving bone marrow transplants (BMT): (1) treatment as usual control, (2) therapist support, (3) relaxation and imagery training, and (4) training in a package of cognitive-behavioral coping skills which included relaxation and imagery. A total of 94 patients completed the study which involved two training sessions prior to treatment and twice a week 'booster' sessions during the first 5 weeks of treatment. Results confirmed our hypothesis that patients who received either relaxation and imagery alone or patients who received the package of cognitive-behavioral coping skills would report less pain than patients in the other 2 groups. The hypothesis that the cognitive-behavioral skills package would have an additive effect beyond relaxation and imagery alone was not confirmed.

Average visual analogue scale (VAS) report of pain within the therapist support group was not significantly lower than the control group ( $P = 0.103$ ) nor significantly higher than the training groups. Patient reports of relative helpfulness of the interventions for managing pain and nausea matched the results of VAS reports. From these results, we conclude that relaxation and

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imagery training reduces cancer treatment-related pain; adding cognitive-behavioral skills to the relaxation with imagery does not, on average, further improve pain relief.

Anxiety: J Music Ther 1999; 36(1):39-55 : **The Effects of Guided Imagery and Music Therapy on Reported Change in Normal Adults.** Maack C, Nolan P Institut für integrative Psychotherapie, Hamburg, Germany. This study explores the main changes gained from Guided Imagery and Music (GIM) therapy as described by former clients. It also explores whether gains are integrated into the clients' lives and if those changes stabilize over periods of time after finishing GIM therapy. Questionnaires were sent to GIM therapists who forwarded them to former GIM clients. Twenty-five former GIM clients returned questionnaires directly to the researcher. Results show that the main gains reported by former clients of GIM therapy are (a) getting more in touch with one's emotions, (b) gaining insights into some problems, (c) spiritual growth, (d) increased relaxation, and (e) discovering new parts of oneself. Results also show that GIM therapy might be helpful for clients with symptoms of anxiety and/or fear, and for clients who want to increase their self-esteem. Changes gained during GIM therapy appear to stabilize over a period of time after finishing GIM therapy. They improved after termination of therapy, especially in the mental and transpersonal areas.

J Holist Nurs 1996 Sep; 14(3):196-205: **The effects of relaxation exercises on anxiety levels in psychiatric inpatients.** Weber S. The purpose of this study was to investigate the effects of relaxation exercises on anxiety levels in an inpatient general psychiatric unit. The conceptual framework used was holism. A convenience sample of 39 subjects was studied. Anxiety levels were measured prior to and post interventions with the state portion of the State-Trait Anxiety Inventory. Progressive muscle relaxation, meditative breathing, guided imagery, and soft music were employed to promote relaxation. A significant reduction in anxiety level was obtained on the post-test. The findings of this study can be incorporated by holistic nurses to help reduce anxiety levels of general psychiatric inpatients by using relaxation interventions.

Annu Rev Nurs Res 1999; 17:57-84 (ISSN: 0739-6686): **Guided imagery interventions for symptom management.** Eller LS. For the past several decades, papers in the nursing literature have advocated the use of cognitive interventions in clinical practice. Increasing consumer use of complementary therapies, a cost-driven health care system, and the need for evidence-based practice all lend urgency to the validation of the efficacy of these interventions. This review focuses specifically on guided imagery intervention studies identified in the nursing, medical and psychological literature published between 1966 and 1998. Included were 46 studies of the use of guided imagery for management of psychological and physiological symptoms. There is preliminary evidence for the effectiveness of guided imagery in the management of stress, anxiety and depression, and for the reduction of blood pressure, pain and the side effects of chemotherapy.

**Insomnia:** Web MD: Insomnia. Cognitive-Behavioral Techniques: Cognitive-behavioral techniques are helpful for retraining healthy sleep patterns. Such techniques combine sleep hygiene, relaxation techniques, and changing the habits and thought patterns that might cause wakefulness. Combinations may work best. A 1993 study reported that after only ten weeks, people with insomnia who used sleep restriction therapy, sleep hygiene, and relaxation techniques achieved a 75% reduction in the time taken to fall asleep (an average of 19 minutes). Such behavioral methods are also effective in elderly patients and, in fact, work better than drugs in this population as well as other age groups. If treating underlying problems and establishing

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proper sleep hygiene do not relieve sleeplessness, the patient may need to experiment with different behavioral approaches.

**MRI:** Holist Nurs Pract 1994 Jan;8(2): 59-69 **The effects of guided imagery on anxiety levels and movement of clients undergoing magnetic resonance imaging.** Thompson MB, Coppens NM. This randomized, experimental study examined the effects of guided imagery on anxiety levels and on movement of clients undergoing non-emergency magnetic resonance imaging (MRI). Subjects who listened to a guided imagery/relaxation tape (n = 20) before their MRI scan and used guided imagery during their scan had lower levels of state anxiety than the control group (n = 21). Based on subject report and operator report, the experimental group moved less frequently during the MRI than the control group. The results of this investigation support the use of guided imagery as a therapeutic intervention and Rogers' Science of Unitary Human Beings.

**J Music Ther 1999; 36(1):39-55: The Effects of Guided Imagery and Music Therapy on Reported Change in Normal Adults.** Maack C, Nolan P. Hamburg, Germany. This study explores the main changes gained from Guided Imagery and Music (GIM) therapy as described by former clients. It also explores whether gains are integrated into the clients' lives and if those changes stabilize over periods of time after finishing GIM therapy. Questionnaires were sent to GIM therapists who forwarded them to former GIM clients. Twenty-five former GIM clients returned questionnaires directly to the researcher. Results show that the main gains reported by former clients of GIM therapy are (a) getting more in touch with one's emotions, (b) gaining insights into some problems, (c) spiritual growth, (d) increased relaxation, and (e) discovering new parts of oneself. Results also show that GIM therapy might be helpful for clients with symptoms of anxiety and/or fear, and for clients who want to increase their self-esteem. Changes gained during GIM therapy appear to stabilize over a period of time after finishing GIM therapy. They improved after termination of therapy, especially in the mental and transpersonal areas.

**Custom Tapes:** J Holist Nurs 1999 Dec; 17(4):317-30: **Imagine this! Infinite uses of guided imagery in women's health.** Bazzo DJ, Moeller RA Parma Community General Hospital, USA. Guided imagery, the use of focused concentration of formed mental images, provides the mechanism of an independent nursing intervention to facilitate mind and body healing. Nurse healers can channel clients to personal restorative potentials and independent health through this powerful and inexpensive tool. In a variety of outpatient, inpatient, chronic care, and home care settings, nurses can introduce this treatment modality early on and for lifelong use for any number of nursing diagnoses. Specific conceptualizations for women's health are presented here. By unleashing your own and your client's imagination, the endless possibilities of guided imagery applications and resulting self-empowerment become apparent. **Oncol Nurs Forum 1999 Jan-Feb; 26(1):67-72.** The effects of guided imagery on comfort of women with early stage breast cancer undergoing radiation therapy.

Kolcaba K, Fox C College of Nursing, University of Akron, Ohio, USA.

**PURPOSE/OBJECTIVES:** To measure the effectiveness of customized guided imagery for increasing comfort in women with early stage breast cancer.

**DESIGN:** Experimental longitudinal, random assignment to groups.

**SETTING:** Two urban radiation oncology departments.

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**SAMPLE:** 53 women (26 in the experimental group, 27 in the control group) aged 37-81; 80% European and 10% African American with stage I or II breast cancer about to begin radiation therapy.

**METHODS:** The experimental group was to listen to a guided imagery audiotape once a day for the duration of the study. The Radiation Therapy Comfort Questionnaire was self-administered at three time points: prior to the introduction of intervention and the beginning of radiation therapy (Time 1), three weeks later (Time 2), and three weeks after completing radiation therapy (Time 3). The State Anxiety Inventory was administered at Time 1 only.

**MAIN RESEARCH VARIABLES:** The effect of use of guided imagery on comfort with anxiety as a control variable. **FINDINGS:** Pooled data indicated a significant overall increase in differences in comfort between the treatment and control group, with the treatment group having higher comfort over time. The data also revealed a significant linear trend in differences between groups. No significant interaction of group and time existed.

**CONCLUSIONS:** Guided imagery is an effective intervention for enhancing comfort of women undergoing radiation therapy for early stage breast cancer. The intervention was especially salient in the first three weeks of therapy.

**IMPLICATIONS FOR NURSING PRACTICE:** Guided imagery audiotapes specifically designed for this population were resource effective in terms of cost, personnel, and time. Empowerment: J Holist Nurs 1999 Dec; 17(4):317-30. Imagine this! Infinite uses of guided imagery in women's health. Bazzo DJ, Moeller RA. Parma Community General Hospital, USA. Guided imagery, the use of focused concentration of formed mental images, provides the mechanism of an independent nursing intervention to facilitate mind and body healing. Nurse healers can channel clients to personal restorative potentials and independent health through this powerful and inexpensive tool. In a variety of outpatient, inpatient, chronic care, and home care settings, nurses can introduce this treatment modality early on and for lifelong use for any number of nursing diagnoses. Specific conceptualizations for women's health are presented here. By unleashing your own and your client's imagination, the endless possibilities of guided imagery applications and resulting self-empowerment become apparent.

J Music Ther 1999; 36(1):39-55: **The Effects of Guided Imagery and Music Therapy on Reported Change in Normal Adults.** Maack C, Nolan P Institut für integrative Psychotherapie, Hamburg, Germany. This study explores the main changes gained from Guided Imagery and Music (GIM) therapy as described by former clients. It also explores whether gains are integrated into the clients' lives and if those changes stabilize over periods of time after finishing GIM therapy. Questionnaires were sent to GIM therapists who forwarded them to former GIM clients. Twenty-five former GIM clients returned questionnaires directly to the researcher. Results show that the main gains reported by former clients of GIM therapy are (a) getting more in touch with one's emotions, (b) gaining insights into some problems, (c) spiritual growth, (d) increased relaxation, and (e) discovering new parts of oneself. Results also show that GIM therapy might be helpful for clients with symptoms of anxiety and/or fear, and for clients who want to increase their self-esteem. Changes gained during GIM therapy appear to stabilize over a period of time after finishing GIM therapy. They improved after termination of therapy, especially in the mental and transpersonal areas.



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## 12. HEALTH HYPNOSIS RESEARCH BIBLIOGRAPHY

Abela, M. B. (1999). **Hypnotherapy for Crohn's disease:** a promising complementary/alternative therapy. *Integrative Medicine*. 2(2/3). 127-31. Abstract: Crohn's disease is a nonspecific chronic syndrome of unknown origin for which, to date, no conventional (i. e., medical or surgical) cure exists. However, recent clinical case studies and anecdotal reports have shown that the use of different forms of hypnotherapy for the treatment of Crohn's have actually resulted in cures. This report reviews and compares the effectiveness of hypnotherapy in the treatment of Crohn's disease vis-a-vis current medical and surgical therapies, in addition to reviewing evidence of the modulation of immune function parameters by hypnosis, while providing support for current etiological hypotheses of Crohn's disease as an autoimmune disorder.

Al Rubaie, T. (1999). **The hypnotic treatment of depression.** *Alternative Health Practitioner*. 5(2). 151-62. Abstract: The use of hypnosis in the treatment of depression is still a controversial matter. Most of the leading experts in the field of hypnosis have either totally ignored its usefulness in treating depressed patients or directly suggested that hypnosis is contraindicated. This article endeavors to dispel the myth and misconceptions concerning the use of hypnosis in the treatment of depression and details the hypnotic techniques and strategies used in the treatment of depression which can be used in the context of a wide range of therapeutic approaches, be they analytical, behavioral, or cognitive. The article also stresses the importance of using these hypnotic techniques and strategies within a carefully structured, comprehensive therapy program, which is grounded in the scientific understanding of both depression and hypnosis as well as the appreciation of the uniqueness of the individual patient.

Ament, P. (1972). **The legal status of hypnosis.** *The Journal of the American Society of Psychosomatic Dentistry and Medicine*. 19(2). 62-8. Anderson, J. A., Basker, M. A. and Dalton, R. (1975). Migraine and hypnotherapy. *International Journal of Clinical and Experimental Hypnosis*. 23(1). 48-58. Compared the treatment of migraine by hypnosis and autohypnosis with the treatment of migraine by the drug prochlorperazine. Results show that the number of attacks and the number who suffered blinding attacks were significantly lower for the group receiving hypnotherapy than for the group receiving prochlorperazine. For the group on hypnotherapy, these two measures were significantly lower when on hypnotherapy than when on previous treatment. It is concluded that further trials of hypnotherapy are justified against some other treatment not solely associated with the ingestion of tablets.

Ashton, C., Jr., Whitworth, G. C., Seldomridge, J. A. Shapiro, P. A., Weinberg, A. D. Michler, R. E., Smith, C. R., Rose, E. A., Fisher, S. and Oz, M. C. (1997). **Self-hypnosis reduces anxiety following coronary artery bypass surgery.** *Journal of Cardiovascular Surgery*. A controlled study of 32 coronary bypass patients showed that those taught self-hypnosis pre-operatively were more relaxed after surgery and had less need for pain medication. This study demonstrates the beneficial effects self-hypnosis relaxation techniques on patients undergoing coronary artery bypass surgery.

Barrios, A. A. (2001). **A theory of hypnosis based on principles of conditioning and inhibition.** *Contemporary Hypnosis*. 18(4). 163-203. Abstract: A theory of hypnosis based mainly on principles of conditioning and inhibition is proposed, covering the hypnotic induction process, hypnotic phenomena and post-hypnotic phenomena. The overall explanation presented is delineated in a set of three initial postulates and seven subsequent hypotheses. Hypnotic

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induction is defined as the giving of a series of suggestions so that a positive response to a previous suggestion conditions the subject to respond more strongly to the next suggestion. This induction process is placed in a conditioning paradigm, with the condition stimulus (CS), unconditioned stimulus (UCS), conditioned response (CR) and unconditioned response (UCR), trials and reinforcement clearly delineated. Summarized in brief, hypnotic induction is explained as the conditioning of an inhibitory set, a set which increases responsiveness to suggestion by inhibiting stimuli and thoughts which would contradict the suggested response. The various hypnotic and post-hypnotic phenomena are explained in terms of this set. Post-hypnotic behavior changes are further explained as produced through a process of higher order conditioning; hypnosis facilitates such conditioning thanks to the inhibitory set which suppresses any interfering stimuli. The theory may be broad enough to cover not only hypnosis but also related areas such as persuasion, the placebo effect and faith.

Bennett, H. L., Benson, D. R. and Kuiken, D. A. *Anesthesiology*. 65. A245.

**Preoperative instruction for decreased bleeding** during spine surgery spinal surgery patients who were given a preoperative suggestion to decrease blood loss at surgery had significantly less blood loss than a relaxation or a control group.

Bishay, E. G., Stevens, G., and Lee, C. (1984). **Hypnotic control of upper gastrointestinal hemorrhage**. *American Journal of Clinical Hypnosis*. 27(1). 22-25. Case report of a woman resuscitated from shock with a positive lavage on her way to endoscopy, whose bleeding apparently stopped with hypnosis--script given.

Breuer, W. C. (2000). **The use of hypnosis in a primary care setting**. *CRNA: The Clinical Forum for Nurse Anesthetists*. 11(4). 186-9. Abstract: An aware clinician using the modality of hypnosis either themselves or induced by a trained practitioner will find many indications on a daily basis. The application can be used for control of symptoms such as nausea or pain or, in the case of some clinical conditions, as a primary or adjunctive therapy. An overview of the commonly occurring opportunities for the use of hypnosis is presented in this article.

Campbell, D. F., Dixon, J. K. Sanderford, L. D. and Denicola, M. A. (1984). **Relaxation: Its effect on the nutritional status and performance status of clients with cancer**. *Journal of the American Dietetic Association*. 84(2). 201-204. Research has shown relaxation to be an effective measure in relation to pain, hypertension, and other conditions. These preliminary results now suggest that relaxation may also be effective in treating the eating problems of the person with cancer, leading to improvement in weight and performance status. Can hypnosis and behavioral theory aid in smoking cessation? Original Study: Covino, N. A. and Bottari, M. Hypnosis, behavioral theory, and smoking cessation. (2001). *The Journal of Dental Education*. 65. 340-7. *Dental Abstracts*. 46(6). 247.

Crowther, J. H. (1983). **Stress management training and relaxation imagery in the treatment of essential hypertension**. *Journal of Behavioral Medicine*. 6(2). 169-187. Results indicated stress management plus relaxation imagery and relaxation imagery alone were significantly more effective than blood pressure checks in reducing systolic and diastolic blood pressures during treatment and in maintaining diastolic blood pressure reductions during follow-up. However, no significant differences were found between the two treatment procedures. Clinical implications of these findings are discussed.

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Culver, L. (1991). Hypnosis in dentistry. *Dental Hygienist News*. 4(3). 3-4. Dahlgren, L. A., Kurtz, R. M., Strube, M. J. and Malone, M. D. (1995). **Differential effects of hypnotic suggestion on multiple dimensions of pain.** *Journal of Pain and Symptom Management*. 10(6). 464-70. Abstract: Within the framework of multidimensional pain assessment, this study extended an earlier finding that hypnotic analgesia and relaxation suggestions have differential effects on pain reduction by evaluating these strategies in subjects undergoing a cold press or protocol. Thirty-two highly susceptible subjects were randomly assigned to an analgesia or a relaxation suggestion treatment group. Six pain reports were taken at 10-sec intervals for each experimental condition. The baseline measures served as covariates. A 2 X 2 X 2 X 6 repeated-measures analysis of covariance (ANCOVA) revealed a significant group (analgesia, relaxation) by pain dimension (intensity, unpleasantness), by condition (suggestion alone, hypnotic induction plus suggestion) interaction. Analysis of the simple-simple main effects, holding both group and condition constant, revealed that application of hypnotic analgesia reduced report of pain intensity significantly more than report of pain unpleasantness. Conversely, hypnotic relaxation reduced pain unpleasantness more than intensity. The clinical implications of the study are discussed.

David, D. and Brown, R. J. (2002). **Suggestibility and negative priming: two replication studies.** *International Journal of Clinical and Experimental Hypnosis*. 50(3). 215-27. Abstract: Research suggests that inhibiting the effect of irrelevant stimuli on subsequent thought and action (cognitive inhibition) may be an important component of suggestibility. Two small correlation studies were conducted to address the relationship between different aspects of suggestibility and individual differences in cognitive inhibition, operationalized as the degree of negative priming generated by to-be-ignored stimuli in a semantic categorization task. The first study found significant positive correlations between negative priming, hypnotic suggestibility, and creative imagination; a significant negative correlation was obtained between negative priming and interrogative suggestibility, demonstrating the discriminant validity of the study results. The second study replicated the correlation between negative priming and hypnotic suggestibility, using a different suggestibility measurement procedure that assessed subjective experience and hypnotic involuntariness as well as objective responses to suggestions. These studies support the notion that the ability to engage in cognitive inhibition may be an important component of hypnotic responsivity and maybe of other forms of suggestibility.

DeBenedittis, G., Cigada, M., Bianchi, A., Signorini, M. G. and Cerutti, S. **Autonomic changes during hypnosis: a heart rate variability power spectrum analysis as a marker of sympatho-vagal balance.** *International Journal of Clinical and Experimental Hypnosis*. 2(2). 140-152. Preliminary results indicated that hypnosis affects heart rate variability, shifting the balance of the sympatho-vagal interaction toward an enhanced parasympathetic activity, concomitant with a reduction of the sympathetic tone. A positive correlation between hypnotic susceptibility and autonomic responsiveness during hypnosis was also found.

Disbrow, E. A. Bennett, H. L. and Owings, J. T. (1993). **Effect of preoperative suggestion on postoperative gastrointestinal motility.** *Western Journal of Medicine*. 158(5). 488-492. The suggestion group had a significantly shorter average time to the return of intestinal motility, 2. 6 versus 4. 1 days. Time to discharge was 6. 5 versus 8. 1 days. An average savings of \$1,200 per patient resulted from this simple five-minute intervention. In summary, the use of specific physiologically active suggestions given preoperatively in a believable manner can

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reduce the morbidity associated with an intra-abdominal operation by reducing the duration of ileus.

Enqvist, B. and Fischer, K. (1997). **Preoperative hypnotic techniques reduce consumption of analgesics after surgical removal of third mandibular molars:** A brief communication. *International Journal of Clinical and Experimental Hypnosis*. 45(2). 102-108. Anxiety before the operation increased significantly in the control group but remained at baseline level in the experimental group. Postoperative consumption of analgesics was significantly reduced in the experimental group compared to the control group.

Enqvist, B., Bjorklund, C., Engman, M. and Jakobsson J. (1997). **Preoperative hypnosis reduces postoperative vomiting after surgery of the breasts.** A prospective, randomized and blinded study. *Acta Anaesthesiologica Scandinavica*. 41(8). 1028-1032. Patients in the hypnosis group had significantly less vomiting, 39% compared to 68% in the control group, less nausea and less need of analgesics postoperatively. Preoperative relaxation and/or hypnotic techniques in breast surgery contribute to a reduction of both postoperative nausea and vomiting and postoperative analgesic requirements.

Enqvist, B., von Konow, L. and Bystedt, H. (1995). **Pre- and perioperative suggestion in maxillofacial surgery: Effects on blood loss and recovery.** *International Journal of Clinical and Experimental Hypnosis*. 43(3). 284-294. The patients who received preoperative suggestions exhibited a 30% reduction in blood loss. A 26% reduction in blood loss was shown in the group of patients receiving pre- and perioperative suggestions, and the group of patients receiving perioperative suggestions only showed a 9% reduction in blood loss. Lower blood pressure was found in the groups that received pre- and perioperative and perioperative suggestions only. Rehabilitation was facilitated in the group of patients receiving perioperative suggestions only.

Eslinger, M. R. (1998). **Hypnosis principles and applications: an adjunct to health care.** *Seminars in Perioperative Nursing*. 7(1). 39-45. Abstract: Hypnosis has existed since the beginning of humankind, and is a part of everyday life. It is a valuable addition to the methods and techniques available to all health care providers, as well as a safe and uncomplicated method used to enhance patient health care. It is simply a state of complete physical and mental relaxation which produces an altered state of consciousness acceptable to suggestions. It is characterized by an increased ability to produce desirable changes in habit patterns, motivation, self-image, lifestyle, and personal health.

Evans, C. and Richardson, P. H. (1988). **Therapeutic suggestions during general anesthesia. Advances.** 5(4). 6-11. Tested the hypothesis that the quality and duration of recovery from surgery would be improved by therapeutic suggestions made while patients were under general anesthesia. Results support the hypothesis.

Faymonville, M. E., Mambourg, P. H., Joris, J., Vrijens, B., Fissette, J., Albert, A. and Lamy M. (1997). **Psychological approaches during conscious sedation. Hypnosis versus stress reducing strategies.** 73(3). 361-367. This study suggests that hypnosis provides better perioperative pain and anxiety relief, allows for significant reductions in alfentanil and midazolam requirements, and improves patient satisfaction and surgical conditions as compared with conventional stress reducing strategies support in patients receiving conscious sedation for plastic surgery.

Forcione, A. G. (1988). **Hypnosis in the treatment of dental fear and phobia.** *Dental Clinics of North America*. 32(4). 745-61. Abstract: The term hypnosis is currently used to define

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an area of research and treatment that employs suggestion. Within this area, suggestion refers to the induction of expectancies by implicit or explicit means, usually involving concentration and the expectancy that the suggested results are possible. This use of suggestion differs from the common use of the term suggestion, which is a logical offering for a change in behavior or thought. The long history of hypnosis is testimony to its effectiveness, although there has been controversy as to why it works. Patient selection is important. Further, fear must be distinguished from phobia. Combined with other treatment techniques, such as systematic desensitization, it is a powerful behavior modification method. To prevent accidental delivery of suggestions that may be counterproductive to treatment, the study of hypnosis is important even to those health care professionals who have no intention of employing it in their practice.

Goldmann, L., Ogg, T. W. and Levey, A. B. (1988). **Hypnosis and daycase anaesthesia: A study to reduce pre-operative anxiety and intra-operative anaesthetic requirements.** *Anaesthesia*. 43(6). 466-469. A significant correlation was found between anxiety and perceived knowledge of procedures. The results suggest that pre-operative hypnosis can provide a quick and effective way to reduce pre-operative patient anxiety and anaesthetic requirements for gynaecological daycase surgery.

Mallee, C., Terwiel, J. P. and Hekster, G. B. **Controlled trial of hypnotherapy in the treatment of refractory fibromyalgia.** *Journal of Rheumatology*. 18(1). 72-75. Results: These feelings showed a significant decrease in patients treated by hypnotherapy compared with physical therapy, but they remained abnormally strong in many cases. We conclude hypnotherapy may be useful in relieving symptoms in patients with refractory fibromyalgia.

Hammarstrand, G., Berggren, U. and Hakeberg, M. (1995). **Psychophysiological therapy vs. hypnotherapy in the treatment of patients with dental phobia.** *European Journal of Oral Sciences*. 103(6). 399-404. Abstract: The aim of this study was to compare two different modes of behaviorally-oriented therapies for dental fear. The subjects were chosen consecutively from the waiting-list of a Dental Fears Research and Treatment Clinic. In addition, a control group was selected from patients treated under general anesthesia to compare levels of dental and general fear with the experimental groups. Twenty-two women, with a mean age of 31. 8 yr, were included and randomly assigned to two groups. The median time of avoidance of dental care was 9. 5 yr. One group received hypnotherapy (HT) and one group a behavioral treatment based on psychophysiological principles (PP). Both therapies included eight sessions followed by standardized conventional dental test treatments. . Pre- and post-treatment measures were dental fear, general fear, mood, and patient behavior. Nine patients were not able to conclude the treatment sessions (6 HT and 3 PP); these patients did not differ significantly from the remaining patients before treatment. The PP group reported a statistically significant decrease in dental fear as well as a rise in mood during dental situations, as opposed to the HT group. General fear levels decreased but not significantly. Eleven patients completed conventional dental treatment according to a dentist's behavioral rating scale, indicating that they were relaxed, and no problems occurred during the treatments. These patients were referred to general practitioners within the community dental service. In conclusion, this small size study showed that a majority of the patients, who accomplished the behavioral therapy and the dental test treatments, became less fearful of dental care and were able to manage conventional dental care, including changing dentist.

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Harvey, R. F., Hinton, R. A., Gunary, R. M. and Barry, R. E. (1989). **Individual and group hypnotherapy in treatment of refractory irritable bowel syndrome.** *Lancet*. 1(8635). 424-425. Thirty-three patients with refractory irritable bowel syndrome were treated with four 40-minute sessions of hypnotherapy over seven weeks. Twenty improved, 11 of whom lost almost all their symptoms. Short-term improvement was maintained for three months without further formal treatment.

Hasegawa, H. and Jamieson, G. A. (2002). **Conceptual issues in hypnosis research: Explanations, definitions and the state/non-state debate.** *Contemporary Hypnosis* 19(3). 103-117. Abstract: The present paper aims to integrate existing streams of hypnosis research and theory into a broader context. A conceptual framework is presented that illustrates the range of explanatory approaches that are available to describe psychological phenomena in general, and this is applied to the discussion of hypnosis. In doing so, various approaches to hypnosis research are categorized and the scope and limitations of the theories derived from them are considered. The definition of hypnosis is also explored within this framework. The state/non-state debate is reconsidered in the context of the systems approach to states of consciousness described by Tart (1983/2000). Research agendas for hypnosis are clarified, and methodologies and directions for future research are suggested.

Heap, M. (1995). **Hypnosis: Applications in general medicine.** *British Journal of Therapy & Rehabilitation*. 2(12). 649-53. Abstract: Hypnosis is a complex psychological phenomenon about which there is much misinformation and misunderstanding. This article presents a description of hypnosis based on common situations in which hypnosis is said to be taking place. Two key aspects, trance and suggestion, are defined and explored in further detail, the role of induction procedures is summarized and the ways in which hypnosis is applied therapeutically are discussed.

Hernandez, A. and Tatarunis, A. M. (2000). **The use of pre-, intra-, and posthypnotic suggestion in anesthesia and surgery.** *CRNA: The Clinical Forum for Nurse Anesthetists*. 11(4). 167-72. Abstract: While under hypnosis, patients can be taught to alter their psychophysiological functions. With this ability to alter these functions, patients can overcome the anxiety associated with surgery. Patients with high anxiety often experience more depression, can have increased complications, need more anesthesia and medication, have suppressed immune function, and often take longer to heal. The purpose of this article is to review the research literature related to the use of hypnosis in preparing the patient for surgery and to present 2 approaches used by the authors to prepare patients for surgery. The first approach is used when there is enough time to condition the patient, and the second approach is used when the anesthetist meets the patient shortly before the surgery is to begin and there is no time to induce formal trance. Hypnosis skills enrich nursing practice.

Jacknow, D. S., Tschann, J. M., Link, M. P. and Boyce, W. T. (1994). **Hypnosis in the prevention of chemotherapy-related nausea and vomiting in children: A prospective study.** *Journal of Developmental and Behavioral Pediatrics*. 15(4). 258-264. To study the effectiveness of hypnosis for decreasing antiemetic medication usage and treatment of chemotherapy-related nausea and vomiting in The hypnosis group experienced less anticipatory nausea than the control group at one to two months post diagnosis ( $p < .02$ ). Results suggest self-hypnosis is effective for decreasing antiemetic medication usage and for reducing anticipatory nausea during chemotherapy. Jensen, M.

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P., Barber, J., Williams-Avery, R. M., Flores, L. and Brown, M. Z. (2000). **The effect of hypnotic suggestion on spinal cord injury pain.** *Journal of Back and Musculoskeletal Rehabilitation.* 14(1/2). 3-10. Abstract: Chronic pain is a significant concern for many individuals with spinal cord injury (SCI). However, few effective treatments have been found for SCI-related pain. The current study sought to explore whether persons with SCI-related pain would respond to hypnotic suggestion for pain relief, and to examine possible moderators of this response. Twenty-two individuals with SCI-related pain rated their 6-month average and least pain on 0-10 scales of pain intensity. They also rated their current pain intensity and pain unpleasantness on 0-10 scales at eight subsequent time points: immediately before a hypnotic induction, immediately after the induction, after each of five hypnotic suggestions, and at the end of the entire session after awakening. Eighty-six percent of the participants reported decreases in pain intensity and pain unpleasantness from pre-induction to post-induction. Significant omnibus analyses of variance followed by pairwise comparisons indicated statistically significant decreases in pain intensity and unpleasantness from pre-to post induction for both pain intensity and pain unpleasantness, and an additional decrease in pain intensity following the analgesia suggestion. In addition, although not specifically suggested, the decrease in pain that subjects experienced during the hypnotic session persisted after they were instructed to awaken. The ability of the subjects to decrease pain intensity to levels lower than the least pain they had experienced during the past six months was associated with hypnotic responsiveness, while the decrease in pain intensity from pre-induction to post-analgesia suggestion was associated with 6-month average pain. These preliminary findings indicate that hypnotic interventions have the potential to benefit many individuals with SCI-related pain, and that controlled trials of hypnotic analgesia with this population are warranted.

Wickramasekera's **High Risk Model of Threat Perception (HRMTP) by comparing autonomic and affective responses to a cognitive and an emotional stress task in high, medium, and low hypnotizables.** Electrodermal activity (EDA) was used as a measure of sympathetic activity, and the high frequency (HF) spectral component of heart rate variability as a measure of parasympathetic activity. High hypnotizables exhibited greater EDA at baseline and slower EDA recovery following both tasks than did medium and lows. Medium hypnotizables responded with greater decreases in normalized HF power than did highs and lows during the emotional stress task. The results suggest diminished EDA variability in high hypnotizables and the potential for HF power as an indicator of autonomic dysregulation in low and high hypnotizables, compared to mediums. The results are discussed in relation to predictions based on the HRMTP.

Kienle, G. S. and Kiene, H. (1998). **The placebo effect: A scientific critique.** . . . adapted from a paper published in the *Journal of Clinical Epidemiology. Complementary Therapies in Medicine.* 6(1). 14-24. Abstract: The existence of so-called placebo effects, where the administration of an inert substance or imitation therapy brings about therapeutic change, seems to have been accepted without question in the biomedical community. Seminal review articles such as Henry Beecher's 'The Powerful Placebo' are often said to constitute the scientific basis of a belief in placebo effects. Analysis of these articles show that many involved extremely poor scholarship, including misquotation, uncritical reporting of anecdotes or inclusion of studies in which no placebo was given. The original studies on which these reviews were based do not, on analysis, provide evidence of a placebo effect. Apparent improvements in patients receiving

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placebos can be attributed to spontaneous improvement, additional interventions, irrelevant and unreliable outcome measures, selective reporting and patient bias. Apparent toxic effects from placebos can be explained as everyday symptoms or symptoms of the disease under study. Placebo literature does not provide sufficient evidence for the existence of therapeutic placebo effects.

Kinnunen, T., Zamansky, H. S. and Nordstrom, B. L. (2001). **Is the hypnotized subject complying?** *International Journal of Clinical and Experimental Hypnosis*. 49(2). 83-94.

Abstract: To examine the role of compliance in responses to hypnotic suggestions, the authors administered a number of suggestions in the standard hypnotic manner and, also, with urging to comply. Participants' overt behavioral responses were noted, and they were questioned about their subjective experience of the suggestions, with electrodermal skin conductance responses providing a measure of the truthfulness of their reports. Results indicated that, although behavioral and verbal responses were consistent with the hypnotic suggestions under both instructional sets, responses in the standard hypnotic setting appeared to be experienced as genuine. That is, reports of subjective experiences met the criterion for truthfulness, whereas reports of suggested experiences administered with urging to comply did not meet the criterion for truthfulness.

Klein, K. B. and Spiegel, D. (1989). **Modulation of gastric acid secretion by hypnosis.** *Gastroenterology*. 96(6). 1383-1387. We have shown that different cognitive states induced by hypnosis can promote or inhibit gastric acid production, processes clearly controlled by the central nervous system. Hypnosis offers promise as a safe and simple method for studying the mechanisms of such central control.

Kohen, D. P. (1996). **Relaxation/mental imagery (self-hypnosis) for childhood asthma: behavioral outcomes in a prospective, controlled study.** *Australian Journal of Clinical and Experimental Hypnosis*. 24(1). 12-28. Results included: (a) fewer emergency room visits in the experimental group; (b) less school missed in the experimental group compared to the traditional control group and to the waking suggestion group; (c) no difference in psychological evaluations between groups; and (d) surprising findings regarding hypnotic and hypnotic-like experiences among subjects.

LaBaw, W. (1992). **The use of hypnosis with hemophilia.** *Psychiatric Medicine*. 10(4). 89-98. A self hypnosis program for hemophilia patients at the University of Colorado has decreased frequency and severity of bleeding episodes, as well as providing increased feelings of control and self-confidence.

Lambert, S. A. (1996). **The effects of hypnosis/guided imagery on the postoperative course of children.** *Journal of Developmental and Behavioral Pediatrics*. 17(5). 307-310. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient.

Langlade, A., Jussiau, C., Lamonerie, L., Marret, E. and Bonnet, F. (2002). **Hypnosis increases heat detection and heat pain thresholds in healthy volunteers.** *Regional Anesthesia and Pain Medicine*. 27(1). 43-6. Abstract: BACKGROUND AND OBJECTIVES: Hypnosis has been reported to induce analgesia and to facilitate anesthesia. To date, hypnotic-induced analgesia has had little explanation and it has even been questioned. The current study was thus



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designed to investigate the effect of hypnotic suggestion on thermal-detection thresholds, heat pain, and heat-pain tolerance thresholds. **METHODS:** In 15 healthy volunteers, enrolled in a randomized cross-over study, thermal thresholds were investigated in 2 sequences of measurements, under waking and hypnotic states, using a thermal stimulator. **RESULTS:** Heat detection and heat-pain thresholds were increased under hypnosis (from 34.3  $\pm$  9 degrees C to 36.0  $\pm$  2.9 degrees C and 45.0  $\pm$  3.7 degrees C to 46.7  $\pm$  2.7 degrees C, respectively).

Letts, P. J., Baker, P. R. A., Ruderman, J. and Kennedy, K. . (1993). **The use of hypnosis in labor and delivery: A preliminary study.** Journal of Women's Health. 2(4). 335-41.

Abstract: Self-hypnosis was taught to 87 obstetric patients (HYP) and was not taught to 56 other patients (CNTRL), all delivered by the same family physician, in order to determine whether the use of self-hypnosis by low-risk obstetric patients leads to fewer technologic interventions during their deliveries or greater satisfaction of parturients with their delivery experience or both. The outcomes of the deliveries of these two groups were compared, and the HYP group was compared to 352 low-risk patients delivered by other family physicians at the same hospital (WCH). Questionnaires were mailed postpartum to 156 patients, all delivered by the same family physician, to determine satisfaction with delivery using the Labor and Delivery Satisfaction Index (LADSI). The hypnosis group showed a significant reduction in the number of epidurals (11.4% less than CNTRL and 17.9% less than WCH).

Manganiello, A. J. (1984). **A comparative study of hypnotherapy and psychotherapy in the treatment of methadone addicts.** American Journal of Clinical Hypnosis. 26(4). 273-279. Significant differences were found on all measures. The experimental group had significantly less discomfort and illicit drug use, and a significantly greater number of withdrawals. At six month follow up, 94% of the subjects in the experimental group who had achieved withdrawal remained narcotic free. Mantle, F. (1999). Hypnosis in the treatment of enuresis. Paediatric Nursing. 11(6). 33-4, 36. Abstract: Following on from last month's article on hypnosis and eczema, Fiona Mantle considers hypnosis as an additional therapy for children with enuresis. .

Medd, D. Y. (2001). **Fear of injections: the value of hypnosis in facilitating clinical treatment.** Contemporary Hypnosis. 18(2). 100-6. Abstract: Three examples of the use of hypnosis in counseling show the variable effects of experiences in the creation of fear, anxiety and disabling phobia. Therapy may be directed to an apparently single cause of a few weeks' duration, or to a many-layered complex of over 40 years' existence. The processes of resolution may be jointly agreed by client and counselor or else no clear path to improvement may be identified. The present paper describes three patients with different problems who had high levels of fear or anxiety about receiving injections in botulinum toxin clinics. Individual differences in causes, history and personality made an integrated approach the logical choice. Successful outcomes showed that hypnosis, adaptably adjoined with mainly behavioral and cognitive methods of counseling, can be of very great assistance in enabling patients to receive injections essential to treatment, and can usefully be made part of multidisciplinary team provision.

Noble, S. (2002). **The management of blood phobia and a hypersensitive gag reflex by hypnotherapy: A case report.** Dental Update. 29(2). 70-4. Nordenstrom, B. K., Council, J. R. and Meier, B. P. (2002). The "Big Five" and hypnotic suggestibility. International Journal of Clinical and Experimental Hypnosis. 50(3). 276-80. Abstract: A recent approach to personality

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measurement argues that the essential personality traits are encompassed by 5 basic factors: openness/intellect, conscientiousness, neuroticism, agreeableness, and extroversion. This study used the Big Five Inventory to test the hypothesis that 1 or more of the 5 factors underlie hypnotic suggestibility. No meaningful relationships between hypnotic suggestibility and any of the 5 factors were found.

Oster, M. I. (2000). **Contemporary methods in hypnotic preparation for childbirth.** CRNA: The Clinical Forum for Nurse Anesthetists. 11(4). 160-6. Abstract: Hypnosis is a viable adjunct to any medical procedure and is not intended to replace conventional medical techniques. In recent years, many of us who practice hypnosis have seen a re-emergence of interest in mind-body approaches to health care. Hypnotic methods for preparation for childbirth are a logical contribution to that mind-body perspective.

Patel, B., Potter, C. and Mellor, A. C. (2000). **The use of hypnosis in dentistry: A review.** Dental Update. 27(4). 198-202. Abstract: Hypnosis is a valuable technique in patient management. With appropriate training, general dental practitioners can widen the treatment options they can offer to patients, especially those who are dentally anxious. This article provides a brief theoretical and historical overview, and a review of the literature pertaining to the clinical uses of hypnosis in dentistry.

Patterson, D. R. and Ptacek, J. T. (1997). **Baseline pain as a moderator of hypnotic analgesia for burn injury treatment.** Journal of Consulting and Clinical Psychology. 65(1). 60-67. The post treatment pain scores of the two groups did not differ significantly when all patients were considered. However, when a subset of patients who reported high levels of baseline pain were examined, it was found that patients in the hypnosis group reported less post treatment pain than did patients in the control group. The findings are used to replicate earlier studies of burn pain hypnoanalgesia, explain discrepancies in the literature, and highlight the potential importance of motivation with this population.

Peebles-Kleiger, M. J. (2000). **The use of hypnosis in emergency medicine.** Emergency Medicine Clinics of North America. 18(2). 327-38. Abstract: Hypnosis can be a useful adjunct in the emergency department setting. Its efficacy in various clinical applications has been replicated in controlled studies. Application to burns, pain, pediatric procedures, surgery, psychiatric presentations (e. g., coma, somatoform disorder, anxiety, and posttraumatic stress), and obstetric situations (e. g., hyperemesis, labor, and delivery) are described. Negative effects are discussed.

Rapkin, D. A. Straubing, M. and Holroyd, J. C. (1991). **Guided imagery, hypnosis and recovery from head and neck cancer surgery:** An exploratory study. International Journal of Clinical and Experimental Hypnosis. 39(4). 215-226. Postoperative hospitalizations for the hypnotic intervention group were significantly shorter than for the usual care group. Findings suggest that imagery-hypnosis may be prophylactic, benefitting patients by reducing the probability of postoperative complications and thereby keeping hospital stay within the expected range.

Ruzyla-Smith, P., Barabasz, A., Barabasz, M. and Warner, D. (1995). **Effects of hypnosis on the immune response: B-cells, T-cells, helper and suppressor cells.** American Journal of Clinical Hypnosis. 38(2). 71-79. Sacks, S. B. (2001). Treatment through trance: Hypnosis for asthma relief. Nursing Spectrum (New York/New Jersey Metro Edition). 13A(6). 32-3.

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Sapp, M. (2002). **Implications of Barber's three dimensional theory of hypnosis. Sleep and Hypnosis.** 4(2). 70-6. Abstract: Recently, Barber has presented a three dimensional paradigm of hypnosis. He proposed that there are three hypnotic types of clients- the fantasy-prone, amnesic-prone, and positively-set. This paper discusses the major theoretical implications of this new paradigm, and, if Barber is correct, his new theory should bridge a gap between the special process (state) and nonstate theorists. Finally, only research will determine if Barber's new theory will actually unify the previous disagreements between the state and nonstate theorists.

Shevlin, B. (1996). **Emergency hypnosis.** Emergency Nurse. 4(1). 4-5. Shinkarovsky, L. (1996). Alternatives. Complementary therapies: Hypnotherapy, not just hocus-pocus  
Commentary/Response: Rebic, H. Oral Head and Neck Nursing. 16(4). 25. RN. 59(6). 55-7. Abstract: A legitimate form of treatment, hypnosis can help patients cope with a wide variety of physical and emotional problems.

Simon, E. P. and Lewis, D. M. **Medical hypnosis for temporomandibular disorders: treatment efficacy and medical utilization outcome.** Oral Surgery, Oral medicine, Oral Pathology, Oral Endodontics. Abstract: AIM: The aim of this study was to examine the effectiveness of a particular behavioral medicine treatment modality, medical hypnosis, on reducing the pain symptoms of temporomandibular disorders (TMD).

**METHODS:** Twenty-eight patients who were recalcitrant to conservative treatment for TMD participated in a medical hypnosis treatment program and completed measures of their pain symptoms on 4 separate occasions: during wait list, before treatment, after treatment, and at a 6-month follow-up. In addition, pretreatment and post-treatment medical use were examined.

**RESULTS:** Statistical analysis of this open trial suggests that medical hypnosis is a potentially valuable treatment modality for TMD. Patients reported a significant decrease in pain frequency ( $F [3, 87] = 14.79, P < .001$ ), pain duration ( $F [3, 87] = 9.56, P < .001$ ), and pain intensity ( $F [3, 87] = 15.08, P < .001$ ), and an increase in daily functioning. Analysis suggests that their symptoms did not simply spontaneously improve, and that their treatment gains were maintained for 6 months after hypnosis treatment. Further, after hypnosis treatment, patients exhibited a significant reduction in medical use.

**CONCLUSION:** medical hypnosis appears to be an effective treatment modality for TMD, in terms of reducing both symptoms and medical use.

Simon, E. P. and Schwartz, J. (1999). **Medical hypnosis for hyperemesis gravidarum.** Birth. 26(4). 248-54. Abstract: Hyperemesis gravidarum in pregnancy is a serious condition that is often resistant to conservative treatments. Medical hypnosis is a well-documented alternative treatment. This article reviews the empirical studies of medical hypnosis for treating hyperemesis gravidarum, explains basic concepts, and details the treatment mechanisms. The importance of a thorough differential diagnosis and appropriate referrals is stressed. The article presents three case studies to illustrate the efficacy of this treatment approach. It is suggested that medical hypnosis should be considered as an adjunctive treatment option for those women with hyperemesis gravidarum. It is also stressed that medical hypnosis can be used to treat common morning sickness that is experienced by up to 80 percent of pregnant women. Its use could allow a more comfortable pregnancy and healthier fetal development, and could prevent cases that might otherwise proceed to full-blown hyperemesis gravidarum.

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Spira, J. L. and Spiegel, D. (1992). **Hypnosis and related techniques in pain management.** *Hospice Journal*. 8(1/2). 89-119. Abstract: Hypnosis has been used successfully in treating cancer patients at all stages of disease and for degrees of pain. The experience of pain is influenced not only by physiological factors stemming from disease progression and oncological treatment, but also from psychosocial factors including social support and mood. Each of these influences must be considered in the successful treatment of pain. The successful use of hypnosis also depends upon the hypnotizability of patients, their particular cognitive style, their specific motivation, and level of cognitive functioning. While most patients can benefit from the use of hypnosis, less hypnotizable patients or patients with low cognitive functioning need to receive special consideration. The exercises described in this chapter can be successfully used in groups, individual sessions, and for hospice patients confined to bed. Both self-hypnosis and therapist guided hypnosis exercises are offered.

Taylor, D. N. (1995). **Effects of a behavioral stress-management program on anxiety, mood, self-esteem, and T-cell count in HIV positive men.** *Psychological Reports*. 76(2). 451-457. Analysis showed that compared with the no-treatment group, the treatment group showed significant improvement on all the dependent measures, which was maintained at a one-month follow-up. Since stress is known to compromise the immune system, these results suggest that stress management to reduce arousal of the nervous system and anxiety would be an appropriate component of a treatment regimen for HIV infection.

Van Sickel, A. D. (1992). **Clinical hypnosis in the practice of anesthesia. Nurse Anesthesia.** 3(2). 67-74. Abstract: Hypnosis has been utilized for at least several hundred years, but the societal view of hypnosis has ranged from raving to ridicule. The advances of hypnosis as a scientific endeavor have occurred within the last two centuries, but many myths and misunderstandings remain about the nature of hypnosis and its effects on the subject. Hypnosis is being recognized as having many medical applications. Important applications for the anesthetist include hypnoanesthesia and hypnoanalgesia, which are found to have some advantages in specific types of patients that present for surgery.

Whorwell, P. J., Prior, A. and Colgan, S. M. (1987). **Hypnotherapy in severe irritable bowel syndrome:** Further experience. *Gut*. 28(4). 423-425. Patients below the age of 50 with classical irritable bowel syndrome exhibited a 100% response rate. This study confirms the successful effect of hypnotherapy in a larger series of patients with irritable bowel syndrome and defines some subgroup variations.

Whorwell, P. J., Prior, A. and Faragher, E. B. (1984). **Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome.** *Lancet*. 2(8414). 1232-1243. The hypnotherapy patients showed a dramatic improvement in all features, the difference between the two groups being highly significant. In the hypnotherapy group no relapses were recorded during the three-month follow-up period, and no substitution symptoms were observed.

Williams, A. R. Hind, M. . Sweeney, B. P. and Fisher, R. (1994). **The incidence and severity of postoperative nausea and vomiting in patients exposed to positive intra-operative suggestions.** *Anesthesia*. 49(4). 340-342. Patients who received positive suggestions suffered significantly less nausea and vomiting in the 24 hours after surgery.

Winocur, E., Gavish, A., Emodi-Perlman, A., Halachmi, M. and Eli, I. (2002). **Hypnorelaxation as treatment for myofascial pain disorder: a comparative study.** *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics*. 93(4). 429-34.

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**Abstract: BACKGROUND:** Hypnorelaxation has a potentially beneficial effect in the treatment of masticatory myofascial pain disorders (MPD). However, there are no data regarding the efficacy of hypnorelaxation in the treatment of MPD compared with other accepted modes of treatment (such as occlusal appliance) or with the mere effect of time.

**OBJECTIVE AND SUBJECTS:** The purpose of the present study was to evaluate the effectiveness of hypnorelaxation in the treatment of MPD compared with the use of occlusal appliance and/or to minimal treatment. The study population consisted of 40 female patients with myofascial pain who were allocated to 1 of 3 possible treatment groups: (1) hypnorelaxation (n = 15), (2) occlusal appliance (n = 15), and (3) minimal treatment group (n = 10).

**RESULTS:** Both active treatment modes (hypnorelaxation and occlusal appliance) were more effective than minimal treatment regarding alleviating muscular sensitivity to palpation.

However, only hypnorelaxation (but not occlusal appliance) was significantly more effective than minimal treatment with regard to the patient's subjective report of pain on the Visual Analog Scale.

**CONCLUSION:** Hypnorelaxation is an effective mode of treatment in MPD, especially with regard to some of the subjective pain parameters.

Winsor, R. M. (1993). **Hypnosis-A neglected tool for client empowerment.** Social Work. 38(5). 603-8. Abstract: Clinical hypnosis is a valuable treatment modality that deserves to be more widely known and used by social workers. The author presents an overview of this growing clinical specialty, distinguishing between directive, Ericksonian, and permissive hypnosis. The latter, which is the most common style in use today, is based on a clear contract in which a hypnotherapist helps a client develop and use his or her own hypnotic abilities toward therapeutic goals. Characteristics of a hypnotic trance and the differing capacities of individuals in trance are presented. The article describes how permissive hypnosis is used in practice and identifies the types of clients for whom it is suitable. The author stresses the consistency of modern clinical hypnosis with social work aims and values. Woods, M. (1989). Pain control and hypnosis. Nursing Times. 85(7). 38-40.

## 13. HYPNOSIS RESEARCH & EVIDENCE: DONALD ROBERTSON

**SELF-HYPNOSIS:** Self-hypnosis has been used to treat a wide variety of clinical problems. Successful outcomes involving self-hypnosis with adults or children have been reported for the treatment of anxiety (including test anxiety, post-traumatic stress disorder, simple phobia and panic disorder), chronic pain (including psychogenic dysphonia, post-traumatic contractures of the hand, abdominal pain and tension headaches) and habit disorders (including smoking, over-eating, alcoholism and drug addiction) as well as in the management of mourning, hypertension, cancer, tinnitus, enuresis, insomnia and depression. The findings from empirical studies and case reports indicate merit in the clinical use of self-hypnosis, and point to some features of self-hypnosis that appear important in positive treatment outcomes. (Lucy O'Neill & Kevin McConkey, 'Treating anxiety with self-hypnosis and relaxation', Contemporary Hypnosis, 1999, vol. 16(2):68)

In a research study involving over 100 patients suffering from stress-related conditions it was found that 75% felt their symptoms were improving after 12 weeks of self-hypnosis practice, within one year 72% of the group reported complete remission of their symptoms as a result of the self-hypnosis. (Maher-Loughnan, G.P. 1980, 'Hypnosis: Clinical application of hypnosis in medicine', British Journal of Hospital Medicine, 23: 447-55) Over a six year period,

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173 successive patients suffering from asthma were treated using self-hypnosis, 82% were either much improved or experienced total remission of symptoms. (Maher-Loughnan, G.P. 1970, 'Hypnosis and autohypnosis for the treatment of asthma', *International Journal of Clinical & Experimental Hypnosis*. 18: 1 -14)

A study of 20 individuals compared the use of self-hypnosis and relaxation therapy in managing anxiety over 28 days. Both groups were shown to have achieved significant reduction in psychological and physical symptoms of anxiety. However, the self-hypnosis group exhibited greater confidence in the positive effects of the treatment, higher expectation of success, and greater degrees of cognitive and physical improvement. (Lucy O'Neill, Amanda Barnier, & Kevin McConkey, 'Treating Anxiety with self-hypnosis and relaxation', *Contemporary Hypnosis*, 1999, vol. 16 (2): 68)

'Various case studies have reported the successful use of self-hypnosis in treating post-traumatic stress disorder, public speaking, simple phobia and panic disorder. Overall, previous speculations and empirical findings suggest that increases in a sense of self-reliance, self-control and self-efficacy may be central to the alleviation of anxiety through self-hypnosis.' (Lucy O'Neill, Amanda Barnier, & Kevin McConkey, 'Treating Anxiety with self-hypnosis and relaxation', *Contemporary Hypnosis*, 1999, vol. 16 (2): 68) Insomnia

A recent 'Clinical Review' of hypnosis and relaxation therapies published in the *BMJ* looked at the existing research on hypnosis and concluded that hypnosis was proven to be effective for treating insomnia. (Vickers & Zollman, 'Hypnosis and relaxation therapies,' *BMJ* 1999;319: 1346-1349)

**ASTHMA:** Over a six year period, 173 successive patients suffering from asthma were treated using self-hypnosis, 82% were either much improved or experienced total remission of symptoms. (Maher-Loughnan, G.P. 1970, 'Hypnosis and autohypnosis for the treatment of asthma', *International Journal of Clinical & Experimental Hypnosis*. 18: 1 -14)

A recent 'Clinical Review' of hypnosis and relaxation therapies published in the *BMJ* looked at the existing research on hypnosis and concluded: 'Randomised trials have shown hypnosis to be of value in treating asthma [...]' (Vickers & Zollman, 'Hypnosis and relaxation therapies,' *BMJ* 1999;319: 1346-1349) Pain

Following an extensive review of the existing literature on hypnotherapy, a special committee commissioned by the British Medical Association formally concluded that: 'In addition to the treatment of psychiatric disabilities, there is a place for hypnotism in the production of anaesthesia or analgesia for surgical and dental operations, and in suitable subjects it is an effective method of relieving pain in childbirth without altering the normal course of labour.' (BMA, 'Medical use of hypnotism', *BMJ*, 1955, vol. I, 190-193) A recent 'Clinical Review' of hypnosis and relaxation therapies published in the *BMJ* looked at the existing research on hypnosis and concluded: 'Randomised controlled trials support the use of various relaxation techniques for treating both acute and chronic pain,' (Vickers & Zollman, 'Hypnosis and relaxation therapies,' *BMJ* 1999;319: 1346-1349)

**ANXIETY/PHOBIA:** Following an extensive review of the existing literature on hypnotherapy, the British Medical Association concluded that hypnotherapy was not only effective but may be 'the treatment of choice' in dealing with anxiety ('psychoneurosis') and stress-related ('psycho-somatic') disorders: 'The Subcommittee is satisfied after consideration of the available evidence that hypnotism is of value and may be the treatment of choice in some

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cases of so-called psycho-somatic disorder and psychoneurosis. It may also be of value for revealing unrecognised motives and conflicts in such conditions. As a treatment, in the opinion of the Subcommittee it has proved its ability to remove symptoms and to alter morbid habits of thought and behaviour. [...]' (BMA, 'Medical use of hypnotism', BMJ, 1955, vol. I, 190-193)

A recent 'Clinical Review' of hypnosis and relaxation therapies published in the BMJ looked at the existing research on hypnosis and concluded: 'There is good evidence from randomised controlled trials that both hypnosis and relaxation techniques can reduce anxiety [...]', the same report also concluded that hypnosis was proven to be effective in treating panic attacks and phobia. (Vickers & Zollman, 'Hypnosis and relaxation therapies,' BMJ 1999;319: 1346-1349)

A study of 20 individuals compared the use of self-hypnosis and relaxation therapy in managing anxiety over 28 days. Both groups were shown to have achieved significant reduction in psychological and physical symptoms of anxiety. However, the self-hypnosis group exhibited greater confidence in the positive effects of the treatment, higher expectation of success, and greater degrees of cognitive and physical improvement. (Lucy O'Neill, Amanda Barnier, & Kevin McConkey, 'Treating Anxiety with self-hypnosis and relaxation', Contemporary Hypnosis, 1999, vol. 16 (2): 68)

**SEXUAL ISSUES:** In a study of 189 people with psychological issues relating to sex, it was proven that self-hypnosis combined with cognitive therapy was more effective than cognitive therapy alone. When self-hypnosis was taught, the number of sessions required was less, relapse was less likely, and clients expressed more satisfaction with the overall outcome. (Carrese & Araoz, 'Self-Hypnosis in sexual functioning.' Australian Journal of Clinical Hypnotherapy & Hypnosis, 1998: Sep., vol 19(2):41-48)

**IBS:** A recent 'Clinical Review' of hypnosis and relaxation therapies published in the BMJ looked at the existing research on hypnosis and concluded: 'Randomised trials have shown hypnosis to be of value in treating [...] irritable bowel syndrome.' (Vickers & Zollman, 'Hypnosis and relaxation therapies,' BMJ 1999;319: 1346-1349)

An experimental study of 12 patients with IBS showed that treatment resulted in significant improvement in symptoms and reduction in related anxiety. (Galovski, T.E., and E.B. Blanchard, 'The treatment of irritable bowel syndrome with hypnotherapy.' Applied Psychophysiology & Feedback, 1998: Dec., vo. 23(4):219-232)

## 14. RESEARCH OVERVIEW ON HYPNOSIS: JINSEI CENTER: UPDATED 04/16/04

### Research Overview on Hypnosis Smoking Cessation:

Elkins GR, Rajab MH. **Clinical hypnosis for smoking cessation: preliminary results of a three-session intervention.** International Journal of Clinical & Experimental Hypnosis, 2004. This study presents preliminary data regarding hypnosis treatment for smoking cessation in a clinical setting. An individualized, 3-session hypnosis treatment is described. 30 smokers enrolled in an HMO were referred by their primary physician for treatment. 21 patients returned after an initial consultation and received hypnosis for smoking cessation. At the end of treatment, 81% of those patients reported that they had stopped smoking, and 48% reported abstinence at 12 months post treatment. 95% of patients reported they were satisfied with the treatment they received.

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Williams JM, Hall DW. **Use of single session hypnosis for smoking cessation.** *Addict Behav.*, 1988. 20 of 60 volunteers for smoking cessation were assigned to single-session hypnosis, 20 to a placebo control condition, and 20 to a no-treatment control condition. The single-session hypnosis group smoked significantly less cigarettes and were significantly more abstinent than a placebo control group and a no treatment control group at post-test, and 4-week, 12-week, 24-week and 48-week follow-ups.

Watkins, Helen H. **Hypnosis and smoking: A five-session approach.** *International Journal of Clinical and Experimental Hypnosis*, 1976. Specialized suggestions and specifically tailored fantasies were initiated to undermine rationalizations and reinforce the subject's commitment to stop smoking. A number of different techniques were mobilized within a hypnotic "concentration-relaxation" approach and were combined with behavior therapy to achieve strong counter-motivations to smoking. 78% of the subjects stopped smoking, and 67% were not smoking at the end of 6 months.

Barabasz, Areed F.; Baer, Lee; Sheehan, David V.; Barabasz, Marianne. **A three year follow-up of hypnosis and restricted environmental stimulation therapy for smoking.** *International Journal of Clinical and Experimental Hypnosis*, 1986. Clinical follow-up data were obtained from 307 clients. Clinicians experience level, contact time, and procedural thoroughness varied in 6 interventions. An additional intervention combined hypnosis with restricted environmental stimulation therapy (REST). The major results suggest positive treatment outcomes to be related to greater hypnotizability, absorption, hypnotist experience level, procedural thoroughness, and client-therapist contact time. The least effective intervention (4% abstinence at 4 month follow-up) involved intern trainees using a short, single-session approach. The most effective procedure (47% abstinence at 19 month follow-up) involved the combination of hypnosis and REST.

Holroyd, Jean. **Hypnosis treatment for smoking: An evaluative review.** *International Journal of Clinical and Experimental Hypnosis*, 1980. 17 studies were reviewed. Abstinence at 6 months post-treatment ranged from 4% to 88%. Effectiveness of treatment outcome was examined in terms of subject's population, individual versus group treatment, standardized versus individual sessions, use of self-hypnosis, number of treatment sessions, and time span covered by the treatment, and use of adjunctive treatment. At 6 months follow-up, more than 50% of smokers had remained abstinent in programs in which there were several hours of treatment, intense interpersonal interaction, suggestions capitalizing on specific motivations of individual patients, and adjunctive or follow-up contact.

Spiegel, David; Frischholz, Edward J.; Fleiss, Joseph L.; Spiegel, Herbert. **Predictors of smoking abstinence following a single-session restructuring intervention with self-hypnosis.** *American Journal of Psychiatry*, 1993. This study examined the relation of smoking and medical history, social support, and hypnotizability to outcome with Spiegel's smoking-cessation program. A consecutive series of 226 smokers were treated with the single-session approach and followed up for 2 years. With a total abstinence criterion, 52% success was found after 1 week, and 23% abstinence at 2 years.

### **Weight Management:**

Bolocofsky, David N.; Spinier, Dwayne; Coulthard-Morris, Linda. Effectiveness of hypnosis as an adjunct behavior weight management. *Journal of Clinical Psychology*, 1985. 109 17-67 year-olds completed a behavior treatment for weight management either with or without



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the addition of hypnosis. Results showed that, at the end of the 9-week program, both interventions resulted in significant weight loss. However, at 8-month and 2-year follow-ups, the hypnosis subjects showed significant additional weight loss, while those in the behavior-treatment-only group exhibited little further change. More of the subjects who used hypnosis also achieved and maintained their personal weight goals.

Kirsch, I.; Montgomery, G.; Sapirstein, G. **Hypnosis as an adjunct to cognitive-behavioral psychotherapy: a meta-analysis.** Journal Consult. Clinical Psychology, 1995. A meta-analysis was performed on 18 studies in which a cognitive-behavioral therapy was compared with the same therapy supplemented by hypnosis. The results indicated that the addition of hypnosis substantially enhanced treatment outcome, so that the average client receiving cognitive-behavioral hypnotherapy showed greater improvement in at least 70% of clients receiving non-hypnotic treatment. Effects seemed particularly pronounced for treatment of obesity, especially at long-term follow-up, indicating that unlike those in non-hypnotic treatment, clients to whom hypnotic inductions had been administered continued to lose weight after the treatment ended. These results were particularly striking because of the few procedural differences between the hypnotic and non-hypnotic treatments. Irritable Bowel Syndrome

Whorwell PJ, Prior A, Faragher, EB. Controlled trial of hypnotherapy in the treatment of severe refractory irritable bowel syndrome. The Lancet, 1984. The earliest and perhaps best study to date, as it was thoroughly placebo-controlled and showed dramatic contrast in response to hypnosis treatment above the placebo group. 30 patients with severe symptoms unresponsive to other treatments were randomly chosen to receive 7 sessions of hypnotherapy (15 patients) or 7 sessions of psychotherapy plus placebo pills (15 patients). The psychotherapy group showed a small improvement in abdominal pain and distension, and in general well-being, but not in bowel activity pattern. The hypnotherapy patients showed a dramatic improvement in all central symptoms. The hypnotherapy group showed no relapses during the 3-month follow-up.

Whorwell PJ, Prior A, Colgan SM. Hypnotherapy in severe irritable bowel syndrome: further experience. Gut, 1987. **This report summed up further experience with 35 patients added to the 15 treated with hypnotherapy in the 1984 Lancet study.** For the whole 50 patient group, success rate was 95% for classic IBS cases, but less for IBS patients with atypical symptom picture or severe psychological problems. Houghton LA, Heyman DJ, Whorwell PJ. Symptomatology, quality of life and economic features of irritable bowel syndrome - the effect of hypnotherapy. Ailment Pharmacol. Ther., 1996. This study compared 25 severe IBS patients treated with hypnosis to 25 patients with similar symptom severity treated with other methods, and demonstrated that in addition to significant improvement in all central IBS symptoms, hypnotherapy recipients had fewer visits to doctors, lost less time from work, and rated their quality of life more improved. Those patients who had been unable to work prior to treatment resumed employment in the hypnotherapy group, but not in the control group.

Gonsalkorale WM, Miller V, Afzal A, Whorwell PJ. **Long term benefits of hypnotherapy for irritable bowel syndrome.** Gut. 2003. BACKGROUND AND AIMS: There is now good evidence from several sources that hypnotherapy can relieve the symptoms of irritable bowel syndrome in the short term. However, there is no long term data on its benefits and this information is essential before the technique can be widely recommended. This study aimed to answer this question.

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**PATIENTS AND METHODS:** 204 patients prospectively completed questionnaires scoring symptoms, quality of life, anxiety, and depression before, immediately after, and up to six years following hypnotherapy. All subjects also subjectively assessed the effects of hypnotherapy retrospectively in order to define their "responder status". **RESULTS:** 71% of patients initially responded to therapy. Of these, 81% maintained their improvement over time while the majority of the remaining 19% claimed that deterioration of symptoms had only been slight. With respect to symptom scores, all items at follow up were significantly improved on pre-hypnotherapy levels ( $p < 0.001$ ) and showed little change from post-hypnotherapy values. There were no significant differences in the symptom scores between patients assessed at 1, 2, 3, 4, or 5+ years following treatment. Quality of life and anxiety or depression scores were similarly still significantly improved at follow up ( $p < 0.001$ ) but did show some deterioration. Patients also reported a reduction in consultation rates and medication use following the completion of hypnotherapy. **CONCLUSION:** This study demonstrates that the beneficial effects of hypnotherapy appear to last at least five years. Thus it is a viable therapeutic option for the treatment of irritable bowel syndrome.

Lea R, Houghton LA, Calvert EL, Larder S, Gonsalkorale WM, Whelan V, Randles J, Cooper P, Cruickshanks P, Miller V, Whorwell PJ. **Gut-focused hypnotherapy normalizes disordered rectal sensitivity in patients with irritable bowel syndrome.** *Aliment Pharmacol Ther.* 2003.

**BACKGROUND:** We have previously shown that hypnotherapy alters rectal sensitivity in some patients with irritable bowel syndrome. However, this previous study used incremental volume distension of a latex balloon, which might be susceptible to subject response bias and might compromise the assessment of compliance. In addition, the study group was symptomatically rather than physiologically defined. **AIM:** To assess the effect of hypnotherapy on rectal sensitivity in hypersensitive, hyposensitive and normally sensitive irritable bowel syndrome patients using a distension technique (barostat) that addresses these technical issues.

**METHODS:** Twenty-three irritable bowel syndrome (Rome I) patients (aged 24-72 years) were assessed before and after 12 weeks of hypnotherapy in terms of rectal sensitivity, symptomatology, anxiety and depression. Normal values for sensitivity were established in 17 healthy volunteers (aged 20-55 years).

**RESULTS:** Compared with controls, 10 patients were hypersensitive, seven hyposensitive and six normally sensitive before treatment. Following hypnotherapy, the mean pain sensory threshold increased in the hypersensitive group ( $P = 0.04$ ) and decreased in the hyposensitive group, although the latter failed to reach statistical significance ( $P = 0.19$ ). Normal sensory perception was unchanged. Sensory improvement in the hypersensitive patients tended to correlate with a reduction in abdominal pain ( $r = 0.714$ ,  $P = 0.07$ ).

**CONCLUSION:** Hypnotherapy improves abnormal sensory perception in irritable bowel syndrome, leaving normal sensation unchanged. Palsson OS, Turner MJ, Johnson DA, Burnelt CK, Whitehead WE. Hypnosis treatment for severe irritable bowel syndrome: investigation of mechanism and effects on symptoms. *Dig Dis Sci.* 2002. Hypnosis improves irritable bowel syndrome (IBS), but the mechanism is unknown. Possible physiological and psychological mechanisms were investigated in two studies. Patients with severe irritable bowel syndrome received seven biweekly hypnosis sessions and used hypnosis audiotapes at home. Rectal pain thresholds and smooth muscle tone were measured with a barostat before and after treatment in

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18 patients (study I), and treatment changes in heart rate, blood pressure, skin conductance, finger temperature, and forehead electromyographic activity were assessed in 24 patients (study II). Somatization, anxiety, and depression were also measured. All central IBS symptoms improved substantially from treatment in both studies. Rectal pain thresholds, rectal smooth muscle tone, and autonomic functioning (except sweat gland reactivity) were unaffected by hypnosis treatment. However, somatization and psychological distress showed large decreases. In conclusion, hypnosis improves IBS symptoms through reductions in psychological distress and somatization. Improvements were unrelated to changes in the physiological parameters measured. Note: Additional research may be found online at [www.pubmed.com](http://www.pubmed.com).

## 15. HYPNOSIS, RELAXATION RESEARCH

Braffman W, Kirsch I. **Imaginative suggestibility and hypnotizability: an empirical analysis.** *Journal of Personality and Social Psychology* 77 (3): 578-87. Sep 1999. VIDA KOVIC VUKIC, Sint Lucas Ziekenhuis, Department of Internal Medicine, Amsterdam, The Netherlands investigated hypnotherapy in the treatment of patients with irritable bowel syndrome (IBS).

**Background:** IBS is relatively common, but its cause and pathogenesis are still unknown. However, individual perceptions clearly play an important part in the pathogenesis of the hypersensitive/hyperreactive gut. There is no easy medical treatment for IBS. In recent years, however, hypnotherapy has been found to be a successful treatment.

**Methods:** The author reports recently starting treating IBS patients with hypnotherapy. All the patients had remained symptomatic despite medical therapy. The gut-targeted method of hypnotherapy was applied, with the view that therapy should be tailored to the individual in accordance with each person's unique representative style.

**Results:** At the time of this report, 27 patients had been treated as described. The author describes the results as 'good', 'comparable with results elsewhere'. 2 of the 27 patients stopped the therapy prematurely and 1 remained symptomatic. All the other 24 patients experienced clear improvement: pain and flatulence were reduced or eliminated, and bowel habits were normalized.

**Conclusion:** Based on data from the published literature and the author's own findings, the author concludes that hypnotherapy is a valuable addition to conventional treatment of IBS. Further research is needed to:

- 1) improve knowledge of sensitivity to hypnotherapy;
- 2) recognize cases with greater hypersensitivity; and
- 3) recognize cases dominated by hypervigilance. More generally, there is a need for a theoretical model of hypnotherapy as applied to treating physiological disorders. Vidakovic Vukic M. Hypnotherapy in the treatment of irritable bowel syndrome: methods and results in Amsterdam. *Scandinavian Journal of Gastroenterology (Supplement)* 230: 49-51. 1999.

**Comment:** That hypnotherapy can be a valuable addition in the treatment program for IBS is good news.

SIMON and LEWIS, Department of Psychology, Multi-Disciplinary Pain Clinic, Tripler Regional Medical Center, University of Hawaii, Hawaii, USA, [EricSimon@yahoo.com](mailto:EricSimon@yahoo.com) examined the effectiveness of medical hypnosis in reducing the pain symptoms of temporomandibular disorders (TMD).

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**Methods:** In this open-label (uncontrolled) study, 28 patients with TMD underwent medical hypnosis for TMD treatment and were assessed for their pain symptoms a) during wait list, b) before treatment, c) after treatment and d) at a 6-month follow-up. Pre- and post-treatment use of medical treatment was also examined.

**Results:** Patients reported significant decreases in pain frequency, pain duration and pain intensity and an increase in daily functioning. Analysis of the results suggested that the patients' symptoms did not improve spontaneously, and that their benefits were maintained for 6 months after hypnosis treatment. In addition, after hypnosis, patients' use of medical treatment was significantly reduced.

**Conclusion:** Medical hypnosis appears to be an effective treatment modality for TMD in terms of reducing both symptoms and medical (treatment) use.

Simon EP and Lewis DM. **Medical hypnosis for temporomandibular disorders: treatment efficacy and medical utilization outcome.** Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics 90 (1): 54-63. Jul 2000.

MONTGOMERY, DUHAMEL and REDD, **Cancer Prevention and Control Program,** Mount Sinai School of Medicine, New York, NY 10029-6574, USA. [guy.montgomery@mssm.edu](mailto:guy.montgomery@mssm.edu) investigated the effectiveness of hypnotically induced analgesia.

**Background:** Over the past two decades, hypnoanalgesia has been widely studied. However, no systematic attempts have been made to determine the average size of hypnoanalgesic effects or establish the generalizability of these effects from the laboratory to the clinic. This study examines the effectiveness of hypnosis in pain management, comparing studies that evaluated hypnotic pain reduction in healthy volunteers versus those using patient samples, compares hypnoanalgesic effects and participants' hypnotic suggestibility, and determines the effectiveness of hypnotic suggestion for pain relief relative to other non-hypnotic psychological interventions.

**Results:** Meta-analysis of 18 studies revealed a moderate to large hypnoanalgesic effect, supporting the efficacy of hypnotic techniques for pain management. The results also indicated that hypnotic suggestion was equally effective in reducing both clinical and experimental pain. The overall results suggest broader application of hypnoanalgesic techniques with pain patients.

PINNELL and COVINO, Arizona School of Professional Psychology, **USA have reviewed the use of hypnosis in medicine.** Discussion: Recent changes in health care have been characterized by an increased demand for empirically supported treatments in medicine. Presently, there is moderate support for the integration of hypnotic techniques in the treatment of a number of medical problems. The authors have critically reviewed the research literature focusing on the empirical research on the effectiveness of hypnotic treatments as adjuncts to medical care for anxiety related to medical and dental procedures, asthma, dermatological diseases, gastrointestinal diseases, haemorrhagic disorders, nausea and emesis in oncology, and obstetrics/ gynaecology. Wider acceptance of hypnosis as an intervention to assist with medical care will require further research.

SHENEFELT, Department of Internal Medicine, College of Medicine, University of South Florida, Tampa 33612 USA. [pshenefe@hsc.usf.edu](mailto:pshenefe@hsc.usf.edu) **writes that hypnosis has been used since ancient times to treat medical and dermatological (skin) problems.** The authors review (87 references) the literature regarding the uses for hypnosis as a treatment in skin practice.

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**Methods:** The author conducted a MEDLINE search between January 1966 through December 1998 using key words related to hypnosis and skin disorders.

**Results:** Hypnosis, used as an alternative or complementary therapy can improve or cure a wide range of skin disorders including acne excoriee, alopecia areata, atopic dermatitis, congenital ichthyosiform erythroderma, dyshidrotic dermatitis, erythromelalgia, furuncles, glossodynia, herpes simplex, hyperhidrosis, ichthyosis vulgaris, lichen planus, neurodermatitis, nummular dermatitis, postherpetic neuralgia, pruritus, psoriasis, rosacea, trichotillomania, urticaria, verruca vulgaris and vitiligo.

**Conclusions:** Clinicians trained appropriately may successfully treat patients with many skin disorders using hypnosis. Shenefelt PD. Hypnosis in dermatology. Archives of Dermatology 136(3): 393-9. Mar 2000.

BARBER, Research Institute, Ashland MA 01721 USA reviews (165 references) the literature regarding clinical hypnosis.

**Background:** The author writes that numerous research projects converge on the conclusion that there are three major types of very good or highly responsive hypnotic subjects: a) fantasy-prone individuals who have secretly spent much of their time since childhood fantasizing vividly and realistically; b) amnesia-prone individuals who have developed special abilities for mentally repressing or compartmentalizing undesired memories, thoughts and emotions; and c) positively-set individuals who are maximally ready to cooperate, think-with, and imagine what is suggested to the best of their ability while letting go of contrary thoughts.

**Discussion:** The major principle which provides a deep understanding of hypnosis and hypnotic phenomena is that all hypnotic subjects are affected, albeit in different ways for different types of subjects, by four powerful behavior-determining factors which can be maximized in hypnotic situations: a) social factors which obligate the socialized subject to cooperate and try to actualize or realize the hypnotists's expectations and explicit suggestions; b) the hypnotist's unique skills and personal characteristics (including creative ideas, communicative ability, and interpersonal efficacy) and the nature of the hypnotist-subject interpersonal relationship; c) the effectiveness of the induction procedure in guiding the subject to think-with the suggestions; and d) the depth of meaning, creativity, and 'force' or 'power' of the suggested ideas.

POTTS and colleagues, University Department of Psychiatry, Royal Edinburgh Hospital UK used a psychological treatment regime to treat patients with chest pain despite normal cardiac measures.

**Methods:** 60 patients with continuing chest pain and who had normal angiography had a psychological treatment package, consisting of education, relaxation, breathing training, graded exposure to activity and exercise and challenging automatic thoughts about heart disease. The treatment was delivered in 6 sessions over 8 weeks for groups of up to 6 patients. Patients maintained daily records of chest pain episode frequency and nitrate use. Questionnaires assessed anxiety, depression and disability. Exercise tolerance was assessed using treadmill electrocardiography, and assessment of hyperventilation was carried out capnographically. The results of these patients were compared to waiting-list controls.

**Results:** The psychological treatment regimes significantly reduced chest pain episodes from a median 6.5 to 2.5 per week. There were significant improvements in anxiety and depression scores, disability rating and exercise tolerance, which were maintained at 6-month follow-up. The treatment reduced hyperventilation prevalence from 54% to 34%, but not the prevalence of

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ECG-positive exercise tests. Those patients who continued to attribute their pain to heart disease had poorer outcomes.

**Conclusions:** Group psychological treatment for non-cardiac chest pain is feasible, reduces pain, psychological morbidity, disability and improves exercise tolerance.

GYSIN, (No affiliation provided) **writes that chronic and episodic headaches in children and adolescents are a common problem, and that the growing resistance against the frequent use of drugs is quite justified.** The author conducted a study in order to search for other helpful therapeutic approaches.

**Methods:** The author compared the effect of 5 sessions of hypnosis/ self-hypnosis given at weekly intervals for 30 minutes with two other psychological treatments each requiring the same amount of time, behavior therapy and talking to the doctor.

**Results:** Despite the small number of patients, both types of treatments were effective. The hypnosis/self-hypnosis appeared to be superior not only in terms of frequency and intensity of headaches, but also regarding the patients' ability to keep their headaches and well-being under control.

BUCHSER, (No affiliation provided) **conducted a controlled clinical trial to evaluate hypnosis and self-hypnosis as an adjuvant treatment for the instrumental and pharmacological management of chronic pain.**

**Methods:** The study was conducted at a hospital specializing in the treatment of outpatients suffering from chronic pain. Hypnosis and self-hypnosis were administered and taught by nurses who had been trained recently for this very purpose.

**Results:** Under the conditions of the study, it was not possible to measure an effect of hypnosis upon pain, despite subjective feeling of usefulness. However, it needs to be taken into account that this form of adjuvant therapy was used for the first time in that hospital for the purpose of the study, and therefore, occurred within an artificial setting. It is, therefore possible that the same therapy administered in the propertherapeutic environment of a specialized institution could demonstrate effects upon pain.

GINANDES and ROSENTHAL, Department of Psychiatry, Harvard Medical School, USA **write that hypnosis has been applied to many medical interventions for functional and psychological improvements, but that it has not been adequately tested for anatomical healing.** The authors conducted a randomized controlled pilot study to determine whether a hypnotic intervention accelerated bodily tissue healing using bone fracture healing as a site-specific test.

**Methods:** 12 healthy adult patients with the study fracture were recruited from the orthopaedic emergency department at Massachusetts General Hospital, Boston Mass, and McLean Hospital, Belmont Mass, and randomized either to a treatment (n = 6) or a control group (n = 6). One of the patients randomized to the treatment group withdrew prior to the intervention. All 11 subjects received standard orthopaedic care which included serial radiographs and clinical assessments throughout 12 weeks following their injury. The treatment group received a hypnotic intervention, which consisted of individual sessions and audiotapes, designed to enhance fracture healing. The main outcome measures included radiological and orthopaedic assessments of fracture healing 12 weeks following injury and the hypnotic subjects' final questionnaires and test scores according to the Hypnotic Induction Scale.

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**Results:** The results indicated trends toward faster healing for the hypnosis group through week 9 following their injury. Objective radiographic results revealed a notable difference in fracture edge healing at 6 weeks. Orthopaedic assessments showed trends toward better healing for the hypnosis group through week 9, which included improved ankle mobility, greater functional ability to descend stairs, diminished use of analgesics in weeks 1, 3 and 9 and trends toward lower self-reported pain through 6 weeks.

**Conclusions:** These data suggest that hypnosis may be capable of enhancing both anatomical and functional fracture healing. In view of the limited sample size and restricted statistical power, further investigation of hypnosis to accelerate healing is warranted.

Arizona Bioethics Programs and Section of Emergency Medicine, University of Arizona College of Medicine, Tucson 85718 USA **writes that hypnosis can diminish pain and anxiety for many emergency patients during examinations and procedures.** Although hypnosis has been used for millennia and was demonstrated to be of use in clinical medicine over a century ago, modern physicians have been reluctant to adopt hypnosis in clinical practice. The author describes 4 children with angulated forearm fractures with no possible access to other forms of pain relief during reduction, and in whom hypnosis was applied successfully. The author also describes a simple method for hypnotic induction.

Meurisse M et al. **Endocrine surgery by hypnosis. From fiction to daily clinical application.** Ann Endocrinol (Paris) 57(6): 494-501. 1996. ASHTON and colleagues, Department of Surgery, College of Physicians & Surgeons, Columbia University, New York NY USA conducted a study to evaluate the effects of self-hypnosis and its role in coronary artery bypass surgery. The authors hypothesized that self-hypnosis relaxation techniques would have a positive effects upon the patient's mental and physical condition following coronary artery bypass surgery. **METHODS:** the prospective, randomised trial at Columbia Presbyterian Medical Center, patients were followed, commencing one day prior to surgery until time of hospital discharge. All patients undergoing first-time elective coronary artery bypass surgery were eligible and the 32 patients who were recruited to the trial were randomized into two groups. The study group was taught self-hypnosis relaxation techniques preoperatively; the control group received no therapy. Outcome variables included anaesthetic requirements, operative parameters, postoperative pain medication requirements, quality of life, hospital stay, major morbidity and mortality.

**RESULTS:** Compared to the control group, the patients who had been taught self-hypnosis relaxation techniques were significantly more relaxed postoperatively. Those patients who practice the self-hypnosis relaxation techniques required significantly less pain medication than those who did not. There were no differences seen in intraoperative parameters, morbidity or mortality. **CONCLUSIONS:** The research demonstrates the beneficial effects of self-hypnosis relaxation techniques on patients undergoing coronary artery bypass surgery and also provides a framework in which to study complementary techniques and the limitations encountered.

Ashton C Jr et al. **Self-hypnosis reduces anxiety following coronary artery bypass surgery.** A prospective, randomized trial. J Cardiovasc Surg (Torino) 38(1): 69-75. Feb 1997. It is encouraging to read of the application of hypnosis techniques to surgical protocol, with its resultant improved prognosis and reduction in pain medication.

SCHREIBER, Rowan College of New Jersey USA **studied whether group hypnosis would improve college students' examination grades.**

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**METHODS:** The examination grades of a midterm and final test of 30 educational psychology students who had been hypnotized were compared with those of 2 control groups of 35 and 32 students.

**RESULTS:** Compared with the control groups, the hypnotized group had a significantly higher mean score on the final examination, although midterm exam differences were not significant. Further research suggestions are outlined. 34(10): 821—6. Oct 1996.

**SCHULZ-STUBNER, Germany write that hypnosis can be an alternative to cerebral sedatives, especially in high-risk and fearful patients, with no side effects for sedation during regional anaesthesia.**

**METHODS:** Patients experienced with techniques such as Jakobson's progressive muscle relaxation are very good hypnosis candidates, but hypnosis is contraindicated in patients with psychotic disorders, major depression and hallucinogenic drug abuse. The authors describe his personal method of hypnosis used in 10 cases, based upon fixation and suggestive techniques including muscle relaxation, temperature sensation and the creation of emotional pictures.

**RESULTS:** Hypnosis was successful in 6 out of 10 cases, not completely successful in 2 cases where hypnosis was interrupted after 30 minutes and was unsuccessful in 2 individuals.

Vegetative stress symptoms such as tachycardia and shivering ceased immediately following induction. Described are 4 individuals where hypnosis was used during spinal anaesthesia for knee and hip surgery or brachial plexus block for open fixation of Colles' fracture.

**CONCLUSIONS:** Because hypnosis requires more time – 15—45 minutes – to inform and test patients, and special organisational conditions, it may not become a routine procedure, but yet hypnosis offers a good alternative in selected cases.

**SOMMERS-FLANAGAN and SOMMERS-FLANAGAN, University of Montana, School of Education, Missoula USA describe a general approach called Wizard of Oz hypnotherapy. METHODS:** This approach is designed for use with 8—13 year-old children who are often difficult to treat due to their inattention, impulsive and oppositional characteristics. The authors use this approach as an adjunct to cognitive-behavioral therapy individually and within small groups. The Wizard of Oz metaphor is integrated into a hypnotherapy approach which is designed to help problem-solving, improve self-regulation skills and enhance self-esteem and efficacy.

**RESULTS:** Used as an adjunct to cognitive-behavioral therapy, this procedure improves the therapeutic relationship, raises young client's interest in therapy methods and improves overall treatment cooperation. Described and discussed are the therapeutic and hypnotic characteristics contributing to this technique's effectiveness.

**MOORE and WIESNER, Kaiser Permanente, Oakland California USA studied the effectiveness of behaviorally-induced vasodilation – hypnosis incorporating biofeedback and autogenics – for the treatment of upper extremity repetitive strain injuries (RSI).**

**METHODS:** 30 patients suffering from recent onset of upper extremity RSI symptoms were randomly assigned to either hypnotically-induced vasodilation or a waiting-list control.

Treatments were performed individually, once per week for 6 weeks.

**RESULTS:** Compared to the controls, patients in the hypnosis group showed highly significant increases in hand temperature between pre- and post-treatment and highly significant reductions in pain.



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**JOHNSON and KARKUT write that studies of hypnotic, covert and overt aversive techniques have yielded equivocal results regarding effect upon weight loss and examined the use of combinations of techniques.**

**METHODS:** The authors studied the effects of 2 programs of hypnosis, imagery, diet, tape, behavior management and support which differed in the overt use of aversion – electric shock, disgusting tastes and smells. Of 172 overweight adult women, 86 women were treated in a hypnosis only and 86 women in an overt aversion and hypnosis regimen.

**RESULTS:** Significant weight losses were achieved with both programs. Compared with the women treated only with hypnosis, the women receiving overt aversion achieved somewhat more desired goals and lost more weight, but the differences between the groups were not significant.

**STENSTROM and colleagues, Department of Rheumatology, Malarsjukhuset, Eskilstuna, Sweden compared dynamic training versus muscle relaxation for patients with inflammatory rheumatic diseases.**

**METHODS:** 54 patients, mean age of 54 years, mean symptom duration 14 years were randomized to either a dynamic training program or a muscle relaxation training program for home use. Following personal instructions, each patient exercised at home for 30 minutes, 5 days per week for 3 months. Prior to and following the interventions, all patients were assessed for health-related quality of life, joint tenderness and physical capacities.

**RESULTS:** The dynamic training group improved in perceived exertion at the walking test and the relaxation training group had improved their total Nottingham Health Profile, its subscale for lack of energy, Ritchie's articular index, muscle function of lower extremities and arm endurance. There was a significant difference between the groups in favour of the relaxation training group regarding changes in muscle function of the lower extremities.

**CONCLUSIONS:** These results indicate that progressive relaxation training may improve health-related quality of life, reduce joint tenderness and be superior to dynamic muscle training to improve muscle function of the lower extremities in patients with inflammatory rheumatic diseases. Because the clinical effects were small, the results must be interpreted with caution.

**CROFT and co-workers, Department of Cognitive Neuroscience and Behavior, Imperial College London, Medical Faculty, St Dunstan's Road, London W6 8RF, UK, write about pain perception, hypnosis and 40 Hz oscillations.**

**Background:** A number of regions of the brain are associated with the subjective experience of pain. This study considers the relations between cortical oscillations in response to pain, with and without hypnosis and hypnotic analgesia, and the experience of pain.

**Methods:** 33 subjects' neural responses (EEG) were measured in the 40-540 msec period following electrical stimulation to the right hand, under control and hypnosis conditions. Resultant FFT amplitudes for frequencies ranging from 8 to 100 Hz were computed. These were grouped into 7 scalp topographies, and for each frequency, relations between these topographies and pain ratings, performance and stimulus intensity measures were assessed.

**Results:** Gamma activity (32-100 Hz) over prefrontal scalp sites predicted subject pain ratings in the control condition ( $p = 0.004$ ), and no other frequency/topography combination did. This relation was present both in high and low hypnotizable subjects and was independent of performance and stimulus intensity. This relation was unchanged by hypnosis in low

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hypnotizable subjects but was not present in high hypnotizable subjects during hypnosis, suggesting that hypnosis interferes with this pain/gamma relation.

**Conclusions:** This study provides evidence for the role of gamma oscillations in the subjective experience of pain. Further it also supports the view that hypnosis involves the dissociation of the prefrontal cortex from other neural functions.

CALVERT and colleagues, Department of Medicine, Wythenshawe Hospital Southmoor Road, Manchester, U.K., **show long-term improvement of functional dyspepsia using hypnotherapy.** Background: Hypnotherapy has been shown to be effective in IBS. This study aimed to assess the usefulness of hypnotherapy in functional dyspepsia.

**Methods:** In this randomized controlled trial, 126 patients with functional dyspepsia were randomized to hypnotherapy, supportive therapy plus placebo medication, or medication for 16 weeks. Percentage change in symptoms from baseline was measured immediately post treatment and 56 weeks post treatment. Quality of life was measured as a secondary outcome.

**Results:** 26 hypnotherapy patients, 24 supportive therapy patients, and 29 medical treatment patients completed all phases of the trial. Short-term symptom scores improved more in the hypnotherapy group (59%) than in the supportive therapy group (41%;  $p = 0.01$ ) or the medical treatment group (33%;  $p = 0.057$ ). Hypnotherapy also led to improvements in the quality of life compared to supportive therapy or medication (42% as compared to 10% and 11%;  $p = 0.01$ ). After one year, hypnotherapy had significantly improved symptoms compared with supportive therapy and medication (73% compared with 34% and 43%;  $p = 0.02$ ). Quality of life improved significantly more with hypnotherapy than with medical treatment (44% and 20%;  $p = 0.001$ ). A total of 82% of patients in the supportive therapy group and 90% of patients in the medication group started on antidepressant medication during the follow-up period, whereas none of the hypnotherapy patients did. Patients in the hypnotherapy group visited their GP or gastroenterologist less in the follow-up period than patients in either of the other groups (median, 1 visit compared to 4).

**Conclusions:** Hypnotherapy is highly effective in the long-term management of functional dyspepsia. Moreover, as the reduction in medication consumption and medical consultations show, it is also cost-effective.

KETTERHAGEN et al., Women's Health Center, Waukesha Memorial Hospital, Waukesha, WI 53188, USA, [debra.ketterhagen@phci.org](mailto:debra.ketterhagen@phci.org), **propose self-hypnosis as an alternative anaesthesia for childbirth.**

**Background:** The purpose of this review (28 references) is to inform nurses about the use of self-hypnosis in childbirth. Hypnosis is a focused form of concentration. Self-hypnosis is one form of hypnosis in which a therapist teaches an individual to induce his or her own altered state of consciousness. When used for labor pain, the primary aim of self-hypnosis is to help the woman manage her anxiety and discomfort through maintaining a focused state of relaxation. Most nurses have little experience with hypnosis, and there is limited information available in the literature.

**Conclusions:** Because nurses are at laboring women's bedsides, they need to learn about self-hypnosis in order to be able to fully inform pregnant women about all options for labor pain control, and maximize the benefits for women who do choose self-hypnosis as a pain control tool.

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PALSSON and co-workers, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27599-7080, USA, **investigated the mechanism of action of hypnotherapy in the treatment of IBS and its effects on symptoms.**

**Background:** Hypnosis improves Irritable Bowels Syndrome (IBS) but the mechanism of action is unknown. In two studies, possible physiological and psychological mechanisms were investigated.

**Methods:** Patients with severe IBS were given seven biweekly hypnosis sessions and used hypnosis audiotapes at home. Rectal pain thresholds and smooth muscle tone were measured with a barostat before and after treatment in 18 patients (study 1), and changes in heart rate, blood pressure, skin conductance, finger temperature, and forehead electromyographic activity were assessed in 24 patients (study 2). Somatization, anxiety, and depression were measured. Results: All IBS symptoms improved substantially in both studies. Rectal pain thresholds, rectal smooth muscle tone, and autonomic functioning remained unchanged in the study. However somatization and psychological distress showed large decreases.

**Conclusions:** The study suggests that hypnosis improves IBS by reducing psychological distress. The improvements were found to be unrelated to changes in the physiological parameters measured.

HOUGHTON et al., Department of Medicine, University Hospital of South Manchester, Manchester M20 2LR, UK, lahoughton@man.ac.uk, **studied visceral sensation and emotion using hypnosis.**

**Background:** The authors have previously shown that both anger and excitement, when hypnotically induced, increased colonic motility, while happiness reduced it. This study investigates the effect of hypnotically induced emotions on rectal sensitivity in patients with irritable bowels syndrome (IBS).

**Methods:** Sensory responses to balloon distension of the rectum were assessed in 20 patients with IBS. Patients were studied on 4 occasions either awake or in hypnosis, during which anger, happiness, or relaxation (neutral emotion) were induced.

**Results:** Hypnotic relaxation increased the distension volume required to produce discomfort while anger reduced it. Happiness did not further alter sensitivity from that observed during relaxation.

**Conclusions:** The study emphasizes how awareness of the emotional state of a patient is important when either measuring visceral sensitivity or treating IBS.

SOLOMON and JOHNSON, Office of Behavioral and Social Science Research, National Institute of Health, Bethesda, MD 20892, USA, **reviewed (17 references) outcome research of psychosocial treatment of posttraumatic stress disorder.**

**Results:** A review of treatment research indicates that several forms of therapy appear to be useful reducing the symptoms of posttraumatic stress disorder (PTSD). Treatments combining cognitive and behavioral techniques are strongly supported. Hypnosis, psychodynamic, anxiety management and group therapies may also produce short-term symptom reduction. Imaginal exposure to trauma memories and hypnosis are most likely to affect the intrusive symptoms of PTSD, while cognitive and psychodynamic approaches may address better the numbing and avoidance symptoms. It is still unclear whether any of the approaches tested produces lasting effects.

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**Conclusions:** Treatment should be tailored to severity and type of presenting PTSD symptoms, to type of trauma experience, and to the many likely comorbid diagnoses and adjustment problems.

RAY et al., Department of Psychology, Penn State University, University Park, PA16802, USA, E: wjr@psu.edu, **describe high resolution EEG indicators of pain responses in relation to hypnotic susceptibility and suggestion.**

**Background:** The aim of the study was to examine the effects of hypnotic susceptibility and hypnotic suggestions upon electrocortical and self-report measures of painful stimuli.

**Methods:** A dense array EEG procedure was used to measure the effects of hypnotic susceptibility and hypnotic suggestions on electrocortical activity of painful stimuli. Self-report measures of painful stimuli were also used. Six high- and six low-hypnotic susceptible individuals were examined during an initial baseline investigation and following a standard hypnotic induction under suggestions to either increase or decrease painful stimulation.

**Results:** The subjects showed few self-report or psychophysiological differences in response to pain stimuli. They reported differential pain experiences depending on hypnotic suggestions, and displayed differential psychophysiological indicators following a hypnotic induction with a suggestion of hypoalgesia.

**Conclusions:** The findings suggest that hypnotic suggestions with highly susceptible individuals modulate the later components of the evoked potential in a global manner. The importance of using both high and low hypnotically susceptible individuals preceding and following a hypnotic induction is pointed out.

KIECOLT-GLASER and colleagues, Department of Psychiatry, Ohio State University College of Medicine, Columbus 43210, USA, kiecolt-glaser.1@osu.edu, **analyzed the effects of hypnotic-relaxation training on cellular immune function during a stressful event.**

**Methods:** Subjects were 33 medical and dental students, selected according to their hypnotic susceptibility. Blood samples were taken during a 'lower stress' period and again 3 days before their first major exam of the term. Half of subjects were randomly assigned to receive hypnotic-relaxation training in the period between blood sampling.

**Results:** Control subjects showed stress-related decreases in immune cell proliferative responses to two mitogens and percentages of CD3+ and CD4+ T-lymphocytes and interleukin-1 production by peripheral blood leukocytes. Subjects who underwent hypnosis-relaxation were, on average, protected from these immunological changes. More frequent hypnotic-relaxation practice resulted in higher percentages of CD3+ and CD4+ T-lymphocytes.

**Conclusion:** The results provide encouraging evidence that hypnosis-relaxation can reduce detrimental immune function changes associated with acute stress.

HEWSON-BOWER and DRUMMOND, Murdoch University, Murdoch, Western Australia 6150, Australia, bhewsonb@central.murdoch.edu.au, **investigated the effects of stress management and relaxation with guided imagery on upper respiratory tract infections (URTIs) in children.**

**Methods:** Subjects were 45 children with a history of 10 or more infections in the past year. Secretory immunoglobulin A (sIgA), an indicator of mucosal immunity, was measured before and during psychological treatment.

**Results:** The number of symptomatic episodes during 13 weeks of monitoring was similar in treatment and waitlist conditions; however, episodes were shorter in stress management and

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guided imagery conditions than in the waitlist condition. Levels of sIgA increased towards the end of treatment. These findings were confirmed in a replication study. Symptom reduction and improvements in psychological state persisted at 1-year follow-up.

**Conclusion:** Psychological treatment appears to interrupt a chronic illness cycle in children with symptoms of recurrent URTI.

### 16. RESEARCH ON HYPNOSIS TREATMENT OF IBS: OLAFUR PALSSON AND OTHERS: [Olafur Palsson, Peter Whorwell, Wendy Gonsalcorale, William Whitehead, Houghton, Harvey, Blanchard, Prior]

**Whorwell PJ; Prior A; Faragher EB.** Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome. *The Lancet* 1984, 2: 1232-4. This study is the earliest and perhaps the best study in this research area to date, as it was thoroughly placebo-controlled and showed dramatic contrast in response to hypnosis treatment above the placebo group. Thirty patients with severe symptoms unresponsive to other treatment were randomly chosen to receive 7 sessions of hypnotherapy (15 patients) or 7 sessions of psychotherapy plus placebo pills (15 patients). The psychotherapy group showed a small but significant improvement in abdominal pain and distension, and in general well-being but not bowel activity pattern. The hypnotherapy patients showed a dramatic improvement in all central symptom. The hypnotherapy group showed no relapses during the 3-month follow-up period. Graph adapted from the above paper, showing group differences in two of the main IBS symptoms:

**Whorwell PJ; Prior A; Colgan SM.** Hypnotherapy in severe irritable bowel syndrome: further experience. *Gut*, 1987 Apr, 28:4, 423-5. This report summed up further experience with 35 patients added to the 15 treated with hypnotherapy in the 1984 *Lancet* study. For the whole 50 patient group, success rate was 95% for classic IBS cases, but substantially less for IBS patients with atypical symptom picture or significant psychological problems. The report also observed that patients over age 50 seemed to have lower success rate from this treatment.

**Harvey RF; Hinton RA; Gunary RM; Barry RE.** Individual and group hypnotherapy in treatment of refractory irritable bowel syndrome. *Lancet*, 1989 Feb, 1:8635, 424-5. This study employed a shorter hypnosis treatment course than other studies for IBS, and the success rate was lower, most likely demonstrating that a larger number of sessions is necessary for optimal benefit. Twenty out of 33 patients with refractory irritable bowel syndrome treated with four sessions of hypnotherapy in this study improved. Improvement was maintained at a 3-month treatment. These researchers further found that hypnosis treatment for IBS in groups of up to 8 patients seems as effective as individual therapy.

**Prior A, Colgan SM, Whorwell PJ.** Changes in rectal sensitivity after hypnotherapy in patients with irritable bowel syndrome. *Gut* 1990;31:896. This study found IBS patients to be less sensitive to pain and other sensations induced via balloon inflation in their gut while they were under hypnosis. Sensitivity to some balloon-induced gut sensations (although not pain sensitivity) was reduced following a course of hypnosis treatment.

**Houghton LA; Heyman DJ; Whorwell PJ.** Symptomatology, quality of life and economic features of irritable bowel syndrome--the effect of hypnotherapy. *Aliment Pharmacol Ther*, 1996 Feb, 10:1, 91-5. This study compared 25 severe IBS patients treated with hypnosis to 25 patients with similar symptom severity treated with other methods, and demonstrated that in addition to significant improvement in all central IBS symptoms, hypnotherapy recipients had

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fewer visits to doctors, lost less time from work than the control group and rated their quality of life more improved. Those patients who had been unable to work prior to treatment resumed employment in the hypnotherapy group but not in the control group. The study quantifies the substantial economic benefits and improvement in health-related quality of life which result from hypnotherapy for IBS on top of clinical symptom improvement.

**Koutsomanis D.** Hypnoanalgesia in the irritable bowel syndrome. *Gastroenterology* 1997, 112, A764. This French study showed less analgesic medication use required and less abdominal pain experienced by a group of 12 IBS patients after a course of 6-8 analgesia-oriented hypnosis sessions followed by 4 sessions of autogenic training. Patients were evaluated at 6-month and 12-month follow-up.

**Houghton LA, Larder S, Lee R, Gonsalcorale WM, Whelan V, Randles J, Cooper P, Cruikshanks P, Miller V, Whorwell PJ.** Gut focused hypnotherapy normalises rectal hypersensitivity in patients with irritable bowel syndrome (IBS). *Gastroenterology* 1999; 116: A1009. Twenty-three patients each received 12 sessions of hypnotherapy. Significant improvement was seen in the severity and frequency of abdominal pain, bloating and satisfaction with bowel habit. A subset of the treated patients who were found to be unusually pain-sensitive in their intestines prior to treatment (as evidenced by balloon inflation tests) showed normalization of pain sensitivity, and this change correlated with their pain improvement following treatment. Such pain threshold change was not seen for the treated group as a whole.

**Palsson, OS, Burnett CK, Meyer K, and Whitehead WE.** Hypnosis treatment for irritable bowel syndrome. Effects on symptoms, pain threshold and muscle tone. *Gastroenterology* 1997;112:A803. Seventeen out of 18 patients with severe and treatment-refractory IBS who completed a 7-session standardized course of hypnosis treatment improved substantially. All central symptoms of IBS responded to treatment, including abdominal pain, diarrhea/constipation, and bloating. Psychological well-being also increased after treatment, with overall psychological symptoms, anxiety and somatization markedly decreased. Gut pain thresholds and smooth muscle tone, measured with a barostat and balloon inflation tests, were unchanged following treatment.

**Vidakovic Vukic M.** Hypnotherapy in the treatment of irritable bowel syndrome: methods and results in Amsterdam. *Scand J Gastroenterol Suppl*, 1999, 230:49-51. Reports results of treatment of 27 patients of gut-directed hypnotherapy tailored to each individual patient. All of the 24 who completed treatment were found to be improved.

**Galovski TE; Blanchard EB. Appl Psychophysiol Biofeedback, 1998 Dec, 23:4, 219-32.** Eleven patients completed hypnotherapy, with improvement reported for all central IBS symptoms, as well as improvement in anxiety. Six of the patients were a waiting-control group for comparison, and did not show such improvement while waiting for treatment.

**Gonsalcorale WM, Houghton LA, Whorwell PJ.** Hypnotherapy in irritable bowel syndrome: a large-scale audit of a clinical service with examination of factors influencing responsiveness. *Am J Gastroenterol* 2002 Apr;97(4):954-61. This study is notable as the largest case series of IBS patients treated with hypnosis and reported on to date. 250 unselected IBS patients were treated in a clinic in Manchester, England, using 12 sessions of hypnotherapy over a 3-month period plus home practice between sessions. Marked improvement was seen in all IBS symptoms (overall IBS severity was reduced by more than half on the average after treatment),

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quality of life, and anxiety and depression. All subgroups of patients appeared to do equally well except males with diarrhea, who improved far less than other patients for unknown reason.

**Palsson OS, Turner MJ, Johnson DA, Burnett CK, Whitehead WE.** Hypnosis treatment for severe irritable bowel syndrome: investigation of mechanism and effects on symptoms. *Dig Dis Sci* 2002 Nov;47(11):2605-14. Possible physiological and psychological mechanisms of hypnosis treatment for IBS were investigated in two studies. Patients with severe IBS received seven biweekly hypnosis sessions and used hypnosis audiotapes at home. Rectal pain thresholds and smooth muscle tone were measured with a barostat before and after treatment in 18 patients (study I), and treatment changes in heart rate, blood pressure, skin conductance, finger temperature, and forehead electromyographic activity were assessed in 24 patients (study II). Somatization, anxiety, and depression were also measured. All central IBS symptoms improved substantially from treatment in both studies. Rectal pain thresholds, rectal smooth muscle tone, and autonomic functioning (except sweat gland reactivity) were unaffected by hypnosis treatment. However, somatization and psychological distress showed large decreases. In conclusion, hypnosis improves IBS symptoms through reductions in psychological distress and somatization. Improvements were unrelated to changes in the physiological parameters measured. 17 of 18 patients in study 1 and 21 of 24 patients in study 2 were judged substantially improved. Improvement was well-maintained at 10-12 month follow up in study 2.

**Lea R, Houghton LA, Calvert EL, Larder S, Gonsalkorale WM, Whelan V, Randles J, Cooper P, Cruickshanks P, Miller V, Whorwell PJ.** Gut-focused hypnotherapy normalizes disordered rectal sensitivity in patients with irritable bowel syndrome. *Aliment Pharmacol Ther*. 2003 Mar 1;17(5):635-42. This study evaluated the rectal sensitivity changes in IBS patients who received hypnotherapy, like a previous study by the same group (see Houghton et al's study above, but using a slightly different methodology). Twenty-three IBS patients were tested before and after 12 weeks of hypnotherapy. Following the course of hypnotherapy, the mean pain sensory threshold increased in the hypersensitive subgroup and tended to decrease in the hyposensitive group, although the l. Reduction in gut pain sensitivity was associated with a reduction in abdominal pain. These results suggest that hypnotherapy may work at least partly by normalizing bowel perception in those patients who have abnormal gut sensitivity, while leaving normal sensation unchanged.

### 17. HYPNOTHERAPY FOR ASTHMA PATIENTS RESEARCH: Entrez PubMed

**Hypnotherapy in the treatment of bronchial asthma.** Aronoff GM, Aronoff S, Peck LW. The efficacy of hypnotherapy in aborting acute asthmatic attacks was studied in 17 children ranging in age from six to 17. All had as their primary diagnosis bronchial asthma. Prior to hypnotic induction pulmonary function was assessed, then monitored in the immediate post hypnotic period and at two intervals thereafter. The average improvement for all subjects was greater than 50% above the baseline measurement as documented by spirometry, monitored dyspnea, wheezing and subjective ratings by the subjects. It is suggested that hypnotherapy may be an important tool in ameliorating asthma, improving ventilatory capacity and promoting relaxation without recourse to pharmacologic agents. One explanation offered is that hypnosis affects an autonomic response, thereby diminishing bronchospasm.

**The value of hypnotherapy as an adjunct in the treatment of bronchial asthma.** Chong, Tong Mun *Singapore Medical Journal*, 10 (3), 182-186.(1969, September). Bronchial asthma is

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a disorder characterized by recurrent spontaneous attacks of dyspnea and wheezing, and remissions either spontaneously or as a result of treatment. Two problems clearly exist in the treatment of bronchial asthma, (1) Treatment of acute attacks and (2) Prevention of future attacks. Hypnotism has been used in the treatment of diseases for hundreds if not thousands of years. Success was claimed for the hypnotic treatment of asthma about 60 years ago by Gerrish (1909). Varying reports have appeared in literature about the efficacy of hypnotherapy. Marchesi (1949), Magonet (1955), Asher (1956), Stewart (1957), Fry (1957), Ambrose and Newbold (1958), Diamond (1959), Meares (1960), Edwards (1960), Sinclair-Gieben (1960), Maher-Loughnan et al (1962), Chong (1964, 1965, 1966, 1968), Maher-Loughnan (1965), McLean (1965), Houghton (1967), British Tuberculous Association (1968). Most authors used various degrees of psychotherapy, and believed that psychotherapy is an essential part of the treatment. However, Maher-Loughnan et al in a controlled study, using only symptom-removal suggestions, found that hypnosis is of value in the symptomatic treatment of asthma. Sinclair-Gieben (1960) reported a case of Status Asthmaticus resistant to all physical therapy and as a final resort, hypnosis was tried and found to cut short the attack instantaneously. Here also only symptom-removal suggestion had been used. **CONCLUSION:** Hypnotherapy is of value as an adjunct in the prevention of future attacks of asthma. It has also been shown to be a useful adjunct in other branches of medicine by the author elsewhere.

**This paper was originally presented by the physician, an instructor at George Washington University Medical School,** at the First Annual Meeting of the American Society of Clinical Hypnosis in 1958. He treated 55 cases, beginning in 1954, with 40 having complete remission. He gives 3 case histories where early childhood experiences gave rise to the asthma, and the symptoms were quickly relieved when the repressed material was reviewed by the patient.

**Improvement in bronchial hyper-responsiveness in patients with moderate asthma after treatment with a hypnotic technique: a randomized controlled trial.** Ewer TC, Stewart DE. A prospective, randomised, single blind, and controlled trial of a hypnotic technique was undertaken in 39 adults with mild to moderate asthma graded for low and high susceptibility to hypnosis. After a six week course of hypnotherapy 12 patients with a high susceptibility score showed a 74.9% improvement ( $p$  less than 0.01) in the degree of bronchial hyper-responsiveness to a standardized methacholine challenge test. Daily home recordings of symptoms improved by 41% ( $p$  less than 0.01), peak expiratory flow rates improved by 5.5% ( $p$  less than 0.01), and use of bronchodilators decreased by 26.2% ( $p$  less than 0.05). The improvement in bronchial hyper-reactivity occurred without a change in subjective appreciation of the degree of bronchoconstriction. A control group 17 patients and 10 patients undergoing treatment with low susceptibility to hypnosis had no change in either bronchial hyper-responsiveness or any of the symptoms recorded at home. This study shows the efficacy of a hypnotic technique in adult asthmatics who are moderately to highly susceptible to hypnosis.

**Hypnosis and asthma: a critical review.** Hackman RM, Stern JS, Gershwin ME. University of California, Davis 95616, USA. Asthma is among the most common chronic diseases of the western world and has significant effects on patients' health and quality of life. Asthma is typically treated with pharmaceutical products, but there is interest in finding nonpharmaceutical therapies for this condition. Hypnosis has been used clinically to treat a variety of disorders that are refractive to pharmaceutical-based therapies, including asthma, but relatively little attention has been given recently to the use of clinical hypnosis as a standard treatment for asthma.



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Significant data suggest that hypnosis may be an effective treatment for asthma, but it is premature to conclude that hypnosis is unequivocally effective. Studies conducted to date have consistently demonstrated an effect of

hypnosis with asthma. More and larger randomized, controlled studies are needed. Existing data suggest that hypnosis efficacy is enhanced in subjects who are susceptible to the treatment modality, with experienced investigators, when administered over several sessions, and when reinforced by patient autohypnosis. Children in particular appear to respond well to hypnosis as a tool for improving asthma symptoms.

**Relaxation/mental imagery (self-hypnosis) for childhood asthma:** Behavioral outcomes in a prospective, controlled study. Kohen, Daniel (1996). *Australian Journal of Clinical and Experimental Hypnosis*, 24 (1), 12-28. Twenty-eight 7-12-year-old children entered a controlled study of the effects of self-hypnosis on asthma. Asthma belief and behavioural inventories were collected before, and at one and two years after intervention. Asthma diaries were kept daily and mailed monthly. Subjects were randomly assigned to (a) experimental (self-hypnosis), (b) waking suggestion (no hypnosis), (c) attention placebo (no hypnosis or asthma discussion), or (d) traditional control groups. Twenty-four completed one-month follow-up, 16 completed six months, and 13 completed two years. Results included: (a) fewer emergency room visits in the experimental group ( $p < 0.05$ ); (b) less school missed in the experimental group compared to the traditional control group ( $p < 0.001$ ) and to the waking suggestion group ( $p < 0.005$ ); (c) no differences in psychological evaluations between groups; and (d) surprising findings regarding hypnotic and hypnotic-like experiences among subjects.

**The use of relaxation-mental imagery (self-hypnosis) in the management of 505 pediatric behavioral encounters.** Kohen DP, Olness KN, Colwell SO, Heimerl A. This report assessed outcomes of hypnotherapeutic interventions for 505 children and adolescents seen by four pediatricians over a period of one year and followed from four months to two years. Presenting problems included enuresis, acute pain, chronic pain, asthma, habit disorders, obesity, encopresis, and anxiety. Using strict criteria for determination of problem resolution (e.g., all beds dry) and recognizing that some conditions were intrinsically chronic, the authors found that 51% of these children and adolescents achieved complete resolution of the presenting problem; an additional 32% achieved significant improvement, 9% showed initial or some improvement; and 7% demonstrated no apparent change or improvement. Children as young as three years of age effectively applied self-hypnosis techniques. In general, facility in self-hypnosis increased with age. There was an inverse correlation ( $p$  less than 0.001) between clinical success and number of visits, suggesting that prediction of responsivity is possible after four visits or less.

**A hypnotic protocol for eliciting physical changes through suggestions of biochemical responses.** Madrid AD, Barnes SH. Erickson Institute, Santa Rosa, California 95405.

We employed brief hypnotherapy to effect physical changes in patients suffering from medical disorders including allergies, rectal bleeding, systemic lupus, hyperemesis, headache, asthma, and chronic pain. We present, in language appropriate to the individual patient, considerations and suggestions to effect the release of healing biochemicals. Ideomotor signals indicated the patient's awareness of the healing. We hypothesize that the technique triggered novel state-dependent memory, learning and behavior.

**Chronic asthma and improvement with relaxation induced by hypnotherapy.** Morrison JB. Southport General Infirmary, Merseyside. Sixteen chronic asthmatic patients inadequately

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controlled by drugs had, after one year of hypnotherapy, a fall in admissions from 44 in the year before starting therapy to 13 in the year after. Duration of stay was reduced for 13 patients by 249 days; prednisolone was withdrawn in 6, reduced in 8 and increased in none. Side effects of drugs were reduced. Although 62% reported improvement on a visual analogue scale, observations of air flow.

**The use of hypnosis and behavior therapy in asthma.** American Journal of Clinical Hypnosis, 13, 162-163. Moorefield, C. W. (1971) Nine patients with asthma were treated with hypnosis and behavior therapy. All of these patients showed subjective improvement to a rather marked degree, except for one patient who has had three slight attacks of asthma since the onset of her treatment. These patients have been followed from eight to approximately 24 months. The results so far have been rather encouraging and the author believes this form of treatment will prove to be of benefit in the treatment of asthma and possibly many other related conditions.

**Hypnotic susceptibility and its relationship to outcome in the behavioral treatment of asthma: some preliminary data.** Murphy AI, Lehrer PM, Karlin R, Swartzman L, Hochron S, McCann B. 12 subjects from an experiment on relaxation therapy for asthma were given the Harvard Group Scale of Hypnotic Susceptibility, Form A. Full scale hypnotic susceptibility scores were positively correlated, at a borderline significance, with improvement in the methacholine challenge test, a measure of asthma severity. Performance on the amnesia item of the Harvard Group Scale was correlated with improvement in self-reported symptoms of asthma.

**Hypnosis as an adjunct therapy for asthma: case report.** Neinstein LS, Dash J. This study reports the effect of hypnotherapy in an asthmatic. The patient had moderately severe asthma with frequent attacks despite multiple medications. He received four weekly hypnosis sessions, and was then followed bimonthly for a year. The patient's course was followed by subjective daily scoring of wheezing severity, daily recording of peak expiratory flow rate by a Wright minispirometer, and once a month recording of his Forced Vital Capacity (FVC), Forced Expiratory Volume in one second/Forced Rate (MMRF). The severity rating showed improvement at one year when the start of therapy was compared to pretherapy ( $P$  less than .005). The daily peak flow rate averaged 486 liter/min before starting hypnotherapy and 502 liter/min after one year. There was no change in the FEV1/FVC and MMFR before and after therapy. School attendance and academic performance may be a helpful adjunct in asthma therapy during adolescence.

**An investigation of hypnosis in asthma was made among patients aged 10 to 60 years with paroxysmal attacks of wheezing or tight chest capable of relief by bronchodilators.** One group of patients was given hypnosis monthly and used autohypnosis daily for one year. Comparisons were made with a control group prescribed a specially devised set of breathing exercises aimed at progressive relaxation. Treatment was randomly allocated and patients were treated by physicians in nine centers. Results were assessed by daily diary recordings of wheezing and the use of bronchodilators, and by monthly recordings of F.E.V. and vital capacity. At the end of the year independent clinical assessments were made by physicians unaware of the patients' treatment. There were 252 patients (127 hypnosis and 125 controls) accepted for analysis, but a number of them did not continue the prescribed treatment for the whole year: 28 hypnosis and 22 control patients failed to cooperate, left the district, or had family problems; one hypnosis and one control patient died. Seven hypnosis and 17 control

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patients were withdrawn as treatment failures, the difference between the two groups being statistically significant.

As judged by analyses based on the daily "score" of wheezing recorded in patients' diaries, by the number of times bronchodilators were used, and by independent clinical assessors, both treatment groups showed some improvement. Among men the assessments of wheezing score and use of bronchodilators showed similar improvement in the two treatment groups; among women, however, those treated by hypnosis showed improvement similar to that observed in the men, but those given breathing exercises made much less progress, the difference between the two treatment groups reaching statistical significance. Changes in F.E.V. and V.C. between the control and hypnosis groups were closely similar. Independent clinical assessors considered the asthma to be "much better" in 59% of the hypnosis group and in 43% of the control group, the difference being significant. There was little difference between the sexes. Physicians with previous experience of hypnosis obtained significantly better results than did those without such experience.

**A holistic approach to meeting students' needs: using hypnotherapy techniques to assist students in managing their health.** Watters KH. Woodside High School, California, USA. Nursing education has long been holistic in its approach to aiding the client or family. Further, most nurses, especially school nurses, are holistic by nature. That is, school nurses see a person as a whole being, physical, emotional, mental, and spiritual. The more conscious nurses become of their holistic nature and the more they expand their knowledge and skills in holistic methods, the more they can assist students and families in having greater control over their health. Examples of selected holistic techniques and their positive effects when used by students with diabetes and asthma are illustrated in case studies.

## 18. HYPNOSIS RESEARCH ALTERNATIVE THERAPY

**Hypnotherapy & Colitis:** A little over ten years ago an interesting research study relating to the application of hypnotherapy in the treatment of colitis was published which did not receive much publicity. It was a controlled study involving 266 patients which found that hypnotherapy and psychotherapy techniques can significantly improve the results obtained through conventional treatment of colitis (i.e., drugs, diet and surgery.) the researchers found that many chronic diarrhoeal disorders such as colitis and Crohn's disease are very much influenced by stress and emotional conflicts (e.g., depression, mental lability and anorexia), and they found that dealing with those stresses and anxieties through hypnotherapy and psychotherapy resulted in significant improvements in the conditions of the patients. Whilst the researchers did not suggest that these mind therapies should substitute other forms of treatment, they did demonstrate that psychotherapy and hypnotherapy could augment the effects of other therapies and should be considered for patients suffering from colitis and associated diseases who do not respond well to conventional treatment. (1) Psychotherapy of Crohn disease Zur Psychotherapie des M. Crohn. Feiereis H Langenbecks Arch Chir 1984, 364 p407-11

**Hypnotherapy & Constipation:** It is interesting to note that more and more medical studies are confirming that stress and psychological disturbances are often related to chronic

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constipation. Many psychologists concur with the Chinese system of medicine which associates 'inability to let go of past hurts or memories, or difficulties in coming to terms with grief and loss' as a common factor in patients with chronic constipation.

In fact, in one study it was said to be "a powerful determinant of outcome, shaping (the patients') response to treatment. (Irritable bowel syndrome: assessment of psychological disturbance and its influence on the response to fibre supplementation. Fowlie S; Eastwood MA; Prescott R Gastrointestinal Unit, Western General Hospital, Edinburgh, U.K. *J Psychosom Res (ENGLAND)* Feb 1992, 36 (2) p175-80) Another study revealed that "psychological treatment is feasible and effective in two thirds of those patients who do not respond to standard medical treatment." (A controlled trial of psychological treatment for the irritable bowel syndrome [see comments] Guthrie E; Creed F; Dawson D; Tomenson B Department of Psychiatry, Manchester Royal Infirmary, England. *Gastroenterology (UNITED STATES)* Feb 1991, 100 (2) p450-7)

All the evidence suggests that psychological therapies are superior to medical management alone. (Psychologic considerations in the irritable bowel syndrome. Whitehead WE; Crowell MD Johns Hopkins University School of Medicine, Baltimore, Maryland. *Gastroenterol Clin North Am (UNITED STATES)* Jun 1991, 20 (2) p249-67,) physical diseases including cancer, heart disease and even skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to constipation sufferers. Remember also that constipation is a stress related condition and Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress.

A controlled study in Europe involving 266 patients found that psychotherapy can improve the therapeutic possibilities of drugs, diet and surgery. Psychotherapy combined with relaxation and removal of stress were considered along with the personality of the patient before the outbreak of chronic digestive disorders. It was suggested that unknown emotional conflicts such as depression and mental lability may influence the course of these diseases.

**Hypnotherapy/Psychotherapy & Crohn's Disease:** All physical diseases including cancer, heart disease and even skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to Crohn's disease sufferers. Remember also that Crohn's disease is a stress related disease and Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress.

A controlled study in Europe involving 266 patients suffering from Crohn's disease revealed that psychotherapy is an important element in the treatment of this disease. The researchers found that psychotherapy can improve the therapeutic possibilities of drugs, diet and surgery. Psychotherapy combined with relaxation and removal of stress were considered along with the personality of the patient before the outbreak of the disease. It was suggested that unknown emotional conflicts such as depression, mental lability and anorexia may influence the course of the disease (Psychotherapy of Crohn disease Zur Psychotherapie des M. Crohn. Feiereis H Langenbecks Arch Chir 1984, 364 p407-11).

**Hypnotherapy & Psychotherapy & Dermatitis:** All physical diseases including cancer, heart disease but particularly skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked

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but which can be of immense help to dermatitis and eczema sufferers by not only alleviating irritation and controlling any pain, but also in helping heal the condition.

Remember that both dermatitis and eczema are considered to be stress-related diseases and stress may be an important factor. If you suspect this may be the case, Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress. (Psychological stress and

**Medical Herbalism & Diarrhoea:** There are several herbs that have been shown to help diarrhoea including Slippery Elm and Psyllium seed (Dr RF Weiss Herbal Medicine p 114). The Psyllium (otherwise known as Isapaghula or flea seed) is a soft bulking agent which, like other dietary fibre, absorbs excess fluid. What makes Psyllium particularly beneficial in Crohn's disease and colitis is that it is a soft fibre as opposed to the hard, rough fibre in bran. Medical Herbalists will take account of other factors and will prescribe for them accordingly. Anti-inflammatory herbs such as meadow sweet and comfrey may be prescribed in cases of colitis and crohn's disease along with nervines and calmatives such as lady's slipper, valerian root, skullcap and chamomile, if stress is a related factor. (Nalda Gosling Successful Herbal Remedies (Thorsons) p 45 )

**Acupuncture & Hypnotherapy & Eczema:** Both acupuncture and hypnotherapy have been shown to influence allergic responses which can cause eczema as well as alleviate the typical symptoms (itching, irritation and general discomfort. A report in the British Medical Journal as far back as 1963 (Black S. Inhibition of immediate-type hypersensitivity response by direct suggestion under hypnosis. British Medical Journal (1963)1, 925-9.) revealed that hypnosis could prevent hypersensitive skin reactions to allergens and thereby prevent inflammation and irritation.

A report of the Royal College of Physicians Committee on Clinical Immunology and Allergy in 1992 (Nordvall SL; Lindgren L; Johansson SG; Johansson S; Fetrini B. IgE antibodies to *Pityrosporum orbiculare* and *Staphylococcus aureus* in patients with very high serum total ) acknowledged that acupuncture and hypnotherapy have a 'role to play' in the treatment of allergy-induced eczema. This is particularly significant bearing in mind that Studies conducted at the Department of Paediatrics, St Goran's Children's Hospital, Karolinska Institute, Stockholm, Sweden have demonstrated that an allergy to a specific yeast (*P. orbiculare*) plays an important pathogenic role in many cases of eczema.

**Hypnotherapy & Psychotherapy & Emphysema:** What is Hypnotherapy & Psychotherapy?: - Hypnotherapy and Psychotherapy use the power of the mind to help heal physical as well as emotional problems. They both help the patient discover the underlying emotional and psychological causes to their ailments.

The theory of Hypnotherapy & Psychotherapy: - There is no doubt that our minds and bodies work together, when one is under stress, the other suffers. We have all experienced it - blushing when embarrassed, going pale with shock, having sweaty palms when nervous. These are just small instances of the way in which our minds can affect our bodies. Medical literature is now full of studies confirming that many diseases are psycho-somatic (caused in the mind) or stress-related. From skin diseases (eg. psoriasis and eczema) to stomach ulcers and migraine.

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Some doctors have estimated that as much as 75% of modern diseases and disorders are actually induced through stress.

Fortunately, the power of the mind has also been shown to be a primary factor in healing many diseases, even cancer. It is therefore important in any physical or emotional health problem not to overlook hypnotherapy and psychotherapy on the road back to health.

What is involved in treatment?: - A Hypnotherapist or psychotherapist will attempt to find out as much about you and your problem as possible during the first visit to try and establish the relevant psychological factors and the appropriate mode of treatment.

In hypnotherapy you will be relaxed in a comfortable chair or couch and the therapist will put you into a hypnotic state - neither asleep nor awake. The therapist will then try to extract information from your subconscious mind in order to find the cause of your problem. Suggestions may be made to your subconscious. At the end of the session you will be brought out of the hypnotic state feeling calm, relaxed and re-energised.

Obtaining treatment: - Due to the intimate nature of hypnotherapy and psychotherapy, it is extremely important to the success of the treatment that you carefully select the therapist to ensure that you get on with him or her. Hypnotherapy has a wide application for all ailments in which anxiety, depression or tension are involved.

Can Hypnotherapy and Psychotherapy help Emphysema?: - Whilst there have been no reported studies specifically related to emphysema and hypnotherapy and psychotherapy, there are many reported instances of asthma and chronic bronchial conditions having been helped through these therapies. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to emphysema sufferers. The power of the mind can help improve remaining respiratory function and minimize the damage caused to scarred lung and bronchial tissues.

**Hypnotherapy/Psychotherapy & Gout:** There has been at least one study involving hypnotherapy and arthritic conditions. In this instance (Biochemical correlates of hypnoanalgesia in arthritic pain patients. Domangue BB; Margolis CG; Lieberman D; Kaji H - J Clin Psychiatry Jun 1985, 46 (6) p235-8.), reported levels of pain, anxiety, and depression, and plasma levels of beta-endorphin, epinephrine, norepinephrine, dopamine, and serotonin were measured in 19 arthritic pain patients before and after hypnosis. Correlations were found between levels of pain, anxiety, and depression and following hypnotherapy, there were clinically and statistically significant decreases in pain, anxiety, and depression and increases in beta-endorphin-like immunoreactive material. The study reveals that hypnotherapy may well play an important role in conquering rheumatic conditions including gout.

**Hypnosis & Hayfever:** Forty-seven subjects with known skin sensitivity to pollen and/or house-dust were divided into five groups and tested with four strengths of allergen. The prick-test method was employed. In the first part of the investigation a group of un hypnotized subjects were compared with a group who had suggestions made under hypnosis that their skin reactions to the allergen would not occur when tested a second time. A significant diminution in the size of the weal was obtained in the hypnosis group at the lower two strengths of allergen. In the second part of the investigation the subjects were divided into three groups. All were hypnotized, no suggestions regarding skin reactions were given to one group, the second group were given suggestions that only on one arm would the skin reactions be less or not recur, and in the third

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group the suggestion was made about the reactions on both arms. There was found to be a similar decrease in the response to prick-tests after hypnosis in all three groups. Fry L. Mason AA Pearson RS. Effect of hypnosis on allergic skin responses in asthma and hayfever. *BMJ* 1964;114S.1 148.

**Hypnosis & Headache:** Researchers in the Netherlands have established that hypnosis and autogenic training may offer hope for patients who regularly suffer from tension headaches. Back in 1992, a carefully designed study (Zitman FG; Van Dyck R; Spinhoven P; Linssen AC. Hypnosis and autogenic training in the treatment of tension headaches: a two-phase constructive design study with follow-up. Department of Psychiatry, Catholic University, Nijmegen, The Netherlands. *J Psychosom Res (ENGLAND)* Apr 1992, 36 (3) p219-28) compared an abbreviated form of autogenic training to a form of hypnotherapy known as ‘future oriented hypnotic imagery’ which was not presented to the patients as hypnosis, and then they compared both treatments to the same future oriented hypnotic imagery, but this time explicitly presented as hypnosis. Fifty six patients diagnosed by a neurologist as having chronic tension headaches took part in the study. The results revealed that all three treatments were equally effective ; during the treatment the headaches were greatly alleviated in all treatment groups in significant contrast to the control group; immediately after the treatment was given , the patients also experienced a reduction in both the severity of the headache and the associated psychological stress, and after a 6-month follow-up period, the therapeutic improvement was maintained.

Short-term and long-term pain reduction were observed in all treatment groups but the researchers found that those patients who attributed the pain reduction obtained during therapy to their own efforts manifested greater long-term pain reduction than those patients who attributed their improvement to the efforts of the therapist. Furthermore, patients who received the ‘future oriented hypnotic imagery’ (which had been explicitly presented as hypnosis) were found to experience greater benefits than those who received autogenic training.

One other interesting finding of the study was that the therapists were shown to be as effective with the treatment modality they preferred as with the treatment modality they felt to be less remedial suggesting that the therapist’s personal beliefs about the efficacy of a treatment does not affect the outcome of the treatment.

The researchers were so impressed with the results of the study that they pursued their line of research by investigating the efficacy of autogenic training (AT) and cognitive self-hypnosis training (CSH) for the treatment of chronic headaches in comparison with a waiting-list control (WLC) condition. In this study 146 patients (58 of whom were referred by a neurological outpatient clinic), 48 of whom responded to an advertisement in a local newspaper, and a further 40 who were students who had responded to an advert in a university newspaper. All of the patients were randomly assigned to receive autogenic training, self-hypnosis or put on a waiting list and used as controls.

During the treatments, there was a significant reduction in the Headache Index scores of the subjects in contrast with the controls. Follow-up assessments indicated that therapeutic improvement was maintained. Interestingly, the patients in both treatment groups who were considered to be highly-hypnotizable were found to achieve a greater reduction in headache pain at post-treatment and follow-up than did those who were considered to be low-hypnotizable

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subjects. These studies indicate that these relatively simple and highly structured relaxation techniques of hypnotherapy and autogenic training may be of considerable help in the treatment of chronic headaches. It also appears that a high level of hypnotic susceptibility is associated with a better therapeutic outcome. (Kuile MM; Spinhoven P; Linssen AC; Zitman FG; Van Dyck R; Rooijmans HG Autogenic training and cognitive self-hypnosis for the treatment of recurrent headaches in three different subject groups. Department of Psychiatry, University of Leiden, The Netherlands. *Pain (NETHERLANDS)* Sep 1994, 58 (3) p331-40)

**Hysterectomy & Hypnotherapy (Positive suggestions on audiotape):** It wasn't long ago that people who believed in the power of affirmations and positive suggestions to improve their health (or any area of their life for that matter) were considered to be one sandwich short of a picnic. However, today it is generally acknowledged that the patient's mental state can play a significant role in the efficacy of their treatment and thus recovery. Researchers in the Middle East recently investigated the use of positive suggestions to help reduce and alleviate the incidence of post-operative nausea in patients undergoing elective surgery.

Fifty women undergoing elective abdominal hysterectomy were randomly assigned into two groups; the women in group one were played a blank audio cassette and the second group were played a tape containing positive suggestions relating to their condition.

The results showed that the patients in group two experienced a 36% reduction in vomiting compared to 60% experienced by the women in group one. the number of vomiting episodes in group one was 3.1 per patient compared to 1.7 in group two. Furthermore, patients in group one required a significantly higher amount of antiemetic medication (66.6%) compared to patients in group two (22.2%).

The researchers concluded that positive suggestions played to patients by audio tape has a statistically significant beneficial effect on reducing and alleviating post-operative nausea and vomiting in patients who have undergone abdominal hysterectomy elective surgery. Maroof M et al. Intra-operative suggestions reduce incidence of post hysterectomy emesis. *Journal of Pak. Medical Association* 47(8) August 1997. 202-4.

**Meditation & Relaxation & Insomnia:** It is commonly accepted that people who are chronically tense and who cannot relax are prime candidates for all cardio-vascular disorders, including hypertension. Researchers have shown that relaxation techniques are demonstrably effective in stress control and in the treatment of insomnia. For example, Dr Chandra patel, author of 'The Complete Guide to Stress Management' (Optima 1992) reported several controlled studies in which patients with high blood pressure had significantly improved (A Holistic Approach to cardiovascular disease Dr C Patel - *BJ Holistic Med* 1984 1, 30 - 41 & Trial of Relaxation in reducing coronary risk *BMJ* 1985 290, 1103-6.).

Other investigators reported that relaxation techniques including yoga, transcendental meditation and biofeedback have all been effective in helping reduce high blood pressure. (New England Journal of Medicine 8/1/76) Medical journalist, Audry Carli also described research in the American journal 'Bestways' in which 21 Hypertensive patients were divided into two groups; one group was given drugs and the other received drugs plus relaxation lessons. Interestingly the former group had an average reduction in systolic blood pressure of 1.1 whereas the group who did relaxation exercises had an average reduction of 13.6 points! This suggests that relaxation can make other treatments and therapies as much as 12 times more effective.



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Added weight was given in two reports in the Lancet (23/2/74 & 21/1/76) which stated that transcendental meditation was effective in inducing relaxation, lowering high blood pressure and helping insomnia, and other researchers have demonstrated that

Biofeedback has also been shown to be an effective tool in overcoming insomnia (Learning Visceral and Glandular responses - Science 163, 434-5 N.E. Miller ; Instrumental conditioning of autonomically mediated behaviour- Psychological Bulletin 67, 337). So much so that Dr Stephen Fulder, author of the Complementary handbook wrote that Biofeedback "is as good as other procedures in relieving stress-related conditions such as anxiety, insomnia, high blood pressure, tachycardia and tension headaches."

**Relaxation & Insomnia:** This study explores the usefulness of relaxation and gradual medication withdrawal in weaning insomniacs from sleep (hypnotic) medication. We recruited 40 volunteers from the community who had insomnia, half of whom were chronic users of hypnotics while the other half were non-medicated. Half of all participants (10 medicated and 10 non-medicated) received progressive relaxation. All medicated participants received a standard gradual drug withdrawal program. Medicated participants reduced sleep medication consumption by nearly 80%. Participants who received relaxation obtained additional benefits in sleep efficiency, rated quality of sleep, and reduced withdrawal symptoms. Medicated and non-medicated participants attained comparable, improved sleep by post-treatment and follow-up. Hypnotic withdrawal was accompanied by serious worsening of insomnia, but this dissipated by the end of the withdrawal period. The psychological treatment of hypnotic-dependent insomnia has high potential for making an important clinical contribution. Behav Modif 1999 Jul;23(3):379-402 Lichstein KL, Peterson BA, Riedel BW, Means MK, Epperson MT, Aguillard RN Department of Psychology, University of Memphis, TN 38152, USA.

**Hypnotherapy & Psychotherapy & IBS:** All physical diseases including cancer, heart disease and even skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to diarrhoea sufferers. Remember also that diarrhoea is a stress related condition and Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress.

A controlled study in Europe involving 266 patients found that psychotherapy can improve the therapeutic possibilities of drugs, diet and surgery. Psychotherapy combined with relaxation and removal of stress were considered along with the personality of the patient before the outbreak of chronic diseases related to diarrhoea such as Crohn's disease and irritable bowel syndrome. It was suggested that unknown emotional conflicts such as depression, mental lability and anorexia may influence the course of these diseases (Psychotherapy of Crohn disease Zur Psychotherapie des M. Crohn. Feiereis H Langenbecks Arch Chir 1984, 364 p407-11. Patients suffering from irritable bowel syndrome and other gastrointestinal disorders are all too often treated with steroids or anti-inflammatories to alleviate the symptoms. It is well known that diet and nutrition play an important part in the treatment of gastro-intestinal disorders but it is not commonly appreciated that hypnotherapy and psychotherapies offer extremely effective therapeutic options that should not be overlooked when considering the appropriate remedial treatment.)

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In a recent review of available controlled studies in the field of gastroenterology conducted at the University Hospital of South Manchester, West Didsbury UK, scientists discovered that hypnotherapy is unequivocally beneficial for patients suffering from gastrointestinal disorders including irritable bowel syndrome and peptic ulceration (Whorwell PJ. Use of hypnotherapy in gastrointestinal disease. *Br J Hosp Med (ENGLAND)* Jan 1991, 45 (1) p27-9).

German researchers also recently demonstrated that emotional stress plays a significant role in irritable bowel syndrome (Kunze M; Seidel HJ; Stube G [Comparative studies of the effectiveness of brief psychotherapy, acupuncture and papaverin therapy in patients with irritable bowel syndrome] *Vergleichende Untersuchungen zur Effektivitat der kleinen Psychotherapie, der Akupunktur und der Papaverintherapie bei Patienten mit Colon irritabile. Klinik fur Innere Medizin, Bereich Neuropsychiatrie, Bezirkskrankenhauses Suhl.Z Gesamte Inn Med (GERMANY)* Oct 15 1990, 45 (20) p625-7).

The researchers compared drug therapy with psychotherapy and acupuncture on patients who were diagnosed with and shown to be suffering from irritable bowel syndrome. Their results of the study revealed that psychotherapies helped to successfully alleviate the symptoms in 74 per cent of the patients - a far higher number than was noted in any of the other therapies. However, acupuncture was also found to be effective, albeit to a lesser degree, achieving long term success in 31% per cent of the patients treated which was markedly better than placebo acupuncture treatment which only produced success in 17.2 per cent of the patients. Drug therapy (papaverine) resulted in a long-lasting status free of symptoms in 17.2% of the patients but this was significantly better than the results of the papaverine-placebo-therapy which produced no improvement at all. The researchers concluded that the psychotherapies played by far the most significant role in treating the disorder than had previously been suspected.

Scientists at the Gastroenterology Unit, Frenchay Hospital, Bristol came up with similar results (Harvey RF; Hinton RA; Gunary RM; Barry RE Individual and group hypnotherapy in treatment of refractory irritable bowel syndrome. *Lancet (ENGLAND)* Feb 25 1989, 1 (8635) p424-5). 33 patients with refractory irritable bowel syndrome were treated with four 40-minute sessions of hypnotherapy over a period of 7 weeks. Twenty of the group (60%) improved, of whom eleven were shown to be completely free of all symptoms. Short-term improvement was maintained for 3 months without the need of further formal treatments and the researchers concluded that hypnotherapy in groups of up to 8 patients was as effective as individual therapy in the treatment of irritable bowel syndrome..

Finally a research study reported in the *Lancet* also confirmed the importance of hypnotherapy and psychotherapies in the treatment of irritable bowel syndrome. In this study, thirty patients with severe refractory irritable-bowel syndrome were randomly allocated to treatment with either hypnotherapy or psychotherapy and placebo.

The psychotherapy patients showed a small but significant improvement in abdominal pain, abdominal distension, and general well-being but not in bowel habit. However, the patients who received hypnotherapy treatment showed a dramatic improvement in all features, and the difference between the two treatments was found to be highly significant. Patients in the hypnotherapy group showed no relapses during the 3-month follow-up period, and no substitution symptoms were observed either.

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These reports provide strong evidence to support a more integrated approach in the treatment of gastro-intestinal disorders in which hypnotherapy and psychotherapy should be considered in the initial stages of the disorder as valuable aids and alternatives to conventional treatment. (Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome. Whorwell PJ; Prior A; Faragher EB. *Lancet (ENGLAND)* Dec 1 1984, 2 (8414) p1232-4)

**Hypnotherapy - intractable pain:** The Crasilneck Bombardment Technique consists of six diversified methods of hypnotic inductions used consecutively within one hour; the six sequential systems are typically used for 7 to 10 minutes each and include (1) relaxation, (2) displacement, (3) age regression, (4) glove anaesthesia, (5) hypnoanaesthesia, and (6) self-hypnosis.

In a study conducted at the University of Texas Southwestern Medical Center, USA, twelve consecutive patients, all of whom manifested severe organic pain problems which had not responded to any form of treatment, including standard hypnosis techniques were given Crasilneck Bombardment Technique.

The results showed that ten of the twelve patients responded positively to the Bombardment Method. More interestingly, one year after the treatment, the patients estimates of pain control ranged from a minimum of 80% relief to a maximum of 90%, most of the time. The types of intractable pain treated were six head-aches, three backaches, one arthritic pain, one postherpetic neuralgia pain problem, and one temporomandibular joint pain. Crasilneck HE. The use of the Crasilneck Bombardment Technique in problems of intractable organic pain. *Am J Clin Hypn (UNITED STATES)* Apr 1995, 37 (4) p255-66

**Hypnosis, acupuncture & pain:** Whilst it is now generally accepted that both Hypnosis and acupuncture can alleviate pain, the precise mechanism that triggers the analgesic response remains unclear for both treatments. It was for this reason that researchers at the Department of Anaesthesiology, Hopital Cantonal Universitaire of Geneva, Switzerland recently investigated and compared the analgesic effect of hypnosis and acupuncture.

Experimental pain was induced by cold pressor test (CPT) in eight male volunteers. The analgesic effects of hypnosis and acupuncture were assessed before and after double-blind administration of a placebo or naloxone, in a prospective, cross-over study.

The results showed that pain intensity was significantly lower with hypnotherapy as compared with acupuncture, and the pain scores did not differ significantly when naloxone or placebo was administered. The researchers concluded that both hypnosis and acupuncture can or AA nor by naloxone or placebo administration. Moret V; Forster A; Laverriere MC; Lambert H; Gaillard RC; Bourgeois P; Haynal A; Gemperle M; Buchser E. Mechanism of analgesia induced by hypnosis and acupuncture: is there a difference? *Pain (NETHERLANDS)* May 1991, 45 (2) p135-40

**Hypnotherapy & Plastic surgery:** Researchers at the Department of Anaesthesia and Intensive Care Medicine, the University of Liege, Belgium investigated the benefits of hypnotherapy in assisting local anaesthesia for patients undergoing plastic surgery. 337 patients requiring minor and major plastic surgery requiring local anaesthesia together with conscious intravenous sedation were divided into three groups. The first group received intravenous

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sedation, the second group received hypnotherapy during which patients achieved an hypnotic trance level, and third group received general relaxation incorporating hypnotherapy without the required hypnotic trance level. Pain scores, anxiety scores and levels of intravenous sedative required were recorded and then compared.

The results showed that anxiety scores were significantly lower in the hypnotherapy and relaxation groups and the levels of sedative required were also significantly lower in the hypnotherapy and relaxation groups. Furthermore, postoperative vomiting and nausea was only 1.2 per cent in the hypnotherapy group compared to 12.8 per cent in the relaxation group and 26.7 per cent in the intravenous sedation group. The hypnotherapy group also reported higher satisfaction with the anaesthetic procedure and greater surgical comfort.

The researchers concluded that hypnotherapy as an adjunct sedation procedure to conscious intravenous sedation produced greater relief from pain and anxiety than conventional intravenous sedation, enabled significant reduction in drug sedative requirements and significantly improved patients satisfaction and comfort. Faymonville M et al. Hypnosis as adjunct therapy in conscious sedation for plastic surgery. *Reg Aneash* 1995. 20;2,145-151

**Hypnotherapy & Trichotillomania:** This study describes a non-pharmacological treatment modality for children with trichotillomania . Three children with trichotillomania were treated using a hypnotherapy technique. All patients were observed in the outpatient clinic for 8 consecutive weeks and subsequently followed for 12-18 months. All children were co-operative in performing the hypnotherapy technique (relaxation/mental imagery). Two patients reported complete resolution of their complaints after 7-8 weeks and 1 patient after 16 weeks. The latter, reporting recurrence of the complaint after 4 weeks due to stressful school problems, was resolved after successful retreatment over 3 weeks. During a mean follow-up period of 16 months, there were no recurrences. In conclusion, hypnotherapy may be considered as a primary treatment modality for trichotillomania in children without associated emotional disorders. *Acta Paediatr* 1999 Apr;88(4):407-10 Cohen HA, Barzilai A,

**Hypnotherapy can be useful in the management of anxiety, discomfort, and psychosomatic symptoms, all of which may contribute to a complaint of dyspnea.** Therefore, instruction in self-hypnosis was offered to 17 children and adolescents with chronic dyspnea, which had not resolved despite medical therapy, and who were documented to have normal lung function at rest. This report documents the result of this intervention.

**Methods.** A retrospective chart review identified all patients followed by a single pediatricpulmonologist (R.D.A.), with a chief complaint of chronic dyspnea from April 1998 through December 1999. These patients had been evaluated and treated for medical diseases according to their history, physical examination, and laboratory investigations. The pulmonologist offered to teach self-hypnosis to all of these patients, who comprise the cohort in this report.

Chronic dyspnea was defined as recurrent difficulty breathing or shortness of breath at rest or with exertion, which had existed for at least 1 month in patients who had not suffered within a month from an acute pulmonary illness. The pulmonologist was trained in hypnosis through his attendance at three

20-hour workshops. Hypnosis was taught to individual patients in 1 or two 15- to 45-minute sessions. Patients were taught hypnotic self-induction techniques and imagery to achieve

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relaxation. Additionally, imagery relating to dyspnea was developed by coaching patients to change their imagined lung appearance from a dyspneic to a healthy state. Patients were encouraged to practice self-hypnosis regularly and to use lung imagery to eliminate dyspnea if it occurred.

**Results.** Seventeen patients (13 males and 4 females) with chronic dyspnea were documented to have normal pulmonary function at rest. Their mean age was 13.4 years (range: 8-18 years). Twelve of the 17 previously were diagnosed with other conditions, such as allergies, asthma, and gastroesophageal reflux. Fifteen of the 17 manifested at least 1 other symptom associated with their dyspnea, including an anxious appearance (4 patients); chest tightness or pain (5); cough (4); wheeze (3); difficulty with inspiration (2); hyperventilation (1); inspiratory noise, such as stridor, gasping, rasping, or squeak (8); dizziness (1); feeling something is stuck in the throat (2); parasthesias (4); and tachycardia (3). Of the 17 patients, 2 complained of dyspnea at rest only, 13 complained of dyspnea with activity only, and 2 complained of dyspnea both at rest and with activity. Nine patients reported that they frequently needed to discontinue their physical activity because of dyspnea. The mean duration of their dyspnea before learning self-hypnosis was 2 years (range: 1 month to 5 years). The dyspnea was of <6 months duration for 4 of the patients. For 9 of the 17 patients a potential psychosocial association with their dyspnea was identified: 3 developed symptoms at school only; 2 with exercise during competitive races only; 3 after a major disagreement between their parents; and 1 developed symptoms each time his family moved to a new neighborhood. Before presentation, 7 of the 17 patients received chronic inhaled antiinflammatory therapy, and 3 were using inhaled albuterol, as needed. All 17 patients had normal physical examinations, with the exception of healed scars on the chest and abdomen of 1 patient, a repaired cleft palate in 1 patient, and rhinitis in another. Four of the 17 underwent pulmonary function testing before and after exercise, 6 had chest radiographs, and 3 had electrocardiograms. All of these tests were normal. A patient with a history of psychogenic cough declined to learn self-hypnosis. Thirteen of the remaining 16 patients were taught to use self-hypnosis in 1 session. A second session was provided to 3 patients within 2 months. Thirteen of the 16 patients reported their dyspnea and any associated symptoms had resolved within 1 month of their final hypnosis instruction session. Eleven believed that resolution of their dyspnea was attributable to hypnosis, because their symptoms cleared immediately after they received hypnosis instruction (5 patients) or with its regular use (6). Two did not attribute resolution of dyspnea to hypnosis because they did not use it at home.

The remaining 3 reported that their dyspnea had improved. Patients were followed for a mean 9 months (range: 2-15 months) after their final hypnosis session. Ten of the 16 regularly used self-hypnosis at home for at least 1 month after the final hypnosis session. There was no recurrence of dyspnea, associated symptoms, or onset of new symptoms in patients in whom the dyspnea resolved. Under supervision of the pediatric pulmonologist, 2 of 7 patients discontinued their chronic antiinflammatory therapy when they became asymptomatic after hypnosis. Subsequently, their pulmonary function remained normal.

**Discussion.** Use of self-hypnosis was associated with resolution of dyspnea in 13 of 16 patients who had normal pulmonary function. The improvement may have been attributable to

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physiologic effects of hypnosis. Furthermore, some of the dyspnea-associated symptoms in these patients were suggestive of anxiety disorders, which are amenable to therapy with hypnosis. Ten patients complained of difficulty with inspiration or made an inspiratory noise when they were dyspneic. It was suspected that many of these patients were suffering from vocal cord dysfunction, which is amenable to therapy with hypnosis. Because use of hypnosis was associated with rapid resolution of symptoms of most of these patients, there was no need to undertake additional investigations involving provocation of symptoms or laryngoscopic evaluation. Although resolution or improvement of dyspnea cannot be attributed solely to hypnosis in this report, it seems that introduction of hypnosis was a key factor in view of the average 2-year duration of symptoms before its utilization. For the 4 patients who were symptomatic for a short duration (ie, for <6 months), it is possible that their improvement was caused by factors independent of hypnotherapy, such as change of weather.

**Conclusion.** A controlled prospective study using serial objective measures is recommended to substantiate this reported dramatic improvement of chronic dyspnea in pediatric patients who were taught self-hypnosis. Key words: dyspnea, hypnosis, spirometry, anxiety disorder, vocal cord dysfunction. The most common causes of chronic dyspnea are respiratory disorders, such as asthma, cystic fibrosis, and interstitial lung disease.<sup>1</sup> Nonpulmonary causes of dyspnea include deconditioning, gastroesophageal reflux, cardiovascular disease, and psychological factors.<sup>1,2</sup>

Children and adolescents sometimes have incomplete resolution of chronic dyspnea despite receiving appropriate medical therapy. Because such patients can respond to psychological interventions,<sup>1</sup> since April 1998 such patients presenting to a pediatric pulmonary center were offered the opportunity to learn self-hypnosis to help control their symptoms.

Although there is no generally accepted definition of hypnosis,<sup>3-6</sup> in practice it can be useful to think of hypnosis as an altered state of consciousness and hypnotherapy as a treatment modality using hypnosis to achieve a therapeutic goal.<sup>3</sup> Hypnosis is useful in altering thoughts, feelings, expectations, attitudes, behavior, and perception.<sup>4,6</sup> Therefore, hypnotherapy can be useful in

the management of anxiety, discomfort, and psychosomatic symptoms,<sup>6</sup> all of which may contribute to a complaint of dyspnea. This report summarizes the efficacy of self-hypnosis for pediatric patients with chronic dyspnea who were found to have normal lung function at rest.

**METHODS:** A retrospective chart review identified all patients followed by a single pediatric pulmonologist (R.D.A.), with a chief complaint of chronic dyspnea from April 1998 through December 1999, who were documented to have normal baseline pulmonary function at rest. These patients had been evaluated and treated for medical diseases according to their history, physical examination, and laboratory investigations. The pulmonologist offered to teach self-hypnosis to all of these patients, who comprise the cohort in this report.

Chronic dyspnea was defined as recurrent difficulty breathing or shortness of breath at rest or with exertion, which had existed for at least 1 month in patients who had not suffered within a month from an acute pulmonary illness. Patients were defined as having normal pulmonary function at rest if their hemoglobin saturation as measured by pulse oximetry was >95%; if their forced vital capacity and forced expiratory volume in 1 second were >80% of predicted; if their forced expiratory flow, 25% to 75% vital capacity was >60% of predicted; and if they did not demonstrate significant bronchodilation 10 minutes after administration of 180 µg

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of albuterol by meter dosed inhaler (eg, a >10% improvement in forced vital capacity or forced expiratory volume in 1 second, or a >20% improvement in forced expiratory flow, 25% to 75% vital capacity). Spirometric testing was performed according to published standards.<sup>7</sup> Predicted values were calculated based on sex, race, height, and age.<sup>8</sup> The pulmonologist was trained in hypnosis through his attendance in three 20-hour workshops sponsored by the Society for Developmental and Behavioral Pediatrics and the American Society of Clinical Hypnosis.

Hypnosis was taught to individual patients in one or two 15- to 45-minute sessions. The hypnosis instruction was not standardized and hypnotizability was not formally assessed. In the first session, patients were taught a hypnotic self-induction technique, imagery to achieve relaxation, and imagery intended to help relieve their dyspnea. For example, induction was achieved by the technique of arm levitation<sup>4</sup>; and relaxation was accomplished by asking patients to imagine what might be perceived by each of the 5 senses in a relaxing place.

Specific imagery relating to the dyspnea was developed with the assistance of the patients: they were asked to describe the imagined appearance of their lungs when dyspnea was present and absent. They then were coached to change their lung appearance from a dyspneic state to how they imagined their lungs to appear in a normal, healthy state. Patients were encouraged to practice the self-hypnosis relaxation techniques on a daily basis and to use lung imagery to reduce or eliminate dyspnea if it occurred. A second session was requested by some patients for whom the dyspnea only partially resolved after initial instruction in self-hypnosis. At the second session, self-hypnosis techniques were reviewed and additional imagery to help control dyspnea was developed with the patients' input.

Because this report describes a retrospective chart review without identification of patients, it was exempt from review by an institutional review board. Seventeen patients (13 males and 4 females) with chronic dyspnea were documented to have normal pulmonary function at rest during the 20-month review period. Their mean age was 13.4 years (range: 8-18 years). Twelve of the 17 patients previously were diagnosed by their referring physicians with other conditions, including 4 who had more than one diagnosis (Table 1). Fifteen of the 17 patients manifested other symptoms associated with their dyspnea, including 9 patients with more than one additional symptom (Table 2).

Of the 17 patients, 2 complained of dyspnea at rest only, 13 complained of dyspnea with activity only, and 2 complained of dyspnea both at rest and with activity. Nine of the patients reported that they frequently needed to discontinue their physical activity because of dyspnea. The mean duration of their dyspnea before learning self-hypnosis was 2 years (range: 1 month to 5 years). The dyspnea was of <6 months duration for 4 of the patients. For 9 of the 17 patients a potential psychosocial association with their dyspnea was identified: three developed symptoms at school only; 2 with exercise during competitive races only; 3 after a major disagreement between their parents; and 1 developed symptoms each time his family moved to a new neighborhood.

Before presentation, 7 of the 17 patients received chronic inhaled antiinflammatory therapy, and 3 were using inhaled albuterol, as needed. All 17 patients had normal physical examinations, with the exception of healed scars on the chest and abdomen of the patient with

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Wilm's tumor, a repaired cleft palate in 1 patient, and rhinitis in another. Four of the 17 patients underwent pulmonary function testing before and after exercise, 6 had chest radiographs, and 3 had an electrocardiogram. All of these tests were normal.

A patient with a history of psychogenic cough declined to learn self-hypnosis, speech therapy, or undergo counseling. She was subsequently lost to follow-up. Thirteen of the remaining 16 patients were taught to use self-hypnosis in 1 session. A second session was provided to 3 patients within 2 months. Thirteen of the 16 patients reported that their dyspnea and any associated symptoms had resolved within 1 month of their final hypnosis instruction session. Eleven believed that resolution of their dyspnea was because of hypnosis, because their symptoms cleared immediately after its use at the center (5 patients) or with regular use (6). Two did not attribute resolution of dyspnea to hypnosis because they did not use it at home. The remaining 3 reported that their dyspnea had improved.

Patients were followed for a mean 9 months (range: 2-15 months) after the final hypnosis session. Nine of the patients were seen for medical management by the pediatric pulmonologist approximately every 3 months after their final hypnosis session. The remaining 7 patients were not seen and were contacted by telephone on one occasion by the author for follow-up. Other than the pulmonologist's acknowledgment of their successful use of hypnosis, patients received no further reinforcement of their hypnosis skills during either personal or telephone follow-up. Ten of the 16 patients regularly used self-hypnosis at home for at least 1 month after the final hypnosis session. There was no recurrence of dyspnea, associated symptoms, or onset of new symptoms in patients in whom the dyspnea resolved. Two of 7 patients discontinued their chronic antiinflammatory therapy when they become asymptomatic after hypnosis, and another discontinued her albuterol therapy, under supervision of the pulmonologist. Subsequently, their pulmonary function remained normal.

**Hypnotherapy and Psychotherapy & Tinnitus:** All physical diseases including cancer, heart disease and even skin complaints have been helped with Hypnotherapy and Psychotherapy. Several reports have concluded that psychological factors should be taken into account in the treatment and management of tinnitus (Is tinnitus a psychological disorder? Gerber KE; Nehemkis AM; Charter RA; Jones HC *Int J Psychiatry Med (UNITED STATES)* 86 1985, 15 (1) p81-7 Tinnitus--incidence and handicap. Lindberg P; Lyttkens L; Melin L; Scott B *Scand Audiol (SWEDEN)* 1984, 13 p287-91 ).The power of suggestion and mental imagery is a tool all too often overlooked but it can be of help. We found one study conducted in England which concluded that over one third of tinnitus sufferers who were given hypnotherapy found it helpful. The report concluded that hypnotherapy "seemed to help them tolerate their tinnitus better , although loudness and quality were unaltered." A controlled trial of hypnotherapy in tinnitus. Marks NJ; Karl H; Onisiphorou C *Clin Otolaryngol (ENGLAND)* Feb 1985, 10 (1) p43-6 Varicose Eczema Alternative & Complementary Therapies Quick

**Hypnotherapy and Psychotherapy & Varicose Eczema:** All physical diseases including cancer, heart disease but particularly skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to eczema sufferers by not only alleviating irritation and controlling any pain, but also in helping heal the condition. Remember that eczema



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itself is a stress-related disease and although varicose eczema is triggered by factors relating to the varicosity, stress may play a part. If you suspect this may be the case,

Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress. (Psychological stress and psoriasis: experimental and prospective correlational studies. Gaston L; Crombez JC; Lassonde M; Bernier-Buzzanga J; Hodgins S Psychiatry Department, McGill University, West Montreal, Quebec, Canada. *Acta Derm Venereol Suppl (Stockh) (SWEDEN)* 1991, 156 p37-43 Can psychotherapy help patients with psoriasis? Price ML; Mottahedin I; Mayo PR Department of Dermatology, Brighton Health Authority, Sussex, UK. *Clin Exp Dermatol (ENGLAND)* Mar 1991, 16 (2) p114-7 ) There has been several studies reported in the medical journals all confirming the benefits of hypnotherapy, psychotherapy and stress management (see yoga and meditation).

Psychological tests have revealed that eczema sufferers tend to be noticeably more anxious than non-sufferers and as levels of anxiety are reduced the skin condition improves proportionately. For this reason, most clinicians and researchers agree that stress affects the course of eczema and psoriasis and reducing stress levels has a positive effect on the course of the disease. Emotional factors have been shown to have a strong correlation with onset of the disease and also with flare-ups. Further more, several documented case studies have revealed that hypnosis can offer a successful treatment for sufferers. (Stress and psoriasis. Kantor SD Psoriasis Research Institute, Palo Alto, California 94301. *Cutis (UNITED STATES)* Oct 1990, 46 p321-2 )

**Hypnotherapy and Psychotherapy:** All physical diseases including cancer, heart disease but particularly skin complaints have been helped with Hypnotherapy and Psychotherapy. The power of suggestion and mental imagery is a tool all too often overlooked but which can be of immense help to vitiligo sufferers.

Firstly, Hypnotherapy and Psychotherapy are both excellent aids to help control emotional stress associated with vitiligo and other skin diseases (Results of the therapeutic correction of psychoautonomic disorders in patients with vitiligo] *Rezultaty lechebnoi korrektsii psikhovegetativnykh rasstroistv u bol'nykh vitiligo*.

Koshevenko IuN *Vestn Dermatol Venerol (USSR)* 1989, (11) p37-9 ). In one study conducted in Russia, not only were psychological problems eliminated but the researchers also observed marked repigmentation in over 20% of cases and that the period necessary to achieve marked repigmentation (i.e. of more than 50%) was twice as fast with psychotherapy. This indicates that psychotherapy and hypnotherapy not only may be effective therapy by themselves but they are almost certainly a beneficial adjunct to other therapies in helping to speed up the recovery process were cut down by half.

**Hypnotherapy & Warts:** According to available research papers, Hypnotherapy seems to be the most effective alternative treatment of warts. There are several published, controlled studies of the use of hypnosis to cure warts that have shown cure rates as high as 80%. Prepubertal children respond to Hypnotherapy almost without exception, although adults sometimes do not. Clinically, many adults who fail to respond to hypnotherapy will heal with individual hypnoanalytic (combination of hypnotherapy and psychotherapy) techniques. By using hypnoanalysis on those who failed to respond to hypnotherapy, 33 of 41 (80%)

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consecutive patients were completely cured. Self-hypnosis was not used. (Hypnotherapy for warts (verruca vulgaris): 41 consecutive cases with 33 cures. Ewin DM Tulane Medical School, New Orleans, LA. Am J Clin Hypn (UNITED STATES) Jul 1992, 35(1) p1-10)

There was a particularly interesting report of hypnosis used to treat a 7-year-old girl who had 82 common warts. The warts had been present for 12-18 months and were not amenable to any of the routine medical treatments. Hypnotic suggestions were given for the facial warts to disappear before warts from the rest of the body. After 2 weeks, eight of 16 facial warts were gone, with no other changes.

After three additional biweekly sessions, all 82 warts were gone. This was, to our knowledge, the first reported case of systematic wart removal in children and the researchers concluded that there is an intimate relationship between psychological mechanisms and the immune system. (Hypnotherapy of a child with warts. Noll RB Department of Pediatrics and Human Development, Michigan State University, East Lansing 48824. J Dev Behav Pediatr Apr 1988, 9 (2) p89-91)

### 19. HYPNOTIC WEIGHT LOSS & MANAGEMENT

58 million Americans between the ages of 20 - 55 are overweight. At least two thirds of dieters will gain the weight back Hypnosis is a drug-free alternative for successful weight loss in which individual sessions are specifically tailored to the person's unique needs.

Please take a moment read what clinical research has found and documented. Journal of Clinical Psychology, 41 (1), 35-41. **109 17-67 year olds completed a behavioral treatment for weight management either with or without the addition of hypnosis.**

**Results** show that, at the end of the 9-week program, both interventions resulted in significant weight reduction. However, at 8-month and 2-year follow-ups, the hypnosis subjects showed significant additional weight loss, while those in the behavioral-treatment-only group exhibited little further change. More subjects who used hypnosis also achieved and maintained their personal weight goals.

Journal of Consulting and Clinical Psychology, 54 (3), 489-492. **Investigated the effects of hypnosis in weight loss for 60 females**, at least 20% overweight and not involved in other treatment...hypnosis was more effective than a control group (17 vs. .5 pounds on follow-up).

Journal of Consulting and Clinical Psychology, 64 (3), 517-519. **Averaged across post treatment and follow-up assessment periods, the mean weight loss was 6.00 lbs. (2.72 kg) without hypnosis and 11.83 lbs. (5.37 kg) with hypnosis....**At the last assessment period, the mean weight loss was 6.03 lbs. (2.74 kg) without hypnosis and 14.88 lbs. (6.75 kg) with hypnosis... Correlational analyses indicated that the benefits of hypnosis increased substantially over time.

### 20. SCIENTIFIC RESEARCH ON HYPNOSIS

Citation: Zeltzer LK, Tsao JC, Stelling C, Powers M, Levy S, Waterhouse M. **A phase I study on the feasibility and acceptability of an acupuncture/ hypnosis intervention for chronic pediatric pain.** Journal of Pain and Symptom Management 2002, Oct;24(4): pp. 437-46. A group of researchers from UCLA conducted a study to assess the usefulness of combining acupuncture and hypnosis for chronic pediatric pain. Thirty-three sequentially referred children

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(21 girls, 12 boys) aged 6-18 years were offered 6 weekly sessions consisting of individually tailored acupuncture treatment together with a 20-minute hypnosis session, conducted while the needles were in place. Parent and child ratings of pain and pain-related interferences in functioning, as well as child ratings of anxiety and depression, were obtained at pre- and post-treatment. The treatment was highly acceptable (only 2 patients refused;  $\geq 90\%$  completed treatment) and there were no adverse effects.

Both parents and children reported significant improvements in children's pain and interference following treatment. Children's anticipatory anxiety declined significantly across treatment sessions. Our results support the feasibility and acceptability of a combined acupuncture/hypnosis intervention for chronic pediatric pain.

Citation: Calvert EL, Houghton LA, Cooper P, Morris J, Whorwell PJ. **Long-term improvement in functional dyspepsia using hypnotherapy.** *Gastroenterology*, 2002. Dec; 123 (6): pp. 1778-85. This study assessed the efficacy of hypnotherapy in treating functional dyspepsia (FD). A total of 126 patients were randomized to either a hypnotherapy condition, a supportive therapy plus placebo medication condition, or a medical treatment condition, for a total of 16 weeks of treatment.

The percentage of change in symptoms from baseline was assessed after the 16-week treatment phase (short-term) and again after 56 weeks (long-term), with the 26 hypnotherapy, 24 supportive therapy, and 29 medical treatment patients who completed all phases of the study. In addition, quality of life was also measured as a secondary outcome.

Investigators found that short-term symptom scores improved more in the hypnotherapy group (median, 59%) than in the supportive group (41%;  $P = 0.01$ ) or in the medical treatment group (33%;  $P = 0.057$ ). Hypnotherapy also benefited quality of life more, (42%) when compared with either supportive therapy (10% [ $P < 0.001$ ]) or medical treatment (11% [ $P < 0.001$ ]). In addition, in the long-term, after the 56 week interval, it was found that hypnotherapy even more significantly improved symptoms (73%), as compared with supportive therapy (34% [ $P < 0.02$ ]) or medical treatment (43% [ $P < 0.01$ ]). Also, quality of life improved significantly more with hypnosis (44%) than with medical treatment (20% [ $P < 0.001$ ]). There were similar improvements in quality of life found in the supportive therapy group, (43%) but it should be noted that 5 of these patients commenced taking antidepressants during follow-up.

Another finding of note: a total of 90% of the patients in the medical treatment group and 82% of the patients in the supportive therapy group commenced medication during follow-up, whereas none in the hypnotherapy group did so ( $P < 0.001$ ). Further, patients in the hypnosis group visited their general practitioner or gastroenterologist significantly less (median, 1) than did those in the supportive therapy (median, 4) and medical treatment (median, 4) groups during follow-up ( $P < 0.001$ ). The study concludes that hypnotherapy is highly effective in the long-term management of functional dyspepsia. Furthermore, the dramatic reduction in medication use and consultation rate provide major economic advantages.

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Citation: Palsson OS, Turner MJ, Johnson DA, Burnelt CK, Whitehead WE. **Hypnosis treatment for severe irritable bowel syndrome: investigation of mechanism and effects on symptoms.** Dig Dis Sci 2002 Nov;47(11):2605-14: A team of researchers from UNC Chapel Hill, interested in learning how hypnosis manages to improve irritable bowel syndrome (IBS), designed two studies that measured and separated out possible physiological mechanisms from psychological ones. Patients with severe IBS received seven biweekly hypnosis sessions and used hypnosis audiotapes at home. Rectal pain thresholds and smooth muscle tone were measured with a barostat before and after treatment in 18 patients in one study, and treatment changes in autonomic functions such as heart rate, blood pressure, skin conductance, finger temperature, and forehead electromyographic activity were assessed in 24 patients in the second study.

Somatization, anxiety, and depression were also measured. All central IBS symptoms improved substantially from treatment in both studies. Rectal pain thresholds, rectal smooth muscle tone, and autonomic functioning (except sweat gland reactivity) were unaffected by hypnosis treatment. However, somatization and psychological distress showed large decreases. The study concludes that hypnosis improves IBS symptoms through reductions in psychological distress and somatization, and that perceived improvements were unrelated to changes in the physiological parameters measured.

A randomized controlled trial in the UK with 30 children compared the efficacy of clinical hypnosis (and imagery) versus training in cognitive behavioral coping skills for alleviating the pain and distress of undergoing bone marrow aspirations. The pediatric cancer patients (age 5 to 15 years) were randomized to one of three groups: hypnosis, a package of CB coping skills, and no intervention beyond standard care. Patients who received either hypnosis or CB reported less pain and pain-related anxiety than did control patients and less pain and anxiety than at their own baseline.

Hypnosis and CB were similarly effective in the relief of pain, but children reported more anxiety and exhibited more behavioral distress in the CB group than in the hypnosis group. The study concludes that hypnosis and CB coping skills are effective in preparing pediatric oncology patients for bone marrow aspiration. Citation: Liossi C, Hatira P. Clinical hypnosis versus cognitive behavioral training for pain management with pediatric cancer patients undergoing bone marrow aspirations. International Journal of Clinical and Experimental Hypnosis, 1999 Apr; 47(2): pp.104-16

This review of three pilot studies by J.H. Gruzelier examines the effect of relaxation, self-hypnosis and guided imagery on basic immune functions, and offers a wide range of exciting findings. The author and his colleagues investigated self-hypnosis training that incorporated imagery of the immune system. In two of his studies, hypnosis was found to buffer the effects of stress on immune functions in medical students at exam time.

When he compared self-hypnosis with and without immune system imagery, the data confirmed that there were advantages to the targeted imagery. Results in the imagery group showed heightened immune function, improvements in mood, and fewer winter viral infections. A third study looked at patients with virulent and chronic herpes simplex virus-2 HSV-2. Six weeks of training almost halved recurrence, improved mood and reduced levels of clinical

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depression and anxiety in the intervention group. Immune functions were up-regulated, notably functional natural killer cell activity to HSV-1.

The review concludes that these preliminary studies show that hypnosis with targeted imagery provides immune control along with enhanced mood and well-being, and that larger studies with controls are warranted. Citation: Gruzelier JH. A review of the impact of hypnosis, relaxation, guided imagery and individual differences on aspects of immunity and health. *Stress* 2002 Jun;5(2):147-63.

Citation: Calvert EL, Houghton LA, Cooper P, Morris J, Whorwell PJ. **Long-term improvement in functional dyspepsia using hypnotherapy.** *Gastroenterology*, 2002. Dec; 123 (6): pp. 1778-85. This study assessed the efficacy of hypnotherapy in treating functional dyspepsia (FD). A total of 126 patients were randomized to either a hypnotherapy condition, a supportive therapy plus placebo medication condition, or a medical treatment condition, for a total of 16 weeks of treatment. The percentage of change in symptoms from baseline was assessed after the 16-week treatment phase (short-term) and again after 56 weeks (long-term), with the 26 hypnotherapy, 24 supportive therapy, and 29 medical treatment patients who completed all phases of the study. In addition, quality of life was also measured as a secondary outcome.

Investigators found that short-term symptom scores improved more in the hypnotherapy group (median, 59%) than in the supportive group (41%;  $P = 0.01$ ) or in the medical treatment group (33%;  $P = 0.057$ ). Hypnotherapy also benefited quality of life more, (42%) when compared with either supportive therapy (10% [ $P < 0.001$ ]) or medical treatment (11% [ $P < 0.001$ ]). In addition, in the long-term, after the 56 week interval, it was found that hypnotherapy even more significantly improved symptoms (73%), as compared with supportive therapy (34% [ $P < 0.02$ ]) or medical treatment (43% [ $P < 0.01$ ]). Also, quality of life improved significantly more with hypnosis (44%) than with medical treatment (20% [ $P < 0.001$ ]). There were similar improvements in quality of life found in the supportive therapy group, (43%) but it should be noted that 5 of these patients commenced taking antidepressants during follow-up. Another finding of note: a total of 90% of the patients in the medical treatment group and 82% of the patients in the supportive therapy group commenced medication during follow-up, whereas none in the hypnotherapy group did so ( $P < 0.001$ ). Further, patients in the hypnosis group visited their general practitioner or gastroenterologist significantly less (median, 1) than did those in the supportive therapy (median, 4) and medical treatment (median, 4) groups during follow-up ( $P < 0.001$ ). The study concludes that hypnotherapy is highly effective in the long-term management of functional dyspepsia. Furthermore, the dramatic reduction in medication use and consultation rate provide major economic advantages.

**HYPNOTIC CHILDBIRTH:** DR. VLASTA DOMIN: This program follows the guidelines of the National Board for Hypnotherapy and Hypnotic Anesthesiology While still widely underused, hypnosis can be helpful during labor and delivery. Hypnosis is not meant to replace the attending physician, and the mother may still need pain medication. However, more obstetricians are learning to incorporate hypnosis into their routines.

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Using hypnosis for childbirth usually involves six 60-minute private sessions with a qualified hypnotherapist that take place before the mother's due date. The sessions are spaced apart by several days, sometimes even weeks, during which the mom-to-be practices the learned hypnotic and visualization techniques.

Generally, in the first session, she learns how to put herself into a conscious state of deep concentration that is marked by intense relaxation. In this state, all unwanted emotions and feelings become, through suggestions, visualizations, and imagery, unintrusive and are easily dismissed. The mom-to-be also "unlearns" all preconceived negative notions and expectations about childbirth (such as that the pain of childbirth is unbearable and prolonged.) In addition, the mom-to-be "rehearses" the actual childbirth, seeing it and experiencing it as the event it should be – a natural, comfortable, and wonderful experience – for her and her baby. In this rehearsal, contractions are perceived as waves of pressure that bring on more comfort and relaxation. The expecting mom is encouraged to bring a partner-coach to the second half of the sessions. The partner is taught how to assist the mom in creating a deep and comfortable trance. The mom-to-be and her coach learn how to give suggestions to maintain deep hypnosis and create a sense of local anesthesia as necessary. (The hypnotherapist may also be available to assist during the actual delivery.)

According to the Journal of Consulting Clinical Psychology, hypnotically prepared births had shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries than the control group subjects. The American Journal of Clinical Hypnosis stated that "hypnotic preparation for labor and delivery appears to be superior to Lamaze."

The use of hypnosis has increased by 33% between 1990 and 1997. – JAMA, 1998.  
Today, hypnotherapy is one of the most scientifically endorsed complementary therapies. – Alternative Medicine, An Illustrated Encyclopedia of Natural Healing

While still widely underused, hypnosis can be helpful during labor and delivery. Hypnosis is not meant to replace the attending physician, and the mother may still need pain medication. However, more obstetricians are learning to incorporate hypnosis into their routines.

**Research shows that hypnosis is also effective in prevention of premature labor and conversion of breech position.**

**Fact # 1:** Hypnotically prepared births had shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries than the control group subjects. Journal of Consulting Clinical Psychology (Oct 1990)

**Fact # 2:** In primigravid (first-time pregnant) women, the first stage of labor was shorter on average by three hours as compared to the control group. In parous (previously gave birth) women the first stage of labor was one hour shorter than in the control group. The use of analgesic was also significantly reduced in both hypnotized groups as compared with their controls. British Journal Obstetrics and Gynecology (Mar 1993)

**Fact # 3:** Hypnotic preparation for labor and delivery appears to be superior to Lamaze. It offers the mother a sense of involvement in the process, control, awareness, and a level of anxiety relief and pain management superior to that provided by Lamaze. Hypnotically prepared subjects also reported that they were able to use their hypnosis skills in other situations, medical or dental, as needed. American Journal of Clinical Hypnosis (Jul 1994)

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**Fact # 4:** Hypnotic relaxation as an adjunct to medication treatment with women hospitalized for premature labor resulted in significantly higher prolongation of pregnancy for the hypnotic-relaxation than for the medication-alone group. *Psychosomatic Medicine* (May 1986)

**Fact # 5:** Eighty-one percent of fetuses in the hypnotic intervention group converted to vertex presentation as compared with 48% of those in the comparison group.

### 21. CLINICAL HYPNOTHERAPY & HYPNOSIS ABSTRACTS: VOL 24 2003

#### **The Use of Imagination in the Treatment of Children with Pain and Anxiety:**

Samuel LeBaron. Stanford University, USA. This paper explores the use of imagination and hypnosis in the treatment of children with pain, anxiety and terminal illness. Several excerpts from case studies are used to illustrate and demonstrate the techniques and hypnotic suggestions with imagination.

**Measuring Dissociation and Hypnotizability with African American College Students: A New Dissociation Scale; The General Dissociation Scale:** Marty Sapp: University of Wisconsin-Milwaukee, USA: Kim Hitchcock. Central State University, USA. Two hundred and two undergraduate African American college students participated in this study. Students completed the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A), the Dissociative Experiences Scale (DES), General Dissociation Scale (GDS) and the Inner Subjective Experiences scoring for the HGSHS:A, a measure of nonvolitional hypnotic responding. The GDS produced items had a reliability of .87 and it correlated .505,  $p < .01$ , with the DES. The items of HGSHS:A behavioral scoring method produced a reliability index of .29 with African American college students. Clearly, the Inner Subjective Experiences method for scoring the HGSHS: A is more appropriate for African American college students than the behaviorally scored items of the HGSHS: A, and the items of this scale had a reliability of .88. And the GDS produced items that were reliable for African American students and European American students. Finally, this study provided confidence intervals for the reliabilities of items that measured hypnotizability, dissociation and nonvolitional responding.

**Techniques and Tales: Milton Erickson: The Man and his Influence:** Maxwell J. Jackson, Max Jackson & Associates, Victoria, Australia. This paper undertakes a brief excursion into Milton Erickson's life, and explores the influences and practices that underpin the concept of what has become popularly known as Ericksonian Psychotherapy. It initially focuses on Erickson the person, making reference to his early life through his adult years to old age, noting the importance the challenges of his life experiences played in his professional life. The question of whether Erickson's approach to psychotherapy and hypnotherapy can be categorized as representing a particular school or method is discussed. In essence, it is contended that underlying what has been identified as Ericksonian Psychotherapy are the critical concepts of style and technique. The paper Summarizes what made Erickson different. It highlights his influence on the field of psychotherapy and hypnotherapy and argues the legitimacy of his place in the modern practice of these two fields of practice.

**Therapist: Beware of False Memories:** Paul G. Durbin, Methodist Hospital, USA: Some 30 years ago, a new therapy system referred to as recovered memory therapy (RMT) caught on with many professional therapists to include psychiatrists, psychologists, social

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workers, ministers, counselors and hypnotherapists. They believed that most of women's problems were the result of childhood sexual abuse and they would attempt to help them recover those memories even if they had never happened. Today many RMT therapists are being sued for the implanting of false memories. This paper addresses the ramifications and pitfalls of using RMT.

### **Hypnosis for Birthing: A Natural Option: Part 1** Peter Jackson, Bowral, Australia

Hypnosis and birthing, two words that conjure up all sorts of different images and feelings, in the minds of mothers, fathers, the general public and the medical community. Ask a group of mothers who have experienced childbirth what it was like. A great number reply that childbirth is painful. This answer is based on their personal experience as they speak of long periods of pain and feelings of helplessness, which are sometimes amplified by the drugs they receive. Many couples come away from their birth experience disappointed in themselves. Ask a group of first time mothers prior to their birth experience what their expectations of childbirth are.

Many of them express feelings of fear and anxiety about the experience that awaits them. Often their preparation for birth has been colored to a degree by the horror stories about birth from their friends, relatives, dramatizations of birth in the movies and on television as well as books they have read and the emphasis of the pain concept in prenatal education classes. Hypnosis is a word that evokes all kinds of different responses in the general public as well as in the medical profession. Misconceptions about hypnosis abound and because of these erroneous perceptions people in general tend to be skeptical or wary whenever hypnosis is mentioned. In the first part of this article I will explore a contemporary view of hypnosis as communication. In part two I will combine hypnosis with birthing as a natural option.

### **The Use of Hypnosis and Relaxation Therapy in Professional and Life Skills:**

Coaching Jeff Berger Berrington, Victoria: This paper gives a brief overview of the nature of professional and life skills coaching and how and where it can be used. It examines the models the coaching concept borrows from in order to function, the nature of the coach-client relationship, the benefits of coaching for the client and the differences between coaching and therapy. In particular it discusses how the author uses hypnosis and relaxation therapy; along with the "Choosing Continuum and Transitional Visualization" as tools in the coaching process, to assist clients in positive coaching breakthroughs. Finally the benefits of coaching for the coach are discussed and the possibility of the clinical hypnotherapist adding coaching to their existing services after receiving the appropriate training.

**Ego State Therapy and the Treatment of Depression:** Debbi Holopainen and Gordon J. Emmerson Victoria University: This paper reviews treating depression with the hypnotically based ego-state therapy. Depression is a common, costly (both personally and socially) disorder, and often does not respond well to traditional psychological or pharmacological treatment. Ego-state therapy is able to "provide significant psychological help to more people with modest expenditures of time and cost" in comparison to more traditional forms of psychotherapy (Watkins, & Watkins, 1993, p.9). Ego state therapy shows clinical promise as an intervention for depression (Emmerson & Farmer, 1996), and it does not require the time, cost, or commitment to homework of Cognitive Behavioral Therapy. An ego state intervention for depression (Emmerson, 2002) is introduced, and a case example is presented.



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### **Psychoneuroimmunological Background to a Controlled Trial of Hypnotherapy as a Treatment for Irritable Bowel Syndrome:** Julie Phillips-Moore University of Sydney:

Nineteenth century philosophy and anatomy regarded the nervous system as the only pathway of communication between the brain and body. Research has now shown that the communication between the nervous and immune systems is bi-directional and that the immune system, the autonomic nervous system, the endocrine system and the neuropeptide systems all communicate with each other by means of chemicals called messenger molecules or ligands. This paper outlines proposed research into the treatment of Irritable Bowel Syndrome (IBS) with hypnotherapy, taking into account the mind-body connection and treating both the patient's physiological and emotional/psychological symptoms. In other words, using a more holistic approach to the treatment of IBS.

**Reoperationalising Adaptive Regression During Hypnosis:** Lynn Edwards and Marty Sapp University of Wisconsin-Milwaukee Employing a non-randomised two-group pretest post-test design, this study found that a regression hypnotic transcript produced a greater reduction in conflict responses than a relaxation hypnotic transcript. Finally, this study re-operationalised the concept of regression.

**Couples Counseling: An Ego State Therapy Approach** Gordon J. Emmerson Victoria University The relationship with a partner can be one of the most rewarding and challenging aspects of living. Maintaining healthy partnered relationships has become more difficult with evolving gender roles, cultural pressures, and a reduced security of permanency. This is evidenced by an increased number of separations and divorce. Repairing, rather than enhancing, a relationship has become the only vision of many couples. Ego state therapy is uniquely equipped to both (1) assist a couple in communication and awareness in order to improve a troubled relationship, and to (2) assist a couple in learning to enhance to a new level the enjoyment of their relationship. Ego state therapy utilizes hypnosis to access the different communicative parts of each partner for improved awareness and for problem resolution. An angry part of one person cannot be properly heard by a partner listening from a part that feels hurt and reactive. Using ego state techniques individuals learn about the distinctive parts of themselves and their partners, and they learn which parts can best communicate with each other to feel heard, to negotiate, and to enjoy the positive aspects of the relationship. Ego state couples counseling is appealing to clients and is easily understood by them.

## 22. HYPNOSIS PAIN MANAGEMENT ABSTRACTS

### **A meta-analysis of hypnotically induced analgesia: how effective is hypnosis?**

Montgomery GH, DuHamel KN, Redd WH. Cancer Prevention and Control Program, Mount Sinai School of Medicine, New York, NY 10029-6574, USA. Over the past two decades, hypnoanalgesia has been widely studied; however, no systematic attempts have been made to determine the average size of hypnoanalgesic effects or establish the generalizability of these effects from the laboratory to the clinic. This study examines the effectiveness of hypnosis in pain management, compares studies that evaluated hypnotic pain reduction in healthy volunteers vs. those using patient samples, compares hypnoanalgesic effects and participants' hypnotic suggestibility, and determines the effectiveness of hypnotic suggestion for pain relief relative to other nonhypnotic psychological interventions. Meta-analysis of 18 studies revealed a moderate

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to large hypnoanalgesic effect, supporting the efficacy of hypnotic techniques for pain management. The results also indicated that hypnotic suggestion was equally effective in reducing both clinical and experimental pain. The overall results suggest broader application of hypnoanalgesic techniques with pain patients.

**Clinical hypnosis versus cognitive behavioral training for pain management with pediatric cancer patients undergoing bone marrow aspirations.** Liossi C, Hatira P.

University of Sunderland, United Kingdom. A randomized controlled trial was conducted to compare the efficacy of clinical hypnosis versus cognitive behavioral (CB) coping skills training in alleviating the pain and distress of 30 pediatric cancer patients (age 5 to 15 years) undergoing bone marrow aspirations. Patients were randomized to one of three groups: hypnosis, a package of CB coping skills, and no intervention. Patients who received either hypnosis or CB reported less pain and pain-related anxiety than did control patients and less pain and anxiety than at their own baseline. Hypnosis and CB were similarly effective in the relief of pain. Results also indicated that children reported more anxiety and exhibited more behavioral distress in the CB group than in the hypnosis group. It is concluded that hypnosis and CB coping skills are effective in preparing pediatric oncology patients for bone marrow aspiration.

**Hypnosis or cognitive behavioral training for the reduction of pain and nausea during cancer treatment: a controlled clinical trial.** Syrjala KL, Cummings C, Donaldson GW. Fred Hutchinson Cancer Research Center, Seattle, WA 98104. Few controlled clinical trials have tested the efficacy of psychological techniques for reducing cancer pain or post-chemotherapy nausea and emesis. In this study, 67 bone marrow transplant patients with hematological malignancies were randomly assigned to one of four groups prior to beginning transplantation conditioning: (1) hypnosis training (HYP); (2) cognitive behavioral coping skills training (CB); (3) therapist contact control (TC); or (4) treatment as usual (TAU; no treatment control). Patients completed measures of physical functioning (Sickness Impact Profile; SIP) and psychological functioning (Brief Symptom Inventory; BSI), which were used as covariates in the analyses. Biodemographic variables included gender, age and a risk variable based on diagnosis and number of remissions or relapses. Patients in the HYP, CB and TC groups met with a clinical psychologist for two pre-transplant training sessions and ten in-hospital "booster" sessions during the course of transplantation. Forty-five patients completed the study and provided all covariate data, and 80% of the time series outcome data. **Analyses of the principal study variables indicated that hypnosis was effective in reducing reported oral pain for patients undergoing marrow transplantation.** Risk, SIP, and BSI pre-transplant were found to be effective predictors of inpatient physical symptoms. Nausea, emesis and opioid use did not differ significantly between the treatment groups. The cognitive behavioral intervention, as applied in this study, was not effective in reducing the symptoms measured.

**Hypnosis for reduction of vomiting associated with chemotherapy and disease in adolescents with cancer.** Zeltzer L, Kellerman J, Ellenberg L, Dash J. Vomiting is often a major source of distress for adolescent oncology patients. This study evaluates the effectiveness of hypnosis in reducing the vomiting associated with chemotherapy and disease in 12 adolescents with cancer. Eight patients receiving chemotherapy demonstrated significant reductions in the frequency (p less than 0.01) and intensity (p less than 0.05) of emesis. Six of the eight patients also demonstrated a shortened duration of emesis. The ninth patient, whose

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vomiting was secondary to her brain tumor, showed a gradual but steady reduction in vomiting with eventual total elimination following hypnosis intervention. Three patients rejected hypnosis. Trait anxiety scores for the group were significantly lower at retest 6 months following hypnosis intervention ( $p$  less than 0.05). Significant changes in scores of health locus of control, impact of illness, or self-esteem were not found. These data support the efficacy of hypnosis for reducing vomiting when used in the context of a comprehensive clinical approach to the cancer patient.

**Preparing patients for cancer chemotherapy: effect of coping preparation and relaxation interventions.** Burish TG, Snyder SL, Jenkins RA. Vanderbilt University, Nashville, Tennessee 37240. Sixty cancer chemotherapy patients were randomly assigned to one of four treatments: (a) relaxation training with guided relaxation imagery (RT), (b) general coping preparation package (PREP), (c) both RT and PREP, or (d) routine clinic treatment only. All patients were assessed on self-report, nurse observation, family observation, and physiological measures and were followed for five sequential chemotherapy treatments. Results indicate that the PREP intervention increased patients' knowledge of the disease and its treatment, reduced anticipatory side effects, reduced negative affect, and improved general coping. RT patients showed some decrease in negative affect and vomiting, but not as great as in past studies. The data suggest that a relatively simple, one-session coping preparation intervention can reduce many different types of distress associated with cancer chemotherapy and may be more effective than often-used behavioral relaxation procedures.

**Distraction and relaxation training in the treatment of anticipatory vomiting: a single subject intervention.** Greene PG, Seime RJ, Smith ME. Department of Behavioral Medicine and Psychiatry, West Virginia Health Science Center. A within-series phase change design (ABABC) was used to evaluate the effect of video distraction and relaxation in the treatment of a 29-year-old male with anticipatory vomiting associated with cancer chemotherapy. Heart rate, blood pressure, nausea ratings, and the occurrence of emesis were recorded during 18 chemotherapy treatments over a 9 month period. Video distraction initially inhibited vomiting but the treatment effects were not maintained. Subsequent relaxation training inhibited vomiting after two sessions. These effects were maintained for the remainder of the patient's chemotherapy protocol.

**Cognitive distraction and relaxation training for the control of side effects due to cancer chemotherapy.** Vasterling J, Jenkins RA, Tope DM, Burish TG. Veterans Administration Medical Center, New Orleans, Louisiana 70146. Sixty cancer chemotherapy patients were randomly assigned to one of six conditions formed by a 3(cognitive distraction, relaxation training, no intervention) x 2(high anxiety, low anxiety) factorial design. All patients were followed for five consecutive chemotherapy sessions. Outcome measures included patient reports, nurse observations, and physiological indices. Results indicated that distraction patients reported less nausea prior to chemotherapy and lower systolic blood pressures after chemotherapy than controls. Relaxation training patients reported less nausea prior to chemotherapy and exhibited lower systolic and diastolic blood pressures after chemotherapy than control patients. There were no significant differences between distraction and relaxation training patients on any measure. Patients with high initial levels of anxiety exhibited continually

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elevated levels of distress throughout the chemotherapy experience; however, anxiety level did not interact with the effectiveness of the treatment interventions. Overall, the data support the use of both cognitive distraction and relaxation training for reducing the distress of chemotherapy with both high and low-anxiety patients and suggest that at least some of the effects of relaxation training can be achieved with distraction alone.

**Hypnosis in the prevention of chemotherapy-related nausea and vomiting in children: a prospective study.** Jacknow DS, Tschann JM, Link MP, Boyce WT. Department of Pediatrics, University of California San Francisco, School of Medicine. To study the effectiveness of hypnosis for decreasing antiemetic medication usage and treatment of chemotherapy-related nausea and vomiting in children with cancer, we conducted a prospective, randomized, and controlled single-blind trial in 20 patients receiving chemotherapy for treatment of cancer. Patients were randomized to either hypnosis or standard treatment. The hypnosis group used hypnosis as primary treatment for nausea and vomiting, using antiemetic medication on a supplemental (p.r.n.) basis only, whereas the control group received a standardized antiemetic medication regimen. Nausea, vomiting, and p.r.n. antiemetic medication usage were measured during the first two courses of chemotherapy. Anticipatory nausea and vomiting were assessed at 1 to 2 and 4 to 6 months postdiagnosis. Patients in the hypnosis group used less p.r.n. antiemetic medication than control subjects during both the first ( $p < .04$ ) and second course of chemotherapy ( $p < .02$ ). The two groups did not differ in severity of nausea and vomiting. The hypnosis group experienced less anticipatory nausea than the control group at 1 to 2 months postdiagnosis ( $p < .02$ ). Results suggest self-hypnosis is effective for decreasing antiemetic medication usage and for reducing anticipatory nausea during chemotherapy.

**Adolescents with cancer. Hypnosis for the reduction of the acute pain and anxiety associated with medical procedures.** Kellerman J, Zeltzer L, Ellenberg L, Dash J. Eighteen adolescents with cancer were trained in hypnosis to ameliorate the discomfort and anxiety associated with bone marrow aspirations, lumbar punctures, and chemotherapeutic injections. Two patients rejected hypnosis. The remaining 16 adolescents achieved significant reductions in multiple measures of distress after hypnosis training. Preintervention data showed no pattern of spontaneous remission or habituation, and, in fact, an increasing anticipatory anxiety was observed before hypnotic treatment. Group reductions in pain and anxiety were significant at levels ranging from  $p$  less than 0.02 to  $p$  less than 0.002 (two-tailed  $t$ -tests). Significant reductions were also found in Trait Anxiety. A non-significant trend toward greater self-esteem was present. The predicted changes in the Locus of Control and General Illness Impact were not found. Comparisons between hypnosis rejectors and successful users unusually showed higher levels of pretreatment anxiety in the former. The pragmatic nature of hypnosis as part of comprehensive medical care in oncology is noted.

**Relaxation therapy as an adjunct in radiation oncology.** Decker TW, Cline-Elsen J, Gallagher M. University of Scranton. Stress, anxiety, and depression in patients who are undergoing treatment of cancer significantly compromise the quality of their lives. The impact of stress reduction by relaxation training and imagery was studied in 82 out-patients who were undergoing curative (73 patients) or palliative (9 patients) radiotherapy. Fifty-two females and 30 males were assigned randomly to a relaxation training condition (34 patients) as an adjunct to

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radiation or a control condition (29 patients), which entailed education and counseling along with the RT. Using pre- and post-tests of the Profile of Mood States, significant ( $p$  less than .01) reductions were noted in the treatment group in tension, depression, anger, and fatigue. The results suggest that relaxation training substantially improves several psychological parameters associated with quality of life in ambulatory patients who are undergoing radiation therapy.

### **The preoperative use of the relaxation response with ambulatory surgery patients.**

Domar AD, Noe JM, Benson H. Division of Behavioral Medicine, Beth Israel Hospital. The efficacy of the regular elicitation of the relaxation response in reducing surgical anxiety and pain in an ambulatory surgery setting was studied in a population of patients scheduled for the surgical removal of a skin cancer. Forty-nine patients with skin cancer were enrolled in the study immediately after being informed of the need for surgery; 21 of these patients elicited the relaxation response 20 minutes per day until the day of surgery, 21 read for 20 minutes per day, and 7 were noncompliant and were excluded from the study. Contrary to expectations, neither group of patients showed any increase in anxiety immediately before or after surgery on either psychological or physiological measures. Thus, there were no differences between the two groups on any of the psychological or physiological measures of anxiety, nor were there any differences in pain perception. There were statistically significant subjective differences; the experimental patients stated that the relaxation-response technique had reduced their anxiety several days before surgery and reportedly experienced their highest levels of anxiety prior to entering the study, while the controls experienced their highest levels of anxiety during and after surgery. This suggests that (1) minor outpatient surgery does not lead to detectable increased anxiety levels on the day of surgery and (2) regular elicitation of the relaxation response can alter subjective reports of distress associated with surgery.

**Hypnotic versus active cognitive strategies for alleviation of procedural distress in pediatric oncology patients.** Wall VJ, Womack W. This study provided a differential comparison of the efficacy of standardized instruction in hypnosis or active cognitive strategy for provision of relief from procedurally induced pain and anxiety. Subjects were instructed to self-direct in the use of strategies during medical procedures. Twenty pediatric oncology patients participated in the study. They were not informed that hypnosis was one of the strategies. Subjects were screened for hypnotizability and randomly assigned to treatments. Demographic data were collected. Pre-strategy training observations were made during a Bone Marrow Aspiration or Lumbar Puncture (BMA/LP) using visual analog scales, the McGill Pain Questionnaire, State-Trait Anxiety Inventory, pulse and temperature readings, and interview. Following strategy training, data were collected during a second BMA/LP using the same measures as employed pre-intervention. Results indicated that both strategies were effective in providing pain reduction. Neither technique provided for anxiety reduction. Hypnotizability scale scores failed to correlate with degree of pain reduction.

**Relaxation and imagery and cognitive-behavioral training reduce pain during cancer treatment: a controlled clinical trial.** Syrjala KL, Donaldson GW, Davis MW, Kippes ME, Carr JE. Fred Hutchinson Cancer Research Center, Seattle, WA 98104, USA. Few controlled clinical trials of psychological interventions for cancer pain relief exist in spite of frequent support for their importance as adjuncts to medical treatment. This study compared oral

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mucositis pain levels in 4 groups of cancer patients receiving bone marrow transplants (BMT): (1) treatment as usual control, (2) therapist support, (3) relaxation and imagery training, and (4) training in a package of cognitive-behavioral coping skills which included relaxation and imagery. A total of 94 patients completed the study which involved two training sessions prior to treatment and twice a week 'booster' sessions during the first 5 weeks of treatment. Results confirmed our hypothesis that patients who received either relaxation and imagery alone or patients who received the package of cognitive-behavioral coping skills would report less pain than patients in the other 2 groups. The hypothesis that the cognitive-behavioral skills package would have an additive effect beyond relaxation and imagery alone was not confirmed. Average visual analogue scale (VAS) report of pain within the therapist support group was not significantly lower than the control group ( $P = 0.103$ ) nor significantly higher than the training groups. Patient reports of relative helpfulness of the interventions for managing pain and nausea matched the results of VAS reports. From these results, we conclude that relaxation and imagery training reduces cancer treatment-related pain; adding cognitive-behavioral skills to the relaxation with imagery does not, on average, further improve pain relief.

### 23. PSYCHONEUROIMMUNOLOGY ABSTRACTS

#### **STRESS-INDUCED CHANGES IN CYTOKINE PRODUCTION IN WOUNDS: R.**

Glaser, J. K. Kiecolt-Glaser, P. T. Marucha, R. C. MacCallum, B. S. Laskowski, and W. B. Malarkey  
Institute for Behavioral Medicine Research, The Ohio State University Health Sciences Center, Ohio, USA

Several studies from our group have shown that stress can significantly delay wound healing. Associated with this delay was a significant decrease in the production of interleukin-1 beta (IL-1) production by lipopolysaccharide stimulated peripheral blood leukocytes, a proinflammatory cytokine important for the early phase of wound healing. In this study, we continue to assess the relationship between psychological stress and the production of proinflammatory cytokines at an actual wound site. Skin blister wounds were induced on the forearm of 36 women using a suction pump device. After removal of the roofs of the blisters, a plastic template was taped to the arm, and wells in the template filled with media. Samples were obtained from the blister chambers at 5 and 24 hours after wounding. Interleukin-1 alpha (IL-1) and interleukin-8 (IL-8) levels were measured. These two cytokines also play an important role in the early phases of wound healing. The data show that women with higher Perceived Stress scores had produced significantly lower levels of IL-1 and IL-8 at the wound site. Subjects who were low producers of both IL-1 and IL-8 at 24 hours post-wounding reported more stress and negative affect and higher salivary cortisol levels. These data suggest a possible mechanism for how psychological stress delays wound healing directly at a wound site. Supported in part by a grant from The National Institutes for Health, MH 42096.

#### **IMMUNE MODULATION BY HYPNOTIC SUGGESTION: ALTERED LOCAL RECRUITMENT OF CD4 LYMPHOCYTES DURING DELAYED TYPE HYPERSENSITIVITY RESPONSES P Anton, M Kemeny, M Schoen UCLA, CA USA.**

**Objective:** Over the past 30 years, a number of studies have been conducted to determine if hypnotic suggestion can alter the delayed-type hypersensitivity (DTH) response. Results have been inconsistent. This kind of study is important because expectancies have been shown to

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have biological and health correlates and hypnosis can be used to manipulate expectancy. The current study was designed to improve on previous experimental methodologies and also determine if hypnosis-induced expectancy can affect leukocyte recruitment in local tissue assessed by skin biopsies during a DTH response.

**Methods:** Thirty-six highly hypnotizable subjects were exposed to tetanus toxoid at the baseline assessment point and their DTH responses were measured 48 hours later. Biopsies of injection site tissue were taken and immunohistochemical staining and computer image analysis were used to quantitate expression of CD4 and other molecules. Participants were randomly assigned to receive either 1) specific hypnotic suggestions from a hypnotherapist to reduce the size of the DTH response in 5 weekly individualized sessions or 2) health education in 5 weekly individualized sessions, matched in duration and timing with the hypnosis sessions. Subjects were exposed to the same intradermal antigen again at 4 and 6 weeks with biopsies taken at 6 weeks.

**Results:** Taken together, the 36 subjects showed an overall significant increase in expression of CD4 immunoreactivity from week 1 to 6 (indicating the expected evidence of immunologic memory following re-exposure to antigen). The education control group showed a significant increase in expressed CD4 while the hypnosis group, receiving suggestions to reduce the DTH response, showed no change in CD4 expression. Analyses of HLA-DR and CD45RO will be presented. Conclusion: Hypnotic suggestions may modulate immune responses including the inhibition of CD4 recruitment in local tissue following repeated antigenic challenge. Support: Bing Foundation and NIMH RSDA #MH00820

**TH1- AND TH2-MEDIATED INFLAMMATORY DISEASES ARE ASSOCIATED WITH DIFFERENT ENDOCRINE AND IMMUNOLOGICAL RESPONSES TO STRESS:** M. Ebrecht, A. Buske-Kirschbaum, C. Kirschbaum & D.H. Hellhammer Center for Psychobiological and Psychosomatic Research, University of Trier, Dietrichstrasse 10-11, 54290 Trier, Germany. This laboratory has previously shown a reduced adrenocortical stress response in subjects with atopic dermatitis (AD), which is a Th2-type inflammatory skin disorder. The specific goal of the present study was to investigate whether this attenuation can also be observed in a population with a Th1-mediated disease. Subjects with a Th1-type inflammatory skin disorder (psoriasis, n=20) and healthy controls (n=20) were confronted with a psychosocial laboratory stressor (Trier Social Stress Test, TSST) consisting of public speaking and mental arithmetics. Blood and saliva samples were repeatedly obtained over a 2h period for determination of cortisol, ACTH, catecholamines and leukocyte subsets in peripheral blood. In contrast to findings in AD subjects, the psoriasis group neither showed an altered cortisol or ACTH stress response nor differences in dexamethason-induced cortisol suppression compared to controls. This suggests that the HPA axis is unaffected by psoriasis. However, differential stress responses were observed in monocytes and lymphocyte subsets. While monocytes and CD4+ cells in peripheral blood were significantly elevated in peripheral blood in the psoriasis group immediately after the stressor, no such changes could be observed in the control group. Monocytes and CD4+ cells play an important role in inducing hyperproliferation of keratinocytes in psoriasis. These findings could link the frequent observation of exacerbations of psoriasis after psychosocial stress to differences in the immunological stress profile in these

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patients. The possible contribution of catecholamines in modulating the immunological stress response in psoriasis will be discussed. This work was supported in part by the Deutsche Forschungsgemeinschaft (He 1013/13-1)

### **FEAR, ANXIETY, AND WORRY: AUTONOMIC AND IMMUNE EFFECTS:**

S.C. Segerstrom. University of Kentucky, Lexington, KY, USA. Worry, the cognitive enumeration and anticipation of negative events, is a ubiquitous phenomenon. While nearly everyone worries to some extent, high levels of worry are associated with affective disruption, including potential deficits in emotion processing and higher levels of anxious mood. Two studies demonstrate how the interactions between worry, fear, and anxiety influence the NK cell subset.

**Study 1:** Hospital employees living and working near the epicenter of the Northridge earthquake ( $n = 47$ ) completed questionnaires and had blood drawn at three time points over the four months following the earthquake. Employees high in trait worry had significantly fewer NK cells than those low in trait worry at all three time points. Furthermore, the low worry group was not significantly different from pre-earthquake laboratory control values at two of the three time points, while the high worry group was significantly lower at all three points. Anxious mood and intrusive thoughts were associated with high worry but did not mediate the effect on NK cells.

**Study 2:** Spider-or snake-fearful subjects were selected for high ( $n = 7$ ) or normal ( $n = 8$ ) levels of trait worry. During a highly fear-provoking exposure exercise, the normal worry group showed a significant increase in heart rate, skin conductance, and percent NK cells in peripheral blood. The high worry group showed similar increases in heart rate and skin conductance without a change in percent NK cells, suggesting dysregulation of normal autonomic-immune communication. During a forty-minute follow-up period, the normal worry group returned to baseline percent NK while the high worry group showed a drop below baseline in percent NK.

**Conclusion:** Worry is associated with disruption of autonomic-immune communication, resulting in failure to show acute immune effects of an emotional stressor but exaggerated responses to a chronic stressor. Ongoing elevations in peripheral catecholamines may account for these effects and may result from the catastrophic cognitive style associated with worry. This research supported by the Norman Cousins Program in Psychoneuroimmunology

## 24. GUIDED IMAGERY: SUZANNE C. BEYEA. AORN DIRECTOR OF RESEARCH

**Guided imagery; intervention for smoking; pagers and bacteria; scissors; abdominal wound separation:** Editor's note: Starting in the July issue, "Research Corner" is no longer being published; however, a new monthly column titled "Evidence for Practice" will bring you research briefs about the latest research published related to preoperative nursing. The intent of these briefs is to provide clinicians with up-to-date information to consider when updating policies, procedures, and practices. Readers who consider basing policies, procedures, and practices on these findings should refer to the original research article and critique the study for its applicability to a specific clinical setting or population.

**Using guided imagery in cardiac surgery:** Outcomes Management, July-September 2002: This quality improvement study examined surgical outcomes in two groups of patients undergoing cardiac surgery.<sup>1</sup> Patients in the first group used guided imagery, and those in the



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second group did not. Preoperatively, patients in the first group were educated about guided imagery and its possible benefits. They received two audiotapes with instructions to listen to them several times per day. On the day of surgery, patients in the first group were encouraged to listen to their tapes before and throughout induction of anesthesia and after surgery. During the initial recovery period, they were encouraged to listen to their tapes to promote sleep and alleviate anxiety or pain during hospitalization. They also were encouraged to listen to the tapes for the first week or two after discharge.

**Findings.** Researchers found that patients who completed the guided imagery program had an one and one-half day shorter average length of stay, a decrease in average direct pharmacy costs, and a decrease in average direct pain medication costs compared to the patients who did not use guided imagery. They also reported high overall patient satisfaction with the care and treatment provided.

**Clinical implications.** Guided imagery should be considered a complementary method of reducing anxiety, pain, and length of stay for patients undergoing cardiac surgery and should be offered to patients interested in its use. Use of audiotapes is a cost-effective intervention that requires little time or effort on the part of clinicians. In this study, the cost of care was lower and the length of stay was shorter for patients who used guided imagery. Furthermore, the use of guided imagery and other complementary therapies should be evaluated in other surgical populations and clinical settings.

### 25. GUIDED IMAGERY RESEARCH AND REFERENCE

Dr. Alan Watkins states that every idea, thought and belief has a neurochemical consequence, which is what makes imagery such a significant mind-body bridge. He writes that the flow of neuropeptides from the CNS, which enhances or inhibits one's immunology through two major neuro-immuno modulatory pathways; neuroendocrine and autonomic, are critically important in maintaining health and fighting disease [Watkins A 1997 Mind-body medicine. Churchill Livingstone, NY].

D. L. Tusek and R. E. Cwynar of Ohio acknowledged that patients often describe the experience in a hospital as overwhelming, evoking fear, anger, helplessness, and isolation. Tusek and Cwynar view guided imagery as one of the most well-studied complementary therapies being used that can improve the patient experience and outcome by providing a significant source of strength, support, and courage as they prepare for a procedure or manage the stresses of a hospital stay [AACN Clin Issues 2000 Feb; 11(1): 68-76].

V. W. Donaldson in NC at the Center for Stress Management examined the effects of mental imagery on the immune system response, and specifically, on depressed white blood cell (WBC) counts. Results indicated significant increases in WBC count for all patients over a 90-day period, even when possessing disease and illnesses that would have predicted a decrease in WBC count [Appl Psychophysiol Biofeedback 2000 Jun; 25(2): 117-28].

L. M. Troesch et al. of the Arthur G. James Cancer Hospital and Research Institute at Ohio State University in Columbus found that those patients using a chemotherapy-specific guided-imagery audiotape expressed a significantly more positive experience with chemotherapy, finding guided imagery to be an effective intervention to promote patient

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involvement in self-care practices and to increase patient coping abilities during symptom occurrence [Oncol Nurs Forum 1993 Sep; 20(8): 1179-85].

D. S. Burns at the Group/Walther Cancer Institute found that individuals who participated in guided imagery sessions scored better on both mood scores and quality of life scores than those who did not. Interestingly, these scores continued to improve in the experimental group, even after sessions were complete, indicating that guided imagery is effective in improving mood and quality of life in cancer patients [J. Music Ther. 2001 spring; 38(1) :51-65].

Gaston-Johansson et al. of Johns Hopkins University School of Nursing in Baltimore, Maryland showed significant benefits from the use of information, cognitive restructuring, and relaxation with guided imagery in those patients with breast cancer who underwent autologous bone marrow/peripheral blood stem cell transplantation. This strategy was found to be effective in significantly reducing anxiety, nausea, and nausea combined with fatigue 7 days after surgery when the side effects of treatment are usually the most severe [Cancer Nurs 2000 Aug; 23(4):277-85].

Researchers at Ohio State University in Columbus, Ohio found that people with cancer who used imagery while receiving chemotherapy felt more relaxed, better prepared for their treatment and more positive about care than those who didn't use the technique. They also found it can help chemotherapy patients cope with one of the most severe side effects of their treatment.

Howard Hall, measuring the effects of healthy people imagining their White blood cells as strong as powerful sharks, found a number of subjects could demonstrate an increase in the number of lymphocytes as well as an increased responsiveness of the immune system after the session as compared to before [Hall H R 1983 Hypnosis and the immune system. American Journal of Clinical Hypnosis, 25:92-103].

C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the "stress hormone" strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance.) The study also [Health Psychol 1997 Jul; 16(4): 390-400].

### **FEAR:**

L. Baider, et al. examined the long-term effects of relaxation and guided imagery on patients recently diagnosed with cancer at Hadassah University Hospital. Results showed a decrease in psychological distress and an increase in the patient's sense of internal control [Gen Hosp Psychiatry 2001 Sep-Oct; 23(5): 272-7].

A study by J. A. Royle, et al. of Ontario, found that guided imagery was the intervention best used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

**DEPRESSION:** Fawzy et al. found that information on the cancer and training in stress management and coping skills, showed participants exhibiting less fatigue, depression, mood disturbances, as well as increased vigor [Fawzy F I, Kemeny M E, Fawzy N W et al. 1990 A structured psychiatric intervention for cancer patients: II. Changes over time in immunological measures. Archive of General Psychiatry 47:729-35].

B. L. Rees reported that patients receiving 4 weeks of relaxation and guided imagery scored significantly lower on trait anxiety, state anxiety, and depression, while scoring

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significantly higher on measurements of self-esteem [J. of Holistic Nursing. 13(3): 255-267. Sept. 1995].

C.L. Norred at the University of Colorado Health Sciences Center Department of Anesthesiology in Denver found that guided imagery may be an integrative therapy that can minimize preoperative anxiety [AORN J 2000 Nov; 72(5): 838-40, 842-3].

S.A. Lambert found that guided imagery and relaxation therapy significantly lowered postoperative pain ratings and shortened the hospital stays, as well as decreased the postoperative anxiety [J Dev Behav Pediatr 1996 Oct; 17(5): 307-10].

### **ANXIETY-QUALITY OF LIFE:**

C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the “stress hormone” strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance. The study also [Health Psychol 1997 Jul; 16(4): 390-400].

B. L. Rees reported that patients receiving 4 weeks of relaxation and guided imagery scored significantly lower on trait anxiety, state anxiety, and depression, while scoring significantly higher on measurements of self-esteem [J. of Holistic Nursing. 13(3): 255-267. Sept. 1995].

L. G. Walker et al. of the University of Aberdeen Medical School found that cancer patients receiving standard care plus relaxation training and imagery were more relaxed and easy going during the study, experiencing a higher quality of life overall during primary chemotherapy [Br J Cancer 1999 Apr; 80(1-2): 262-8].

A study by J. A. Royle, et al. of Ontario, found that guided imagery was the best intervention used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

### **SIDE EFFECTS-PAIN:**

K.L. Syrjala et al. of the Fred Hutchinson Cancer Research Center in Seattle, WA concluded in their study that stand-alone relaxation and imagery training reduces cancer treatment-related pain [Pain 1995 Nov; 63(2): 189-98].

R.Sloman from the University of Sydney in Australia observed that progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain. The techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. This technique seems to provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient [Nurs Clin North Am 1995 Dec; 30(4): 697-709].

R. J. Moore and D. Spiegel from the Anderson Cancer Center in Houston, TX observed a desire for and a benefit from patients being able to attach meaning to the disease and its treatment. They felt that this is why many are drawn to guided imagery as a tool in the management of cancer-related anxiety and pain by using it to reconnect to the self, to make sense of their experiences with breast cancer, and for managing cancer pain in a manner that increases one’s sense of control, thereby alleviating the suffering of the survivor [1096-2190 2000 Mar 21; 2(2): 115-126].

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D.L. Tusek, R. Cwynar, and D.M. Cosgrove studied the effect of listening to taped guided imagery for patients undergoing cardiovascular surgeries and concluded that guided imagery can decrease length of stay, pain, and anxiety [J of Cardiovascular Management. 22-28. March-April 1999].

C Renzi et al. found that listening to guided imagery tapes before, during, and after surgery showed results in which there was a trend for reduction in pain following surgery and a significant improvement in the quality of sleep [Int J Colorectal Dis 2000 Nov; 15(5-6): 313-6].

Omlor et al. found that preoperative relaxation techniques significantly reduced the number of postoperative hematomas as well as the amount of pain medication being required after surgery [Zentralbl Chir 2000; 125(4): 380-5; discussion 385-6]. Journal of Consulting and Clinical Psychology: 1991 Aug; 59(4): 518-25 concluded that relaxation therapy is effective in reducing adverse consequences of chemotherapy, for a study involving 81 cancer patients showed relaxation therapy to decrease nausea and anxiety during chemotherapy.

K. L. Kaufman et al. at Ohio State University tried a self-hypnotic, cue-controlled relaxation, and guided imagery intervention that showed a marked and clinically significant reduction in nausea and vomiting as well as a concurrent increase in sleep duration [J Adolesc Health Care 1989 Jul; 10(4): 323-7].

### **IMMUNE RESPONSE:**

K. Glaser and R. Glaser, studying a group of elderly people, found that over a month of relaxation training three times per week significantly increased their natural killer lymphocytes and T cell activity [Cousins N 1989 Head first. Dutton, NY].

J. Pennebaker found that "confessional writing," of the type that occurs when journaling, led to salubrious changes in the immune system and better health in general. He felt that there is structuring and resolving of the harmful effects of those "hidden" feelings and images going on through the process of writing. [Pennebaker J W 1990 Opening up: the healing power of confidence in others. Avon, NY].

Danish researchers found increased natural killer cell activity among ten college students who imagined that their immune systems were becoming very effective. Natural killer cells are an important part of the immune system because they can recognize and destroy virus-infected cells, tumor cells and other invaders. A group of metastatic cancer patients using daily imagery for a year achieved significant improvements in NK cell activity and several other measures of immune functioning.

C. Holden-Lund found that the use of an audiotape series employing relaxation with guided imagery demonstrated significantly less state anxiety, lower cortisol levels one day following surgery, and less surgical wound erythema than the control group. Thus, the guided imagery tapes demonstrated stress-relieving outcomes closely associated with healing [Res Nurs Health 1988 Aug; 11(4):235-44].

### **GUIDED IMAGERY RESEARCH:**

D.A. Rapkin, M. Straubing, and J.C. Holroyd from the University of California, Los Angeles explored the value of imagery-hypnosis on recovery from head and neck cancer surgery and found there were fewer surgical complications and less blood loss during surgery [Int J Clin Exp Hypn 1991 Oct; 39(4): 215-26].

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L. LeShan found that psychological conditions had an enormous influence not only on the production of cancer, but also on the disease's evolution and even on the person's response to a particular treatment (LeShan L, Worthington R 1956 Personality as a factor in the pathogenesis of cancer: a review of the literature. *British Journal of Medical Psychology* 29:49-56).

K. Kolcaba and C. Fox measured the effectiveness of customized guided imagery for increasing comfort in early stage cancer. They found that listening to a guided imagery audiotope once a day for the duration of the study indicated a significant overall increase in comfort over time, and was especially salient in the first three weeks of therapy. [*Oncol Nurs Forum* 1999 Jan-Feb; 26(1): 67-72].

M. Jasnoski of George Washington University, Washington, D.C., is examining the effects of imagery on the immune system, with potential implications for use in cancer and AIDS. Blair Justice of the University of Texas Health Sciences Center in Houston was funded to conduct a controlled study examining the effects of a group imagery/ relaxation process on immune function and quality of life in breast cancer patients

### **ARTICLES ON GUIDED IMAGERY:**

Strategies For Implementing A Guided Imagery Program To Enhance Patient Experience  
Reviews the use of and research about guided imagery in surgery, and describes how to implement a program. 2000 AACN Clin Issues 11; 1:68-76

Tusek, D. L. and Cwynar, R. E. Imagine This! Infinite Uses Of Guided Imagery In Women's Health Reviews use of guided imagery in outpatient, inpatient, chronic care and home care settings related to women's health. 1999 *J Holist Nurs* 17; 4:317-30

Bazzo, D. J. and Moeller, R. A. The Value Of Imagery In Preoperative Nursing Review of interactive imagery with an institutional implementation plan. 1998 *Semin Perioper Nurs* 7; 2:108-13

Miller, T. Guided Imagery. A Psychoneuroimmunological Intervention In Holistic Nursing Practice. Use of guided imagery as an intervention in nursing practice, and its impact on psychoneuroimmunology. 1997 *J Holist Nurs* 15; 2:112-27 Giedt, J. F.

Coping, Life Attitudes, And Immune Responses To Imagery And Group Support After Breast Cancer Treatment / Richardson MA. *Altern Ther Health Med* 1997; 3(5): 62-70. The Effects Of Guided Imagery On Comfort Of Women With Early Stage Breast Cancer Undergoing Radiation Therapy / Kolcaba K, Fox C. *Oncol Nurs Forum* 1999; 26(1): 67-72. Imagery And Hypnosis In The Treatment Of Cancer Patients / Spiegel

D. *Oncology (Huntingt)* 1997; 11(8): 1179-89; discussion 1189-95. Psychological, Clinical And Pathological Effects Of Relaxation Training And Guided Imagery During Primary Chemotherapy / Walker LG,

Walker MB, et al. *Br J Cancer* 1999; 80(1-2): 262-8. Relaxation And Imagery For Symptom Management: Improving Patient Assessment And Individualizing Treatment / Van Fleet S. *Oncol Nurs Forum* 2000; 27(3): 501-10. Use Of Relaxation For The Promotion Of Comfort And Pain Relief In Persons With Advanced Cancer / Solman R. *Contemp Nurse* 1994; 3(1): 6-12.

## 26. IMAGERY: MIND BODY MEDICINE: RESEARCH

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**Self-hypnosis reduces anxiety following coronary artery bypass surgery. A prospective, randomized trial.** Authors Ashton C Jr. Whitworth GC. Seldomridge JA. Shapiro PA. Weinberg AD. Michler RE. Smith CR. Rose EA. Fisher S. Oz MC. Institution Department of Surgery, College of Physicians & Surgeons, Columbia University, New York, NY, USA. Comments Comment in: J Cardiovasc Surg (Torino). 2000 Apr;41(2):335-6 ; 10901550 Source Journal of Cardiovascular Surgery. 38(1):69-75, 1997 Feb. **Abstract:** **OBJECTIVE:** The role of complementary medicine techniques has generated increasing interest in today's society. The purpose of our study was to evaluate the effects of one technique, self-hypnosis, and its role in coronary artery bypass surgery. We hypothesize that self-hypnosis relaxation techniques will have a positive effect on the patient's mental and physical condition following coronary artery bypass surgery. **EXPERIMENTAL DESIGN:** A prospective, randomized trial was conducted. Patients were followed beginning one day prior to surgery until the time of discharge from the hospital. **SETTING:** The study was conducted at Columbia Presbyterian Medical Center, a large tertiary care teaching institution. **PATIENTS:** All patients undergoing first-time elective coronary artery bypass surgery were eligible. A total of 32 patients were randomized into two groups. **INTERVENTIONS:** The study group was taught self-hypnosis relaxation techniques preoperatively, with no therapy in the control group. **MEASURES:** Outcome variables studied included anesthetic requirements, operative parameters, postoperative pain medication requirements, quality of life, hospital stay, major morbidity and mortality. **RESULTS:** Patients who were taught self-hypnosis relaxation techniques were significantly more relaxed postoperatively compared to the control group ( $p=0.032$ ). Pain medication requirements were also significantly less in patients practicing the self-hypnosis relaxation techniques than those who were noncompliant ( $p=0.046$ ). No differences were noted in intraoperative parameters, morbidity or mortality. **CONCLUSION:** This study demonstrates the beneficial effects self-hypnosis relaxation techniques on patients undergoing coronary artery bypass surgery. It also provides a framework to study complementary techniques and the limitations encountered.

**Imagery practice: the development of imagery skills in competitive athletes.** Authors Cumming J. Hall C. Institution University of Western Ontario, London, Canada. Source Journal of Sports Sciences. 20(2):137-45, 2002 Feb. **Abstract:** The aim of this study was to examine mental imagery within the context of the deliberate practice framework. Altogether, 159 athletes from one of three different competitive standards (recreational, provincial and national) completed the Deliberate Imagery Practice Questionnaire, which was designed for the present study to assess the athletes' perceptions of the importance of imagery along the three deliberate practice dimensions of relevancy, concentration and enjoyment. The results indicated that national athletes perceived imagery to be more relevant to performing than recreational athletes. In addition, athletes of a higher standard (i.e. provincial and national) reported using more imagery in a recent typical week and they had accumulated significantly more hours of imagery practice across their athletic career than recreational athletes. Finally, the relationships among the

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dimensions of deliberate practice did not lend conclusive support to either the original conception of deliberate practice or a sports-specific framework of deliberate practice.

Guided imagery: replication study using coronary artery bypass graft patients. [Review] [21 refs] Authors Deisch P. Soukup SM. Adams P. Wild MC. Institution Critical Care Clinical Nurse Specialist, Center for Advanced Nursing Practice, BryanLGH Medical Center, Lincoln, NE 68506, USA. Source Nursing Clinics of North America. 35(2):417-25, 2000 Jun. **Abstract:** Replication of a guided imagery study, based on the work of D. Tusek and colleagues, was initiated for coronary artery bypass graft patients, using the Center for Advanced Nursing Practice's Evidence-Based Practice Model. Through the leadership of clinical nurse specialists and the support of perioperative and postoperative bedside clinicians, this initiative offered benefits to patients and served as a template for program expansion to other patient populations. [References: 21]

**Surgical anticipatory stress manifests itself in immunocyte desensitization: evidence for autoimmunoregulatory involvement.** Authors Fricchione G. Bilfinger TV. Jandorf L. Smith EM. Stefano GB. Institution Division of Psychiatry, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115, USA. Source International Journal of Cardiology. 53 Suppl:S65-73, 1996 Apr 26. **Abstract:** The immunocyte behavior (conformational changes and locomotion in response to signal molecule challenge) in patients about to undergo elective cardiac surgery was studied to elucidate the effect of psychological anticipatory stress on the immune system. Granulocytes and monocytes from 10 patients and 35 non-surgical controls were examined. Computer-assisted microscopic image analysis, capable of measuring cellular conformational and velocity changes, was used to measure the responsiveness of these immunocytes to peptidergic and cytokine stimulation. Immunocyte desensitization would appear to account for the reduction in their abilities to respond to chemotaxic challenge associated with the pre-cardiac surgery state. Their abilities to respond to D-Ala2-Met-enkephalinamide (DAMA) were observed only at much higher concentrations than previously reported (10-11 M vs. 10-9 M prior to surgery). This finding, together with the observed decrease in adrenocorticotropin levels compared to non-surgical controls, suggests that neutral endopeptidase activity was elevated just prior to surgery. Indeed, neutral endopeptidase activity is statistically elevated in the pre-cardiac surgery state. Furthermore, glucocorticoid levels remained constant, within normal resting limits, in both groups. Thus, surgical anticipatory stress may manifest itself, in part, as a desensitization of various immunocytes. Thus, a psychological anticipatory stress response may be a precipitant of the desensitization. Although this desensitization seemed not to involve the entire hypothalamic-pituitary-adrenal axis, the data suggest that psychological anticipatory stress may initially involve and influence autoimmunoregulation.

**The effectiveness of the comprehensive coping strategy program on clinical outcomes in breast cancer autologous bone marrow transplantation.** Authors Gaston-Johansson F. Fall-Dickson JM. Nanda J. Ohly KV. Stillman S. Krumm S. Kennedy MJ. Institution International and Extramural Programs, Johns Hopkins University School of Nursing, Baltimore, Maryland 21205-2110, USA. Source Cancer Nursing. 23(4):277-85, 2000 Aug. **Abstract:** Patients with breast cancer who undergo autologous bone marrow/peripheral

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blood stem cell transplantation (ABMT) cope not only with a life-threatening medical treatment, but also with multiple, interrelated symptoms including pain, fatigue, psychological distress, and nausea. The purpose of this study was to determine, in a randomized controlled clinical trial, whether a comprehensive coping strategy program (CCSP) was effective in significantly reducing pain, fatigue, psychological distress, and nausea in patients with breast cancer who underwent ABMT. The CCSP was composed of preparatory information, cognitive restructuring, and relaxation with guided imagery. Randomization placed 52 patients in the CCSP treatment group and 58 patients in the control group. The CCSP was found to be effective in significantly reducing nausea as well as nausea combined with fatigue 7 days after the ABMT when the side effects of treatment were most severe. These results are important given the high incidence of nausea and fatigue in the ABMT population. The CCSP-treated group experienced mild anxiety as compared with the control group who reported moderate anxiety. The greatest effectiveness of CCSP may correspond to the time of the greatest morbidity for patients with breast cancer who have undergone ABMT.

**Self-hypnosis and exam stress:** Comparing immune and relaxation-related imagery for influences on immunity, health, and mood. Author Gruzelier, John; Levy, Jonathon; Williams, John; Henderson, Don. Institution Imperial Coll School of Medicine, Dept of Cognitive Neuroscience & Behavior, London, England. Source Contemporary Hypnosis. Vol 18(2) 2001, 73-86. Whurr Publishers, England **Abstract:** Examined the effects of self-hypnosis training on immune function, mood, and health at examination time in medical schools. In a replication of the study of J. Gruzelier et al (1998), 22 medical students (mean age 19.1 yrs) underwent 3 hypnotherapy sessions using instructions of increased energy, alertness, concentration and happiness; additionally, Ss received instructions concerning either immune or relaxation imagery. Collected data included blood levels of CD3, CD4, CD8, CD19 lymphocytes, CD56 natural killer (NK) cells and blood cortisol. Results show that Ss receiving immune-related imagery reported fewer viral illnesses, such as colds and influenza, during the exam period. Immunerelated imagery was also more successful in buffering decline in total lymphocytes and subsets. Independent of instructions, hypnosis buffered the decline in CD8 cytotoxic T-cells observed in control Ss, an effect associated with hypnotic susceptibility. Evidence of a buffering effect on NK cells was not replicated. Dissociations between negative mood and raised cortisol followed hypnosis training. Findings demonstrate benefits for reported illness as a result of a psychological intervention.

**Guided imagery in cardiac surgery.** Authors Halpin LS. Speir AM. Capo Bianco P. Barnett SD. Institution Inova Heart Center, Inova Fairfax Hospital, 3300 Gallows Road, Falls Church, VA 22042, USA. linda.halpin@inova.com Source Outcomes Management for Nursing Practice. 6(3):132-7, 2002 Jul-Sep. Abstract: Clinical research has demonstrated that guided imagery, a simple form of relaxation, can reduce preoperative anxiety and postoperative pain among patients undergoing surgical procedures. In 1998, the cardiac surgery team implemented a guided imagery program to compare cardiac surgical outcomes between two groups of patients: with and without guided imagery. Data from the hospital financial cost/accounting database and patient satisfaction data were collected and matched to the two groups of patients. A questionnaire was developed to assess the benefits of the guided imagery program to those who elected to



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participate in it. Patients who completed the guided imagery program had a shorter average length of stay, a decrease in average direct pharmacy costs, and a decrease in average direct pain medication costs while maintaining high overall patient satisfaction with the care and treatment provided. Guided imagery is now considered a complementary means to reduce anxiety, pain, and length of stay among our cardiac surgery patients.

**The management of unwanted pre-sleep thoughts in insomnia: distraction with imagery versus general distraction.** Authors Harvey AG. Payne S. Institution Department of Experimental Psychology, University of Oxford, UK. allison.harvey@psy.ox.ac.uk Source Behaviour Research & Therapy. 40(3):267-77, 2002 Mar. **Abstract:** Insomniacs commonly complain that they are unable to get to sleep at night due to unwanted thoughts, worries and concerns. The present study investigated whether brief training in identifying and elaborating an interesting and engaging imagery task for use during the pre-sleep period can reduce unwanted pre-sleep cognitive activity and sleep onset latency. Forty one people with insomnia were given one of three instructional sets to follow on the experimental night; instructions to distract using imagery, general instructions to distract, or no instructions. Based on previous findings reported by Salkovskis & Campbell (1994) 'Behaviour Research and Therapy 32 (1994) 1' and ironic control theory (Wegner, 1994) 'Psychological Review 101 (1994) 34', it was predicted that (1) "imagery distraction" would be associated with shorter sleep onset latency and less frequent and distressing pre-sleep cognitive activity compared to the "no instruction" group and that (2) "general distraction" would be associated with longer sleep onset latency and more frequent and distressing pre-sleep cognitive activity compared to the "no instruction" group. Support was found for the first but not the second prediction. The success of the "imagery distraction" task is attributed to it occupying sufficient "cognitive space" to keep the individual from re-engaging with thoughts, worries, and concerns during the pre-sleep period. In addition, "imagery distraction" involved a very specific alternative cognitive task hence the operating process was given a feature positive search, conditions where mental control is likely to be achieved.

**The effects of guided imagery on comfort of women with early stage breast cancer undergoing radiation therapy.** Authors Kolcaba K. Fox C. Institution College of Nursing, University of Akron, Ohio, USA. Source Oncology Nursing Forum. 26(1):67-72, 1999 Jan-Feb. **Abstract:**

PURPOSE/OBJECTIVES: To measure the effectiveness of customized guided imagery for increasing comfort in women with early stage breast cancer.

DESIGN: Experimental longitudinal, random assignment to groups.

SETTING: Two urban radiation oncology departments.

SAMPLE: 53 women (26 in the experimental group, 27 in the control group) aged 37-81; 80% European and 10% African American with stage I or II breast cancer about to begin radiation therapy.

METHODS: The experimental group was to listen to a guided imagery audiotape once a day for the duration of the study. The Radiation Therapy Comfort Questionnaire was self-administered at three time points: prior to the introduction of intervention and the beginning of radiation therapy (Time 1), three weeks later (Time 2), and three weeks after completing radiation therapy (Time 3). The State Anxiety Inventory was administered at Time 1 only.

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**MAIN RESEARCH VARIABLES:** The effect of use of guided imagery on comfort with anxiety as a control variable.

**FINDINGS:** Pooled data indicated a significant overall increase in differences in comfort between the treatment and control group, with the treatment group having higher comfort over time. The data also revealed a significant linear trend in differences between groups. No significant interaction of group and time existed.

**CONCLUSIONS:** Guided imagery is an effective intervention for enhancing comfort of women undergoing radiation therapy for early stage breast cancer. The intervention was especially salient in the first three weeks of therapy.

**IMPLICATIONS FOR NURSING PRACTICE:** Guided imagery audiotapes specifically designed for this population were resource effective in terms of cost, personnel, and time.

**Anodyne imagery: an alternative to i.v. sedation in interventional radiology.** [see comments.]. Authors Lang EV. Hamilton D. Institution Department of Radiology, Department of Veterans Affairs Medical Center, Palo Alto, CA 94304. Comments Comment in: AJR Am J Roentgenol. 1995 Mar;164(3):772 ; 7863924, Comment in: AJR Am J Roentgenol. 1995 Mar;164(3):772-3 ; 7863925 Source AJR. American Journal of Roentgenology. 162(5):1221-6, 1994 May. **Abstract** **OBJECTIVE.** Pain and anxiety are to be expected in patients undergoing interventional procedures, and they are usually treated by IV conscious sedation. Insufficient treatment of pain and anxiety can cause cardiovascular strain and restlessness, which may jeopardize the success of the procedure. On the other hand, pharmacologic over sedation can provoke respiratory and cardiovascular depression, thereby increasing the procedural risks and delaying the patient's recovery. We therefore evaluated a non-pharmacologic method, which we call anodyne imagery (anodyne: able to soothe or relieve pain; soothing the feelings; relaxing), as an alternative to the use of drugs in interventional radiology.

**SUBJECTS AND METHODS.** Anodyne imagery technique consists of conditioned relaxation, induction of a trance state, and guided processing of the patient's internal imagery. An intra-patient comparison of drug use was made in five patients who had equivalent procedures with and without anodyne imagery and an intergroup comparison was made between a group of 16 other patients undergoing anodyne imagery and a group of 16 control patients matched for factors affecting use of drugs and recruited from 100 interventional cases analyzed for patterns of drug use. For statistical analysis, drug unit scores (weighting: 1 mg of midazolam = 1 unit and 50 micrograms of fentanyl = 1 unit) were compared within patients by paired t-test and between groups of patients by analysis of variance in two-sided tests, with p less than .05 considered to be significant.

**RESULTS.** The 100 patients who did not have anodyne imagery received 0-6 mg of midazolam (median, 1.4 mg), 0-500 micrograms of fentanyl (median, 80 micrograms), and 0.5-9 drug units (median, 2.5). Drug administration was insignificantly affected by the physician conducting the procedure, the type of procedure, or the patient's age, but significantly increased with longer table times. Ten of the 21 patients undergoing anodyne imagery associated fear-provoking images with their interventional procedure that were generally intense, vivid, and dramatic. Inpatient comparison showed significantly lower median drug use with anodyne imagery than without (0.1 vs 5.3 drug units,  $p = .01$ ). Intergroup comparison also yielded significantly lower

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median drug use during procedures with anodyne imagery than without (0.2 vs 2.6 drug units,  $p = .0001$ ).

**CONCLUSION.** Patients having interventional radiologic procedures frequently experience intense and frightening imagery related to the procedure. Our initial experience with anodyne imagery suggests that this alternative method of analgesia can mitigate patients' anxiety and fears and reduce the amount of drugs used during interventional radiologic procedures, and thereby has the potential to improve procedural safety and increase the speed of recovery.

**Effect of guided imagery on quality of life for patients with chronic tension-type headache.** Author Mannix, Lisa K. Chandurkar, Rohit S. Rybicki, Lisa A. Tusek, Diane L. Solomon, Glen D. Institution Headache Wellness Ctr, Greensboro, NC, US. Source Headache. Vol 39(5) May 1999, 326-334. Blackwell Science, Inc., US. **Abstract:** Examined the effect of adjuvant guided imagery on patients with chronic tension type headache. 129 patients (mean age 41 yrs) with chronic tension type headache completed the Headache Disability Inventory and the Medical Outcomes Study Short Form (SF-36) at their initial visit to a specialty headache center and again 1 mo after the visit. In addition to individualized headache therapy, Ss listened to a guided imagery audiocassette tape daily for the month. 131 control Ss (mean age 40 yrs) received individualized therapy without guided imagery. Controls and Ss who listened to the guided imagery tape improved in headache frequency, headache severity, patient global assessment, quality of life, and disability caused by headache. More guided imagery Ss than controls reported that their headaches were much better. The guided imagery Ss had significantly more improvement in 3 of the SF-36 domains: bodily pain, vitality, and mental health.

Preoperative rehearsal of active coping imagery influences subjective and hormonal responses to abdominal surgery. Author Manyande, Anne; Berg, Simon; Gettins, Doreen; Stanford, S. Clare; et al. Institution U London, University Coll London, Dept of Psychology, England. Source Psychosomatic Medicine. Vol 57(2) Mar-Apr 1995, 177-182. Williams & Wilkins Co., US Abstract Tested the effects of a preoperative preparation that used guided imagery, not to reduce anxiety, but to increase patients' feelings of being able to cope with surgical stress; 26 adult imagery patients were compared with 25 adult controls who received, instead, background information about the hospital. State-anxiety was similar in each group, but imagery patients experienced less postoperative pain than did the controls, were less distressed by it, felt that they coped with it better, and requested less analgesia. Hormone levels measured in peripheral venous blood did not differ on the afternoon of admission, before preparation. Cortisol levels were, however, lower and noradrenaline levels greater in imagery patients than in controls immediately before and after surgery. Heart rate during surgery was lower in the imagery group than in controls, but differences were non-significant.

**Guided imagery as a coping strategy for preoperative patients.** Authors Tusek D. Church JM. Fazio VW. Institution Guided Imagery Program, Cleveland Clinic Foundation, USA. Source AORN Journal. 66(4):644-9, 1997 Oct. **Abstract:** Patients who undergo surgery usually experience fear and apprehension about their surgical procedures. Guided imagery is a simple, low-cost therapeutic tool that can help counteract surgical patients' fear and anxiety. The authors randomly assigned 130 patients undergoing elective colorectal surgical procedures into two groups. Members of one group received routine preoperative care. Members of the other

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group listened to guided imagery tapes for three days before their surgical procedures, during anesthesia induction, intra-operatively, in the post-anesthesia care unit, and for six days after surgery. The authors measured patients' anxiety levels, pain perceptions, and narcotic medication requirements. The patients in the guided imagery group experienced considerably less preoperative and postoperative anxiety and pain, and they required almost 50% less narcotic medications after their surgical procedures than patients in the control group.

### 27. VISUALIZATION RESEARCH: TIFFANY FIELD

[Tiffany Field, Ph.D., professor of pediatric psychology & psychiatry at the University of Miami School of Medicine found that job stress among hospital employees was significantly reduced (less anxiety, depression, fatigue and confusion) by a mere ten minutes of any of the following interventions: massage therapy, music relaxation with imagery, muscle relaxation and social support group sessions. (Alternative Therapies, July, 1997). Dr. Lisa K. Mannix MD of the Adelman Headache Center in Greensboro, NC reported at the American Association for the Study of Headache that she added guided imagery audio-tapes to the course of treatment of half her headache patients in a 250-person study. The imagery group listened to the tape daily for one month. Mannix found that a significantly greater proportion of imagery patients (21.7% of 129, as opposed to 7.6% of 131 controls) reported an overall improvement in their headaches.]

Henry Dreher's superb summary of research with mind-body interventions for surgery appears in the Fetzer Institute's *Advances in Mind-Body Medicine*, Vol. 14, no.3, Summer 1998, pp. 207-222. His discussion of Henry Bennett's placebo controlled, double blinded research with 4 audio interventions on 335 surgery patients establishes that the Health Journeys tape for Surgery was the only tape that offered statistically significant results. The study yielded profound results on the reduction blood loss, length of hospital stay and anxiety levels, both state (the fluctuating kind) and trait anxiety (which presumably doesn't change, because it is seen as a relatively stable personality feature).

L. Stockdale's controlled study found that listening to guided imagery audio-tapes at home significantly reduced both trait and state anxiety levels in men who had received cardioverter defibrillator implants. (Incidentally, this is intriguing, because "trait anxiety" is not supposed to change that much - presumably it is a relatively stable feature of the personality. Henry Bennett, however, found the same thing with his surgery study; guided imagery tapes significantly dropped trait anxiety along with state anxiety.) Stockdale's finding is critical, since elevated anxiety levels in defibrillator recipients are known to precede sudden cardiac death. (Dissertation Abstracts International, 1991; 51(9): p. 4270B)

Principal Investigator James Halper at Lenox Hill Hospital in New York completed his guided imagery study with asthma patients. It did result in significantly more patients being able to discontinue their medication. Not surprisingly, he also found significantly less depression and anxiety in the guided imagery group than in the control group. (As reported in *Alternative Health practitioner: The Journal of Complementary and Natural Care*, Vol. 3, no 3, Fall/Winter 1997.)

Blair Justice, Mary Ann Richardson and their cohorts at the University of Texas-Houston School of Public Health, conducted a pilot study to differentiate the effects of imagery vs. support on coping, attitude, immune function and emotional well-being after breast cancer.

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Subjects were randomly assigned to one of 3 groups: standard care, weekly support (for 6 weeks) or imagery sessions (for 6 weeks).

For all women, immune function increased, quality of life improved and natural killer activity remained unchanged. Both of the intervention groups showed better coping skills than the standard care group. And the imagery group had less stress, more vigor and better quality of life than the support group.

Jeff Rossman, Ph.D., Director of Behavioral Medicine at Canyon Ranch in the Berkshires, conducted a study with 16 staff members as part of a general behavioral/educational program for weight loss. As with the Joslin study, half the group used the Weight Loss tape; the other half just listened to Music II. The group that listened daily to the weight loss guided imagery tape while attending an 8-week weight reduction program, lost an average of 8.5 pounds. The group that listened daily to just the music from the weight loss tape, while participating in the same program, lost an average of 4.25 pounds, exactly half. The study ran for eight weeks, and results are being tabulated now, even as you read this. Rossman says that at superficial glance, the guided imagery group seems to have done extremely well. (This exploratory study is not published at this time.)

Karen Olness, MD, Howard Hall, Ph.D. and colleagues at University Hospitals of Cleveland have found that teaching children self hypnosis and biofeedback will significantly reduce their incidence of migraine headaches. They also demonstrated that mast cell activity is somehow implicated in migraines, and that mast cell production also declines with these interventions.

### 28. USE OF HYPNOSIS IN PAIN MANAGEMENT: MEDICAL ABSTRACTS

"Between April 1994 and June 1997, 197 thyroidectomies and 21 cervical explorations for hyperparathyroidism were performed under hypnosedation (HYP) and compared to the operative data and postoperative courses of a closely-matched population (n = 121) of patients operated on under general anaesthesia (GA). Conversion from HYPNOSIS to GA was needed in two cases (1%). All surgeons reported better operating conditions for cervicotomy using HYP. All patients having HYP reported a very pleasant experience and had significantly less postoperative pain while analgesic use was significantly reduced in this group. Hospital stay was also significantly shorter, providing a substantial reduction of the medical care costs. The postoperative convalescence was significantly improved after HYP and full return to social or professional activity was significantly shortened. We conclude that HYP is a very efficient technique providing physiological, psychological and economic benefits to the patient" Meurisse, M., T. Defechereux, et al. (1999). "HYPNOSIS with conscious sedation instead of general anaesthesia? Applications in cervical endocrine surgery." *Acta Chir Belg* 99(4): 151-8.

"Burn patients must often endure intense pain during their regular dressing changes. The aim of the present study was to investigate the therapeutic effect of rapid induction analgesia (RIA) on resting and procedural pain, anticipatory anxiety, relaxation levels and medication consumption in 30 hospitalized burn patients. Patients rated levels of pain and relaxation for four burn care sessions. RIA was conducted twice on 15 patients, whereas dressing changes proceeded as usual in 15 control patients. When asked to recall pain during the dressing changes,

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patients remembered an experience which was worse in its entirety than the average of spot ratings taken during the burn care procedure. However, self-reported ratings of the sensory and affective components of pain decreased significantly during and after RIA, particularly in patients who became readily absorbed, and relaxation increased during burn care.

Anticipatory anxiety decreased before dressing changes in the RIA group, and analgesic intake decreased between treatment sessions. The promising outcome of this study confirms RIA as a viable adjunct to narcotic treatment for pain control during burn care." Wright, B. R. and P. D. Drummond (2000). "Rapid induction analgesia for the alleviation of procedural pain during burn care." *Burns* 26(3): 275-82.

\* **OBJECTIVE:** Burn injuries produce severe wound care pain that is ideally controlled on intensive burn care units with high-dosage intravenous opioid medications. We report a case illustrating the use of HYPNOSIS for pain management when one opioid medication was ineffective. **SETTING:** Intensive burn care unit at a regional trauma center. **PATIENT:** A 55-year-old man with an extensive burn suffered from significant respiratory depression from a low dosage of opioid during wound care and also experienced uncontrolled pain.

\* **INTERVENTION:** Rapid induction hypnotic analgesia.

\* **OUTCOME MEASURES:** Verbal numeric pain scale, and pain and anxiolytic medication usage. \* **RESULTS:** The introduction of HYPNOSIS, supplemented by little or no opioids, resulted in excellent pain control, absence of need for supplemental anxiolytic medication, shortened length of wound care, and a positive staff response over a 14-day period.

\* **CONCLUSIONS:** This case illustrates that HYPNOSIS can not only be used easily and quite appropriately in a busy medical intensive care unit environment, but that sometimes this treatment may be a very useful alternative when opioid pain medication proves to be dangerous and ineffective. This case also illustrates possible clinical implications both pain relief and side-effect profiles for opioid receptor specificity. Although this report does not provide data regarding hypnotic mechanisms, it is clear that with some patients nonopioid inhibitory mechanisms can be activated in a highly effective manner, that clinical context may be important for the activation of those pathways, and that those mechanisms may be accessed more easily than opioid mechanisms." Ohrbach (1998). "HYPNOSIS after an adverse response to opioids in an ICU burn patient." *Clin J Pain* 14(2): 167-75.

\* **CONTEXT:** HYPNOSIS has been used in numerous medical applications for functional and psychological improvement, but has been inadequately tested for anatomical healing.

\* **OBJECTIVE:** To determine whether a hypnotic intervention accelerates bodily tissue healing using bone fracture healing as a site-specific test.

\* **DESIGN:** Randomized controlled pilot study.

\* **SETTING:** Massachusetts General Hospital, Boston, Mass, and McLean Hospital, Belmont, Mass.

\* **PATIENTS:** Twelve healthy adult subjects with the study fracture were recruited from an orthopedic emergency department and randomized to either a treatment (n = 6) or a control group (n = 6). One subject, randomized to the treatment group, withdrew prior to the intervention.

\* **INTERVENTION:** All 11 subjects received standard orthopedic care including serial radiographs and clinical assessments through 12 weeks following injury. The treatment group

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received a hypnotic intervention (individual sessions, audiotapes) designed to augment fracture healing.

\* **MAIN OUTCOME MEASURES:** Radiological and orthopedic assessments of fracture healing 12 weeks following injury and hypnotic subjects' final questionnaires and test scores on the Hypnotic Induction Scale.

\* **RESULTS:** Results showed trends toward faster healing for the

\* **HYPNOSIS** group through week 9 following injury. Objective radiographic outcome data revealed a notable difference in fracture edge healing at 6 weeks. Orthopedic assessments showing trends toward better healing for

\* **HYPNOSIS** subjects through week 9 included improved ankle mobility; greater functional ability to descend stairs; lower use of analgesics in weeks 1, 3, and 9; and trends toward lower self-reported pain through 6 weeks.

\* **CONCLUSION:** Despite a small sample size and limited statistical power, these data suggest that HYPNOSIS may be capable of enhancing both anatomical and functional fracture healing, and that further investigation of HYPNOSIS to accelerate healing is warranted." Ginandes, C. S. and D. I. Rosenthal (1999). "Using HYPNOSIS to accelerate the healing of bone fractures: a randomized controlled pilot study." *Altern Ther Health Med* 5(2): 67-75.

\* **"BACKGROUND:** The neural mechanisms underlying the modulation of pain perception by HYPNOSIS remain obscure. In this study, we used positron emission tomography in 11 healthy volunteers to identify the brain areas in which HYPNOSIS modulates cerebral responses to a noxious stimulus.

\* **METHODS:** The protocol used a factorial design with two factors: state (hypnotic state, resting state, mental imagery) and stimulation (warm non-noxious vs. hot noxious stimuli applied to right thenar eminence). Two cerebral blood flow scans were obtained with the 15O-water technique during each condition. After each scan, the subject was asked to rate pain sensation and unpleasantness. Statistical parametric mapping was used to determine the main effects of noxious stimulation and hypnotic state as well as state-by-stimulation interactions (i.e., brain areas that would be more or less activated in HYPNOSIS than in control conditions, under noxious stimulation).

\* **RESULTS:** HYPNOSIS decreased both pain sensation and the unpleasantness of noxious stimuli. Noxious stimulation caused an increase in regional cerebral blood flow in the thalamic nuclei and anterior cingulate and insular cortices. The hypnotic state induced a significant activation of a right-sided extrastriate area and the anterior cingulate cortex. The interaction analysis showed that the activity in the anterior (mid-)cingulate cortex was related to pain perception and unpleasantness differently in the hypnotic state than in control situations.

\* **CONCLUSIONS:** Both intensity and unpleasantness of the noxious stimuli are reduced during the hypnotic state. In addition, hypnotic modulation of pain is mediated by the anterior cingulate cortex." Faymonville, M. E., S. Laureys, et al. (2000). "Neural mechanisms of antinociceptive effects of HYPNOSIS." *Anesthesiology* 92(5): 1257-67. "This report documents the utility of self-HYPNOSIS in patients with cystic fibrosis (CF). Sixty-three patients 7 years of age or older were offered the opportunity to be taught self-HYPNOSIS by their pulmonologist.

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Forty-nine agreed to learn it. Patients generally were taught HYPNOSIS in one or two sessions. The outcome was determined by patients' answers to open-ended questions regarding their subjective evaluation of the efficacy of HYPNOSIS. The average age of the 49 patients who were taught and used self-HYPNOSIS was 18.1 years (range, 7-49 years). Many of the patients used HYPNOSIS for more than one purpose, including relaxation (61% of patients), relief of pain associated with medical procedures (31%), headache relief (16%), changing the taste of medications to make the flavor more palatable (10%), and control of other symptoms associated with CF (18%). The patients successfully utilized self-HYPNOSIS 86% of the time. No symptoms worsened following . Sixteen patients chose to practice HYPNOSIS on their own for a half year or longer. In conclusion, with the use of self-HYPNOSIS, patients with CF can quickly learn to enhance their control over discomforts associated with therapy and their disease.

Consideration should be given to making instruction in self-HYPNOSIS available to patients with CF." Anbar, R. D. (2000). "Self-HYPNOSIS for patients with cystic fibrosis." *Pediatr Pulmonol* 30(6): 461-5. "Despite the availability of specialized treatments for chronic pain, including biofeedback training, relaxation training, and hypnotic treatment, most physicians rely on the traditional approaches of surgery or pharmacotherapy. The patient in this case study had severe and chronic pain but found little relief from pain medications that also caused side effects. She then took the initiative to learn and practice self-HYPNOSIS with good results. Her physician in the resident's internal medicine clinic supported her endeavor and encouraged her to continue self-HYPNOSIS. This patient's success shows that self-HYPNOSIS can be a safe and beneficial approach to control or diminish the pain from chronic pain syndrome and can become a useful part of a physician's therapeutic armamentarium." Nickelson, C., J. O. Brende, et al. (1999). "What if your patient prefers an alternative pain control method? Self-HYPNOSIS in the control of pain." *South Med J* 92(5): 521-3.

"The effect of Rapid Induction Analgesia (RIA) on pain tolerance and ratings of mechanically induced pain in the pain-sensitized forearm was investigated in 58 undergraduates. Posthypnotic suggestions of relaxation and analgesia did not influence pain ratings or tolerance, but relaxation ratings increased after RIA. When suggestions for analgesia were made throughout pain testing, ratings of pain unpleasantness at the pain tolerance point decreased more in the RIA group than in the attention control group. However, RIA did not influence pain threshold or tolerance.

It was concluded that RIA was more effective in reducing subjective reports of pain (particularly the affective component) than in altering pain tolerance, and that maintenance of hypnotic suggestions was more effective than posthypnotic suggestions of comfort and relaxation in alleviating the affective component of pain." Wright, B. R. and P. D. Drummond (2001). "The effect of Rapid Induction Analgesia on subjective pain ratings and pain tolerance." *Int J Clin Exp Hypn* 49(2): 109-22. "In a pilot study with 2 patients suffering from phantom limb pain (PLP), hypnotic suggestions were used to modify and control the experience of the phantom limb, and positron emission tomography (PET) was used to index underlying pathways and areas involved in the processing of phantom limb experience (PLE) and PLP. The patients' subjective experiences of pain were recorded in a semistructured protocol. PET results demonstrated activation in areas known to be responsible for sensory and motor processing. The reported subjective experiences of PLP and movement corresponded with predicted brain activity



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patterns. This work helps to clarify the central nervous system correlates of phantom limb sensations, including pain. It further suggests that HYPNOSIS can be incorporated into treatment protocols for PLP." Rosen, G., F. Willoch, et al. (2001).

"Neurophysiological processes underlying the phantom limb pain experience and the use of HYPNOSIS in its clinical management: an intensive examination of two patients." *Int J Clin Exp Hypn* 49(1): 38-55. "It is well accepted that pain is a multidimensional experience, but little is known of how the brain represents these dimensions. We used positron emission tomography (PET) to indirectly measure pain-evoked cerebral activity before and after hypnotic suggestions were given to modulate the perceived intensity of a painful stimulus. These techniques were similar to those of a previous study in which we gave suggestions to modulate the perceived unpleasantness of a noxious stimulus. Ten volunteers were scanned while tonic warm and noxious heat stimuli were presented to the hand during four experimental conditions: alert control, HYPNOSIS control, hypnotic suggestions for increased-pain intensity and hypnotic suggestions for decreased-pain intensity. As shown in previous brain imaging studies, noxious thermal stimuli presented during the alert and HYPNOSIS-control conditions reliably activated contralateral structures, including primary somatosensory cortex (S1), secondary somatosensory cortex (S2), anterior cingulate cortex, and insular cortex.

Hypnotic modulation of the intensity of the pain sensation led to significant changes in pain-evoked activity within S1 in contrast to our previous study in which specific modulation of pain unpleasantness (affect), independent of pain intensity, produced specific changes within the ACC. This double dissociation of cortical modulation indicates a relative specialization of the sensory and the classical limbic cortical areas in the processing of the sensory and affective dimensions of pain." Hofbauer, R. K., P. Rainville, et al. (2001). "Cortical representation of the sensory dimension of pain." *J Neurophysiol* 86(1): 402-11. "The neurophysiological mechanisms of hypnotic analgesia are still under debate. It is known that pain occurring in one part of the body (counterstimulation) decreases pain in the rest of the body by activating the diffuse noxious inhibitory controls (DNICs). The aim of this study was to explore the effects of HYPNOSIS on both pain perception and heterotopic nociceptive stimulation. The A forms of both the Harvard Group Scale of Hypnotic Susceptibility and the Stanford Hypnotic Susceptibility Scale were administered to 50 healthy students. Twenty subjects were selected and assigned to two groups: group A, consisting of 10 subjects with high hypnotic susceptibility; and group B, consisting of 10 subjects with low hypnotic susceptibility. The subjects were then randomly assigned first to either a control session or a session of hypnotic analgesia. The nociceptive flexion reflex (RIII) was recorded from the biceps femoris muscle in response to stimulation of the sural nerve. The subjective pain threshold, the RIII reflex threshold, and the mean area with suprathreshold stimulation were determined. Heterotopic nociceptive stimulation was investigated by the cold-pressor test (CPT). During and immediately after the CPT, the subjective pain threshold, pain tolerance, and mean RIII area were determined again. The same examinations were repeated during HYPNOSIS. HYPNOSIS significantly reduced the subjective pain perception and the nociceptive flexion reflex. It also increased pain tolerance and reduced pain perception and the nociceptive reflex during the CPT. These effects were found only in highly susceptible subjects. However, the DNIC's activity was less evident during HYPNOSIS than during the CPT effects

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without HYPNOSIS. Both HYPNOSIS and DNICs were able to modify the perception of pain. It seems likely that DNICs and HYPNOSIS use the same descending inhibitory pathways for the control of pain. The susceptibility of the subject is a critical factor in hypnotically induced analgesia." Sandrini, G., I. Milanov, et al. (2000). "Effects of HYPNOSIS on diffuse noxious inhibitory controls." *Physiol Behav* 69(3): 295-300. "HYPNOSIS is a valuable technique in patient management. With appropriate training, general dental practitioners can widen the treatment options they can offer to patients, especially those who are dentally anxious.

This article provides a brief theoretical and historical overview, and a review of the literature pertaining to the clinical uses of HYPNOSIS in dentistry." Patel, B., C. Potter, et al. (2000). "The use of HYPNOSIS in dentistry: a review." *Dent Update* 27(4): 198-202. "The pain involved in acute burn care can be excruciating and intractable. Even the best pharmacologic pain control efforts often fail to adequately control pain, especially procedure-related pain, in pediatric patients with burn injuries. Nonpharmacologic (hypnosis) interventions have been found to be effective in reducing pain in both children and adults and can be extremely important adjuvants to standard pharmacologic analgesia in the burn care setting. In the first article in this series, we outlined psychological factors that influence the emotions, cognitions, and behaviors of children during wound care. Building on this theoretical framework, we now present a detailed discussion of the implementation of nonpharmacologic intervention strategies in the burn care setting. Because accurate measurement of discomfort is imperative for the development of interventions and for the evaluation of their efficacy, we begin with a brief review of pain measurement techniques. We follow this with suggestions for tailoring interventions to meet specific patient needs and conclude with a detailed and practical discussion of specific intervention techniques and the implementation of those techniques." Martin-Herz, S. P., C. A. Thurber, et al. (2000). "Psychological principles of burn wound pain in children. II: Treatment applications." *J Burn Care Rehabil* 21(5): 458-72; discussion 457.

Since 1992, we have used HYPNOSIS routinely in more than 1400 procedures in plastic surgery. Our clinical success and experience with this technique led us to test whether HYPNOSIS using active patient collaboration, could be used as an effective adjunct to conscious intravenous sedation ("hypnosedation", (HS)) for endocrine surgery, as an alternative to general anaesthesia. On a total of 1905 cervical endocrine surgical procedures performed between 1995 and 1998, 296 thyroidectomies and 33 cervical explorations for hyperparathyroidism were conducted under HS. Conversion to GA was needed in three cases (0.9%). All patients having HS reported a very pleasant experience and had significantly less postoperative pain while analgesic use was significantly reduced in this group. Hospital stay was also significantly shorter, providing a substantial reduction of the costs of medical care. The postoperative convalescence was significantly improved after HS and full return to social or professional activity was significantly shortened. We conclude that HS is a very efficient technique that provide physiological, psychological and economic benefits to the patient." Meurisse, M. (1999). "Thyroid and parathyroid surgery under HYPNOSIS: from fiction to clinical application." *Bull Mem Acad R Med Belg* 154(2): 142-50; discussion 150-4. "A randomized controlled trial was conducted to compare the efficacy of clinical HYPNOSIS versus cognitive behavioral (CB) coping skills training in alleviating the pain and distress of 30 pediatric cancer patients (age 5 to 15 years) undergoing bone marrow aspirations. Patients were randomized to

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one of three groups: HYPNOSIS, a package of CB coping skills, and no intervention. Patients who received either HYPNOSIS or CB reported less pain and pain-related anxiety than did control patients and less pain and anxiety than at their own baseline. HYPNOSIS and CB were similarly effective in the relief of pain. Results also indicated that children reported more anxiety and exhibited more behavioral distress in the CB group than in the HYPNOSIS group. It is concluded that HYPNOSIS and CB coping skills are effective in preparing pediatric oncology patients for bone marrow aspiration." Liossi, C. and P. Hatira (1999). "Clinical HYPNOSIS versus cognitive behavioral training for pain management with pediatric cancer patients undergoing bone marrow aspirations." *Int J Clin Exp Hypn* 47(2): 104-16.

"HYPNOSIS has become routine practice in our plastic and endocrine surgery . Revivication of pleasant life experiences has served as the hypnotic substratum in a series of over 1650 patients since 1992. In retrospective studies, followed by randomized prospective studies, we have confirmed the usefulness of hypnosedation (HYPNOSIS in combination with conscious IV sedation) and local anaesthesia as a valuable alternative to traditional anaesthetic techniques. The credibility of hypnotic techniques and their acceptance by the scientific community will depend on independently-confirmed and reproducible criteria of assessing the hypnotic state. Based on the clinical success of this technique, we were interested in confirming this phenomenon in healthy volunteers. The revivication of pleasant life experiences thus served as the cornerstone of a basic research program developed to objectify the neurophysiological attributes of the hypnotic state. We compared HYPNOSIS to normal alertness with similar thought content. In our experience, the activation profile obtained during the hypnotic state was completely different from simple re-memoration of the same subject matter during normal alertness. This represents an objective and independent criteria by which to assess the hypnotic state." Faymonville, M. E., M. Meurisse, et al. (1999). "Hypnosedation: a valuable alternative to traditional anaesthetic techniques." *Acta Chir Belg* 99(4): 141-6.

\* "OBJECTIVES: To assess the feasibility of endocrine cervical surgery under hypnoanesthesia as a valuable, safe, efficient, and economic alternative to general anesthesia. METHODS: Between April 1994 and June 1997, 197 thyroidectomies and 21 cervical explorations for hyperparathyroidism were performed under hypnoanesthesia (HYP) using Erikson's method. Operative data and postoperative course of this initial series were compared to a contemporary population of patients (n = 119) clinically similar except that they declined HYP or were judged unsuitable for it, and who were therefore operated on under general anesthesia (GA).

\* RESULTS: The surgeons all reported better operating conditions for cervicotomy using HYP. Conversion from HYPNOSIS to GA was needed in two cases (1%). All patients having HYP reported a pleasant experience and, keeping in mind that the GA group is not a randomly assigned control group, both had significantly less postoperative pain and analgesic use. Hospital stay was also significantly shorter, providing a substantial reduction in the costs of medical care. The postoperative convalescence was significantly improved after HYP and a full return to social or professional activity was significantly quicker.

\* CONCLUSION: From this study, we conclude that HYP is an effective technique for providing relief of intraoperative and postoperative pain in endocrine cervical surgery. The technique results in high patient satisfaction and better surgical convalescence. This technique

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can therefore be used in most well-chosen patients and reduces the socioeconomic impact of hospitalization." Defechereux, T., M. Meurisse, et al. (1999). "Hypnoanesthesia for endocrine cervical surgery: a statement of practice." *J Altern Complement Med* 5(6): 509-20. "This article demonstrates how the surgeon performs a major surgical procedure on himself using self-HYPNOSIS as the means of anesthesia and pain control. The hypnotic techniques used by the author for self HYPNOSIS are reviewed. These include glove anesthesia and transference; the switch technique; dissociation; positive imagery; as well as the specific post-hypnotic suggestions used by the surgeon during the operative procedure." Botta, S. A. (1999). "Self-HYPNOSIS as anesthesia for liposuction surgery." *Am J Clin Hypn* 41(4): 299-301; discussion 302. "Nociceptive electrical stimuli were applied to the sural nerve during hypnotically-suggested analgesia in the left lower limb of 18 highly susceptible subjects. During this procedure, the verbally reported pain threshold, the nociceptive flexion (RIII) reflex and late somatosensory evoked potentials were investigated in parallel with autonomic responses and the spontaneous electroencephalogram (EEG). The hypnotic suggestion of analgesia induced a significant increase in pain threshold in all the selected subjects. All the subjects showed large changes (i.e., by 20% or more) in the amplitudes of their RIII reflexes during hypnotic analgesia by comparison with control conditions. Although the extent of the increase in pain threshold was similar in all the subjects, two distinct patterns of modulation of the RIII reflex were observed during the hypnotic analgesia: in 11 subjects (subgroup 1), a strong inhibition of the reflex was observed whereas in the other seven subjects (subgroup 2) there was a strong facilitation of the reflex. All the subjects in both subgroups displayed similar decreases in the amplitude of late somatosensory evoked cerebral potentials during the hypnotic analgesia. No modification in the autonomic parameters or the EEG was observed. These data suggest that different strategies of modulation can be operative during effective hypnotic analgesia and that these are subject-dependent. Although all subjects may shift their attention away from the painful stimulus (which could explain the decrease of the late somatosensory evoked potentials), some of them inhibit their motor reaction to the stimulus at the spinal level, while in others, in contrast, this reaction is facilitated." Danziger, N., E. Fournier, et al. (1998). "Different strategies of modulation can be operative during hypnotic analgesia: a neurophysiological study." *Pain* 75(1): 85-92.

"Many patients with cancer often seek some means of connecting their mental activity with the unwelcome events occurring in their bodies, via techniques such as imagery and HYPNOSIS. HYPNOSIS has been shown to be an effective method for controlling cancer pain. The techniques most often employed involve physical relaxation coupled with imagery that provides a substitute focus of attention for the painful sensation. Other related imagery techniques, such as guided imagery, involve attention to internally generated mental images without the formal use of HYPNOSIS. The most well-known of these techniques involves the use of "positive mental images" of a strong army of white blood cells killing cancer cells.

Despite claims to the contrary, no reliable evidence has shown that this technique affects disease progression or survival. Studies evaluating more broadly defined forms psychosocial support have come to conflicting conclusions about whether or not these interventions affect survival of cancer patients. However, 10-year follow-up of a randomized trial involving 86 women with cancer showed that a year of weekly "supportive/expressive" group therapy significantly increased survival duration and time from recurrence to death. This intervention

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encourages patients to express and deal with strong emotions and also focuses on clarifying doctor-patient communication. Numerous other studies suggest that suppression of negative affect, excessive conformity, severe stress, and lack of social support predict a poorer medical outcome from cancer. Thus, further investigation into the interaction between body and mind in coping with cancer is warranted." Spiegel, D. and R. Moore (1997). "Imagery and HYPNOSIS in the treatment of cancer patients." *Oncology (Huntingt)* 11(8): 1179-89; discussion 1189-95.

\* "OBJECTIVE: The role of complementary medicine techniques has generated increasing interest in today's society. The purpose of our study was to evaluate the effects of one technique, self-HYPNOSIS, and its role in coronary artery bypass surgery. We hypothesize that self-HYPNOSIS relaxation techniques will have a positive effect on the patient's mental and physical condition following coronary artery bypass surgery.

\* EXPERIMENTAL DESIGN: A prospective, randomized trial was conducted. Patients were followed beginning one day prior to surgery until the time of discharge from the hospital.

\* SETTING: The study was conducted at Columbia Presbyterian Medical Center, a large tertiary care teaching institution.

\* PATIENTS: All patients undergoing first-time elective coronary artery bypass surgery were eligible. A total of 32 patients were randomized into two groups.

\* INTERVENTIONS: The study group was taught self-HYPNOSIS relaxation techniques preoperatively, with no therapy in the control group.

\* MEASURES: Outcome variables studied included anesthetic requirements, operative parameters, postoperative pain medication requirements, quality of life, hospital stay, major morbidity and mortality.

\* RESULTS: Patients who were taught self-HYPNOSIS relaxation techniques were significantly more relaxed postoperatively compared to the control group ( $p=0.032$ ). Pain medication requirements were also significantly less in patients practising the self-HYPNOSIS relaxation techniques than those who were noncompliant ( $p=0.046$ ). No differences were noted in intraoperative parameters, morbidity or mortality.

\* CONCLUSION: This study demonstrates the beneficial effects self-HYPNOSIS relaxation techniques on patients undergoing coronary artery bypass surgery. It also provides a framework to study complementary techniques and the limitations encountered." Ashton, C., Jr., G. C. Whitworth, et al. (1997). "Self-HYPNOSIS reduces anxiety following coronary artery bypass surgery. A prospective, randomized trial." *J Cardiovasc Surg (Torino)* 38(1): 69-75.

## 29. CLINICAL STUDIES PROVE THE MIND IS MORE POWERFUL THAN ANY DRUG: MIKE ADAMS: DAILY EMAIL NES: SEPT 2004

Sometimes the answers are right in front of our eyes. The "placebo effect," long dismissed by doctors as illusion, turns out to be the most powerful healing agent of all. It has proven to be effective against heart disease, high blood pressure, cancer and a long list of other diseases, in nearly 30% of the cases (which is far more effective than most drugs or surgical

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procedures). The power of the mind, it seems, is far stronger than anything the pharmaceutical companies can offer.

So why don't doctors leverage the power of placebo? It's simple: because they don't believe in it, not because it doesn't work. The science simply cannot be denied: the placebo effect is powerful, effective, and exhibits zero side effects. It should be the medicine of choice. Naturally, you can't patent it and you can't market it, so there's no economic reason for anybody in Western medicine to push it. Besides, if Western doctors admitted that patients could heal themselves, then they would lose a tremendous amount of power and control over patients. Look at it this way: really good doctors (and there are many) readily state that they are only conduits of healing, that patients must ultimately heal themselves. Bad doctors, on the other hand, think they are God and that they alone control the healing response in patients.

**Related Reading:** Benefit from attention: In a placebo-controlled research study, patients often have frequent and intensive medical attention. Stimulus response: People may have a trained positive response to taking a pill or receiving treatment, whether it's real or not. Beliefs or expectations, including the meaning you attach to a treatment: A person with positive expectations of the treatment may experience the placebo effect more than someone with lower expectations. Relationship with your doctor: A person whose doctor is supportive and positive may experience more benefit from a placebo -- or the standard treatment -- than someone who doesn't have that relationship. This story has been adapted from a news release issued by Mayo Clinic.

### 30. MIND/BODY INTERACTION ACCELERATES HEALING

A new study conducted at Ohio State University and published in the journal *Psychoneuroendocrinology* has revealed that having social interaction makes wounds heal faster. In fact, this study demonstrated that wounds heal twice as fast in subjects who had social interaction compared to those who were isolated. This effect is well-documented, and the intermediary cause of this is the production of the stress hormone cortisol in response to being in isolation.

These tests were conducted on hamsters, and when these hamsters were in the presence of other hamsters they produced less of the stress hormone cortisol and healed twice as fast as those who were in isolation (who produced far more of the stress hormone cortisol.) It appears that stress delays healing through the production of stress hormones. When these stress hormones are present, healing potential is diminished, and we know from other studies that chronic stress suppresses the function of the immune system. Apparently, not only is stress a critical determining factor in the wound healing rate in hamsters, but engaging in social interaction seems to be a fantastic way to reduce stress and create an environment that supports healing.

So what does all of this have to do with you and me? Even though the research was conducted on hamsters, the primary conclusions are fundamentally true with human beings. Both hamsters and human beings are mammals, of course, and the reason these tests are being conducted on hamsters is because they are biologically similar to humans. They have the same organ systems -- such as the adrenal glands -- which produce the stress hormones just as they do in human beings. Hamsters are also highly social, which makes them especially appropriate for this sort of study.

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What this is showing is that wound healing is not simply a technical science. It's not merely having the right chemicals in the right place in the right time. There's also a mind-body connection when it comes to healing wounds and supporting the proper immune function of the human body. A person needs social interaction, and they need friends and family around in order to heal more quickly.

Unfortunately, this is not happening much in our modern medical system. If you think about hospitals, patients are usually kept in isolation. In fact, hospitals go to great lengths to isolate patients from each other by using curtains and walls and doors and other physical barriers. Of course, this is often necessary to reduce the spread of potentially contagious bacterial infections, but at the same time, we should recognize that this degree of isolation actually suppresses the wound healing ability of human beings.

Patients whose families visit them will no doubt heal much more quickly than those who have no visitors. The social interaction will lower their stress levels and accelerate their healing speed. It's also interesting to note that nursing homes and retirement centers are in many ways social environments that support the patient's healing ability -- but only if they are good nursing homes. In nursing homes where patients are kept isolated, and where families don't visit and there are few social opportunities, patients will no doubt heal very slowly from various wounds and immune system attacks. But when there is ample opportunity for social interaction, family visitations, and other forms of engagement with human beings, patients no doubt heal much more quickly.

The journal in which this is published, *Psychoneuroendocrinology*, is an interesting journal that attempts to explore the links between the mind and the body. In fact, the term *psychoneuroendocrinology* really means mind-body medicine. It's just a more technical way to say it. For decades, mind-body medicine has been ridiculed by western medicine. Even to this day, there are many old-school doctors who believe that the mind has absolutely no role whatsoever in health or healing. Such a belief is, of course, absurd. The mind is intricately tied with the body in determining the body's reaction to wounds and bacterial invasions (among other health compromising situations).

The field that studies the interaction between the mind and the immune system is of course called *psychoneuroimmunology*, and this is a fascinating field of emerging knowledge that attempts to document the links between the mind and the immune system. As it turns out, these links are very, very strong, and patients who exist in an environment that supports healthy brain function and engage in social interaction, brain exercises, exposure to natural sunlight, and so on, universally demonstrate stronger immune systems as well. In fact, it can be accurately stated that one of the best ways to support your immune system is to make sure you have a healthy mind and brain.

A final point of interest in all of this is the fact that most Americans exist in a state of chronic stress. It's little wonder that their immune systems are so depleted and they are unable to quickly heal from wounds and bacterial infections. Not only is chronic stress a fact of life for most Americans, but the vast majority of people in civilized nations also suffer from nutritional deficiencies that inhibit the healing response of the human body.

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They eat extremely unhealthy foods, such as junk foods and fast foods, they consume ingredients that strip nutrition from their bodies, such as refined white flour and high-fructose corn syrup, and they fail to supplement their diets with nutritional supplements that enhance human health and immune system function. Those supplements include vitamins, minerals and trace minerals, medicinal herbs, and of course, superfoods.

So you put all of this together, and add on a heaping dose of chronic stress through commuting, relationship difficulties, work problems and financial challenges, and it's a wonder that people can heal their bodies at all. In fact, it is a testament to the miraculous healing potential of the human body that it can overcome these incredible anti-healing forces and yet manage to accomplish healing milestones on even on the most diseased bodies in our society.

### 31. USING YOUR BRAIN BOOSTS YOUR IMMUNE SYSTEM AND KEEPS YOU HEALTHY:

DAILY EMAIL NEWS SEPT 2004

The mind/body connection is real: new research shows that a healthy, active brain boosts your immune system function and helps keep you healthy.

\* Overview: According to a new study from the University of Wisconsin-Madison, it also may involve a particular pattern of brain activity. Numerous scientific studies show that keeping a positive attitude can keep a person healthy, says Richard Davidson, a UW-Madison neuroscientist and senior author of the paper. Specifically, the scientists wanted to know if people who showed more activity in the left side of the prefrontal cortex - a part of the brain associated with positive emotional responses - also showed greater immunity to the influenza virus after vaccination. As the respondents focused on the emotion experienced for one minute, the researchers measured the electrical activity in both the right and left sides of the prefrontal cortex.

### 32. PLACEBO EFFECT PROVES TO BE GOOD MEDICINE IN 12 MONTH STUDY: MARK ADAMS: DAILY EMAIL NEWS SEPT 2004 [NEWS:NEWS:](#)

A fascinating twelve-month experiment reported in the Archives of General Psychiatry reveals the power of mind/body medicine and the placebo effect. In the experiment, Parkinson's disease patients underwent a surgical procedure that transplanted human neurons into their brains. But half the patients had no neurons transplanted whatsoever and were merely told by their doctor that the neurons had been transplanted. The result? Even those patients who received the sham operation showed significant improvements in brain and body function a full twelve months later. In other words, they didn't even have the surgery, but they thought they did. So their bodies responded and self healing kicked in.

This is yet one more study demonstrating the powerful healing ability of the human mind. The mind can overcome or create practically any disease. All this reminds me of an older study where a group of students who were allergic to poison ivy were told they were going to have their arms rubbed with it. When rubbed, more than 80% of the students' arms reacted with the classic symptoms of poison ivy: itching, boils, redness, etc. Yet the plant that was used for the study wasn't poison ivy at all! It was a harmless shrub. The students' minds were creating the biological effects of poison ivy on their own, even though no such plant had touched their skin.



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Now here's the bigger story on all this: mind/body medicine is real. A proper patient belief system can overcome practically any disease. Yet modern medicine utterly dismisses the idea that mind/body medicine can work at all. The "placebo effect" is too often discarded rather than exploited. If doctors could use the leverage of the placebo effect and actually give their patients hope, together they could overcome almost any illness. But instead, too many doctors and surgeons destroy patients' belief in the placebo effect and fill their minds with frightening statistics like, "You only have a one in three chance of surviving this operation." That's horrifying to patients, and as it turns out, it actually increases the chance that the patient will die during the operation. If you take a hard look at the tens of thousands of clinical trials involving prescription drugs, surgical procedures, and various forms of therapy carried out over the last hundred years, you'll find that no drug and no surgery comes even close to the power of the placebo. In a very matter-of-fact, scientific way, the placebo effect has been proven to be the single most effective healing tool anywhere.

The studies prove it: the placebo effect cures approximately 30% of everything -- any disease, any illness, or any unwanted symptom. It does this at no cost, with no side effects, and primarily by leveraging the innate healing ability of the human mind. Amazingly, even while the proof of this is right under their noses, western doctors and surgeons somehow manage to dismiss the phenomenon as hocus pocus. They don't believe it because they don't understand it, not because there isn't a mountain of good science to back it up (because there is!).

All this brings us to an even larger picture: modern medicine really isn't about good science as is amusingly insisted by its captains. Rather, modern (western) medicine is a dogmatic system of beliefs and so-called "scientific truths" that are based more on shared professional illusions than reality. Modern medicine can, in fact, be properly described as a system of mass hysteria where things are accepted as true just because enough people say they are. Like all such systems, this one is aggressively defended: when evidence surfaces that challenges the present dogma, the medical journals, researchers and doctors dismiss it all as mumbo jumbo. That's how they protect the existing dogma of western medicine: throw out all the evidence that contradicts what "they know to be true" and publish all the evidence that agrees with it.

In a sad but very real way, the science of medicine only advances when the holders of the so-called "truths" of medicine pass away. Only then is there room for new beliefs, from new, younger doctors who ask new questions. I'm talking about questions like, "Hey, if the placebo effect helps 30% of all patients with no side effects and zero cost, why don't we look into actually using it to help people heal?" That's a reasonable question, don't you think? But it's probably blasphemy to your doctor. The very idea that the mind should play a role in healing probably goes against their religion. Thankfully, we're starting to see the trend shift. With new studies being undertaken like the one mentioned here, we move closer to a system of medicine that finally acknowledges the all-important role of the mind of the patient. Truly, no healing is possible unless the mind and belief systems of the patient are aligned with the goal of a positive health outcome. All the prescription drugs and surgery in the world can't overcome even one simple belief firmly held in the mind of a patient. Neither can any disease resist the healing potential of that same mind. It's time we start honoring the human mind as the ultimate tool of healing.

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**RELATED SUBJECT:** Patients with Parkinson's disease who thought they had received a transplant of human neurons into their brains--but who really hadn't--reported an improved quality of life one year later. In the April issue of the "Archives of General Psychiatry", research reported by Dr. Cynthia McRae of the University of Denver's College of Education provides strong evidence for a significant mind-body connection among patients who participated in a double-blind Parkinson's surgical trial. Twenty patients received the transplant while 20 more were randomly assigned to a sham surgery condition. Dr. McRae reports that the "placebo effect" was strong among the 30 patients who participated in the quality of life portion of the study.

### 33. RESEARCH INDICATES MIND/BODY CONNECTION AFFECTS CANCER PATIENTS: DR. RICHARD FIRSHEIN: PSYCHOLOGY TODAY: JULY 1999

Get started now. (It's free.) Your daily mood isn't all in your head; it also affects your physical health. Research shows that depression and resistance to disease are strongly linked. That's particularly significant when battling an illness like cancer since having a strong immune system can help save your life. I think of cancer as a disease that must be fought with treatments for both mind and body--with surgery, radiation and chemotherapy when needed, but also with techniques which boost mood and immunity naturally

Social support, for example, can extend the life of a cancer patient. In 1989, a landmark study on emotions and cancer was published in *The Lancet*, a prominent British journal. It found that women with cancer who attended support groups lived twice as long, on average, as those who did not. A 1993 study from the University of California at Los Angeles indicated that patients who had survived cancer for at least five years and attended group therapy lived three times as long as those who didn't seek therapy. When people are grieving, their T-cells and natural killer cells--both important immune system defenders--function less effectively. Support from family, friends and fellow sufferers not only provides comfort but may improve a patient's health by bolstering immune cells. People who feel isolated face the opposite effect: depression and anxiety can increase the risk of cancer. In 1998, the National Cancer Institute published a study of 4,825 healthy individuals, 146 of whom were chronically depressed. Those who had been depressed for at least six years were more likely to develop cancer. Another study, from Ohio State University, found that breast cancer patients who reported high levels of anxiety about their disease showed a major reduction in the effectiveness of their natural killer cells. That doesn't mean that mood can cause cancer, but it does imply that depression and anxiety lower immunity--and that can be a risk factor for cancer.

A provocative 1998 study published in the *Journal of Research and Social Medicine*, however, suggests that cancer might cause depression. Researchers examined 43 patients with liver tumors and found a significant correlation between clinical depression and an immune modulator called interleukin sIL2r alpha. This chemical is released when our immune system battles cancer cells--so the same substance which fights the disease may also biologically trigger depression. Scary as this may sound, it's actually good news because it gives us some new tools for treating cancer patients. In addition to surgery and medicine, we can use the power of the mind to impact health. There are a host of natural remedies which I recommend to patients diagnosed with cancer, especially immune boosters like alkylglycerols, green tea and maitake mushroom extracts. But just as important is for patients to seek out emotional comfort and

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support to help improve their outlook on life. Taking the time to meditate and reflect on our experiences can alleviate stress and negative thoughts, thus strengthening the immune system. The mind-body connection is powerful, and we need to use it to our advantage. Dr. Richard Firshein is founder of the Firshein Center for Comprehensive Medicine in New York City and author of *The Nutraceutical Revolution* (Riverhead Books).

### 34. MIND/BODY CONNECTION IN PLACEBO SURGERY TRIAL STUDIED

In the April issue of the *Archives of General Psychiatry*, research reported by Dr. Cynthia McRae of the University of Denver's College of Education provides strong evidence for a significant mind-body connection among patients who participated in a double-blind Parkinson's surgical trial.

Forty persons from the United States and Canada participated to determine the effectiveness of transplantation of human embryonic dopamine neurons into the brains of persons with advanced Parkinson's disease. Twenty patients received the transplant while 20 more were randomly assigned to a sham surgery condition.

Dr. McRae reports that the "placebo effect" was strong among the 30 patients who participated in the quality of life portion of the study. "Those who thought they received the transplant at 12 months reported better quality of life than those who thought they received the sham surgery, regardless of which surgery they actually received," says Dr. McRae. More importantly, objective ratings of neurological functioning by medical personnel showed a similar effect. In the *Archives* report, Dr. McRae writes "medical staff, who did not know which treatment each patient received, also reported more differences and changes at 12 months based on patients' perceived treatment than on actual treatment."

One patient, for example, reported that she had not been physically active for several years before surgery, but in the year following surgery she resumed hiking and ice skating. When the double blind was lifted, she was surprised to find that she had received the sham surgery.

Although patient perceptions influenced their test scores, when the total sample of patients was grouped by the actual operation they received, patients who had the actual transplant surgery showed improvement in movement while, on average, patients who had sham surgery did not. Professor Dan Russell of the Institute for Social and Behavioral Research at Iowa State, the study's co-author, says the findings have both scientific and practical implications. "This study is extremely important in regard to the placebo effect because we know of no placebo studies that have effectively maintained the double-blind for at least 12 months. The average length of placebo studies is eight weeks," according to Russell. Dr. McRae notes that similar results related to the placebo effect have been found in other studies with patients with Parkinson's disease. She says that there is a need for placebo controls in studies evaluating treatment for Parkinson's as the placebo effect seems to be very strong in this disease. Dr. McRae also reports that although the sham surgery research design is somewhat controversial and has raised some ethical concerns, the results of this study show "the importance of a double-blind design to distinguish the actual and perceived values of a treatment intervention."

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The surgical trials were done at the University of Colorado Health Sciences Center by Drs. Robert Breeze and Curt Freed with neurological evaluations at Columbia University Medical Center in New York by Dr. Stanley Fahn and Dr. Paul Greene.

### 35. MEDITATION PROVEN TO LOWER BLOOD PRESSURE WITH NO DRUGS, NO SIDE EFFECTS, AND ZERO COST

A study published in the American Journal of Hypertension reveals that daily meditation (two sessions each lasting 15 minutes) results in a measurable drop in blood pressure in at-risk teenagers. This is yet more research demonstrating the powerful mind/body connection that western medicine continues to deny exists at all. Interestingly, the positive effects of the meditation persisted even four months after the patients stopped the practice, indicating that meditation has substantial long-term effects. Meditation is safe, free, and has no negative side effects. It doesn't even need the supervision of a doctor, which is probably why virtually no doctors prescribe it. Pharmaceutical companies don't make money when people engage in meditation, so there's no reason for them to promote it, either. They'd much rather see people popping pills than promoting something that people can do for free.

[Author Mike Adams is a holistic nutritionist with over 4,000 hours of study on nutrition, wellness, food toxicology and the true causes of disease and health. He is well versed on nutritional and lifestyle therapies for weight loss and disease prevention / reversal. View Adams' health statistics showing LDL cholesterol of 67 and outstanding blood chemistry. Adams uses no prescription drugs whatsoever and relies exclusively on natural health, nutrition and exercise to achieve optimum health. He serves as the executive director of the Consumer Wellness Research Center and is author of several books about health and nutrition, including Low-Carb Diet Warning and Superfoods For Optimum Health. In his spare time, Adams engages in pilates, cycling, strength training, gymnastics and comedy improve training. In the technology industry, Adams is president and CEO of a well known email marketing software firm.]

**Related Reading:** FRIDAY, April 2 (HealthDayNews) -- Black teens at risk of becoming hypertensive adults lowered their pressures with just two 15-minute meditation sessions a day, a Georgia physiologist reports. "More than 70 percent said they were compliant," Barnes said, reporting that they did indeed complete the two meditation sessions. Half were in the group practicing transcendental meditation; the other half got information at school about how to lower blood pressure, such as following a low-salt diet and getting more physical activity. "Based on our study, we would say that transcendental meditation should be considered as an option" to reduce the number of at-risk teens who go on to develop hypertension, Barnes said.

### 36. EVIDENCE OF A MIND-BODY CONNECTION: ARLENE F. HARDER

"The ancient idea that attitudes play a vital part in the recovery process is finding systematic verification in current medical research... There is little doubt about the fact that fear is a great accelerator of disease. Conversely, hope, faith, confidence and the will to live set an auspicious stage for efforts toward recovery." Norman Cousins, Former Editor, Saturday Review of Literature: One of the most fascinating observations of the mind-body correlation was first noticed more than a decade ago. Some multiple personalities who were allergic to strawberries or exhibited symptoms of insulin-dependent diabetes when expressing one

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personality did not have those physical problems when in another personality state -- entirely different reactions within the same body!

Then there is the famous "placebo response," which is just another way of saying that some people get better simply because they believe will get better. One of the most frequently cited clinical cases is that of a patient with lymphosarcoma. His condition, thought to be pre-terminal, went into remission almost totally for two months while he was receiving injections of Krebiozen, an experimental drug he thought would cure him. After learning from the news that the drug was useless, he relapsed. His physician cleverly reactivated the patient's faith in the medication by giving him water injections that were described as a refined and more potent form of the same drug. The patient once again recovered, only to relapse and die several months later after discovering from a nationwide announcement that Krebiozen had no therapeutic value.

Today there are many researchers trying to see just how our thoughts, attitudes, beliefs, emotions and health affect each other. In fact, scientists have even developed a new branch of medicine to explore the link between emotions and the immune system. Then, as scientists are prone to do, they gave this new field a long name "psychoneuroimmunology" although in medicine's love of acronyms, they frequently shorten it to PNI. More easily remembered terms for this relationship are mind-body, (and the variations of mindbody, mind/body, and bodymind) and mind-body-spirit, since there is another dimension to the relationships between health and the total person. In fact, since we humans are physical, mental, social, emotional, AND spiritual beings, some people refer to a "physical - emotional - social - psychological - spiritual" relationship.

**Two Studies on the Effect of Fighting Spirit and Hopelessness:** Cancer is often used in research that looks at the relationship of mind and body because so many statistics are known about the probability of survival for different kinds of treatment, making it easier to determine whether an improvement was the result of a new chemotherapy or of attitude. Although we can't extrapolate results to all other diseases, since the relationship of emotions and mind might work differently for different physical conditions, it does seem reasonable to assume that if there is a strong correlation between cancer and emotions, the same would probably be true for other diseases. In any case, the role that attitude plays in prognosis of illness has been evaluated in two studies of women with breast cancer.

One study was conducted by Steven Greer and reported in several sources, such as *The Type C Connection* by Lydia Temoshok and Henry Dreher. He interviewed women three months after they had mastectomies and divided them into four groups according to their psychological coping style: (1) those with a "fighting spirit" who accepted the diagnosis, adopted an optimistic attitude, sought information and were determined to fight the disease, (2) the "positive avoiders" who either rejected the diagnosis or minimized its seriousness, (3) the "stoics" who accepted the diagnosis but did not seek further information and adopted a fatalistic attitude, and (4) the "helpless and hopeless" whose lives were preoccupied with cancer and dying. At the end of five years, only 20% of the "helpless and hopeless" group were alive and disease free. This compared with 32% of the "stoics", 70% of the "positive avoiders" and a full 80% of the

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"fighting spirit" group. A 10-year follow-up indicated that a "fighting spirit" was still significantly associated with a better prognosis.

This seemed to give credence to the idea that if you can simply be positive enough all the time and keep up your spirits, you could beat your cancer primarily with your mind. This mind-over-matter approach caused a great deal of grief for cancer patients who couldn't always be upbeat. Then, more recently, a similar study was done in England with a larger group of women that measured patients' attitudes toward their cancer, scoring the women in several categories, including fighting spirit, helplessness / hopelessness, anxiety and depression. The results, published in the Oct. 16, 1999, issue of the British journal *The Lancet* found that a fighting spirit had no effect on survival, although feeling helpless and hopeless can reduce long-term survival, especially if women don't get treatment for their feelings.

The effect from feeling helpless and hopeless "was very modest but not trivial." Of women who felt helpless and hopeless, Watson says. "58 percent were alive or in remission five years after diagnosis. Of women who were not helpless or hopeless, 72 percent were alive or in remission five years after diagnosis. . . . [Further,] women who scored high on the depression scale were 3.5 times more likely to have a relapse or die within five years than those who weren't depressed. Those who scored high on the hopelessness scale were 1.5 times more likely to die or have a relapse as those who scored low in that category."

Maggie Watson, the consultant clinical psychologist at Royal Marsden Hospital in London who headed up the study, points out "two messages" women can take from this study. "The first is that women who find it difficult to be combative, to maintain a fighting spirit all the time, don't have to feel" the pressure of always being positive, which can remove their burden of guilt. "The other message is that feeling helpless and hopeless may be a symptom of depression." Therefore, it's very important that doctors recommend treatment for depression, including counseling and perhaps anti-depressant medication to help improve the chances for survival and at the very least to help these patients improve their emotional well-being. [Arlene F. Harder: If there is something in this article you have particularly liked, you can e-mail a note to yourself as a reminder. Learn more about how to send a note to yourself, or create a note now.]

### 37. HYPNOSIS AND CONVERSION OF THE BREECH TO THE VERTEX

**PRESENTATION:** L E MEHL: Department of Psychiatry, University of Vermont College of Medicine, Burlington.

**OBJECTIVE:** To evaluate the effectiveness of hypnosis to convert a breech presentation to a vertex presentation. **DESIGN:** Prospective case series compared with historical, matched comparison group.

**SUBJECTS:** One hundred pregnant women whose fetuses were in breech position at 37 to 40 weeks' gestation and a matched comparison group of women with similar obstetrical and sociodemographic parameters derived from databases for other studies from the same time period and geographical areas.

**INTERVENTION:** The intervention group received hypnosis with suggestions for general relaxation with release of fear and anxiety. While in the hypnotic state women were asked for the reasons why their baby was in the breech presentation. As much hypnosis was provided as was

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convenient and possible for the women until they were delivered of the baby or the baby converted to the vertex position.

**MAIN OUTCOME VARIABLES:** A successful conversion for the intervention group was scored when the baby spontaneously converted to the vertex position before delivery or successful external cephalic version. The conversion rate of the intervention group was compared with the comparison group who received standard obstetrical care without the opportunity for hypnosis.

**DATA ANALYSIS:** Parametric testing of statistically significant differences in the rate of conversion between the two groups.

**RESULTS:** Eighty-one percent of the fetuses in the intervention group converted to vertex presentation compared with 48% of those in the comparison group. This difference was statistically significant.

**CONCLUSIONS:** Motivated subjects can be influenced by a skilled hypnotherapist in such a manner that their fetuses have a higher incidence of conversion from breech to vertex presentation. Psychophysiological factors may influence the breech presentation and may explain this increased frequency of conversion to vertex presentation.

### 38. CANCER GUIDED IMAGERY PROGRAM: MURRY

**WHAT IS GUIDED IMAGERY?** The ability and power of the mind to help influence the body in healing is quite extraordinary, and at times, it seems unbelievable what can transpire with this powerful influence. This book presents information and guidance for applying a proven process called Guided Imagery, which will help you tap into this powerful influence for cancer treatment and recovery. Guided Imagery has been called the language of the mind. It is a language that the mind can use to talk to the body, a language the body can understand immediately and without question. It is a way of communicating internally with the parts of ourselves that cannot speak in words. Guided Imagery is an internal process that creates messages with images, which will be fully explained later. These messages include directions and goals that are communicated to your entire body and/or any area you choose. For this reason Guided Imagery has been labeled a “mind intervention with the body.” This intervention incorporates the power and resources of the mind to convey the positive responses and changes you desire. Guided Imagery has also been described as the interface, or connection between the body and the mind because of the positive chemical and biological changes it can produce in the body. These changes are extremely useful in the successful treatment of and recovery from cancer.

### CANCER IMAGERY RESEARCH AND REFERENCE:

\* Dr. Alan Watkins states that every idea, thought and belief has a neurochemical consequence, which is what makes imagery such a significant mind-body bridge. He writes that the flow of neuropeptides from the CNS, which enhances or inhibits one’s immunology through two major neuro immuno modulatory pathways; neuroendocrine and autonomic, are critically important in maintaining health and fighting disease [Watkins A 1997 Mind-body medicine. Churchill Livingstone, NY].

\* D. L. Tusek and R. E. Cwynar of Ohio acknowledged that patients often describe the experience in a hospital as overwhelming, evoking fear, anger, helplessness, and isolation. Tusek

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and Cwynar view guided imagery as one of the most well-studied complementary therapies being used that can improve the patient experience and outcome by providing a significant source of strength, support, and courage as they prepare for a procedure or manage the stresses of a hospital stay [AACN Clin Issues 2000 Feb; 11(1): 68-76].

\* V. W. Donaldson in NC at the Center for Stress Management examined the effects of mental imagery on the immune system response, and specifically, on depressed white blood cell (WBC) counts. Results indicated significant increases in WBC count for all patients over a 90-day period, even when possessing disease and illnesses that would have predicted a decrease in WBC count [Appl Psychophysiol Biofeedback 2000 Jun; 25(2): 117-28].

\* L. M. Troesch et al. of the Arthur G. James Cancer Hospital and Research Institute at Ohio State University in Columbus found that those patients using a chemotherapy-specific guided-imagery audiotape expressed a significantly more positive experience with chemotherapy, finding guided imagery to be an effective intervention to promote patient involvement in self-care practices and to increase patient coping abilities during symptom occurrence [Oncol Nurs Forum 1993 Sep; 20(8): 1179-85].

\* D. S. Burns at the Group/Walther Cancer Institute found that individuals who participated in guided imagery sessions scored better on both mood scores and quality of life scores than those who did not. Interestingly, these scores continued to improve in the experimental group, even after sessions were complete, indicating that guided imagery is effective in improving mood and quality of life in cancer patients [J. Music Ther. 2001 spring; 38(1) :51-65].

\* Gaston-Johansson et al. of Johns Hopkins University School of Nursing in Baltimore, Maryland showed significant benefits from the use of information, cognitive restructuring, and relaxation with guided imagery in those patients with breast cancer who underwent autologous bone marrow/peripheral blood stem cell transplantation. This strategy was found to be effective in significantly reducing anxiety, nausea, and nausea combined with fatigue 7 days after surgery when the side effects of treatment are usually the most severe [Cancer Nurs 2000 Aug; 23(4):277-85].

\* Researchers at Ohio State University in Columbus, Ohio found that people with cancer who used imagery while receiving chemotherapy felt more relaxed, better prepared for their treatment and more positive about care than those who didn't use the technique. They also found it can help chemotherapy patients cope with one of the most severe side effects of their treatment. Howard Hall, measuring the effects of healthy people imagining their White blood cells as strong as powerful sharks, found a number of subjects could demonstrate an increase in the number of lymphocytes as well as an increased responsiveness of the immune system after the session as compared to before [Hall H R 1983 Hypnosis and the immune system. American Journal of Clinical Hypnosis, 25:92-103].

\* C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the "stress hormone" strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance.) The study also [Health Psychol 1997 Jul; 16(4): 390-400].

### **FEAR:**



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\* L. Baider, et al. examined the long-term effects of relaxation and guided imagery on patients recently diagnosed with cancer at Hadassah University Hospital. Results showed a decrease in psychological distress and an increase in the patient's sense of internal control [Gen Hosp Psychiatry 2001 Sep-Oct; 23(5): 272-7].

\* A study by J. A. Royle, et al. of Ontario, found that guided imagery was the intervention best used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

### **DEPRESSION:**

\* Fawzy et al. found that information on the cancer and training in stress management and coping skills, showed participants exhibiting less fatigue, depression, mood disturbances, as well as increased vigor [Fawzy F I, Kemeny M E, Fawzy N W et al. 1990 A structured psychiatric intervention for cancer patients: II. Changes over time in immunological measures. Archive of General Psychiatry 47:729-35].

\* B. L. Rees reported that patients receiving 4 weeks of relaxation and guided imagery scored significantly lower on trait anxiety, state anxiety, and depression, while scoring significantly higher on measurements of self-esteem [J. of Holistic Nursing. 13(3): 255-267. Sept. 1995].

\* C.L. Norred at the University of Colorado Health Sciences Center Department of Anesthesiology in Denver found that guided imagery may be an integrative therapy that can minimize preoperative anxiety [AORN J 2000 Nov; 72(5): 838-40, 842-3].

\* S.A. Lambert found that guided imagery and relaxation therapy significantly lowered postoperative pain ratings and shortened the hospital stays, as well as decreased the postoperative anxiety [J Dev Behav Pediatr 1996 Oct; 17(5): 307-10].

### **ANXIETY-QUALITY OF LIFE:**

\* C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the "stress hormone" strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance. The study also [Health Psychol 1997 Jul; 16(4): 390-400].

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\* L. G. Walker et al. of the University of Aberdeen Medical School found that cancer patients receiving standard care plus relaxation training and imagery were more relaxed and easy going during the study, experiencing a higher quality of life overall during primary chemotherapy [Br J Cancer 1999 Apr; 80(1-2): 262-8].

\* A study by J. A. Royle, et al. of Ontario, found that guided imagery was the best intervention used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

### **SIDE EFFECTS-PAIN:**

\* K.L. Syrjala et al. of the Fred Hutchinson Cancer Research Center in Seattle, WA concluded in their study that stand-alone relaxation and imagery training reduces cancer treatment-related pain [Pain 1995 Nov; 63(2): 189-98].

\* R.Sloman from the University of Sydney in Australia observed that progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain. The

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techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. This technique seems to provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient [Nurs Clin North Am 1995 Dec; 30(4): 697-709].

\* R. J. Moore and D. Spiegel from the Anderson Cancer Center in Houston, TX observed a desire for and a benefit from patients being able to attach meaning to the disease and its treatment. They felt that this is why many are drawn to guided imagery as a tool in the management of cancer-related anxiety and pain by using it to reconnect to the self, to make sense of their experiences with breast cancer, and for managing cancer pain in a manner that increases one's sense of control, thereby alleviating the suffering of the survivor [1096-2190 2000 Mar 21; 2(2): 115-126].

\* D.L. Tusek, R. Cwynar, and D.M. Cosgrove studied the effect of listening to taped guided imagery for patients undergoing cardiovascular surgeries and concluded that guided imagery can decrease length of stay, pain, and anxiety [J of Cardiovascular Management. 22-28. March-April 1999].

\* C Renzi et al. found that listening to guided imagery tapes before, during, and after surgery showed results in which there was a trend for reduction in pain following surgery and a significant improvement in the quality of sleep [Int J Colorectal Dis 2000 Nov; 15(5-6): 313-6].

\* Omlor et al. found that preoperative relaxation techniques significantly reduced the number of postoperative hematomas as well as the amount of pain medication being required after surgery [Zentralbl Chir 2000; 125(4): 380-5; discussion 385-6]. Journal of Consulting and Clinical Psychology: 1991 Aug; 59(4): 518-25 concluded that relaxation therapy is effective in reducing adverse consequences of chemotherapy, for a study involving 81 cancer patients showed relaxation therapy to decrease nausea and anxiety during chemotherapy.

\* K. L. Kaufman et al. at Ohio State University tried a self-hypnotic, cue-controlled relaxation, and guided imagery intervention that showed a marked and clinically significant reduction in nausea and vomiting as well as a concurrent increase in sleep duration [J Adolesc Health Care 1989 Jul; 10(4): 323-7].

### **IMMUNE RESPONSE:**

\* K. Glaser and R. Glaser, studying a group of elderly people, found that over a month of relaxation training three times per week significantly increased their natural killer lymphocytes and T cell activity [Cousins N 1989 Head first. Dutton, NY].

\* J. Pennebaker found that "confessional writing," of the type that occurs when journaling, led to salubrious changes in the immune system and better health in general. He felt that there is structuring and resolving of the harmful effects of those "hidden" feelings and images going on through the process of writing. [Pennebaker J W 1990 Opening up: the healing power of confidence in others. Avon, NY].

\* Danish researchers found increased natural killer cell activity among ten college students who imagined that their immune systems were becoming very effective. Natural killer cells are an important part of the immune system because they can recognize and destroy virus-infected cells, tumor cells and other invaders. A group of metastatic cancer patients using daily imagery for a year achieved significant improvements in NK cell activity and several other measures of immune functioning.

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\* C. Holden-Lund found that the use of an audiotape series employing relaxation with guided imagery demonstrated significantly less state anxiety, lower cortisol levels one day following surgery, and less surgical wound erythema than the control group. Thus, the guided imagery tapes demonstrated stress-relieving outcomes closely associated with healing [Res Nurs Health 1988 Aug; 11(4):235-44].

### **GUIDED IMAGERY RESEARCH:**

\* D.A. Rapkin, M. Straubing, and J.C. Holroyd from the University of California, Los Angeles explored the value of imagery-hypnosis on recovery from head and neck cancer surgery and found there were fewer surgical complications and less blood loss during surgery [Int J Clin Exp Hypn 1991 Oct; 39(4): 215-26].

8 L. LeShan found that psychological conditions had an enormous influence not only on the production of cancer, but also on the disease's evolution and even on the person's response to a particular treatment (LeShan L, Worthington R 1956 Personality as a factor in the pathogenesis of cancer: a review of the literature. British Journal of Medical Psychology 29:49-56).

\* K. Kolcaba and C. Fox measured the effectiveness of customized guided imagery for increasing comfort in early stage cancer. They found that listening to a guided imagery audiotape once a day for the duration of the study indicated a significant overall increase in comfort over time, and was especially salient in the first three weeks of therapy. [Oncol Nurs Forum 1999 Jan-Feb; 26(1): 67-72].

\* M. Jasnoski of George Washington University, Washington, D.C., is examining the effects of imagery on the immune system, with potential implications for use in cancer and AIDS. Blair Justice of the University of Texas Health Sciences Center in Houston was funded to conduct a controlled study examining the effects of a group imagery/ relaxation process on immune function and quality of life in breast cancer patients

### **ARTICLES ON GUIDED IMAGERY:**

\* Strategies For Implementing A Guided Imagery Program To Enhance Patient Experience  
Reviews the use of and research about guided imagery in surgery, and describes how to implement a program. 2000 AACN Clin Issues 11; 1:68-76 Tusek, D. L. and Cwynar, R. E.

\* Imagine This! Infinite Uses Of Guided Imagery In Women's Health Reviews use of guided imagery in outpatient, inpatient, chronic care and home care settings related to women's health. 1999 J Holist Nurs 17; 4:317-30 Bazzo, D. J. and Moeller, R. A.

\* The Value Of Imagery In Preoperative Nursing: Review of interactive imagery with an institutional implementation plan. 1998 Semin Perioper Nurs 7; 2:108-13 Miller, T.

\* Guided Imagery. A Psychoneuroimmunological Intervention In Holistic Nursing Practice. Use of guided imagery as an intervention in nursing practice, and its impact on psychoneuroimmunology. 1997 J Holist Nurs 15; 2:112-27 Giedt, J. F.

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### 38. FIERY TRANSFORMATIONS: JIM CRISTALDI: MAURY BREECHER

At the turn of the 21st Century a constellation of powerful economic, political, and social forces in the managed care environment demands the identification of effective alternative care medical treatments based on empirical standards. This review is of empirical and non-empirical studies published in peer-reviewed literature found indexed in the Medline and PubMed databases maintained by the U.S. government's National Library of Medicine.

This comprehensive review leaves little doubt that hypnosis is helpful as an adjunct to medical care for people with a variety of both acute and chronic diseases and that as an adjunct to medical and dental care medical hypnosis is becoming more and more accepted by clinicians, consumers, and even health maintenance organizations.

Although research evidence on the cost savings offered by the use of hypnosis as an adjunct to medical care is rather sparse in comparison to the literature on clinical effectiveness, it too is growing and the weight of the research that does exist tends to support the hypothesis that clinical hypnosis can, in certain situations, reduce the costs of medical care associated with a variety of conditions.

**What is Hypnosis and How Might It Enhance Health?** "There is a rich scientific literature on hypnosis that stretches back over 100 years - each year there are about 150 articles on hypnosis in mainstream medical and science journals," says Michael Nash, editor of *The International Journal of Clinical and Experimental Hypnosis* in an interview with the British medical journal, *The Lancet*.

The use of hypnosis has been approved by the American Medical Association as an "ethical medical treatment" since 1958. "Today, several prominent medical schools provide elective courses in hypnosis," according to *JAMA: The Journal of the American Medical Association*.

Hypnosis is a state of altered awareness and increased suggestibility. "During hypnosis, it is as though the brain temporarily suspends its attempts to authenticate incoming sensory information," according to an article in the July, 2001 issue of *Scientific American*.

Although deeply relaxed, subjects can carry out instructions and visualize or imagine situations or possibilities suggested by their hypnotist. Thus, when used medically, hypnotism consists of a voluntary submission of a patient to a series of carefully controlled suggestions whose purpose is to increase the likelihood that specific therapeutic suggestions will be accepted.

Hypnosis facilitates health by countering stress, especially the type of stress depicted as maladaptive physiological responses to distress described by Selyes' generalized adaptation

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syndrome. Hypnosis also augments the "relaxation response" described by Benson, and evokes or enhances beneficial immune system responses, according to an ocean of literature on the science of psychoneuroimmunology.

Hippocrates is quoted as saying that, "Nothing should be omitted in an art which interests the whole world, one which may be beneficial to suffering humanity and which does not risk human life or comfort." Indeed, hypnosis has been used in medicine from antiquity to the present time. From time to time it has fallen in disfavor but, in recent years, it has "regained credibility and is now recognized as a valuable tool for many problems," writes Richard F. Graber, M.D., in *Patient Care*. Over the years, a steady stream of case reports and anecdotal observations has inspired interest in the healing effects of hypnotic procedures. Still, it was not until the 1980's that well-controlled studies which systematically evaluated the role of hypnosis in the treatment of medical conditions began to provide convincing evidence of the efficacy of hypnosis-based interventions.

This review of the medical literature identifies the benefits of medical hypnosis including, to name just a few, the reduction of anxiety and fear, decreased requirement for analgesics, increased comfort during medical procedures, faster healing and, according to Karen Olness, M.D., a professor in the departments of Pediatrics, Family Medicine, and International Health at Case Western University, "Greater stability of functions controlled by the autonomic nervous system, such as blood pressure."

**How This Review is Organized:** This review is organized initially by cost benefits and then by clinical effectiveness in the treatment of various medical conditions. Most of the reviews and studies cited here occur after 1980. My guideline, in most cases, was a definition published in 1998 by two Arizona researchers, D. L. Chambless and S. D. Hollon. In that year, they published a proposed revision of criteria used to identify "empirically validated treatments." They suggested that the term, "empirically supported therapies (EST)," be used for treatments "shown to be efficacious in controlled research with a delineated population." (10) Chambless and Hollon contended that the best way to demonstrate treatment efficacy "is through randomized clinical trials (RCT) with well-defined clinical populations" or "carefully controlled and methodologically sound single-case experiments" backed up by a treatment manual with "carefully defined and specified procedures." (11)

Most of the studies cited by this review predate the publication of Cahambless and Hollon's proposed EST definition, yet most of the studies reviewed in this report meet the criteria specified by the Arizona researchers.

**Cost Effectiveness of Hypnosis as an Adjunct Therapy:** Cost effectiveness is a primary issue and concern in the current climate of managed care. Many experts point out that under the right circumstances, hypnosis is less expensive, less time-consuming, and safer than other medical approaches including the use of medications. For instance, hypnosis is safer and more effective than medications (including imipramine) for the treatment of enuresis (bed-wetting) and for other pediatric problems, according to Karen Olness, M.D. a professor of Pediatrics at Case Western Research University. That said, most of the research cited compares hypnosis as an adjunct to conventional treatments, not a replacement.

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Another researcher supporting the cost effectiveness of hypnosis is Dabney Erwin, M.D., a board-certified general surgeon, clinical professor of surgery and psychiatry at Louisiana's Vane Medical School, and clinical professor of psychiatry at Louisiana's State University School of Medicine. Dr. Erwin, who primarily practices occupational medicine says that about a fifth of the patients who come to see him want hypnosis for common medical disorders including asthma, irritable bowel syndrome, migraines, and to control the pain of trauma and musculoskeletal problems, and chemotherapy-induced nausea. "Most can be treated in five sessions or less," Erwin told New Orleans Magazine.

Based on his experience, he concludes: "Hypnosis is generally less time-consuming than other treatments for certain medical conditions." Although he is a well-qualified expert, Erwin's experience and opinions are not, of course, empirical evidence. More weighty are the conclusions of experts who extensively studied the question for a special issue of the International Journal of Clinical and Experimental Hypnosis 2000. Drawing on a series of literature reviews published in the medical literature, the editors of that journal conclude: "As a whole, the clinical research to date generally substantiates the claim that hypnotic procedures can ameliorate some psychological and medical conditions as judged against the Chanbless and Hollon methodological guidelines. In many cases, these clinical procedures can also be quite cost-effective."

Indeed, many health plans have started to cover the cost of complementary and alternative medicine (CAM), according to a recent issue of Effective Clinical Practice. "Many HMOs already cover hypnotherapy if it is used in conjunction with psychotherapy or medical treatments," adds the Harvard Health Letter.

The authors of the Effective Clinical Practice article did a cross-sectional mail survey of a managed care organization in Minnesota. Out of 5,107 questionnaires, 42% of the plan participants reported the use of at least one CAM therapy. The most common CAM therapy reported was the use of "relaxation techniques", a group which included hypnosis. The article concluded that "CAM does not seem to be a substitute for conventional preventive health care" (16) indicating that CAM modalities such as hypnosis are recognized and considered, at least by some health plan users, as adjuncts to conventional care.

**Studies Indicate Cost Savings from Medical Hypnosis:** "Medical hypnosis offers physicians the ability to effect beneficial change even in difficult cases," says Brian Altman, Ph.D., while describing, in the Fall 2001 issue of The Permanente Journal, the outcomes of five cases referred to him from the Kaiser Permanente Department of Preventive Medicine in San Diego. "Especially in this era of emphasis on cost-effectiveness, both medical hypnosis and certain parahypnotic techniques may be of special interest to physicians," says Altman. However, "To the disadvantage of patients as well as physicians, medical hypnosis is underutilized as a medical modality."

As a result, empirical evidence proving cost effectiveness of medical hypnosis is sparse. It is sparse, but not non-existent. One intriguing Harvard Medical School study presented at the 2000 annual meeting of the Radiological Society of North America revealed that a simple form of hypnosis reduced the average non-emergency procedure time by 17 minutes and the average cost of such procedures by \$130.

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The study involved 161 patients. The patients randomized to use imagery and relaxation techniques (N=82) had "smoother, quicker procedures" than did the 79 patients who underwent only a standard prep that did not include hypnosis, Says primary investigator Elvira V. Lang, M.D. Dr. Lang is chief of cardiovascular and interventional radiology at the Beth Israel Deaconess Medical Center in Boston.

The extra minutes spent on the non-hypnotized patients were consumed with treating complications that arose from under or Over medicating patients, or by delays prompted by their calls for more drugs, she explained. Slightly less than half (38 of 82) of the hypnotized patients requested no conscious sedation compared with 18% (14 of 79) in the control group.

The cost reduction in the hypnotized patient procedures stemmed from the use of less medication and from the reduced shorter post-procedure follow up times needed on the hypnotized patients, said Dr. Lang. Hypnotized patients were more likely to be "hemodynamically stable, have fewer complications, and require significantly less medication," she added.

The evidence of benefit was so overwhelming that Harvard's entire interventional radiology team underwent training to incorporate hypnosis into procedures that could induce anxiety or pain, Dr. Lang told Family Practice News. Her research was later published in the Lancet.

**The Second Study:** An even more recent study by Dr. Lang was published in the February, 2002 issue of the medical journal Radiology indicates that self-hypnotic relaxation, combined with medications to produce sedation, reduces costs during outpatient interventional radiologic procedures. That prospective randomized trial studied 151 patients who underwent vascular and renal interventional procedures with either standard sedation (N=79) or sedation with adjunct hypnosis (N=82). According to the analysis, the cost associated with standard sedation was \$639 compared to only \$300 for sedation with adjunct hypnosis, a savings of \$338 per case with hypnosis.

**Hypnosis and the Immune System:** Psychoneuroimmunology is a term coined by Dr. Robert Ader in the late seventies. Although his own textbook, Psychoneuroimmunology, published in 1981 contained no specific definition, by 1991 when he published his second addition Ader wrote:

There is now abundant data documenting neuroanatomical, neuroendocrine, and neurochemical links to the immune system... . The existence of bidirectional pathways of communication between nervous and immune systems provides an experimental foundation for the observation of behavioral and stress-induced influences on immune function, and, conversely, the effects of immune processes on behavior.

Even more recently he wrote: There is growing awareness of an intimate and relatively unexplored relationship between the immune system and the central nervous system, an analysis of this relationship might reveal much about the operation of the immune system - and about the brain.

This growing field suggests multiple uses and benefits of hypnosis (see Hall, 1982 and Levitan, 1991).(23) Levy, for instance, reviews many studies on the psychoneuroimmunological implications of emotions and cancer progression and reports that helplessness and poor coping

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are associated with lower cancer survival rates. Relaxation techniques and hypnosis are health-promoting strategies that can counter the experience of helplessness, enhance patients' active participation in care, and potentially augment immunological strength, according to Levy.

During the past three decades, many published studies have linked stress and/or depression with immunological deficits in both animals and humans. Most of the earlier published reports are case studies. However, over the past two decades there has been an increase in the number of randomized, controlled studies that indicate it is indeed possible to alter certain immune system responses through hypnosis and similar mind-body techniques.

For example, Karen Olness, M.D., and her colleagues at the Minneapolis Children's Medical Center, conducted a seminal study in this area. They measured the levels of immune system substances known as salivary immunoglobulins in the saliva of 57 children, ages six to twelve. The children were divided into three groups. The first group learned the same exercise with the addition of hypnotic suggestions to increase their salivary immunoglobulin. The third group, which served as the control, engaged in ordinary conversation. Afterward, the children's saliva was again measured. The hypnosis group showed a "striking increase in their levels of the salivary immunoglobulin known as IgA. The other two groups showed no change. In a follow-up study with adolescents, Olness et al., found that self-hypnosis training led to "significant changes in the activity of the key component of the immune system - the activity of white blood cells."

**Hypnosis and Warts:** A well-documented body of research indicates that hypnosis works to remove warts by training the immune system to reject them. Evidence for the effectiveness of hypnosis in the removal of warts and the control of herpes extends back to 1928 when two Viennese physicians used hypnosis to alleviate oral herpes symptoms and also demonstrated that hypnotic suggestions could experimentally trigger recurrences. Similar reports appeared sporadically in the medical literature over the next 40 years. The first well-documented experimental demonstration of hypnotic treatment of non-veneral warts was conducted by Boston psychiatrist Owen Surman in 1973. After five weekly hypnotic sessions, 53% of patients who started with one or more warts in the Surman study were wart free. Since then, Dr. Surman's experiment has been successfully replicated by many other researchers and clinicians. For instance, Spanos and colleagues conducted a series of three well-controlled experiments that investigated the efficacy of hypnosis in wart regression in a total of 180 cases. The patients, all of whom had at least one wart, were randomly assigned to experimental and control conditions. The hypnotic intervention consisted of a two minute hypnotic induction followed by direct suggestions that the warts would be eliminated. Participants were instructed to count their warts daily and vividly imagine tingling sensations and warmth in their warts followed by images of the warts shrinking and falling off. The Spanos research group reported a cure rate of 50% for the participants who received hypnotic suggestions for wart removal, a result "significantly higher" than in the placebo and no-treatment control groups.

**Hypnosis and Cancer: Healing Potential Remains Unproven, but Convincing Evidence of Benefits for Pain Relief and Nausea Control Exists:** There has been speculation in the medical literature for decades that there is a link between cancer and stress and that strategies addressing that stress could potentiate healing. Simonton and colleagues first advocated psychotherapy coupled with guided imagery to stimulate the immune system's ability



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and defend against malignancies.(30) Although Simonton's results failed to stand up to careful scrutiny and confirmatory studies, they did prompt further research that many consider to be fruitful. For instance, Spiegel and associates conducted studies demonstrating increased survival in a group of 86 patients with metastatic breast cancer who were randomized to a treatment group of 50 and a control group of 36 patients. That treatment group received conventional medical therapy plus weekly support groups and self-hypnosis training for pain management. Both groups received routine oncological care and follow-up. At 10 years follow-up, only three patients remained alive, but the data revealed that those in the control group that received conventional treatment survived only 18.9 months and the group that received weekly support and self-hypnosis training survived almost twice as long (36.6 months). These results were declared to have both statistical and clinical significance.

Although no other studies have corroborated the apparent survival advantage conferred by hypnotic training and support groups, studies seeking to replicate and confirm the study are ongoing but often encounter barriers placed by research review committees. Olness explains the issue this way: Research review committees often not knowledgeable about hypnotherapy, too often demand identical protocols for all participants in a study, which reduces the likelihood of success by individuals. Training in hypnosis must be tailored to individual preferences, imagery skills, communications styles, attentional skills, fears, and likelihood of practice at home.

**Cancer and Nausea:** What has been convincingly demonstrated are the benefits of hypnosis as an adjunct therapy for the pain and nausea associated with cancer and its treatment. Several controlled studies have found hypnosis to be helpful for nausea caused either by cancer and the chemotherapy used to treat it and for the pain caused by the disease itself. For example, in one randomized, controlled, prospective study, 54 pediatric patients recently diagnosed with cancer were randomly assigned to either hypnosis, or a non-hypnotic distraction/relaxation, or an attention placebo group to evaluate the effectiveness of hypnosis in preventing nausea during chemotherapy. The major finding of the study was "the efficacy of the hypnosis intervention in reducing the nausea and vomiting related to chemotherapy," wrote the authors. The hypnosis group had statistically significantly lower somatic scores compared with the control group and their total symptom scores improved by 31% after hypnosis compared to only a 13% improvement for those who received non-hypnotic support and compared to a 50% worsening of symptoms of those in the placebo control group.

**Breast Cancer and Pain:** "Hypnosis has been demonstrated as effective for controlling patients' pain in other surgical settings, but breast surgery patients have received little (hypnosis research) attention," wrote Montgomery et al in 2002.

To determine the impact of brief pre-surgical hypnosis on such patients' postsurgical pain and distress and to explore "possible mediating mechanisms," they randomized 20 excisional breast biopsy patients to either a hypnosis or a control group that received only standard care.

**Hypnosis reduced postsurgery pain and distress. The authors concluded:** A brief presurgery hypnosis intervention was effective in managing patients' post-surgical pain and distress after excision breast biopsy. The intervention was also effective in reducing distress prior to surgery, a time of heightened distress for most women. Based on these results, it would appear

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that hypnosis has a strong beneficial impact for women undergoing excisional breast biopsies and should possibly be more widely implemented as part of standard clinical care.

**Cancers and Other Types of Pain:** "Reasonably well-controlled studies with carefully selected patients support the use of hypnosis in the preoperative preparation of surgical patients," state the authors of a review of reviews in a special issue of the International Journal of Clinical and Experimental Hypnosis 2000.

Even stronger language can be found in a National Institute of Health Technology Assessment Panel Report. It judged hypnosis to be a "viable and effective intervention for alleviating pain with cancer and other chronic pain conditions," according to a July, 2001 report in Scientific American.

The actual NIH Panel report published in JAMA stated: "The panel found strong evidence for the use of realization techniques in reducing chronic pain in a variety of medical conditions as well as strong evidence for the use of hypnosis in alleviating pain associated with cancer."

The Scientific American article also cited a year 2000 meta analysis of 18 different studies involving hypnosis and treatments for various types of pain. A meta analysis the organization and integration of previously published data into a type of "super study" that permits comparisons of similarly designed research trials studying related similar conditions, in this case different types of pain. The 18 different studies in the meta study had a combined total of 933 participants reporting pain. The meta-analysis of the 18 grouped studies reveled "a moderate to large hypnoanalgesic effect regardless of the source of the apin," according to the four Mount Sinai School of Medicine researchers who did the analysis. Their study indicates that hypnosis was an effective pain reliever for three out of four of the participants in the studies.

The Mount Sinai autors concluded: "Hypnotic suggestion relieves pain for the majority of people, regardless of the type of pain they are experiencing...The literature supports the view that hypnotically suggested pain reduction can be classified as a well-established treatment."Furthermore, they stated, "The overall results suggest broader application of hypoanalgesic techniques with pain patients."

**Reduction of Fear and Anxiety:** A review of seven studies since 1980 looking at the effectiveness of hypnosis in reducing anxiety in cancer patients, revealed that "Hypnosis interventions were found to be of significant help in reducing anziety in six of seven studies examining this variable and all seven reported a significant reduction in the pain experience by the patient."

Nearly every normal adult can use self-hypnosis to "reduce the fear and anxiety that accompanies and that can heighten pain," says Karen Olness, M.D., a professor in the departments of Pediatrics, Family Medicine, and International Health at Case Western Reserve University. "With sufficient practice, many adults can learn to tolerate various painful procedures without medication."

Dr. Olness further states that "there are great advantages to learning self-hypnosis through individualized sessions with a coach or teacher. Like any skill, hypnosis is learned more rapidly with guidance."

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Patients with pain or needle phobias are good candidates for hypnosis. "All cancer patients" should be taught the hypnotic techniques of glove anesthesia and regional anesthesia "because they are frequently subjected to invasive procedures such as venapuncture, finger stickes, biopsies and endoscopies," writes Alexander A. Levitan in the book, *Medical Hypnosis: An Introduction and Clinical Guide*.

Hypnosis "augments and complements other pain therapies nicely", and patients suffering from cancer pain are "ideally suited" for the use of hypnosis for several reasons states David L. Handel, M.D. in a recent issue of *Texas Medicine*. Patients with chronic conditions that they feel are outside their control "live in a state of perpetual tension; they struggle with the concept of self-relaxation". Hypnosis is an answer for these people because it is often accompanied by profound relaxation (that) has been shown helpful in managing pain, points out Dr. Handel who is a medical director for Palliative Care Services at the Harris Methodist Hospital, Fort Worth, Texas. he writes: The patient suffering from cancer pain is ideally suited for the use of hypnosis... most patients with cancer pain are highly motivated to gain control, whenever possible... Those with chronic or cancer pain, commonly complain of feeling their lives are controlled by the pain and its treatment. Hypnosis can create an 'inner space' away from this burden- some external focus.

The function of hypnotic induction is to enhance responsiveness to suggestion, continues Dr. Handel. "The hypnotist simply 'guides' the patients, helping them achieve the hypnotic state in which they may respond more readily to therapeutic suggestions", he adds. "Hypnosis is more than simple relaxation, (it is) a state that is easily learned, immediately helpful, and easily 'portable' to other situations."

### **The Use of Hypnosis as an Adjunct Treatment for Other Medical Conditions:**

**Asthma:** In the 19th century a pioneering physician by the name of MacKenzie reported that a patient's expectations, as well as suggestions received during the waking state, could trigger an asthmatic attack. If patient expectations and suggestions received during the waking state can trigger an asthmatic attack, expectations and positive suggestions during hypnosis might counter such an attack, reasoned many researchers. And, indeed it may. A recent critical review on "Hypnosis and Asthma" in the February, 2000 *Journal of Asthma*, concludes, "Significant data [20 different studies conducted over three decades] suggest that hypnosis may be an effective treatment for ashthma, but it is premature to conclude that hypnosis is unequivocally effective. More randomized, controlled studies are needed."

The University of California, Davis, researchers who analyzed three decades worth of controlled and uncontrolled studies, said that data suggests that, "Hypnosis is likely to yield improvements in patients' perceptions of their asthma. Children in particular appear to respond well to hypnosis as a tool for improving asthma symptoms."

The largest, randomized, controlled prospective study of asthma and hypnosis, mentioned in the above mentioned review, was conducted by the British Tuberculosis Association in 1968. It was a pioneering, controlled study that lasted a full year. The British researchers compared the effectiveness of hypnosis and progressive muscle relaxation in the treatment of 252 patients with asthma. The patients in the hypnosis group were taught self-hypnosis and received direct suggestions that their breathing would become and remain easier.

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The patients in the relaxation group received progressive muscle relaxation training. Bronchodilator use and self-report journals of days wheezing were analyzed as dependent measures.

Both interventions were effective in reducing asthma symptoms as measured by independent ratings by physicians and by the diaries of medication use and the frequency of wheezing, as well as by regular pulmonary function measurements. However, the data revealed that hypnosis was superior overall. The participants in the hypnosis group reported significantly less wheezing and less daily use of bronchodilators. The self-reports were confirmed by physicians who evaluated the participants in the study without knowing which participants had been in the hypnosis group or which had been in the progressive relaxation group. The physicians rated those in the hypnosis group as more improved than those in the relaxation group.

The standard of proof in medical literature is when a study's results is replicated. In a follow-up study, the above named British researchers compared what was then a new bronchodilator drug in groups of asthmatics with and without hypnosis. At the end of 18 months, the subjects in the hypnosis group had no wheezing above baseline measurements and showed a dramatic decrease in bronchodilator usage. The control group showed "no significant change over a year of treatment."

The gold standard of proof in medical literature is when a study's results is replicated by a different research group using similar research procedures. That occurred in another test of hypnosis and another bronchodilator medication. Researchers measured subjects' pulmonary function through tests. One group was then put on a new bronchodilator. The other group received the bronchodilator and training in self-hypnosis. At the end of six weeks, the subjects receiving hypnosis showed a "significant improvement" in peak expiratory flow rates and a 74.9% improvement in bronchial hyper-responsiveness over baseline.

**Other Related Studies:** A similar study a few years later found that after one year of hypnotic treatment that patients whose chronic asthma had been inadequately controlled by medication reported symptomatic relief along with a significant reduction in their use of medication. The improvement, however, was not confirmed by their pulmonary function tests.

Four researchers studied 10 patients with exercise-induced asthma provoked by a treadmill run on five successive days. The patients' breathing was tested while they were running. All the subjects were able to control bronchospasm with hypnosis significantly better than with a cromolyn inhaler, saline mist placebo or waking suggestions.

In 1986 two researchers classified 39 adult asthmatic patients as having high or low hypnotizability. They then randomized the patients into two groups, one trained in self-hypnosis and guided imagery and one trained in a treatment described as "attention control". Only the patients with high hypnotizability scores reported significant improvement in symptoms. The highly hypnotizable patients were then challenged by a chemical that normally induces asthma attacks (methacholine) and were able to "overcome" this challenge and achieve normal breathing. "The finding in this study provide qualified support for the effects of hypnosis on improved pulmonary functioning in high hypnotizable patients with asthma," state study leaders Pinnell and Covino.

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Summarizing this asthma section, this While Paper author concludes that a number of controlled studies demonstrate that hypnosis is more effective than relaxation and, in some cases, medication alone for the relief of symptoms. Suggestions under hypnosis have been shown to improve a patient's subjective experience, frequently of wheezing, and, in some studies, their pulmonary function tests and thus potentially reduce their need for constly hospitalization.

**Burns:** Between 22% and 56% of burn survivors report psychiatric symptoms and adjustment problems after treatment for their wounds. Fortunately, a large volume of studies document the usefulness of hypnotism in treating pain and other trauma symptoms exhibited by burn victims, especially during repeated painful debridement of their wounds.

A January, 2002 study indicates that degree of hypnotizability is a risk factor associated with increased trauma after burn injury in the acute hospital stage of recovery. Forty three hospitalized burn injury survivors were rated three to seventeen days after their injury for the frequency of intrusive avoidance symptoms. Results indicated that high hypnotizability categories were associated with more intrusive avoidance and arousal symptoms. the clinical implication of the study is that if burn victims sho are highly hypnotizable are at increased risk for trauma after burn injury then "hypnosis may be a particularly useful component of intervention to reduce postburn trauma symptoms," writes Katherine N. Duhamel, of Mount Sinai School of Medicine, and her colleagues including the New York Presbyterian Hospital and Albert Einstein College of Medicine.

**Fibromyalgia and Chronic Fatigue Syndrome:** For fibromyalgia, empirical data for the effeectiveness of CAM therapies exists for only three approaches: Mind-body, acupuncture, and manipulative therapies. "The strongest data exists for the use of mind-body techniques including biofeedback, hypnosis and cognitive behavioral therapy," according to a study in Baillieres Best Practices of Research in Clinical Rheumatology.(57) The hypnotherapy approach incorporates cognitive behavioral aspects followed by hypnosis and positive suggestions for symptom relief.

A 1999 study by Wik et al in the European Journal of Pain starts out by stating "Hypnosis is a powerful tool in pain therapy." To discover what goes on in the brain of fibromyalgia patients during hypnotic pain relief, the researchers used a PET imaging machine to trace the blood-flow patterns of fibromyalgia patients while under hypnosis. The study proved there are actual blood-flow changes and patterns in the "interplay between cortical and subcortical brain dynamics," wrote the researchers concluding that "The patients had less pain during hypnosis that at rest".

A randomized, controlled study published in The Journal of Rheumatology involved 40 patients with refractory fibromyalgia who were given treatment either with hypnotherapy or physical therapy for 12 weeks and then followed up 12 weeks later. The study showed that the patients who underwent hypnotherapy showed "a significantly better outcome with respect to their pain experiences, fatigue on awakening, sleep patterns" and their overall assessents of their conditions. The researchers concluded that "Hypnotherapy may be useful in relieving symptoms in patients with refractory fibromyalgia."

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A randomized study in Italy compared the efficacy of autogenic training with Ericksonian hypnosis on 53 patients with fibromyalgia. Improvements in the patients using autogenic training were less than in the comparable group undergoing Ericksonian hypnosis. (The late Milton Erickson, M.D., was a pioneering leader in developing indirect, flexible, and personalized clinical applications of hypnotic techniques.) The Italian researchers wrote: The Erickson techniques have showed many advantages: numerous patients continued the treatment until it was finished; only a small number of therapeutic sittings were necessary. There was an improvement of all the parameters examined, superior compared to the results obtained in the group of patients treated with autogenous training.

Neuroimaging and EEG research has documented brain dysfunction in Chronic Fatigue Syndrome (CFS) cases. However, there was only one study involving hypnosis and CFS found during this literature search. It is a 2001 case study in the journal of Neuro-Rehabilitation. The case is that of a 21 year old woman with serious CFS that was rapid in onset and severely debilitating cognitively. She had no psychiatric history and specialized testing revealed she had excessive theta brainwave activity in her left frontal lobes. A novel treatment consisting of a combination of EEG neurofeedback and self-hypnosis training was devised to treat the woman. Her doctor reports that "She experienced considerable improvement in fatigue, vigor and confusion" as measured both pre and post test by a testing instrument known as the Profile of Mood States. "Most of the changes were maintained at five, seven and nine month follow-up testing", according to the researcher.

**Gastroenterointestinal Disorders:** Hypnosis has been found to be effective in the treatment of Irritable Bowel Syndrome (IBS), which is the most common functional disorder encountered in the gastroenterologists' practice. "Recent controlled studies in the field of gastroenterology have shown that hypnotherapy is unequivocally beneficial in conditions such as IBS and peptic ulceration", says P. J. Whorwell, M.D., of the University of Manchester Hospital in England.

In one classic study, researchers measured the gastric acid secretion of 28 healthy men and women with on history of GI disease during a baseline period of reading and relaxing. During a second hour, the participants were hypnotized and asked to imagine eating the most delicious of meals. During the hypnotic session the subjects' mean acid output increased by 89% over baseline. A subsequent experiment was made to see if the subjects could then suppress the output of stomach acids. Seventeen subjects successfully did so. The implications were obvious.

In one study, 33 patients with refractory irritable bowel syndrom were treated with four 40 minute sessions of hypnotherapy over seven weeks. Twenty patients improved, eleven of whom lost almost all of their symptoms. Short term improvement was maintained for three months without formal treatment. "Hypnotherapy in groups of up to eight patients was as effective as individual therapy," wrote the authors. In still another study, British researchers randomly assigned 30 patients diagnosed with severe IBS resistant to medical treatments to either a group of 15 patients who received hypnosis or to a group of 15 patients who received standard psychotherapy. The hypnotic treatment included specific suggestions aimed at the control of smooth muscles, gut motility and improvement of bowel function. Twelve weeks later the patients treated with hpnosis demonstrated significant decreases in pain, stomach distension

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and increased well-being compared to the 15 patients treated with psychotherapy. Eighteen months later all 15 patients treated with hypnosis continued to report "complete recovery".

Dr. Whorwell, lead author of the above mentioned study, stated in a later article that he attributed his high rate of success to a specific "gut directed" style of hypnosis, a technique adopted in the U.S. by Olafur S. Palsson, director of the behavioral medicine clinic at the Eastern Virginia Medical School, Norfolk, VA. In a study presented at an annual meeting of the American Gastroenterological Association, Dr. Palsson reported a high level of improvement - less pain, less bloating, better-formed stools in 17 of 18 patients using the method. The method involved seven sessions, each lasting 30 to 40 minutes, in which all 18 patients got the exact same hypnotic script in which the hypnotist induced a very deep level of physical relaxation followed with gut-specific imagery, an exercise in which the participants imagined, for instance, a strong, protective coating being applied to the insides of their intestines that would soothe the gut and do away with their symptoms. Participants also received a 15 minute audio tape to use once a day to reinforce the hypnotic suggestions.

**Labor and Obstetrics:** Nausea and vomiting are normal in pregnancy. Up to 70% of all women get mild to moderate symptoms during the first trimester of pregnancy. Lynne M. Yancey, M.D., and Jean Abbott, M.D., DACEP, point out in the June 21, 2001 issue of eMedicine Consumer Journal that medical hypnosis has been used to successfully reduce nausea and vomiting and that some people have also used self-hypnosis to control their symptoms. Larry Goldman, writing in *Medical Hypnosis: An Introduction and Clinical Guide*, also says, "Hypnosis can be a valuable tool throughout the entire course of pregnancy and into the postpartum period from controlling hyperemesis gravidarum (excessive nausea and vomiting in early pregnancy) to the prevention and control of postpartum depression. Premature delivery is one of the leading cause of fetal loss in the U.S. and is the major contributor to "the exorbitant costs of neonatal intensive care", says Goldman. He cites the research work of Omer who demonstrated that hypnosis combined with conventional pharmacological therapy could "significantly prolong the duration of pregnancies threatened by premature labor". Omer also found that the addition of hypnotic techniques to standard therapeutic regimens "prolonged the pregnancies an average of 18% over those treated with conventional therapy alone".

Furthermore, Goldman claims that the practice of hypnosis can "lengthen the physician's career." He points out that the practice of obstetrics and gynecology are especially stressful. "Managed care, lawyers, life-threatening illnesses, sleep deprivation and financial pressures combine to make this specialty one of the most stressful in medicine," wrote Goldman, pointing out that physicians are retiring from medicine at earlier and earlier ages.

Hypnosis is not a panacea for doctor burn out, but it does offer an ounce of prevention when the pound of cure requires desertion from practice. Self-hypnotic techniques can rapidly reduce the stresses of critical situations, allowing decision making to be more rational and effective. Removing the emotions of the moment may clarify the situation, enabling the physician to rapidly assess the problem and choose the proper course of therapy.

**Pediatric Conditions:** Hypnotherapy has been helpful in treating children with dysphagia or swallowing disorders, enuresis (bedwetting), the abnormal heartbeats of Neurally Mediated Syncope, vocal cord dysfunction, and test anxiety.

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**Swallowing Disorders and Headaches:** Howard Hall, M.D., writing in *Medical Hypnosis: An Introduction and Clinical Guide*, describes case studies in which hypnosis was used successfully in children with disorders and headaches. Dr. Hall, who has done long-term research on hypnosis and its use in pediatrics that was supported by a federal grant from the National Institute of Drug Abuse, states, "In pediatrics, hypnosis is now being employed in primary care settings to address... anxiety, invasive procedures, pelvic examinations, pain and headache management, habit disorders, emergency medical treatment and chronic and terminal conditions."

He also states, "Neurologists and pediatricians frequently request hypnotherapy for children with headaches." He did a review of the 50 patients referred for the treatment of headache and noted that they ranged in age from eight to seventeen and that 60% were female. Duration of their headache complaints ranged from 2 to 108 months with a mean of 25 months. The four major categories of headache were migraines, 36%, tension, 21%, mixed headaches, 19% and non-specific, 24%. The patients had been using a variety of medication ranging from Advil, Tylenol, and Excedrin to Motrin, amitriptyline and Elavil. Following treatment with hypnotherapy, patients were rated in terms of decreases in the frequency and intensity of their headache complaints. "over 80% reported major improvement" with decreased headache frequency and intensity", state Dr. Hall.

**Breathing Problems:** Hypnosis was also a key factor in bringing relief to the chronic distress of adolescents suffering chronic dyspnea, according to a retrospective chart review published in the February, 2001 issue of *Pediatrics*. The chart review identified all patients followed by a pediatric pulmonologist who had complained of chronic dyspnea from April, 1998 through December, 1999. The chronic dyspnea was defined as recurrent difficulty in breathing or shortness of breath at rest or with exertion existing for at least one month in patients who had not suffered within a month from an acute pulmonary illness.

The pediatric pulmonologist, Ran D. Anbar, M.D., had been trained in hypnosis through his attendance at three 20 hour workshops. He, in turn offered to teach his patients hypnotic self-induction techniques and imagery to achieve relaxation when they went into a dyspneic state. Sixteen of the patients agreed to take the training and use self-hypnosis regularly. The patients were followed for months after their discharge (from 2 to 15 months, a mean of 9 months). The use of self-hypnosis was associated with resolution of dyspnea in 13 of the 16 patients. "Although resolution or improvement of dyspnea cannot be attributed solely to hypnosis in this report, it seems that introduction of hypnosis was a key factor in view of the average 2 year duration of symptoms before its utilization," stated Dr. Anbar in the *Pediatrics* article.

Although Dr. Anbar's chart review is not a randomized clinical study, it may be considered a pilot study. He calls for a "controlled prospective study using serial objective measures to substantiate this reported dramatic improvement of chronic dyspnea in pediatric patients who were taught self-hypnosis." Dr. Anbar also has taught self-hypnosis to pediatric and adult patients with cystic fibrosis (ages 7-49). "With the use of self-hypnosis, patients with CF can quickly learn to enhance their control over discomforts associated with therapy and their disease," Dr. Anbar says in the journal of *Pediatric Pulmonology*.



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**Sleep Disorders:** Hypnotherapy has successfully employed with sleep disorders such as nightmares and anxiety associated with falling asleep as well as night terrors. There is general agreement that relaxation-based approaches, including hypnosis, are "effective treatments of insomnia", according to a 1996 National Institute of Health Technology Assessment Panel report published in JAMA.

**Surgery:** There are more than 23 million surgical procedures performed in the United States each year and slightly more than half are outpatient procedures, according to the American Medical Association. In these days of cost consciousness, providing the best clinical care to the surgery patients in the least amount of time is a key concern of providers and health maintenance organizations. The medical literature supports a role for hypnosis, especially in preparation for surgery.

Hypnosis has been used as a preparation strategy for such procedures as laparotomies, thyroidectomies, mastectomies, cholecystectomies, colectomies and cardiac and orthopedic surgeries. Four meta-analyses of the effects of pre-surgical interventions including hypnosis on post-operative psychophysiological recovery have been found in the literature. For instance, Mumford et al., performed a statistical meta-analysis of 34 controlled outcome studies and concluded that surgical patients who were given pre-operative information, psychological support and hypnosis pre-operatively recovered more rapidly, physically, and felt better psychologically than those patients receiving ordinary care.

A review by Rogers and Reich of surgical/obstetrical procedures came to similar conclusions.<sup>(81)</sup> Blankfield reviewed 18 studies that used hypnosis, suggestion, or relaxation to prepare patients for surgery and found that 16 studies credited the intervention with "improved psychological or physical post-operative function."

**Specifically, the Blankfield review showed the following:** Seven studies demonstrated shortened hospital stay - Seven studies demonstrated less use of pain medication including narcotics - Five studies demonstrated less postoperative pain - Six studies demonstrated less postoperative anxiety - Two studies showed less blood loss - Three studies demonstrated earlier return of GI function

**Conclusion:** The findings reviewed in this White Paper echo and extend the conclusion of a seminal special issue of the International Journal of Clinical and Experimental Hypnosis 2000. These findings document that, "Clinical hypnosis is securely grounded in a foundation of careful empirical work that fully substantiates efficacy" under the circumstances described in the research literature. Furthermore, this report also concludes that the efficacy of clinical hypnosis as an adjunct to standard medical care can result in significant cost savings to both patients and the medical establishment. Further research about the cost saving benefits of hypnosis in clinical conditions is called for. However, the solid foundation of past research on hypnosis in medicine reviewed in this report indicates that medical doctors and managed care plans should explore using medically supervised hypnosis as an adjunct treatment for a variety of acute and chronic medical conditions.

### 39. HEALTHY HYPNOSIS RESEARCH: GRAHAM BLAIR

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Hypnosis is the Greek word for sleep chosen by scientist James Braid in 1840 to describe the natural process of opening our subconscious minds for a period of time. During this relaxed moment we can do two things, remove old unhealthy or unwanted values and patterns and replace them with new healthy desirable ones. We all go in and out of trance many times per day. We call it day dreaming or zoning out. Have you ever driven to the store and realized you remembered no details of the drive?

The subconscious mind is where we store all our beliefs, values and it controls our bodily functions. Our conscious mind keeps us in the here and now. It's our short-term memory. It judges, critiques, approves or denies what gets stored in the subconscious mind. The conscious mind can make mistakes and send back unhelpful/unproductive values and beliefs for the subconscious. This information becomes part of our repetition of life. It becomes part of who we are.

Think of the subconscious as a greenhouse. Roses and poison ivy will both flourish in this fertile environment. With hypnosis you can do the weeding, pruning and planting to help stay healthy, happy and strong.

With hypnosis we relax, focus and close down the conscious mind allowing the subconscious open. This can either be done by accepting our own silent self-direction, listening to a self-hypnosis audiotape or with assistance from a hypnotherapist. Once at the desired level of relaxation we begin to plant seeds. By reinforcing this process daily for about a month these seeds have rapidly grown as subconscious patterns. I say desired level of relaxation because we don't need deep trance to effect positive change. Are we in a deep hypnotic trance when our subconscious receives the instructions to accept smoking as a pattern for life?

To make changes on the conscious level that are programmed and repeated year after year on the subconscious level is like clipping the weeds off at ground level. With hypnosis you have the advantage not only pulling them out by the root but also by doing some direct deep seeding and rapid growing of new healthy replacements. People try over and over to lose weight, stop smoking or become better golfers or public speakers at the conscious level. Their results are mostly limited and discouraging. Not only do you get the job done effectively with hypnosis but also it feels good. You feel rested, refreshed and recharged. There is a sense of focused, centered peace with people who have been hypnotized. With hypnosis there is no withdrawal, patches or gum, no sedation, medications, prescriptions, interactions, allergic reactions and once you know the technique, it's free. What a deal.

**What does it feel like?** It feels as right as rain. Hypnosis is a peaceful moment of stillness. We all experience naturally occurring hypnotic trance several times. We refer to it as zoning-out or day dreaming. Have you ever jumped out of your seat during a scary movie or driven to the store and wondered how you got there because you had no memory of the trip? Both are examples of naturally occurring hypnotic trance.

Experiences are definitely subjective. Some report a heaviness, a lightness or a sensation of floating, deep relaxation and sense of heightened focus. Sounds are crisp and clear and you may have an increase in swallowing when you are hypnotized. Your eyelids may flutter and your fingers could twitch a little as your body adjusts to deep relaxation.

You may notice your breathing and heart rate comfortably slowing down. Your facial muscles loosen and your mouth may open a bit. Hypnosis feels really good. 50-100% hear and

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remember everything. When people are hypnotized they are in complete control and could return to conscious thought any time they choose. There is a look of centered, peace and contentment on the face of a client coming out of hypnosis.

**Is it the same as sleeping?** In 1843 a scientist named James Braid made the mistake of choosing the Greek word 'hypnosis' to describe the process of accessing the subconscious mind. It's not sleep at all. When you sleep and when you are hypnotized your subconscious mind is on active duty. It's open and ready to receive information which is normally first processed by the conscious mind. The similarity ends here. While hypnotized your conscious mind is still functioning quietly in the background which is why 50-100% of those hypnotized hear and remember everything said to them during a session. While you sleep your conscious mind sleeps.

**What are some applications?** weight loss, smoking cessation, relieving symptoms of irritable bowel syndrome, athletic and musical performance, childbirth, anger management, headaches, hypertension, pain, test anxiety, panic, memory and study skills, anesthesia, skin conditions, traumas and phobias, sales, attitude, motivation.

**Can anyone be hypnotized?** Anyone who wants to be can be. If you have reasonable intelligence, an imagination, motivated to change and enjoy being relaxed and focused hypnosis is for you. It's an association of trust and co-operation between the therapist and client. In addition, all hypnosis is self-hypnosis. The only 'power' a hypnotherapist has is the power to access their own subconscious mind. Think of them as a tour guide. They point you in the direction of great vacation spots in your mind and if you choose to go you can.

**What is self-hypnosis?** Self-hypnosis is the process of entering hypnotic relaxation and creating positive changes either from the helpful suggestions you repeat to yourself, or by listening to a self-hypnosis audiotope. A good hypnotherapist should teach you that all hypnosis is self-hypnosis. Even with a therapist at your side, it is you who relaxes and decides which words or images to accept. As good as any hypnotherapist may be, he or she only serves as the tour guide leading you to healthy paths which you can choose to take.

**How quickly does it work?** Some report immediate positive results. For long lasting benefits it is recommended that you listen to a self-hypnosis audiotope for 21-30 consecutive days. In general, habits, both good and bad are formed out of repetition. With practice the message is planted into our subconscious mind and grows to become reality. Life-long practices such as smoking and drinking are patterns which last so long because of repetition. These are habits which likely were unpleasant to begin with but because of the repeated use they became life-long patterns. This also applies to self-hypnosis, repetition rules. The pleasant addition to the process of making positive life-long change is that hypnosis feels great. The sensation of achieving this level of relaxation makes your body and mind sing. The positive messages and support are received so warmly by your subconscious mind enhancing the overall effect even more. Also, you may be working on weight loss but all of our audio programs support health, nutrition, exercise and overall well-being.

**Is it mind control?** Not at all. Hypnosis is a personal experience, which can be enhanced by a hypnotherapist. You can reject any suggestion you hear or return to conscious thought anytime you choose. This is your journey. A hypnotherapist is trained and certified to assist you with your goals. Like a psychologist, they support your health and well being. In

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addition I would say that those who pursue hypnosis are more in control. These individuals are seeking to learn more about their own inner strengths and resources to create a better life.

**What if I don't come out of hypnosis?** It doesn't happen. All hypnosis is self-hypnosis, you decide if you want to relax, how relaxed you get or if you want to relax at all. You have total control. On occasion someone will doze off but they awaken refreshed after a moment or two. If someone does fall asleep during the session their subconscious is still active and retains all information supporting their goals and desires.

**What is the history of hypnosis?** The use of hypnosis, as a therapeutic tool is as ancient as man is, as far as we can accurately trace back the history of man, we find records of the use of hypnosis for a healing role. Hypnosis, although it has been described under various names, is as natural as man is. There should be no mystery surrounding one of the greatest tools that man has used throughout the centuries.

The use of hypnosis for healing can be traced back to 3,000 BC and the times of ancient Egypt where the earliest known hypnotic sessions were recorded on a stone stele. And indeed, in 2,000 BC the father of Chinese medicine, Wond Tai, wrote about the technique involving incantations and 'the passing of hands'.

Indeed, both the old and new testament of the Bible refer us to what could be deemed to be hypnosis and indeed suggestions to people within a hypnotized state. But I don't want to bore you with ancient history; suffice it to say that hypnosis is recorded throughout the ages and across many, many cultures.

The starting point for today is the 18th century and a Viennese physician called Franz Anton Mesmer. It is in fact this person that lent his name to mesmerism. Franz Mesmer was born in 1734 in Austria. He grew up in a world that was turning more and more to science, and Mesmer himself had a great interest in astronomy, and in the works of Maximillian Hell, a Jesuit priest, on the curative effects of magnets. From this interest, Mesmer developed a theory that 'when the ebb and flow within an organism became out of balance with the universal rhythm mental imbalance or nervous illnesses could result.

Mesmer also believed that this imbalance could be corrected with magnets. Now Mesmer wasn't 'a bit short up top' and indeed he spent 16 years at universities and was awarded two doctorates, one in medicine and one in philosophy. Now Mesmer, using a mixture of conventional medical methods and the use of magnets, drew himself a lot of attention in Vienna. Mesmer soon obtained a number of remarkable cures and listed in his first published report, cures for epilepsy, hysteria, melancholia and fitful fever.

These cures were affected by the application of horseshoe shaped magnets on the chest and the soles of the patient's feet. But Mesmer also realized that the magnets were not too important as almost anything would do in the place of magnets. Mesmer also published a letter in which he asserted that magnets only acted as a conductor for the force or 'fluid' that influenced the patient.

Mesmer believed that the hypnotic effect was caused by what he called 'animal magnetism', and this magnetism he thought was an invisible magnetic fluid that came from living bodies. Mesmer also thought that this fluid could be transmitted to certain inanimate objects, such as a large tub filled with water and iron fillings, or even certain trees. Effectively Mesmer saw 'animal

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magnetism' as something that could be harnessed and stored in the same way that today we 'store' electricity in a car battery.

Although Mesmer's technique may seem quite strange by today's standards Mesmer did in fact have many spectacular cures using his hypnotic techniques.

For reasons unknown Mesmer left Vienna, but it is believed that the 'powers that be' were unhappy about the use of his 'animal magnetism' and that also Mesmer was involved in a protracted argument that involved unpleasant scenes, with the family of a blind girl who disputed his claimed cure.

So in the year of 1778 Mesmer traveled to Paris where he set up his salon, and then within the year moved to a house just outside Paris and this is where he set up his famous Baquet. This was actually a large round oak barrel which people were able to sit around, and these people held iron rods that dipped into the barrel which was filled with water, iron filings and glass. With this Baquet it was possible for Mesmer and his assistants to treat many people at once - and could be seen as an early form of group therapy!

During these sessions Mesmer would be dressed in a silk robe and walk amongst the patients, talking quietly and making passes with his hands or with an iron wand that he would carry and there would be light piano music in the background. Perhaps not very scientific, but it was effective all the same.

Mesmer moved back into Paris where he and his partner, and friend, Dr Charles D'eslon became so successful using this technique that he often had to turn people away, this didn't please Mesmer as he wished this therapy to be available to anyone who required it. Mesmer eventually realized that he didn't need to use his Baquet and set about using a tree, as he had previously done in Vienna. So Mesmer attached cords to the tree and often up to a hundred people were said to be sat in this suburb of Paris, under a tree, holding cords attached to the branches, with Mesmer walking amongst them in his silk robe! Many of the people who took part in these sessions reported being 'cured' or feeling 'better' and, unsurprisingly, orthodox medical practitioners attacked Mesmer's methods of treatment.

In 1782 Mesmer and his associates founded the Society of Harmony. This was actually a form of franchise, he had 100 subscribers pay today's equivalent of £400 and for this they received full instructions of Mesmer's methods along with the right to practice these methods in specific towns, much of a similar idea as the Macdonald franchises of today.

The society that Mesmer founded was such a great success that soon other Societies of Harmony were operating in other French provinces and abroad, and during this time many important discoveries were being made by many of the members.

The hostility that they received from orthodox medicine continued during this time, although Mesmer and D'eslon were campaigning for investigations into the methods that they were using to try to show that they were an acceptable form of therapy - that actually worked.

During Mesmer's declining years and after his death, one of Mesmer's pupils (and friend) continued to practice and teach 'animal magnetism' and it was around this time that Professor Jean Deleuze demonstrated 'Post Hypnotic Suggestion', this was most probably the first time that Post Hypnotic Suggestion was utilized.

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Now for any of you that aren't aware, a post hypnotic suggestion is a suggestion that is given when the patient is actually hypnotized, and acted out after they have left the hypnotic state - very similar to the technique that is used when people come to me to help them quit the habit of smoking.

Now there are many other names in the history of hypnotherapy, and if I had more time I would tell you more about these, but as time (and web space) is short and for the sake of reader interest I will quickly jump forward to 1845. In 1845 James Esdaile made his first Mesmeric experiments whilst in charge of a hospital in India, and subsequently used 'Mesmeric analgesia', or put another way his operations were carried out with only the use of Mesmers techniques - there was no anaesthetic used. Mesmeric analgesia proved to be so successful that it was used extensively by Esdaile during this period; however, he was not the first to use Mesmerism for operations. The first recorded use of the technique was in the amputation of a leg by Dr's Topham and Squire Ward.

Over a three year period Esdaile carried out thousands of painless operations, no less than 300 of these were major operations and included 19 amputations and also the removal of scrotal tumors, now please don't forget that all these operations were carried out without any other form of anesthetic except Mesmeric practices.

A commission was appointed by the Governor of Bengal to report on the work that Esdaile was doing and indeed reported back very favorably on Esdaile's work, but unfortunately the introduction of ether and chloroform virtually ended the application of Mesmerism dispute Esdaile's vigorous defense of his methods. In 1852 James Esdaile published a pamphlet called "The introduction of mesmerism as an anesthetic and curative agent into the hospitals of India", however you'd be very fortunate to be able to lay your hands on a copy of his publication today!

In the 19th century, a man called James Braid was to give the phenomena associated with mesmerism a new name, for it was Braid who first coined the words hypnotism, hypnotic, hypnotize etc. The origin of the word comes from the Greek word "hpnos" meaning sleep. Not long after Braid had coined the word hypnotism, he realized that he had made a grave error in his naming of this phenomena, and tried to rename it monoidism, for that is what hypnosis actually is, people don't 'go to sleep' in hypnosis, rather they direct their attention inwards, to a single point - but unfortunately it was too late as hypnosis had already been accepted and was in common use. But back to the history lesson, when Braid first witnessed mesmerism he really wasn't too impressed as he believed that the Mesmeric effect was nothing but trickery.

Braid got to witness a second demonstration, and at this demonstration trickery was suggested, so several of the audience members, including Braid, were invited onto the stage to study the mesmerized subject. Braid, convinced that it was nothing short of a stage act actually forced a pin beneath the subjects finger nail, and was surprised and impressed when the subject showed no sign of discomfort.

Braid became a convert to mesmerism after that demonstration, and proceeded to carry out numerous experiments on the phenomena and it was his scientific approach to hypnotism that enabled many influential people to embrace the subject. But more importantly Braid also ascertained that the hypnotic phenomena were not produced directly by the hypnotist.

Or to put this another way, Braid discovered that the state of hypnosis was self induced and the hypnotist was only a catalyst for the affair.

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Two doctors by the names of Liebeault and Bernheim founded the so called Nancy school of France in the 19th century, which proved to be very significant in the acceptance of hypnotherapy. Liebeault although often being described as a simple country doctor amassed a considerable amount of experience and expertise in hypnosis by treating, without charge, the peasants of Nancy, a rural French region. Bernheim, a fashionable doctor in Paris at the time, began to make frequent visits to Liebeault after the Nancy doctor effected a cure on a patient that Bernheim had previously had no success with.

The two doctors became great friends and although Liebeault continued working with the poor, refusing to accept any payment, Bernheim made a practice of hypnotizing all of the hospital patients who came into his care. After four years, and about five thousand hypnotic inductions, Bernheim yielded a 75% success rate - however, several years later, the number of inductions had risen to ten thousand and his success rate had risen to 85%.

At the same time as Liebeault and Bernheim were experimenting with hypnosis and its therapeutic use, a great French neurologist, Jean Charcote, had also been experimenting with hypnosis, and Charcote put forward the view that hypnosis was essentially hysteria, however the Nancy school opposed Charcote's view and consequently won acceptance of hypnosis for what it is an essentially normal consequence of suggestion.

Sigmund Freud, the father of psycho-analysis, visited Nancy in 1889, and on this visit he became convinced of the 'powerful mental processes which nevertheless remain hidden from man'. Freud never really got to grips with hypnosis, abandoning it after he discovered 'positive transference'. This happened when he terminated the hypnotic session of a female patient and she threw her arms around his neck. Freud is reported saying of this event, 'I was modest enough not to attribute the event to my own irresistible personal attraction'. Freud subsequently developed free association and psychoanalysis, through these techniques he was able to control and use the transference phenomena.

This brings us into the early decades of the 20th century and a man whose name may be familiar with you, Emile Coue, Coue also studied at Nancy and is associated with the New Nancy School. His reputation is mainly founded on the work that he did on auto suggestion, it was in fact Coue who originated the well known affirmation 'Everyday, in every way, I'm getting better and better'. I would imagine at least some of you are familiar, if you haven't actually employed this affirmation at some time.

This brings us almost up to date with modern hypnotherapy, apart from the continuing debate upon whether hypnosis is a specific or non specific state that was started by Barber, now Barber thought that hypnosis was a non specific state, and he did many experiments to prove his point, he gave hypnotized and non-hypnotized volunteers the same suggestions, such as to stop smoking, and was surprised to find that both groups reacted in a similar manner. From this he decided that there was not a specific state of hypnosis, however many people disagree with his non specific state theory. Unfortunately, until there are major advances in biological science, this debate shall surely continue.

So, there we are a quick tour of the world of hypnotherapy, from 3,000 BC to modern day. Modern hypnosis has survived the controversies, mistrust and open hostility to reach its present

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position amongst the healing arts. Hypnotherapy has survived because enough determined people have fought on, and because enough people have benefitted from it.

Hypnotherapy in the 1990s has become accepted as an alternative medicine, mainly due to the efforts of the people I have already mentioned. And indeed, hypnotherapy is becoming more and more accepted by orthodox medicine as a tool that does affect cures in previously incurable cases.

To many people, hypnotherapy is only a last resort for those people who wish to give up smoking, but the reality is the average hypnotherapist only deals with his sort of person occasionally. Hypnotherapy is able to effectively cure many problems, if you are really scared of spiders, as many people are, or snakes, or going outside or even being in confined spaces; hypnotherapy can cure that problem - not for just a week or a month – permanently.

**Pediatric Research:** Lambert SA. The effects of hypnosis/guided imagery on the postoperative course of children. *Journal of Developmental & Behavioral Pediatrics*. 1996; 17(5): 307-10. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient. Kohen DP Relaxation/mental imagery (self-hypnosis) for childhood asthma: behavioural outcomes in a prospective, controlled study *Australian Journal of Clinical & Experimental Hypnosis* 1996 May; 24(1): 12-28.

### **Results included:**

- (a) fewer emergency room visits in the experimental group;
- (b) less school missed in the experimental group compared to the traditional control group and to the waking suggestion group;
- (c) no difference in psychological evaluations between groups; and
- (d) surprising findings regarding hypnotic and hypnotic-like experiences among subjects.

**IBS Research:** A British study of 18 adults with IBS published in *The Lancet* found that hypnosis "strikingly" reduced colonic motility, thus decreasing diarrhea and cramping (July 11, 1992).

Colgan SM, Faragher EB, Whorwell PJ Controlled trial of hypnotherapy in relapse prevention of duodenal ulceration *Lancet* 1988; 1(8598): 1299-300 30. The results of this study suggest that hypnotherapy may be a useful therapeutic adjunct for some patients with chronic recurrent duodenal ulceration. Whorwell PJ; Prior A; Colgan SM. Hypnotherapy in severe irritable bowel syndrome: further experience. *Gut*, 1987 Apr, 28:4, 423-5. This report summed up further experience with 35 patients added to the 15 treated with hypnotherapy in the 1984 *Lancet* study. For the whole 50 patient group, success rate was 95% for classic IBS cases, but substantially less for IBS patients with atypical symptom picture or significant psychological problems. The report also observed that patients over age 50 seemed to have lower success rate from this treatment.

Prior A, Colgan SM, Whorwell PJ. Changes in rectal sensitivity after hypnotherapy in patients with irritable bowel syndrome. *Gut* 1990;31:896. This study found IBS patients to be less sensitive to pain and other sensations induced via balloon inflation in their gut while they were under hypnosis. Sensitivity to some balloon-induced gut sensations (although not pain sensitivity) was reduced following a course of hypnosis treatment.



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Koutsomanis D. Hypnoanalgesia in the irritable bowel syndrome. *Gastroenterology* 1997; 112, A764. This French study showed less analgesic medication use required and less abdominal pain experienced by a group of 12 IBS patients after a course of 6-8 analgesia-oriented hypnosis sessions followed by 4 sessions of autogenic training. Patients were evaluated at 6-month and 12-month follow-up.

Vidakovic Vukic M. Hypnotherapy in the treatment of irritable bowel syndrome: methods and results in Amsterdam. *Scand J Gastroenterol Suppl*, 1999, 230:49-51. Reports results of treatment of 27 patients of gut-directed hypnotherapy tailored to each individual patient. All of the 24 who completed treatment were found to be improved.

Galovski TE; Blanchard EB. *Appl Psychophysiol Biofeedback*, 1998 Dec, 23:4, 219-32. Eleven patients completed hypnotherapy, with improvement reported for all central IBS symptoms, as well as improvement in anxiety. Six of the patients were a waiting-control group for comparison, and did not show such improvement while waiting for treatment.

Disbrow EA. Bennett HL. Owings J. T. Effect of preoperative suggestion on postoperative gastrointestinal motility *Western Journal of Medicine*. 1993; 158(5): 488-92. The suggestion group had a significantly shorter average time to the return of intestinal motility, 2.6 versus 4.1 days. Time to discharge was 6.5 versus 8.1 days. An average savings of \$1,200 per patient resulted from this simple 5-minute intervention. In summary, the use of specific physiologically active suggestions given preoperatively in a believable manner can reduce the morbidity associated with an intra-abdominal operation by reducing the duration of ileus.

Harvey RF. Hinton RA. Gunary RM. Barry RE. Individual and group hypnotherapy in treatment of refractory irritable bowel syndrome. *Lancet* 1989; 1(8635): 424-5. 33 patients with refractory irritable bowel syndrome were treated with four 40-minute sessions of hypnotherapy over 7 weeks. 20 improved, 11 of whom lost almost all their symptoms. Short-term improvement was maintained for 3 months without further formal treatment.

Klein KB. Spiegel D. Modulation of gastric acid secretion by hypnosis. *Gastroenterology* 1989; 96(6): 1383-7. We have shown that different cognitive states induced by hypnosis can promote or inhibit gastric acid production, processes clearly controlled by the central nervous system. Hypnosis offers promise as a safe and simple method for studying the mechanisms of such central control.

Whorwell PJ. Prior A. Colgan SM. Hypnotherapy in severe irritable bowel syndrome: further experience. *Gut* 1987; 28(4): 423-5. Patients below the age of 50 with classical irritable bowel syndrome exhibited a 100% response rate. This study confirms the successful effect of hypnotherapy in a larger series of patients with irritable bowel syndrome and defines some subgroup variations.

Whorwell PJ. Prior A. Faragher EB. Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome. *Lancet* 1984; 2(8414): 1232-4 30. The hypnotherapy patients showed a dramatic improvement in all features, the difference between the two groups being highly significant. In the hypnotherapy group no relapses were recorded during the 3-month follow-up period, and no substitution symptoms were observed.

## Appendix B

**Cardiac Research:** A controlled study of 32 coronary bypass patients showed that those taught self-hypnosis pre-operatively were more relaxed after surgery and had less need for pain medication (Journal of Cardiovascular Surgery, February 1997).

Ashton C Jr. Whitworth GC. Seldomridge JA. Shapiro PA. Weinberg A. D. Michler RE. Smith CR. Rose EA. Fisher S. Oz MC. Self-hypnosis reduces anxiety following coronary artery bypass surgery.

**CONCLUSION:** This study demonstrates the beneficial effects self-hypnosis relaxation techniques on patients undergoing coronary artery bypass surgery.

Crowther J. H. Stress management training and relaxation imagery in the treatment of essential hypertension. Journal of Behavioral Medicine 1983; 6(2): 169-87. Results indicated stress management plus relaxation imagery and relaxation imagery alone were significantly more effective than blood pressure checks in reducing systolic and diastolic blood pressures during treatment and in maintaining diastolic blood pressure reductions during follow-up. However, no significant differences were found between the two treatment procedures. Clinical implications of these findings are discussed.

DeBenedittis G. Cigada M. Bianchi A. Signorini MG. Cerutti S. Autonomic changes during hypnosis: a heart rate variability power spectrum analysis as a marker of sympatho-vagal balance. International Journal of Clinical & Experimental Hypnosis 1994; 42(2): 140-52. Preliminary results indicated that hypnosis affects heart rate variability, shifting the balance of the sympatho-vagal interaction toward an enhanced parasympathetic activity, concomitant with a reduction of the sympathetic tone. A positive correlation between hypnotic susceptibility and autonomic responsiveness during hypnosis was also found.

**Surgical Research:** Eberhart LH. Doring HJ. Holzrichter P. Roscher R. Seeling W. Therapeutic suggestions given during neurolept-anaesthesia decrease post-operative nausea and vomiting. European Journal of Anaesthesiology 1998; 15(4): 446-52. We conclude that therapeutic suggestions heard during neurolept-anaesthesia are processed and decrease post-operative nausea and vomiting in patients after thyroidectomy.

Enqvist B. Bjorklund C. Engman M. Jakobsson J. Preoperative hypnosis reduces postoperative vomiting after surgery of the breasts. A prospective, randomized and blinded study. Acta Anaesthesiologica Scandinavica 1997; 41(8): 1028-32.

**RESULTS:** Patients in the hypnosis group had significantly less vomiting, 39% compared to 68% in the control group, less nausea and less need of analgesics postoperatively. Preoperative relaxation and/or hypnotic techniques in breast surgery contribute to a reduction of both PONV and postoperative analgesic requirements.

Enqvist B. Fischer K. Preoperative hypnotic techniques reduce consumption of analgesics after surgical removal of third mandibular molars: a brief communication. International Journal of Clinical & Experimental Hypnosis 1997; 45(2): 102-8. Anxiety before the operation increased significantly in the control group but remained at baseline level in the experimental group. Postoperative consumption of analgesics was significantly reduced in the experimental group compared to the control group.

Enqvist B. von Konow L. Bystedt H. Pre- and perioperative suggestion in maxillofacial surgery: effects on blood loss and recovery. International Journal of Clinical & Experimental Hypnosis 1995; 43(3): 284-94. The patients who received preoperative suggestions exhibited a

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30% reduction in blood loss. A 26% reduction in blood loss was shown in the group of patients receiving pre- and perioperative suggestions, and the group of patients receiving perioperative suggestions only showed a 9% reduction in blood loss. Lower blood pressure was found in the groups that received pre- and perioperative and perioperative suggestions only. Rehabilitation was facilitated in the group of patients receiving perioperative suggestions only.

Evans C, Richardson PH Therapeutic suggestions during general anesthesia *Advances* 1988; 5(4): 6-11. Tested the hypothesis that the quality and duration of recovery from surgery would be improved by therapeutic suggestions made while patients were under general anesthesia. Results support the hypothesis.

Goldmann L, Ogg TW, Levey AB. Hypnosis and daycase anaesthesia. A study to reduce pre-operative anxiety and intra-operative anaesthetic requirements. *Anaesthesia* 1988; 43(6): 466-9. A significant correlation was found between anxiety and perceived knowledge of procedures. The results suggest that pre-operative hypnosis can provide a quick and effective way to reduce pre-operative patient anxiety and anaesthetic requirements for gynaecological daycase surgery.

Lambert SA. The effects of hypnosis/guided imagery on the postoperative course of children. *Journal of Developmental & Behavioral Pediatrics*. 1996; 17(5): 307-10. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient.

Maroof M, Ahmed SM, Khan RM, Bano SJ, Haque AW. Intra-operative suggestions reduce incidence of post hysterectomy emesis. *JPMA - Journal of the Pakistan Medical Association* 1997; 47(8): 202-4. The difference was statistically significant. The patients requiring rescue antiemetic was significantly higher ( $P < 0.05$ ) in group I (66.6%) as compared to group II (22.2%). It is concluded that positive therapeutic suggestion may be considered as an alternative to antiemetic therapy.

McLintock TT, Aitken H, Downie CF, Kenny GN. Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions. *BMJ* 1990; 301(6755): 788-90.

**CONCLUSION** – Positive intraoperative suggestions seem to have a significant effect in reducing patients' morphine requirements in the early postoperative period.

Rapkin DA, Straubing M, Holroyd JC. Guided imagery, hypnosis and recovery from head and neck cancer surgery: an exploratory study. *International Journal of Clinical & Experimental Hypnosis* 1991; 39(4): 215-26. Postoperative hospitalizations for the hypnotic intervention group were significantly shorter than for the usual care group. Findings suggest that imagery-hypnosis may be prophylactic, benefiting patients by reducing the probability of postoperative complications and thereby keeping hospital stay within the expected range.

Williams AR, Hind M, Sweeney BP, Fisher R. The incidence and severity of postoperative nausea and vomiting in patients exposed to positive intra-operative suggestions. *Anesthesia*. 1994; 49(4): 340-2. Patients who received positive suggestions suffered significantly less nausea and vomiting in the 24 h after surgery.

## Appendix B

Preoperative instruction for decreased bleeding during spine surgery spinal surgery patients who were given a preoperative suggestion to decrease blood loss at surgery had significantly less blood loss than a relaxation or a control group. 1986 *Anesthesiology* 65;A245 Bennett HL, Benson DR Kuiken DA

Pre- and perioperative suggestion in maxillofacial surgery: effects on blood loss and recovery. Patients facing maxillofacial surgery who listened to a preop tape suggesting favorable outcomes including decreased blood loss, had a significant 30% less blood loss than controls, vs. only 9% less blood loss in a group than only heard these suggestions while asleep in the OR. 1995 *Int J Clin Exp Hypn* 43;3:284-94 Enqvist, B., von Konow, L., and Bystedt, H.

Hypnotic control of upper gastrointestinal hemorrhage: Case report of a woman resuscitated from shock with a positive lavage on her way to endoscopy, whose bleeding apparently stopped with hypnosis--script given. 1984 *Am J Clin Hypn* 27;1:22-5 Bishay, E. G., Stevens, G., and Lee, C.

The use of hypnosis with hemophilia. A self hypnosis program for hemophilia patients at the Univ. of Colorado has decreased frequency and severity of bleeding episodes, as well as providing increased feelings of control and self-confidence. 1992 *Psychiatr Med* 10;4:89-98 LaBaw, W.

**Addiction Research:** Manganiello AJ. A comparative study of hypnotherapy and psychotherapy in the treatment of methadone addicts. *American Journal of Clinical Hypnosis* 1984; 26(4): 273-9. Significant differences were found on all measures. The experimental group had significantly less discomfort and illicit drug use, and a significantly greater number of withdrawals. At six month follow up, 94% of the subjects in the experimental group who had achieved withdrawal remained narcotic free.

**Cancer Research:** Campbell DF. Dixon JK. Sanderford LD. Denicola MA. Relaxation: its effect on the nutritional status and performance status of clients with cancer. *Journal of the American Dietetic Association* 1984; 84(2): 201-4. Research has shown relaxation to be an effective measure in relation to pain, hypertension, and other conditions. These preliminary results now suggest that relaxation may also be effective in treating the eating problems of the person with cancer, leading to improvement in weight and performance status.

Dahlgren LA. Kurtz RM. Strube MJ. Malone MD. Differential effects of hypnotic suggestion on multiple dimensions of pain. *Journal of Pain & Symptom Management*. 1995; 10(6): 464-70. Analysis of the simple-simple main effects, holding both group and condition constant, revealed that application of hypnotic analgesia reduced report of pain intensity significantly more than report of pain unpleasantness.

Enqvist B. Bjorklund C. Engman M. Jakobsson J. Preoperative hypnosis reduces postoperative vomiting after surgery of the breasts. A prospective, randomized and blinded study. *Acta Anaesthesiologica Scandinavica* 1997; 41(8): 1028-32. RESULTS: Patients in the hypnosis group had significantly less vomiting, 39% compared to 68% in the control group, less nausea and less need of analgesics postoperatively. Preoperative relaxation and/or hypnotic techniques in breast surgery contribute to a reduction of both PONV and postoperative analgesic requirements.

Jacknow DS. Tschann JM. Link MP. Boyce WT. Hypnosis in the prevention of chemotherapy-related nausea and vomiting in children: a prospective study. *Journal of*

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Developmental & Behavioral Pediatrics 1994; 15(4): 258-64. To study the effectiveness of hypnosis for decreasing antiemetic medication usage and treatment of chemotherapy-related nausea and vomiting in The hypnosis group experienced less anticipatory nausea than the control group at 1 to 2 months post diagnosis ( $p < .02$ ). Results suggest self-hypnosis is effective for decreasing antiemetic medication usage and for reducing anticipatory nausea during chemotherapy.

Rapkin DA. Straubing M. Holroyd JC. Guided imagery, hypnosis and recovery from head and neck cancer surgery: an exploratory study. International Journal of Clinical & Experimental Hypnosis 1991; 39(4): 215-26. Postoperative hospitalizations for the hypnotic intervention group were significantly shorter than for the usual care group. Findings suggest that imagery-hypnosis may be prophylactic, benefiting patients by reducing the probability of postoperative complications and thereby keeping hospital stay within the expected range.

Sullivan DS. Johnson A. Bratkovitch J. Reduction of behavioral deficit in organic brain damage by use of hypnosis. Journal of Clinical Psychology 1974; 30(1): 96-8. There was a highly significant correlation between hypnotic susceptibility and improvement on the dependent measures.

**Pain Research:** Anderson JA, Basker MA, Dalton R Migraine and hypnotherapy International Journal of Clinical & Experimental Hypnosis 1975; 23(1): 48-58. Compared the treatment of migraine by hypnosis and autohypnosis with the treatment of migraine by the drug prochlorperazine (Stemetil) Results show that the number of attacks and the number who suffered blinding attacks were significantly lower for the group receiving hypnotherapy than for the group receiving prochlorperazine. For the group on hypnotherapy, these 2 measures were significantly lower when on hypnotherapy than when on previous treatment. It is concluded that further trials of hypnotherapy are justified against some other treatment not solely associated with the ingestion of tablets. (German, French, & Spanish summaries)

Dahlgren LA. Kurtz RM. Strube MJ. Malone MD. Differential effects of hypnotic suggestion on multiple dimensions of pain. Journal of Pain & Symptom Management. 1995; 10(6): 464-70. Analysis of the simple-simple main effects, holding both group and condition constant, revealed that application of hypnotic analgesia reduced report of pain intensity significantly more than report of pain unpleasantness.

Melis PM. Rooimans W. Spierings EL. Hoogduin CA. Treatment of chronic tension-type headache with hypnotherapy: a single-blind time controlled study. Headache 1991; 31(10): 686-9. The improvement was confirmed by the subjective evaluation data gathered with the use of a questionnaire and by a significant reduction in anxiety scores.

Patterson DR. Ptacek JT. Baseline pain as a moderator of hypnotic analgesia for burn injury treatment. Journal of Consulting & Clinical Psychology 1997; 65(1): 60-7. The post treatment pain scores of the 2 groups did not differ significantly when all patients were considered. However, when a subset of patients who reported high levels of baseline pain were examined, it was found that patients in the hypnosis group reported less post treatment pain than did patients in the control group. The findings are used to replicate earlier studies of burn pain hypnoanalgesia, explain discrepancies in the literature, and highlight the potential importance of motivation with this population.

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Oakley DA, Whitman LG, Halligan PW. Department of Psychology, University College London, UK. oakley@the-croft.demon.co.uk **OBJECTIVE:** Treatment of phantom limb pain using hypnotic imagery. **CONCLUSION:** Hypnotic procedures appear to be a useful adjunct to established strategies for the treatment of phantom limb pain and would repay further, more systematic, investigation. Suggestions are provided as to the factors which should be considered for a more systematic research program.

**Stress & Phobia Research:** Faymonville ME. Mambourg PH. Joris J. Vrijens B. Fissette J. Albert A. Lamy M. Psychological approaches during conscious sedation. Hypnosis versus stress reducing strategies. 1997; 73(3): 361-7. This study suggests that hypnosis provides better perioperative pain and anxiety relief, allows for significant reductions in alfentanil and midazolam requirements, and improves patient satisfaction and surgical conditions as compared with conventional stress reducing strategies support in patients receiving conscious sedation for plastic surgery.

Stanton HE Overcoming fear of public speaking with the diagnostic trance Australian Journal of Clinical & Experimental Hypnosis 1991 May; 19(1): 41-7. Subjects in both the experimental group of the 1st stage and the control group of the 2nd stage were able to reduce their fear of public speaking level significantly through use of the diagnostic trance procedure. Three months later, this improvement had been maintained. Stanton HE Self-hypnosis: one path to reduced test anxiety Contemporary Hypnosis 1994; 11(1): 14-8. Results indicate a significant reduction of TASC scores in the experimental group, maintained over a 6-mo period, which was not matched by the control group.

Hammarstrand G. Berggren U. Hakeberg M. Psychophysiological therapy vs. hypnotherapy in the treatment of patients with dental phobia. European Journal of Oral Sciences 1995; 103(6): 399-404. The PP group reported a statistically significant decrease in dental fear as well as a rise in mood during dental situations, as opposed to the HT group. Treatments, became less fearful of dental care and were able to manage conventional dental care, including changing dentist.

Stanton HE Overcoming fear of public speaking with the diagnostic trance Australian Journal of Clinical & Experimental Hypnosis 1991 May; 19(1): 41-7. Subjects in both the experimental group of the 1st stage and the control group of the 2nd stage were able to reduce their fear of public speaking level significantly through use of the diagnostic trance procedure. Three months later, this improvement had been maintained.

Taylor DN. Effects of a behavioral stress-management program on anxiety, mood, self-esteem, and T-cell count in HIV positive men. Psychological Reports. 1995; 76(2): 451-7. Analysis showed that compared with the no-treatment group, the treatment group showed significant improvement on all the dependent measures, which was maintained at a 1-mo. follow-up. Since stress is known to compromise the immune system, these results suggest that stress management to reduce arousal of the nervous system and anxiety would be an appropriate component of a treatment regimen for HIV infection.

**Fibromyalgia Research:** Haanen HC. Hoenderdos HT. van Romunde LK. Hop WC. Mallee C. Terwiel JP. Hekster GB. Controlled trial of hypnotherapy in the treatment of refractory fibromyalgia. Journal of Rheumatology 1991; 18(1): 72-5. Results: These feelings showed a significant decrease in patients treated by hypnotherapy compared with physical

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therapy, but they remained abnormally strong in many cases. We conclude hypnotherapy may be useful in relieving symptoms in patients with refractory fibromyalgia.

**HIV Research:** Ruzyla-Smith P. Barabasz A. Barabasz M. Warner D. Effects of hypnosis on the immune response: B-cells, T-cells, helper and suppressor cells. *American Journal of Clinical Hypnosis*. 1995; 38(2): 71-9. Significant alteration of the immune response as measured by B-cells and helper T-cells was shown only for highly hypnotizable Ss exposed to hypnosis.

Healthy Hypnosis self-hypnosis programs are in NO WAY a substitution for traditional medical care. If you are under the care of a physician, psychiatrist, psychologist or on any prescription medication we recommend that you make appropriate consultations prior to receiving hypnosis treatment of any kind.

### 40. RESEARCH IN HYPNOSIS

There has been a great deal of research into the phenomena of hypnosis over the last 90 years. Beginning with the pioneering work of Anton Mesmer, research in hypnosis moved from a primary clinical orientation in the realm of experimental psychology. As a result the scientific method was applied to the investigation of many of the aspects of trance state and the effects these states had on the subject in the present and the future. The scientific method involves the use an experiment to determine if a "cause" had an "effect" on some object. i.e., A caused B to change. To be considered, a valid conclusion A must effect B in the same way and with the same effect each time A affects B. In addition, no other cause e.g., C can be used to explain the changes in B. Thus A is the only cause of the "effects" in B. This set of circumstances leads to reliability and validity of the claim that A causes B. Thus we can frame the argument; if A {Hypnosis} is used to affect a person's anxiety {B} and A does affect this B consistently over a number or trials and no other explanation can provide a better explanation [i.e. there is no other cause of the effect on B] we can conclude that A causes B is a valid and reliable conclusion and we can put or faith that the use of A will produce affects in B. The experimental approach is by far the favorite method of investigation of hypnotic phenomena even though psychological processes are extremely complex. However, there are other quasi-experimental approaches that are also used in the field. These approaches involve the use of case studies in which a single individual case is investigated in detail. Although it is not possible to generalize from one case to any number of similar cases. Case studies are useful in pointing to directions where the experimental approach can be most fruitful in the area of investigation e.g., if a particular method of hypnosis is found very useful for a person e.g., a substance abuser. Then there is some likelihood that this method may be useful other persons with this type of problem.

In this website it is not possible to review all the research available e.g., last year alone there were over 500 articles published in hypnosis in English alone. However, we have done our best to categorize the research and describe the area under investigation as well as provide you with representative articles and pointers to the research literature so that you can find data you need quickly. Hypnosis with Children and Adolescents

**Experimental Investigation of Psychosomatic Problems e.g.,**

\* Asthma

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- \* Psychotherapy
- \* Surgical Applications
- \* Eating Disorders
- \* Studies in Consciousness
- \* Hypnosis with Adults
- \* Learning Enhancement
- \* Pain Reduction and Elimination
- \* Theory Validation
- \* Psychiatric Classifications

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## Appendix B

## Appendix C

## RESEARCH ON HYPNOSIS STUDIES: VOL 2

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## HYPNOSIS RESEARCH AND STUDIES: VOL 2

## 1. INTEGRATIVE THERAPIES PROGRAM FOR CHILDREN WITH CANCER HYPNOSIS: CAROL ANN SCWARTZ CANCER RESEARCH: COLUMBIA

**HYPNOSIS:** There are 6 studies looking at the effectiveness of hypnosis on anticipatory nausea and vomiting (ANV). There are 14 studies looking at the effectiveness of hypnosis on pain and anxiety during painful procedures (e.g., lumbar punctures and bone marrow aspirations). ANV Contanch P, Hockenberry M, Herman S. Self-Hypnosis as antiemetic therapy in children receiving chemotherapy. *Oncology Nursing Forum* 12:4;41-6, 1985.

**Randomized Controlled Trial Results:** 20 children randomized to standard protocol or self-hypnosis/relaxation experimental group. In the experimental group there was a statistically significant decrease in intensity and severity of nausea and vomiting, and a significant increase in oral intake post chemotherapy. Hawkins P, Lioffi C, Ewart B et al. Hypnotherapy for control of anticipatory nausea and vomiting in children with cancer: preliminary findings. *Psycho-Oncology* 4:101-6, 1995

**Randomized Controlled Trial Results:** In 30 patients, hypnosis was found to relieve anticipatory nausea and vomiting significantly better, as compared with therapist contact and no therapy (control group). Jacknow D, Tschann J, Link M et al. Hypnosis in the prevention of chemotherapy-related nausea and vomiting in children: a prospective study. *J Dev Beh Pediatr* 15:258-64, 1994.

**Randomized Controlled Trial, single blinded Results:** Twenty patients receiving chemotherapy were randomized to two groups, one receiving hypnosis, the other a control. The study observed the effectiveness of hypnosis in decreasing antiemetic medication and the effectiveness in alleviating the side effects of nausea and vomiting. The patients receiving hypnosis took less antiemetic medication in both the first course chemotherapy ( $P < .04$ ) and the second course ( $P < .02$ ). Redd W, Andresen G, Minagawa R. Hypnotic control of anticipatory nausea in patients receiving cancer chemotherapy. *Journal of Consulting and Clinical Psychology* 50:14-9, 1982.

**Single group intervention Results:** Patients were trained in hypnosis and imagery to control anticipatory nausea and vomiting. They all reported decreases in nausea/vomiting before and during chemotherapy sessions. Zeltzer L, Kellerman J, Ellenberg L, Dash J. Hypnosis for reduction of vomiting associated with chemotherapy and disease in adolescents with cancer. *Journal of Adolescent Health Care* 4(2):77-84, 1983.

**Single group intervention. Results:** Hypnosis was found to be effective in a group of adolescents undergoing treatment for cancer. Zeltzer L, LeBaron S, Zeltzer P. The effectiveness of behavioral intervention for reduction of nausea and vomiting in children and adolescents receiving chemotherapy. *Journal of Clinical Oncology* 2:6;683-90, 1984.

**Controlled trial. Results:** 19 patients received hypnosis or counseling. Both interventions resulted in a decrease in nausea and vomiting.

**Pain & Anxiety** Hawkins P, Lioffi C, Ewart B, Hatira P. Hypnosis in the Alleviation of Procedure Related Pain and Distress in Pediatric Oncology Patients. *Contemporary Hypnosis* 15(4): 199-207, 1998. Results: In a randomized, controlled trial 30 children with leukemia and non-Hodgkin's lymphoma (6 to 16 years old) undergoing routine lumbar punctures were randomized to hypnosis using direct suggestions versus to hypnosis using indirect suggestions.

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The effect of hypnosis on pain and anxiety was reported. Pain and anxiety were measured by self reports and by independent observers. Both direct and indirect hypnosis significantly decreased self reports of pain and anxiety over time ( $p < 0.001$ ,  $p < 0.001$ ). Both styles of hypnosis also significantly decreased observers' reports of pain and anxiety ( $p < 0.001$ ). Pain and anxiety were also significantly related to the level of the subject's hypnotizability ( $p < 0.001$ ,  $p < 0.001$ ). Liossi, C., Hatira, P. Clinical hypnosis versus cognitive behavioral training for pain management with pediatric cancer patients undergoing bone marrow aspirations. *The International Journal of Clinical and Experimental Hypnosis*. 47 (2):104-116. 1999. Results: A randomized, controlled trial was conducted to evaluate the efficacy of clinical hypnosis versus cognitive behavioral coping (CB) in reducing pain and distress in 30 pediatric patients (5 to 15y) undergoing bone marrow aspirations. Patients were randomized to receive hypnosis, cognitive behavioral coping or no intervention. Both hypnosis and CB were effective in reducing subjects' pain, ( $p = 0.0001$ ,  $p = 0.002$ ), anxiety ( $p = 0.0001$ ,  $p = 0.0056$ ), and observed distress ( $p = 0.0001$ ,  $p = 0.003$ ) compared to controls. Hypnosis was more effective than C B in reducing subjects' anxiety and distress ( $p = 0.0002$ ,  $p = 0.0025$ ). Harper G. A developmentally sensitive approach to clinical hypnosis for chronically and terminally ill adolescents. *American Journal of Clinical Hypnosis* 42(1):50-60, 1999.

**Case Series Results:** This paper discusses the technique of hypnosis and why it can help adolescents who are ill. Several case reports are presented. One described a teenager with a brain tumor who reported that hypnosis helped with pain relief and that when he was taught self-hypnosis he gained a sense of control over his life. Hockenberry M, Bologna-Vaughan S. Relaxation techniques in children with cancer: the nurse's role. *J Assoc Pediatr Oncol Nursing* 5:1-2;7-11, 1988.

**Single group intervention. Results:** 15 children with cancer underwent relaxation training, including hypnosis. This study suggested that coping with painful procedures was better with the training. Katz E, Kellerman J, Ellenberg L. Hypnosis in the reduction of acute pain and distress in children with cancer. *J Pediatr Psychol* 12:379-94, 1987.

**Observational, longitudinal study. Results:** In 36 patients with ALL, both hypnosis and play therapy reduced pain and distress during aversive medical procedures. Kellerman J, Zeltzer L, Ellenberg L, et al. Adolescents with cancer. *Journal of Adolescent Health Care* 4:85-90, 1983.

**Single group intervention. Results:** 16 of 18 adolescents trained in hypnosis showed a reduction. Kuttner K. Favorite stories: a hypnotic pain-reduction technique for children in acute pain. *Am J Clin Hypn* 30:289-95, 1988.

**Controlled trial. Results:** The group that received hypnotic suggestion and reframing had more therapeutic benefit than standard treatment or distraction techniques. Kuttner L, Bowman M, Teasdale M. Psychological treatment of distress, pain, and anxiety for young children with cancer. *J Dev Behav Pediatr* 9:374-82, 1988.

**Randomized Controlled Trial. Results:** 30 leukemia patients were randomized to standard treatment vs. hypnotic/imaginative involvement vs distraction during bone marrow aspirations. For the younger children hypnosis/imaginative involvement reduced stress the best. For older kids, both distraction and hypnosis/imagery reduced pain and anxiety. In distress and anxiety associated with lumbar punctures, bone marrow aspirations, and chemotherapy. Hilgard J,

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LeBaron S. Relief of anxiety and pain in children and adolescents with cancer: quantitative measures and clinical observations. *Int J Clin Hypnosis* 30:417-22, 1982.

**Single group intervention. Results:** 24 children undergoing bone marrow aspirations were successful in reducing self-reported pain below baseline levels with hypnosis. Miller, J.A. Hypnosis in a boy with leukemia. *The American Journal of Clinical Hypnosis*. 22:231-235, 1980.

**Case study. Results:** A case history of a 9-year old boy with ALL who had tremendous anxiety over his illness. His anxiety interfered with treatment and his social interactions upon during treatment and upon entering remission. The hypnosis was successful in helping the 9-year old boy cope with his anxiety. Valente, S.M. Using hypnosis with children for pain management. *Oncology Nursing Forum*. 18:699-704, 1991.

**Review paper. Results:** Discusses the research, misconceptions, strategies, and potential contraindications in managing pain in children with cancer with hypnosis. Hockenberry-Eaton M, Contach P. Evaluation of a child's perceived self-competence during treatment for cancer. *Journal of Pediatric Oncology Nursing* 6:3;55-62, 1989.

**Randomized Controlled Trial. Results:** 22 children were assigned to self-hypnosis or standard care group. The self-hypnosis group maintained a higher level of self-competence ratings during treatment than did the control group. Wall V, Womack W. Hypnotic versus active cognitive strategies for alleviation of procedural distress in pediatric oncology patients. *Am J Clin Hypn* 31:181-91, 1989 **Observational study. Results:** In 20 patients the pain during bone marrow aspirations or lumbar punctures was reduced in both the hypnotic group and the cognitive group. Neither technique reduced anxiety though. Zeltzer L, LeBaron S. Hypnosis and non-hypnotic techniques for reduction of pain and anxiety during painful procedures in children and adolescents with cancer. *The Journal of Pediatrics* 101:1032-1035, 1982.

**Randomized trial. Results:** Patients were randomized to two groups, one receiving hypnotic therapy and the control group receiving non-hypnotic behavioral therapy in efforts to help reduce the pain and anxiety in 27 children undergoing bone marrow aspirations and 22 children undergoing lumbar punctures. In the children undergoing bone marrow aspirations, a significant decrease in pain in the hypnotic group ( $P < 0.001$ ) versus the nonhypnotic group ( $P < 0.01$ ) was reported. Children undergoing lumbar punctures also incurred less pain in the group receiving the hypnosis ( $P < 0.001$ ). Anxiety was decreased more in both groups receiving hypnosis versus controls. (P values in the bone marrow aspiration and lumbar punctures were  $P < 0.001$  and  $P < 0.001$ , respectively.) Zeltzer, LK, Dolgin, MJ, LeBaron, S, LeBaron, C. **A Randomized, Controlled Study of Behavioral Intervention for Chemotherapy Distress in Children with Cancer.** *Pediatrics*. 88(1):34-42, 1991. Fifty-four children and adolescents with various types of cancer were randomized to either hypnosis, non-hypnotic/distraction therapy, or placebo to assess the effect on chemotherapy-induced nausea/vomiting. Subjects in the hypnosis group and non-hypnotic/distraction therapy group had significantly shorter duration of nausea. The hypnosis group also had shorter duration of vomiting. Overall trends found subjects in the hypnosis group had a general improvement of symptoms without decline; whereas, subjects in the control group had worsened symptoms.

**Case Reports** Silva, M. "May the force be with you" hypnotherapy with a leukemic child. *Psychother Private Practice* 8:49-54, 1990. Positive findings Kaufman K, Tarnowski K, Olson R.

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Self-regulation treatment to reduce the aversiveness of cancer chemotherapy. *J Adolesc Health Care* 10:323-7, 1989  
 Positive findings LaClave L, Blix S. Hypnosis in the management of symptoms in a young girl with malignant astrocytoma: a challenge to the therapist. *Int J Clin Exp Hypn* 37:6-14, 1989  
 Positive findings Ellenberg L, Kellerman J, Dash J. Use of hypnosis for multiple symptoms in an adolescent girl with leukemia. *Journal of Adolescent Health Care* 1:132-6, 1980.  
 Positive findings Pettit G. Adjunctive trance and family therapy for terminal cancer. *New Zealand Medical Journal* 89(627):18-21, 1979.  
 Positive findings Gardner G. Childhood, death, and human dignity: hypnotherapy for David. *The International Journal of Clinical and Experimental Hypnosis* 23(2):122-39, 1976. Positive findings

### 2. INTEGRATIVE THERAPIES PROGRAM FOR CHILDREN WITH CANCER IMAGERY: CAROL ANN SCWARTZ CANCER RESEARCH: COLUMBIA

Broome M, Lillis P, McGahee T, Bates T. The use of distraction and imagery with children during painful procedures. *Oncology Nursing Forum* 19:3;499-502, 1992.

**Prospective observational study. Results:** In 14 children with ALL undergoing lumbar punctures, the practice of imagery, relaxation and distraction seemed to lower the pain rating on repeat lumbar punctures. The study was too small to be conclusive. Kazak, AE, Penati, B, Brophy, P, and Himelstein, B. 1998. Pharmacologic and psychological interventions for procedural pain. *Pediatrics*. 102(1 Pt. 1): 59-66.

**Randomized, unblinded trial:** Two treatment arms of pediatric cancer patients (leukemia) under age 18. One arm received only pharmacologic interventions (the control arm, n=45); the second arm received both pharmacologic and psychological interventions (n=47). Psychological interventions included externally-oriented play for children under six years of age and external and/or abstract interventions such as guided imagery, counting, and/or breathing for children between 6 and 18 years of age. Three measures of distress were used: the Perception of Procedures Questionnaire, the Pediatric Oncology Quality of Life Scale, and parent and nursing staff ratings of distress. In the combined intervention group, mothers and nurses reported lower levels of child distress than in the pharmacologic group only. Distress decreased inversely with child age and throughout the period of the study, regardless of the group. Lansky S. Imagery (self-hypnosis) as adjunct therapy in childhood cancer. *The American Journal of Pediatric Hematology/Oncology* 3:3; 313-321, 1981

**Pilot study.** The Minneapolis Children's Health Center conducted a study to evaluate the effectiveness of imagery for symptom relief in children with cancer. The results found it to be effective in 19 of the 21 consented patients. These compelling results led to a five-year prospective study on imagery and children with cancer. McGrath P, DeVeber L. Helping children cope with painful procedures. *American Journal of Nursing* 86(11):1278-9, 1986.

**Cohort study. Results:** 14 children undergoing lumbar punctures were given a pain management program that consisted of imagery, distraction and education. Anxiety and pain were significantly decreased immediately, 3 months and 6 months after repeat lumbar puncture. Olness K. Imagery (self-hypnosis) as an adjunct therapy in childhood cancer: clinical experience with 25 patients. *Am J Pediatr Hematol Oncol* 3:313-21, 1981

**Cohort study. Results:** 19 of the 25 patients reported symptom relief (decreased nausea, vomiting and pain) of their malignancies in association with imagery exercises. Pederson C.



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Promoting parental use of nonpharmacologic techniques with children during lumbar punctures. *Journal of Pediatric Oncology Nursing* 13(1):21-30

**Cohort Study. Results:** 8 children with ALL were trained in non-pharmacologic techniques including imagery, relaxation, distraction and others. Lower levels of pain and fear were experienced by this group of patients.

### 3. RESEARCH GUIDED IMAGERY FOR CHILDREN WITH ALLERGIES: JAN, 2004:

**Definition of the Problem:** Pediatric allergies affect more than 20% of school age children.<sup>1</sup> Types of allergies include allergic rhinitis, atopic eczema and dermatitis, and allergies to food, pets, and insect stings. Allergies frequently contribute to childhood asthma, chronic otitis media, and sinusitis.

Allergy symptoms include itching, sneezing, runny nose, rash, itching and cough. Allergies can also cause fatigue, difficulty concentrating and thinking, and insomnia, all of which can significantly affect patients' quality of life.

**Scope of the Problem:** According to the American Academy of Allergy, Asthma and Immunology, allergies rank sixth in cost on the list of chronic diseases in the United States. One in five children visiting a pediatrician has a major allergy problem. According to the National Institute of Allergy and Infectious Disease, approximately 2 million children have allergies.

Atopic dermatitis is the most common skin problem in children under age eleven. If both parents have allergies, there is a 70% chance that their child will also have allergies. Each year, American children lose 2 million school days because of allergies. While no specific cost figures are available for pediatric allergies, the total treatment cost of allergies in the United States is about \$2 billion a year. There are 16.7 million office visits a year just for allergic rhinitis (AR), and AR's estimated cost, based on direct and indirect costs, was \$2.7 billion in 1995. This number does not include the costs for related problems such as sinusitis and asthma.

**Medical Treatment:** Standard medical treatment for allergies includes antihistamines, decongestants, steroids, cromolyn (in the respiratory tract), skin ointments, eye drops, decongestant and antihistamine nasal sprays, and newer medications including leukotriene receptor antagonists. None of these medications cure allergies, and all oral medications have significant side effects. Antihistamines cause drowsiness, although newer drugs are less sedating. Decongestants raise blood pressure and heart rate, and steroids can cause a variety of physical and mental symptoms. Allergy shots do reduce sensitivity to allergens in some patients, but the shots are expensive, require frequent clinic visits, and do not work for a significant group of patients.

**Complementary Treatment including Imagery and Self-Hypnosis:** The causes of allergy include hereditary tendencies, past and present environment, and stress. Anxiety is strongly linked to allergies, especially rhinitis and dermatitis. Anti-anxiety programs including relaxation and guided imagery have been used with great success in allergic dermatitis. In one study, 19 out of 20 children showed immediate improvement in their severe, resistant atopic dermatitis after using hypnotherapy. These methods have been less studied in allergic rhinitis (AR), probably because treatment results are harder to measure in AR than they are in dermatitis. However, when Madrid et al. taught a two-session course in self-hypnosis to a group of 34

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patients with a variety of allergies, 76% reported improvement, and 86% reduced medication use. Improvement was maintained through two years of follow-up. Behavioral approaches with demonstrated effectiveness include cleaning and ventilation to reduce allergens, allergen avoidance, regular relaxation, exercise and healthier eating.

**Conclusion:** Guided imagery can improve children's ability to cope with allergies, and reduce allergy symptoms, office visits, and medication use in many cases.

### 4. RESEARCH GUIDED IMAGERY FOR ALLERGIES AND ALLERGIC REACTIONS: MAY 2003:

**Definition of the Problem:** Allergies are one of the greatest causes of illness and disability in the United States. As many as 50 million Americans have allergies of some kind. The most common allergy is probably hay fever ("allergic rhinitis"), which affects about 36 million people. There are many other types of common allergies, including sensitivity to pets, food, and insect bites, and also various allergies that can cause rashes or scaly skin. Add to these the uncommon or atypical allergies that many people seem to experience, and it's no wonder that they are so common. Nearly everyone seems to be allergic to something. Having allergies can also make you more prone to other problems (including asthma, recurring ear infections, and sinus problems), or they can often make these problems worse. Typical allergy symptoms include itching, sneezing, runny nose, and cough, fatigue, and insomnia. The symptoms are not only physical, for allergies can even slow down your thinking. Any of these symptoms can significantly affect the quality of one's life, and they also can impose significant financial burdens on employers, their customers, insurers, and the economy from lost work due to increased sick leave time.

**Scope and Cost of the Problem:** Each year, Americans lose 3 million workdays because of allergies at an estimated cost to the economy of \$639 million. Allergies in children result in a loss of about 2 million school days each year. Allergies result in about 16 million physician visits per year. The cost of medical tests, medications, and allergy shots for allergies costs about \$2 billion (\$2,000,000,000) a year. When you add economic costs to medical costs, the numbers are even larger. For example, the total estimated cost to the economy for allergic rhinitis alone was \$2.7 billion in 1995, exclusive of the additional costs for associated medical problems such as sinusitis and asthma.

**Medical Treatment:** Standard medical treatment for allergies includes antihistamines, decongestants, steroids, cromolyn (for respiratory tract allergies), skin ointments, eye drops, nasal sprays, and a variety of new medicines called LTRA's. Unfortunately, none of these medications can cure allergies, and many of them can produce significant side effects or complications. Some, such as antihistamines, may cause drowsiness. Others, such as decongestants, can raise blood pressure and heart rate, and others, such as steroids, can cause many other problems. Desensitization injections ("allergy shots") may be helpful for some people, but they are expensive and require frequent clinic visits.

**Complementary Treatment Including Imagery and Self-Hypnosis:** The causes of allergies are thought to include heredity factors, past and present environmental exposure, and

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stress. Anxiety is also strongly linked with many kinds of allergies, especially rhinitis and dermatitis. Anti-anxiety programs using relaxation and guided imagery have been used with great success in allergic dermatitis. These methods have not been studied as much in allergic rhinitis (AR). This may be because results are harder to measure in AR than they are in dermatitis. When one researcher taught self-hypnosis to a group of patients with a variety of allergies, 76% said they felt better, and 86% reduced their medication usage. They continued to show improvement when they were examined for follow-up two years later. Since allergies are usually mediated by the immune system, anything that affects the immune system can affect allergies, as well. Research in psychoneuroimmunology has demonstrated that psychological interventions, including relaxation and guided imagery, tend to “calm down” the immune system and a calmer immune system appears to be beneficial for many allergic reactions. Thorough cleaning and effective ventilation to reduce allergens, avoiding allergy triggers, regular relaxation, exercise and healthier eating can also help to reduce or eliminate some types of allergies.

**Conclusion:** Research available to date supports the conclusion that guided imagery can help people cope with allergies, and reduce allergy symptoms, office visits, and medication usage in many cases.

**RESEARCH FINDINGS USING GUIDED IMAGERY FOR ANGIOGRAPHY, ANGIOPLASTY, AND CARDIAC CATHETERIZATION: DEC, 2003: The Value of Angiography:** An angiography is an X-ray of the arteries. It is an invasive procedure, meaning that the X-ray is taken from inside the body, usually by injecting a dye into a blood vessel. In cardiac catheterization, the heart chambers as well as the arteries are entered, and measurements of blood flow and pressure in various parts of the heart and vessels that supply the lungs are often done. In angioplasty, the clinician attempts to open partially blocked arteries with a small tool designed to reduce deposits that cause narrowing or “hardening” of the arteries. This procedure is very valuable. Many authorities recommend an angiography for any patient who is having surgery on blood vessels because it gives the medical team a “snapshot” of the patient’s individual body. Angiography is also useful for diagnostic and prognostic purposes. Angioplasty can treat some blocked arteries. This allows some people to avoid surgery. Angiography is a widely performed and expensive procedure (about \$3500 for an uncomplicated coronary arteriogram in 1999).<sup>4</sup> In 1999, 2 million angiographies with contrast materials (dye) were performed in American hospitals. There were 1.27 million cardiac catheters performed.

**The Role of Patient Anxiety:** Patient anxiety appears to be a significant problem in invasive procedures including angiography. Dr. Elvira Lang and associates wrote: “Insufficient treatment of pain and anxiety can cause cardiovascular strain and restlessness, which may jeopardize the success of the procedure. On the other hand, pharmacologic oversedation [over-medication] can provoke respiratory and cardiovascular depression, thereby increasing the procedural risks and delaying the patient’s recovery.” High levels of patient anxiety can prolong angiographies. Patient anxiety can also increase use of sedation and pain medication, and increase risks of complication.

**Non-drug treatment of patient anxiety:** Among the most effective non-drug approaches to reducing patient anxiety are relaxation with guided imagery (self-hypnosis) and

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pre-procedure provision of information.<sup>7-9</sup> Pre-procedure teaching, especially if tailored to how individual patients cope with stress, can reduce tachycardia (racing heartbeat) and signs of distress during procedures. Self-hypnosis, or relaxation with guided imagery can result in shorter procedures, less need for medication, lower anxiety, and fewer complications. Self-hypnosis (guided imagery) was effective even in patients with low hypnotizability scores. In one study, imagery in which patients develop their own images (‘‘interactive imagery’’) was more effective than pre-scripted imagery presented to patients. Similar benefits have been found for imagery and self-hypnosis in other procedures including endoscopy and MRI.

**Conclusion:** Guided imagery can reduce patient anxiety and medication use, and probably reduce time of procedures and frequency of complications.

### 5. RESEARCH GUIDED IMAGERY FOR ANXIETY: FEB, 2002

**Prevalence and Costs:** Anxiety disorders are the most common psychiatric condition in the United States, affecting more than 19 million people. In 1996, anxiety disorders cost the US economy over \$46.6 billion in direct and indirect costs<sup>1</sup> and were responsible for 4.8 million office visits.

**What is Anxiety?** Anxiety disorders is an umbrella term used to describe a group of psychological conditions. The two major anxiety disorders are Generalized Anxiety Disorder (GAD) and Panic Disorder. Others include Post-Traumatic Stress Disorder (PTSD), phobias, separation anxiety, performance anxiety, and Obsessive-Compulsive Disorder (OCD). All of these conditions are marked by feelings of apprehension, tension, or uneasiness which can range from mild to incapacitating. Physical symptoms can include stress, palpitations, and sweating. The severity of these symptoms can vary. No single cause seems to be responsible for anxiety disorders. Both psychological and physical causes are usually involved. Genetics can also play a role.

**Medical Treatment of Anxiety:** Treatment depends on the precise anxiety disorder. Serotonin-reuptake inhibitors (SSRIs) are the most frequent initial medications prescribed. Other medications include benzodiazepines, tricyclics (if depression is also involved), MAO inhibitors (for OCD), beta-blockers (for phobias), and clonidine (for PTSD).

**Non-pharmacologic treatment including imagery:** The most effective approach is cognitive-behavior therapy (CBT). It is usually combined with medication. Many medical studies confirm the effectiveness of CBT<sup>3-7</sup> for anxiety. CBT can sometimes be so effective that it can replace medication in treating the symptoms of OCD and PTSD.<sup>8</sup> Studies also confirm the effectiveness of the mind-body techniques of guided imagery, relaxation, hypnosis, meditation, and biofeedback. CBT and/or mind-body therapies have been effective in all types of anxiety disorders and across all age ranges, and patients reported feeling more in control of their lives. These positive benefits have been sustained in follow-ups as long as six years. In a study of over 1000 patients, behavioral medicine (relaxation response, cognitive restructuring, exercise and nutrition) was able to significantly reduce anxiety as well as its medical symptoms. A biofeedback study of 45 people with GAD showed ‘‘significant reduction’’ in one measure of anxiety and its physical and psychological symptoms. Herbert Benson, a researcher famous for his studies on relaxation, and his colleagues reported the effectiveness of meditation-based

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relaxation and self-hypnosis in the treatment of anxiety. A small study (20 subjects) showed that anxiety and platelet MAO levels were significantly lower after using relaxation training. A study of people with OCD showed that mental imagery could be used successfully to “freeze” the anxiety “trigger” in order to reduce fear and avoidance behavior in subjects. Self-help audiotapes and/or multimedia self-help programs have also been effective.

**Conclusion:** A program that includes imagery, relaxation, and behavioral changes can be a low cost, effective way for patients to actively participate in managing the symptoms of anxiety disorders.

**RESEARCH FINDINGS USING GUIDED IMAGERY FOR ARTHRITIS: MAY, 2003: Definition of the Problem:** Arthritis refers to a group of more than 100 conditions that cause pain, stiffness, and swelling in the joints. Occasionally there is damage to other structures as well. All the major forms of arthritis are chronic conditions, and most get worse over time. Osteoarthritis, the most common form, is a degenerative joint disease. Rheumatoid arthritis (RA), the second most common form, is considered an autoimmune condition.

**Scope and cost of Problem:** Arthritis is the most common chronic illness in the United States. According to the Centers for Disease Control, almost 70,000 people in the United States have some form of arthritis or joint pain.<sup>1</sup> Arthritis is also the leading cause of disability in this country.<sup>1</sup> The CDC reports direct and indirect annual costs of arthritis were over \$82 billion<sup>1</sup> in 1995. Arthritis accounts for 36 million physician visits per year and 750,000 hospital admissions.

**Medical and Complementary Treatment:** The main classes of arthritis medications are the non-steroidal anti-inflammatory drugs (NSAIDs). There are also many secondary treatments including methotrexate, gold compounds, d-penicillamine, hydroxychloroquine, sulfasalazine, and newer drugs such as Enbrel (anti-tumor-necrosis factor). All of these medicines “help but do not cure,” according to rheumatologist Earl J. Brewer, Jr., MD. People also take a tremendous variety of nutritional supplements and herbal medications for arthritis, the most popular of which are glucosamine and chondroitin. The annual cost of prescription arthritis medications is \$9.4 billion and money spent on herbal and other nonprescription medicines is \$2 billion. Acupuncture has been found useful for some people with osteoarthritis.

**Arthritis Self-Management Programs:** The Arthritis Self-Management Program (ASMP), developed at Stanford and now presented at over 200 facilities worldwide, has been highly successful and cost-effective. The Arthritis Foundation now markets this course as the Arthritis Self-Care Program. Along with education about arthritis, exercise, nutrition, and medication use, ASMP features practice with relaxation, guided imagery, other cognitive pain management techniques, communication skills, doctor-patient relationship skills, and group support.<sup>4</sup> Imagery and relaxation exercises are used in five of the six ASMP sessions, and are considered important parts of the program’s success. Benefits include better self-reported health, improved routine function and comfort levels, and decreased healthcare usage (doctor’s visits?). These benefits could not be adequately explained by improved health behaviors, and better self-sufficiency (self-care?) is considered a likely major contributor to the positive outcomes.

**Imagery and Self-Hypnosis:** Dozens of studies show moderate effectiveness for relaxation, hypnosis, and psychological support in arthritis. A literature review of relaxation and psychotherapy in people with RA found significant reduction of pain and disability, and improvement on several psychological characteristics. A study comparing hypnosis with

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relaxation in osteoarthritis showed that both had significant benefits in reducing pain and medication for pain, with hypnosis somewhat more effective. Varni and Gilbert published a case study showing self-hypnosis reduced pain medication use in an arthritic patient with hemophilia. Imagery, relaxation and self-hypnosis have proven effective in a number of chronic pain conditions.

**Conclusion:** Guided imagery and relaxation are valuable skills for increasing self-efficacy and self-management behavior. Used with appropriate medical treatment, a guided imagery program can help increase patients' perceived well-being and self-management skills, and reduce consumption of medical resources.

### 6. RESEARCH GUIDED IMAGERY FOR ASTHMA: DEC, 2003:

**Prevalence and Costs:** Asthma is a large, growing, and expensive health problem in all industrialized countries. As of 1998, 17 million Americans (12.2 million adults) were affected by asthma. Asthma generated 9.3 million office visits and was responsible for 4487 deaths in America in 2000. In 1994, cost to the economy totaled \$10.7 billion -- \$6.1 billion in direct health care costs, and \$4.6 billion in indirect costs. In 1994, there were 451,000 hospital admissions for asthma, and in 1995, acute asthma episodes resulted in 1.8 emergency room visits. Fifteen percent of disabling asthma cases are Occupational Asthma, triggered by exposure to irritants at work. Occupational asthma is the most prevalent form of occupational lung disease in industrialized nations. Asthmatic workers are twice as likely to retire early; they miss more work, and rate their work ability and general health as poorer than workers without asthma. Occupations most at risk include baking, electronics, chemical and metal manufacturing, paints and plastics, farming, and house cleaning.

**What is asthma?** Asthma is thought to result from genetic sensitivity, environmental exposure to irritants and stress responses that lead to a cycle of "hyper-responsiveness" and inflammation in the bronchi. This inflammation, along with excess mucus production, can close airways and make breathing out difficult. Once established, this cycle is difficult to stop.

**Medical treatment of asthma:** Standard medical treatment includes daily use of an inhaled steroid medication, as-needed use of a bronchodilator (or "rescue medication"), and avoidance of environmental asthma "triggers." (Oral medications are sometimes needed as well.) The biggest problem in asthma care is noncompliance (failing to obey doctors' instructions or take medication as directed), particularly with the steroid inhalers. Seventy percent of patients in some studies either failed to take prescribed daily inhalers, or never received them.

**Non-pharmacologic treatment including imagery:** Behavioral and mind/body approaches are also used to control inflammation and spasm. In two British studies, hypnosis reduced hyper-responsiveness, and increased forced expiratory volume (ability to breathe out) through one year of follow up in adult patients who were easily hypnotized (susceptibility). In a group of 250 patients who had not been tested for susceptibility, 59% of those receiving hypnotic suggestion were rated as "much better," compared with 40% of a group who received relaxation training without hypnotic suggestions. Guided imagery uses deep relaxation and positive suggestion in ways nearly identical to hypnosis. The terms "self-hypnosis" or "auto-hypnosis" are used almost interchangeably with "guided imagery" in the literature. A meta-analysis by Hackman, Stern, and Gershwin showed that, though larger, more randomized studies were

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needed, hypnosis has shown definite, long-term effectiveness in asthma, and that effectiveness is enhanced by the use of self-hypnosis. In one study, 303 pediatric asthmatics were offered hypnosis; some patient's symptoms resolved after one session, and there was measurable improvement in 80% of those participating. No patients' symptoms worsened. In another study of self-hypnosis with children, the researcher followed participants for a mean of nine months post-hypnosis. Positive results were recorded in 13 patients. Two of the children had no more symptoms and were able to discontinue their medication. Hypnosis, combined with an education program, improved pediatric cooperation and compliance with taking peak flow measurements. In another study, adult asthmatics who listened to imagery tapes were less depressed and anxious, and were able to use less medication. Asthma education programs that instruct patients about asthma, medications, and avoiding triggers, as this program does, help to reduce asthma morbidity. **Conclusion:** A low-cost imagery intervention may reduce asthmatic patients' anxiety and use of medical services, and improve their pulmonary function.

### 7. RESEARCH GUIDED IMAGERY FOR BACK OR NECK PAIN: MAY, 2002:

**Scope of the Problem:** Estimates indicated that at any given time, 15%-20% of Americans have back pain, and 70% have had back pain at least once in their lives. Back pain is the second leading cause of absenteeism from work. Work-related back injuries are the country's number one occupational hazard. The cost to Americans of lower back pain is \$50 billion a year. According to government statistics, there were 14.3 million office visits for conditions associated with back pain. One study estimated that almost one-third (or 203 million) of all visits to CAM providers in 1997 were for back or neck pain. Being in chronic pain can result in many psychological side effects, including anger, anxiety, depression, low perceived quality of life, low self-efficacy, and poor coping skills.

**Mind-Body Approaches:** Many studies demonstrate the effectiveness of cognitive-behavioral measures, including relaxation, meditation, and guided imagery, in reducing pain perception, physician visits and narcotic use, and increasing feelings of well-being and self-efficacy in pain conditions. One study found that cognitive-behavioral intervention, including relaxation and imagery, was able to stop back and neck pain from becoming a chronic disability in 88% of the 253 cases studied. J. Kabat-Zinn found meditation successful in a mixed group of chronic pain patients, including those with back pain. Location of pain did not appear to make a difference in its effectiveness. Researchers recently conducted an extensive review of published research studies that involved psychosocial-mind-body interventions (including imagery, relaxation, CBT meditation, imagery, and hypnosis) and concluded that "there is considerable evidence" that these approaches are effective in the treating chronic lower back pain. Another study reported that a higher percentage of patients had used complementary therapies for their back and neck pain than had used conventional approaches (54% vs. 37%). A higher percentage of those using complementary methods found those approaches "more helpful" than those who used conventional approaches. Other studies of imagery in chronic pain include a study of tension headache patients.<sup>11</sup> The imagery group were three times as likely to report major pain reduction ( $p=.004$ .) Relaxation and imagery has significantly reduced pain in studies involving patients with cancer, arthritis, fibromyalgia, hemophilia, and migraine headaches. In all studies

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with follow-up, improvements in pain, function, and mental outlook were sustained through follow-up lasting as long as months.

**Conclusion:** Guided imagery can be a cost-effective complementary treatment for chronic pain, including back pain.

### 8. RESEARCH GUIDED IMAGERY FOR BACK AND NECK SURGERY: DEC, 2003:

**Definition of the Problem:** Back and neck surgeries are usually done to repair a lesion that hasn't responded to more conservative treatment. Lesions can be caused either by disease or injury. Some of the most frequently performed back and neck surgeries are discectomy, laminectomy, spinal fusion, and device implantation.

**Scope and Cost of the Problem:** Back pain is the second most common medical complaint in the country<sup>1</sup>, and accounts for 16.2 million office visits per year.<sup>2</sup> Lower back pain alone results in direct and indirect costs to the U.S. economy of \$100 billion.<sup>1</sup> Between the years 1983-1994, the incidence of lower back surgery rose from 190,000 to 335,000. About 200,000 lumbar laminectomies and discectomies are performed annually<sup>4</sup>; about 90,000 spinal fusions are performed. For the year 1999, American Association of Neurological Surgeons members alone performed 533,839 spine surgeries.

**Medical Treatment:** Most chronic back and neck pain patients are initially treated with more conservative approaches, including medications to relax the muscles oral and topical pain medications, TENS and other devices, physical therapy, acupuncture, and learning about how to change your environment to make it more "body friendly" (ergonomics modification). Back and neck surgeries are usually performed because these other methods of treatment have failed.

**Mind-Body Approaches to Coping with Surgery:** Since pharmacologic sedation often increases the risk of low blood pressure and lack of oxygen, doctors have looked at other ways to reduce pre-surgical anxiety. Most effective have been relaxation with guided imagery (self-hypnosis) and pre-procedure provision of information. Self-hypnosis, or relaxation with guided imagery, used before and during surgery has resulted in shorter surgical and medical procedures.

These techniques can also significantly reduce post-surgical pain and the need for post-operative pain medication, shorten the time it takes for the intestines to return to normal functioning and reduce the length of hospital stay. There is also some evidence that mind body therapies like hypnosis and imagery can reduce blood loss and speed wound healing. Hypnosis and guided imagery have been used effectively in back and neck surgeries. High patient satisfaction with guided imagery tapes have been reported by several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles); and "guided imagery with the use of audio tapes" is routinely used and recommended by Mehmet Oz, MD, a cardiac surgeon and Director of the Complementary Care Center at Columbia Presbyterian Medical Center (New York).

**Conclusion:** Guided imagery can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

### 9. RESEARCH FINDINGS USING GUIDED IMAGERY FOR BIOPSY: DEC, 2003:



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**Value, Prevalence and Costs of Biopsy:** A biopsy is the removal of a small piece of tissue for microscopic examination or testing. Biopsies can be done on almost any part of the body. Biopsies are among the most commonly performed medical procedures in the America. For example, in 1995, about 600,000 prostate biopsies were performed in the U.S.A.<sup>1</sup> 700,000 breast biopsies were performed, at an average cost of \$1,500 each.<sup>1</sup> And a half million biopsies of the GI tract were done in that year.<sup>1</sup> Other areas frequently biopsies include the liver, lungs, and lymph structures. Biopsies are an extremely valuable diagnostic tool, not only for confirming or ruling out cancer, but for assessing other conditions in the lungs, liver, and GI tract. According to the National Institutes of Health, the two major methods of biopsy are needle biopsy and open biopsy, which is a surgical procedure. Needle biopsies generally cost one third to one half as much as surgical biopsy, and have a quicker recovery time. Endoscopic biopsies are also frequently performed.

**Problems with Biopsy:** The complication rate in all types of biopsies is quite low. One to two percent of patients may develop significant low blood pressure, which is often stress-related. However, biopsies sometimes cause significant pain. For example, the American Journal of Gastroenterology Editors wrote that patient facing liver biopsy “frequently have anticipatory anxiety, which would be expected of a procedure that is associated with pain in 30% of patients, severe complications in 0.3%, and death in 0.03%.” A far greater problem for many patients is fear of the results of biopsy. For example, women who are called back after screening mammography “may interpret need for further examination as meaning a definite diagnosis of cancer, referral to an operation, or even death,”

according to Arja Aro, Senior Researcher at the National Public Health Institute of Finland. This fear of bad news keeps some patients from getting timely biopsies. This delay, however, endangers their lives and adds an unknown, but significant amount to medical costs. Even when patients do come for their biopsies, they may suffer from tremendous anxiety, which can increase their need for sedation and worsen their quality of life. Therefore, interventions that reduce patients’ anxiety and increase their level of confidence are needed.

**Pharmacologic and Non-pharmacologic Anxiety Treatment in Biopsy:** Most patients undergoing biopsy receive pain medication and sedation, either orally or intravenously. Because sedation requires increased monitoring by medical staff, it increases the costs, the recovery time, and the risk of low blood pressure. Hypnosis, self-hypnosis, relaxation and guided imagery can reduce anxiety and pain in adults undergoing liver<sup>7</sup> and breast<sup>8</sup> biopsies, and in children undergoing bone marrow aspiration.<sup>9</sup> Similar techniques have resulted in reduced anxiety, fewer complications, less need for medication and, in some cases, shorter procedures in angiography<sup>10</sup>, upper intestinal endoscopy, abdominal surgery, and Magnetic Resonance Imaging.

**Conclusion:** Guided imagery can reduce patients’ anxiety and improve their ability to cope with biopsy-related stress. This anxiety reduction could potentially result in improved patient cooperation with ordered biopsies, reduced medication use, and lower cost savings in some cases.

## 10. RESEARCH GUIDED IMAGERY FOR CANCER PAIN: AUG 2003:

**Definition and Scope of the Problem of Cancer Pain:** Pain is among the most common and most feared symptoms of cancer. According to the Kansas Cancer Pain Initiative,

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about 51% of all cancer patients experience significant pain at some point during the course of their disease.<sup>1</sup> Based on analysis of numerous studies, this same study states that approximately 25% of early stage cancer patients have significant pain. This figure jumps to 75-80% of patients in advanced stages. National costs of cancer pain management are difficult to estimate. However, in 1990, a single hospital, City of Hope, estimated their costs for hospitalizations for uncontrolled cancer pain at over \$5 million. This cost would have risen to \$9 million if their patients receiving home parenteral infusions of morphine had been in-patients.

**Medical Treatment of Cancer Pain:** Various types of drugs are used to control cancer pain: non-steroidal anti-inflammatories (NSAIDs), COX-2 inhibitors, and opioids (such as morphine or Demerol). Non-pain medications can also help: drugs to relieve cramps, stabilize the heart rhythm, seizure medications, sleep aids, and drugs to relieve depression and anxiety. Used correctly, these medications can completely control pain in over 50% of cases, according to cancer specialist Daniel Brookoff, MD. For pain that doesn't respond to oral medications, opiates can be given intravenously (I.V.s) or directly into the spinal canal. In even more severe cases, surgery and radiation are sometimes used effectively. Use of a TENS (Transcutaneous Electrical Nerve Stimulation) device sometimes helps. Pain specialists estimate that pain could be effectively controlled in nearly all cancers. Failure to adequately treat cancer pain can lower quality of life and lead to unnecessary hospital stays. The indirect costs in lost productivity and missed work for patients and caregivers are unknown but must be substantial, as is the burden of unrelieved suffering.

**Problems in Cancer Pain Treatment:** Some physicians are not adequately informed about the value of non-narcotic medications, particularly anti-depressants. Likewise, many patients do not request or use available medications. They may avoid anti-depressants and take less of their narcotics because they are afraid of addiction. Depression, insomnia and stress can greatly increase the perception of pain and suffering.

**Non-medical Treatments Including Guided Imagery:** Various complementary therapies have been found successful to varying degrees in cancer pain. These include acupuncture<sup>7</sup>, hypnosis<sup>8,9</sup>, and guided imagery. Two studies at the Fred Hutchinson Cancer Center demonstrated significant relief of cancer pain with relaxation and self-hypnosis consisting of relaxation and guided imagery. Researchers at Sloan-Kettering Memorial Cancer Center reported that "randomized trials support the value of hypnosis for cancer pain and nausea; relaxation therapy, music therapy, and massage for anxiety. Such complementary therapies are increasingly provided at mainstream cancer centres." A University of Minnesota researcher reported significant pain relief from a hypnosis technique called glove anesthesia. Self-hypnosis, relaxation and meditation have been significantly effective in many types of pain, including cancer. Kabat-Zinn and others reported dramatic improvement in the chronic pain in a group of 90 patients who participated in a 10-week meditation program. These patients had increased comfort and less psychological distress. In some cases, they were able to use less medication. Other researchers' patients achieved profound relief of arthritis pain with self-hypnosis (guided imagery). Many times, doctors aren't the first ones to suggest alternative pain approaches. One doctor at the Eastern Virginia School of Medicine found that many cancer patients come to that clinic familiar with hypnosis and request it for their pain. In a 2003 review of the literature, the authors reviewed complementary and alternative medicine (CAM) use in end-of-life issues such

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as pain. They found that self-hypnosis was one of the techniques that may provide relief in cancer pain, and that relaxation and imagery specifically could help with the pain of mouth sores (oral musositis).

**Conclusion:** When used along with prescribed medications, guided imagery can contribute to controlling pain and anxiety in cancer patients. In some cases, guided imagery can allow reduction of medication usage.

### 11. RESEARCH GUIDED IMAGERY FOR CARPAL TUNNEL SYNDROME: SEPT, 2003:

**What is Carpal Tunnel Syndrome?** Carpal Tunnel Syndrome is a disorder of the hand that is caused by pressure on the median nerve, usually resulting from swollen tendons in the wrist. The “carpal tunnel” is actually a narrow tunnel formed by the bones and other tissues in the wrist. Nerves, tendons and ligaments pass through this tunnel to the hand. Repetitive motions, vibration, or stress day after day can cause the tendons to swell, become inflamed, and compress the median nerve.

**Dimensions of the Problem:** Carpal tunnel syndrome (CTS) results in the highest median number of days of work loss among all major work-related injury or illness categories. In the past ten years, the medical literature has reported increasing numbers of cases of working people afflicted with CTS. Reasons for the increases of cases seems to be largely due to job automation and specialization. There were 3.4 million doctor office visits for CTS in 2000( and approximately 260,000 carpal tunnel release operations were performed in 2000 each year, with approximately 47% of these being work related. It is estimated that the economic burden of CTS to industry in the United States currently exceeds \$2 billion per year.

**Treatment for CTS:** Standard medical treatment usually begins with a wrist splint, resting the affected hand, and anti-inflammatory medications. Sometimes, the workplace can be modified to avoid repetitive motion, undue stress, and strain. Surgery is recommended if these initial treatments or steroid injections fail to relieve the pain, numbness or weakness. Full use of the hand usually returns approximately six weeks after surgery. As with any surgical procedure, there can be complications such as infection, bleeding, or unintended injury to other tissues.

**Mind/Body Treatments for Pain and Other Symptoms:** Mind/Body effects are part of almost every health-related issue. Patients with pain symptoms can clearly benefit from relaxation techniques, hypnosis, cognitive-behavioral therapy and meditation.

Imagery has been shown in dozens of research studies to affect almost all major physiologic control systems of the body, including heart rate, blood pressure, metabolic rates in cells, and even immune responsiveness. Imagery has been shown to be especially helpful in working with pain. In a study involving patients with another repetitive motion injury were treated with biofeedback, relaxation training or a combination of both. Patients in all three treatment groups showed significantly greater reductions in pain than the control group. Patients receiving relaxation training showed the strongest short-term benefits on measures of pain, distress, interference in daily living, depression, and anxiety. In another study treating repetitive strain injuries, patients using hypnosis with biofeedback showed significant increases in hand temperature, with significant reductions in pain, compared to the control group. **Conclusion:** Used as a complementary treatment, a low-cost guided imagery program can help patients cope better with their CTS, reduce their CTS symptoms, and save healthcare resources.

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## 12. RESEARCH GUIDED IMAGERY FOR CHEMOTHERAPY: APRIL, 2003:

**Scope of the Problem of Chemotherapy Side Effects:** Approximately 1,334,100 Americans are expected to be diagnosed with cancer in 2003, and about half will receive chemotherapy as part of their treatment regimen. As many as 25% of chemotherapy patients experience anticipatory nausea. Vomiting, nausea, fatigue, and depression are common after having chemotherapy. Painful side effects (e.g., mouth sores) can also occur. Severe side effects like fatigue and anemia can lead to loss of time at work for the patient and/or the caregiver, additional office visits, and failure to complete chemotherapy treatment -- all of which contribute to morbidity and mortality, and to the total in 2002 of \$171.6 billion direct and indirect costs of cancer.

**Research in Mind/Body Interventions for Chemotherapy:** Some people undergoing chemotherapy become nauseated prior to a chemotherapy treatment. This is called “anticipatory nausea.” Hypnosis has been successful in reducing or eliminating anticipatory and post-treatment nausea in both adults and children. Relaxation training is also effective in reducing anticipatory nausea. The authors of one meta-analysis concluded that relaxation training was so effective at helping emotional adjustment, tension, mood, and anxiety that “relaxation training should be implemented into clinical routine for cancer patients in acute medical treatment.” Imagery’s effectiveness as a complementary treatment extends to pain as well. One study demonstrated that imagery, relaxation and cognitive behavioral training can reduce the pain of certain chemotherapy side effects. Guided imagery can also help people tolerate chemotherapy treatments and have a better sense of well-being. In one study patients using chemotherapy-specific guided imagery reported a “significantly more positive experience”. Having a better chemotherapy experience is important because as many as 31% of chemotherapy patients prematurely stop treatment because of anxiety or depression.<sup>11</sup> Relaxation and imagery can directly relieve anxiety and depression. They can also indirectly help these conditions by improving quality of life and reducing side effects. This may let patients successfully complete treatment.

A study of 96 breast cancer patients who used guided imagery and relaxation were more relaxed during chemotherapy, and had a better quality of life. This led the study’s authors to conclude that relaxation and guided imagery were “simple, inexpensive and beneficial” for patients undergoing chemotherapy. Researchers recently concluded that chemotherapy patients who use self-help programs to manage their stress do even better than people who receive professional stress-reduction help. They have more energy, can function better, and feel better mentally. The economic consequences are equally impressive. The self-help program studied cost 66% to 68% less than a typical professional psychosocial chemotherapy preparation.

**Conclusion:** Relaxation with guided imagery is a safe, inexpensive technique that can improve chemotherapy patients’ quality of life, reduce side effects, and improve their chances of completing therapy.

## 12. RESEARCH GUIDED IMAGERY FOR CHEMOTHERAPY:: DEC , 2003:

**The value of childbirth preparation:** About four million births take place annually in the United States. Many of the mothers involved are looking for ways to participate more

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actively in preparation for delivery and in the process of labor, and to avoid “medicalized” births. A search for books on “natural childbirth” on Amazon.com, conducted on June 9, 2003, yielded 309 titles. Another indicator of this trend is the rise in the use of midwives, which rose from 0.9% in 1975, to nearly 10% of vaginal deliveries in 2001. A recent survey of nurse midwives revealed that 48.8% of CNM’S recommend mind-body techniques for the birthing process. Although the programs of Lamaze and Dick-Read are the most widely used forms of childbirth preparation in this country, psychological and educational preparation with self-hypnosis and guided imagery have proven effective in several studies. Self-hypnosis and guided imagery the terms are used interchangeably in the literature, combining deep relaxation with positive suggestion for a normal, comfortable birth. In one study, a group of 22 women who learned self-hypnosis in a four-session program had shorter hospital stays and fewer surgical interventions than a matched control group who received psychosocial counseling sessions. Harmon, Hynan, and Tyre studied 60 pregnant women, half of whom received hypnotic suggestions for an enjoyable childbirth, deep relaxation, and glove anesthesia. The treatment group had quicker progress through Stage 1 of labor, less reported pain, less use of medication, and their babies had higher Apgar scores at 1 and 5 minutes. Imagery and self-hypnosis have also demonstrated effectiveness in reducing complications of pregnancy. For example, Mehl used guided imagery with 100 women whose babies were in breech positions at 37 to 40 weeks’ gestation. He compared them with a matched comparison group. In the hypnosis group, 81% of the babies spontaneously “turned” to the proper position, compared with 48% of the comparison group. Gentz, in her recent review of the literature, concluded that hypnosis is “a helpful adjunct” for women during the birthing process.

**Potential Cost Savings:** According to the CDC, in 2001 the number of cesarean births in the United States increased by 5%, representing a rise for the fifth consecutive year.<sup>11</sup> Reduction of cesarean birth rates to European levels would save approximately \$1.5 billion per year in the U.S., according to a New England Journal of Medicine article of Jan. 7, 1999.<sup>12</sup> Whatever the method of birth, reduction of hospital stays and complications, like those demonstrated in the studies mentioned above, would save additional resources, although the amount has not been calculated.

**Conclusion:** Guided imagery can increase women’s feelings of control and confidence in the labor process, significantly reduce their perception of pain, help them handle complications that might arise, and reduce costs by shortening hospital stays and lowering the frequency of surgical interventions.

### 13. RESEARCH GUIDED IMAGERY FOR CHILDHOOD ASTHMA: JAN, 2004:

**Definition of the problem:** Pediatric asthma is chronic inflammation of the airways. Children with asthma have inflammation of their bronchial tree, leading to partial airway blockage by swelling and mucus. Their airways also narrow. This combination can make breathing extremely difficult. The causes of asthma are not fully understood, but include genetic tendencies, exposure to environmental irritants, and stress.

**Dimensions and costs of the problem:** Statistics for the year 1998 indicate that chronic pediatric asthma affects 4.8 million children in the United States. The incidence of pediatric asthma increased 72% between 1980 and 1994, probably due to increased indoor and outdoor air

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pollution. Asthma is a leading cause of missed school (10 million), 570,000 emergency room visits, and the care of asthmatic children cost the economy \$1 billion due to missed work days for parents. According to GlaxoSmithKline's web site [ibreathe.com](http://ibreathe.com), the estimated annual cost of treating asthma in children under 18 years of age in 1999 was \$3.2 billion. Asthma is the most prevalent chronic condition in American children.

**Medical Treatment of Pediatric Asthma:** A wide range of asthma medications has greatly improved treatment of young asthmatics. Steroid inhalers can now reduce inflammation. Bronchodilators can open constricted airways. A number of oral medications can moderate immune response and reduce airway sensitivity. Improved home monitoring of asthma can greatly reduce the incidence of respiratory emergencies. Use of peak flow meters to check children's respiratory status can give ample warning of an impending attack.

**Problems in treating pediatric asthma:** Several difficulties remain in medical management of pediatric asthma. As many as 70% of patients do not take their steroid inhalers as prescribed. Most patients and families still do not have a peak flow meter or do not use it. The expense of asthma medications and medical care is a major problem for some families. Many families do not regard asthma as a serious problem, and stressful family dynamics can worsen a child's condition or ability to cope with it.

**Non-medical therapies including imagery:** There is a large body of research on the effective use of self-hypnosis, guided imagery, hypnosis and relaxation in asthma in adults and children.<sup>10-13</sup> For example, pulmonologist Ran Anbar found that 13 of 16 pediatric patients who learned self-hypnosis (guided imagery) had no shortness of breath within one month, and this improvement continued for nine months of follow-up. Two of seven patients on inhaled steroids were able to discontinue them, and their lung function remained normal. In another Anbar study, 303 pediatric asthmatics were offered hypnosis (with 254 participating and continuing to follow up). Some of these children's symptoms resolved after one session, and there was measurable improvement in 80% of the others. No one's symptoms got worse. In another study, after 25 preschoolers and their parents used a relaxation and imagery program, the children's symptoms were less severe and they needed fewer office visits. The number of asthmatic episodes did not change significantly, but their ability to cope did. Preschoolers developed new cooperation in asthma-care skills, including cooperative and consistent performance of peak flow measurements. In addition, relaxation and imagery has been found to reduce stress and improve patient and family coping with asthmatic children. Pulmonary rehabilitation breathing exercises, massage, and increased self-monitoring with peak flow meters have also been shown effective in pediatric asthma.

**Conclusion:** Guided imagery can improve coping skills, willingness to follow treatment regimens and lifestyle changes, and reduce the severity, though perhaps not the frequency, of asthmatic episodes.

### 14. EVIDENCE OF EFFICACY FOR GUIDED IMAGERY FOR CHILDREN AND ADOLESCENTS UNDERGOING CHEMOTHERAPY: JAN, 2004:

**Scope of the Problem:** According to the National Cancer Institute, approximately 8,600 American children were diagnosed with cancer in 2001. The most common childhood cancer, totaling almost one-third of these cases, is leukemia, a condition for which chemotherapy is the

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most effective treatment. Unfortunately, chemotherapy is associated with numerous side effects. Vomiting, nausea, fatigue, and depression are common after treatments. Other side effects are nerve pain, mouth sores, and pain upon touching or being touched. There are also significant behavioral effects. Younger children's behavioral distress usually decreases as treatment goes on, while adolescents; tends to increase. Adolescents also tend to have more nausea and vomiting than their younger children. Failure to cooperate with medical recommendations is frequently a problem, with adolescents tending to be less compliant than young children. Severe side effects, and non-compliance because of those side effects, can lead to loss of time at school for the child, loss of time at work for the caregiver, and additional office visits to the doctor -- all of which contribute both to death and disability, and to the annual costs of cancer.

**Research in Mind/Body Interventions for Chemotherapy:** Nausea can occur both after treatment, and before treatments ("anticipatory nausea"). Hypnosis has been successful in reducing or eliminating both types of nausea in adults and children. Relaxation training has also proven effective in reducing anticipatory nausea adults and children. As early as 1982, a study reported that relaxation significantly reduced anticipatory nausea. In one pediatric study, the hypnosis group had less anticipatory nausea and lower need for anti-nausea medication during both the first and second courses of chemotherapy ). Hypnosis, as well as distraction and relaxation, reduced both distress and nausea. Patients' well-being and ability to tolerate treatment are also enhanced by the use of guided imagery. Adult patients using guided imagery specifically geared toward chemotherapy reported a "significantly more positive experience". Imagery is effective in pain relief, too. Imagery, relaxation and a psychological approach called cognitive behavioral training can reduce the pain of certain chemotherapy side effects. Relaxation and imagery can also relieve anxiety and depression by improving quality of life, and reducing side effects. Breast cancer patients who used guided imagery and relaxation were more relaxed during chemotherapy, and had a better quality of life. This lead the study's authors to conclude that relaxation and guided imagery were "simple, inexpensive and beneficial" for patients undergoing chemotherapy. The National Cancer Institute has also recommended "relaxation therapy, guided imagery, hypnosis, music, and other techniques "at ease your child's discomfort and fear" before and during cancer procedures. A pediatric guided imagery program can increase relaxation, coping skills, and compliance, and reduce anxiety, discomfort, and side effects of chemotherapy. A caregivers' guided imagery program can enable parents and others involved in the care of the child to reduce their stress, and increase their relaxation and coping skills.

**Conclusion:** Relaxation with guided imagery is a safe, inexpensive intervention that can improve pediatric chemotherapy patients' quality of life, reduce side effects, and help with anxiety and depression. This can help to improve compliance and lower incidents of stopping treatment before it is finished.

### 15. RESEARCH GUIDED IMAGERY FOR SURGERY FOR CHILDREN AND ADOLESCENTS: JAN, 2004:

**RESEARCH FINDINGS USING GUIDED IMAGERY FOR SURGERY FOR CHILDREN AND ADOLESCENTS: JAN, 2004: Scope of the Issue:** There were 1,951,000 in-hospital surgeries and 2,318,000 out-patient surgeries performed on children under the age of 15 in the years 2000 and 1996 respectively.

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**Children and Surgery:** Children have a kaleidoscope of fears around surgery. Some of these fears are of mutilation, needles, loss of control, pain, the unknown, separation from family and friends, and fear of the unfamiliar staff, routines, and equipment in the hospital. Their anxiety can increase their pain and slow their recovery. It can also lead to lack of cooperation with staff. Surgery can also cause regressive behavior, including nightmares, bedwetting, and acting out behaviors that can last for months; this can be a significant problem for families. With over 4 million pediatric surgeries per year, speeding recovery even slightly could provide significant savings.

**Research in Mind/Body Interventions:** Pre-operative preparation for pediatric surgical patients has been found helpful in improving children's following instructions in the hospital. It can also reduce problems at home after the surgery. Reducing children's anxiety, and increasing their sense of control is also beneficial, leading to shorter hospital stays and less need for some medications. Surgical prep programs have also been found to increase patient satisfaction with the surgical experience.<sup>10</sup> Surgical preparation with guided imagery has been found to reduce pain and anxiety, and accelerate recovery in adult surgical patients. Tusek, Church and Fazio studied 130 patients undergoing abdominal surgery for colorectal disorders. The imagery group needed significantly less pain medication, had faster return of bowel function, and reported less pain and anxiety. Daake and Gueldner found that patients who participated in guided imagery pre-operatively had less need for pain medication post-operatively, and Holden-Lund documented faster wound healing in patients who relaxed with guided imagery. Clinical studies have also shown that patients who use relaxation and guided imagery have fewer complications, reduced bleeding, are more comfortable after surgery, and spend less time in the hospital. Mind-body studies have also been done involving the pediatric population. Jones used hypnosis/imagery in addition to general anesthesia in children undergoing spinal surgery. The imagery group needed less chemical anesthesia. Lambert studied 52 children undergoing a variety of surgeries. Those who received guided imagery/hypnosis pre-operatively had shorter hospital stays and reported less pain. Guided imagery/self-hypnosis has been shown to help children tolerate procedures (including needle sticks) with less need for sedation, and less pain and anxiety. Olness<sup>14</sup> used imagery with 25 pediatric cancer patients who tolerated procedures including bone marrow aspiration, lumbar puncture, and chemotherapy with less pain and nausea than a control group.

**Conclusion:** Guided imagery is an effective way to help pediatric patients and families cope with the stress of surgery and hospitalization, cooperate with invasive procedures, and speed readiness for discharge from hospital. **Scope of the Issue:** There were 1,951,000 in-hospital surgeries and 2,318,000 out-patient surgeries performed on children under the age of 15 in the years 2000 and 1996 respectively.

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### 16. RESEARCH GUIDED IMAGERY FOR COLONOSCOPY: DEC, 2003:

**The value of colonoscopy:** Nearly 2.5 million colonoscopies are performed yearly in the United States, about 80% of them on an outpatient basis (that is, without a hospital stay). The majority of colonoscopies are done to detect colon cancer, the second leading cause of cancer death in the U.S. There are about 130,000 new cases and 57,000 deaths from colon cancer annually. According to the American Cancer Society, early detection can increase survival in colon cancer by 90%, but only 37% of colon cancers are detected early. Large HMOs including Kaiser Permanente and Group Health encourage regular screening with sigmoidoscopy and follow-up colonoscopy because it is highly cost-effective, too.

**Problems with colonoscopy:** Many patients avoid recommended sigmoidoscopies and colonoscopies out of fear of the procedure itself, or fear of what the procedure will find. Sometimes people are simply don't know about its potential benefits. Studies show that pre-colonoscopy anxiety is a significant problem. Providing people with information about the procedure can reduce anxiety and improve acceptance of the procedure. Distress due to intestinal

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cramping can make colonoscopy much harder for both patient and medical team. Severe anxiety sometimes prevents completion of the examination. But using intravenous (I.V.) sedation may cause hypoxia (low oxygen) and hypotension (low blood pressure) in some patients.

**The role of relaxation and imagery:** Many studies have shown that relaxation with guided imagery, hypnosis, and/or music can reduce patient discomfort, raise patient tolerance of and satisfaction with the procedure, and reduce need for sedation in colonoscopies, endoscopies, and some vascular procedures. Reduced sedation decreases complications, cuts the need for expensive monitoring, and allows patients and caregivers to quickly return to their daily lives. Increased satisfaction improves willingness to have future procedures, if needed.

**Conclusion:** Guided imagery is a safe, effective, and can increase patient compliance and satisfaction with colonoscopy, a procedure with known cost-effectiveness and outcome benefits. Guided imagery can reduce need for sedation, leading to direct cost savings and reduced chance of complications.

### 17. RESEARCH GUIDED IMAGERY FOR DENTAL PROCEDURES: DEC, 2003:

**Dental Procedures: Scope and Purpose:** About 78% of Americans say they saw a dentist between six months and a year ago. American Dental Association surveys found that there were around 150,000 professionally active dentists in the U.S. in 1996, with the average dentist seeing about 3,900 patients per year. Dental procedures include cleaning, repair, and pulling (extraction) of teeth, treating infection of teeth and gums, replacing damaged teeth, and sometimes cleaning, treatment and repair of underlying bone. Dental procedures have significant medical value because dental infections can spread to other parts of the body, including the heart valves. Dental infections can challenge the immune system even when they remain confined to the teeth and gums. They can cause tooth loss, impair patient nutrition, contribute to high blood sugar and atherosclerosis (“hardening of the arteries”), and cause pain and suffering. Thus, timely, effective treatment of dental problems can prevent more expensive and damaging problems.

**Problems with Dental Procedures:** Unfortunately, 25 % of all patients have anxiety about dental work severe enough to cause them to delay needed treatment. As many as 15% can be classified as dental phobic, meaning they have strong anxiety at even the thought of going to a dentist. Dental phobia can lead to spread of infection and premature loss of teeth. Dental anxiety can cause longer, more difficult dental procedures, requiring some kinds of sedation or anesthesia. Sedation and anesthesia both add to the difficulty and cost of procedures.

**The Role of Relaxation and Imagery:** Many studies have shown that relaxation with guided imagery or hypnosis can reduce patient anxiety and increase the ability to tolerate procedures, improve patient satisfaction, speed healing and reduce the need for analgesic medication and sedation. Similar benefits have been found in other medical procedures. Reduced sedation decreases complications and cuts the need for expensive monitoring, as well as allowing patients and their caregivers a more rapid return to their daily lives. Increased patient satisfaction also improves patient willingness to have other follow-up procedures done.

**Conclusion:** Guided imagery can reduce anxiety and medication use in dental patients, leading to increased patient satisfaction. This can result in shorter procedures, lower costs, and more regular dental visits.

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## 18. RESEARCH GUIDED IMAGERY FOR DEPRESSION: DEC, 2003:

**Dimensions and Costs of the Problem:** Depression, or Major depressive disorder (MDD), to use the medical diagnosis -- is the leading cause of disability in the U.S. and established market economies worldwide. MDD affects approximately 9.9 million American adults annually. This figure represents about 5% of the population age 18 and older. About two thirds of these are women. MDD is defined as a depressed mood, accompanied by loss of interest in usual activities, changes in appetite, energy level, or sleep pattern, hampered mental and physical function, or suicidal thoughts or action. The annual medical costs of depression in the United States is over \$20 billion, which includes approximately 7 million hospital days and 13 million physician visits. The cost to business is estimated at \$24 billion per year in lost productivity, and depression accounts for more than half of all corporate mental health claims. Depression ranks among the top three workplace problems for employee assistance professionals, following only family crisis and stress. The milder form of depression, called dysthymic disorder, affects approximately 5.4% of the population age 18 and older during their lifetime, or almost 11 million Americans.<sup>2</sup> About 40% of dysthymics also meet the criteria for MDD. Depression can end lives as well as impoverish them. In 1997, 30,535 people died from suicide in the U.S. The vast majority of these people suffered from depression. Depression also contributes to increased deaths and severity of heart disease and other conditions. The causes of depression are thought to include genetic predisposition, stress, loss, physical symptoms such as pain or disability, low sense of self-efficiency, learned helplessness, repressed anger, distorted, negative thinking, and metabolic processes. Decreased levels of the neurotransmitter serotonin are usually found in depressed patients.

**Treatment of Depression:** Selective Serotonin Reuptake Inhibitors (SSRIs) have largely replaced the somewhat more dangerous tricyclics and monamine oxidase inhibitors. Still, SSRIs are no more effective than those older drugs for most indications. SSRIs can have many side effects, especially gastrointestinal symptoms, loss of sexual desire or ability, tremors and nervousness. Fifteen to 30% percent of patients in various studies took themselves off an SSRI because of side effects. And 20-50% fail to show any benefit from these medications. Even when SSRIs work, they leave the patient unprepared for future episodes of depression, which may require re-treatment.

**Non-drug Approaches Including Imagery:** Psychotherapeutic approaches include cognitive therapy (changing patients' distorted negative thinking), behavioral therapy (especially stress management programs), psychodynamic approaches, solution-oriented brief therapy, and others. Many experts believe that combining psychotherapy or behavioral therapy with SSRIs is a more effective approach for depression than either treatment alone, at least in women. Exercise often has lasting positive effects. Relaxation and guided imagery improved mood and decreased depressive symptoms in postpartum first-time mothers, cancer patients, post-op patients, multiple sclerosis patients, healthy adults, and college students. The anti-depressant effects of guided imagery and relaxation may result from reduced anxiety and an increased sense of control over life stresses.

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**Conclusion:** Guided imagery can improve people's ability to cope with depression, and will lift mood in many cases. This leads to decreased use of medical resources, better quality of life, and possibly, improved physical health status in some users.

### 19. RESEARCH GUIDED IMAGERY FOR DIABETES: MAY, 2002:

**Definition of the Problem:** Diabetes mellitus (DM) refers to two related illnesses. Both affect how a person metabolizes glucose (sometimes called "blood sugar"). In Type I diabetes, the pancreas stops producing insulin, possibly because of an autoimmune process of some kind. Type I diabetics need carefully monitored insulin replacement therapy to survive. Type I diabetics make up around 10% of the diabetic population. In Type II diabetes, the pancreas may or may not be producing enough insulin, but the insulin receptor cells have closed down ("insulin resistance"). The liver may also be affected, producing more glucose than the body needs. Type II diabetes is associated with high-fat, high-calorie diets, sedentary lifestyles, overweight, and economic hardship. Stress is a major contributing factor in diabetes. It raises blood glucose by stimulating the release of glucose by the liver, and can also interfere with people following their doctors' orders and recommendations.

**Scope and Cost of the Problem:** Diabetes is one of the most prevalent, most expensive, and fastest growing chronic conditions in the U.S.A. and the world. About 7 million Americans had diagnosed diabetes in 1996. In 1998, their care involved 513,000 hospital admissions, averaging 5.2 days per stay. Direct medical expenditures for diabetes in 1997 totaled \$44.1 billion, about \$7.7 billion for glycemic care, and \$36.4 billion for treatment of complications and excess prevalence of general medical conditions. People visited doctor's offices 21.4 million times in 1997. According to the American Diabetes Association, indirect costs of diabetes (from premature mortality and disability) in 1997 totaled \$54.1 billion. Total medical expenditures incurred by people with diabetes totaled \$77.7 billion or \$10,071 per person, compared with \$2,669 for people without diabetes.

ADA research also found that: "In the United States alone, diabetes accounted for a loss of nearly 88 million disability days in 1997." Diabetes is a chronic illness in which outcomes, quality of life, and use of medical resources depend almost entirely on patient compliance. That is, the ability to follow prescribed diet, exercise, glucose monitoring, infection prevention, and medication regimens. But many find this program burdensome and frustrating.<sup>10</sup> Noncompliance is the biggest cause of diabetic complications, including kidney failure, blindness, amputation, and heart disease.<sup>2</sup> Any program that enables patients to better comply with treatment plans will be extremely valuable and cost-effective.

**Medical Treatment:** Medical treatment of Type I diabetes centers on insulin replacement, which is usually done by self-administered injections. Continuous insulin pumps are now available for some patients and allow for greater glycemic control and ease of treatment. Type II diabetics are usually treated with oral medications (sulfonylureas, biguanides, alpha-glucosidase inhibitors, and thiazolidinediones).

**Compliance with Diabetes Treatment:** The Diabetes Clinical Control Trial<sup>11</sup> demonstrated that diabetics who maintain excellent glycemic control face relatively little risk of kidney failure, retinopathy, or amputation. Improvements in glucose testing technology and

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medications have made glucose control possible for a greater number of diabetics. Still, the physical and psychological demands of tight control are difficult for many patients.

**The Role of Relaxation, Hypnosis, and Imagery:** Stress reduction is a vital part of diabetes management. This is especially true in Type II diabetes, where it appears to lower blood glucose directly. In Type I, the advantages of relaxation, hypnosis, biofeedback and guided imagery appear to stem largely from improved behaviors, although there is some evidence of a direct effect. Researchers found that both depression and anxiety worsen glycemic control directly, and indirectly (through behavior). Depression and anxiety can be partially relieved through relaxation and self-hypnosis (guided imagery). Other researchers found that several areas of diabetes self-care behavior improved in a group of patients who listened to guided imagery tapes.

**Conclusion:** A low-cost guided imagery-based program can improve compliance in diabetics of both types and improve glycemic control in Type II diabetics.

### 20. RESEARCH GUIDED IMAGERY FOR ENDOSCOPY: DEC, 2003:

**The value of endoscopy:** Endoscopy is the visual examination of the esophagus, stomach and the duodenum (the first part of the small intestine) using a lighted, thin flexible tube (an "endoscope"). Nearly 2.5 million upper gastrointestinal endoscopies are performed yearly in the United States, about 60% of them on an outpatient basis. Endoscopy is a valuable, safe procedure to investigate various problems, such as trouble swallowing, nausea, vomiting, reflux, bleeding, indigestion, abdominal pain, or chest pain. It is the best way of diagnosing many problems in the digestive tract, including ulcers, cancer, bleeding, and hernias. It also makes it possible for some people to avoid surgery for abnormal vessels, ulcers, narrowing of passageways, polyps, and some tumors.

**Problems with endoscopy:** Many patients avoid recommended endoscopies out of fear of the procedure, or of what the procedure will find. Studies show that pre-endoscopic anxiety is a significant problem and that providing information about the procedure can reduce anxiety and improve acceptance of the procedure. Distress due to gagging and intestinal cramping can make endoscopy much harder for both patient and provider and sometimes prevents completion of the examination. Intravenous sedation may cause low oxygen and low blood pressure in some patients.

**The role of relaxation and imagery:** Many studies have shown that relaxation with guided imagery, hypnosis, and/or music can reduce patient discomfort, raise patient tolerance of and satisfaction with the procedure. They can also reduce need for sedation in endoscopies and other procedures. Procedures also tended to go more smoothly and require less time. Reduced sedation decreases complications and cuts the need for expensive monitoring. It also allows patients and caregivers to quickly return to their daily lives. Increased satisfaction improves willingness to have future procedures, if necessary.

**Conclusion:** Guided imagery is a safe and effective method that can increase patient compliance and satisfaction with endoscopy. Guided Imagery can reduce need for sedation, leading to direct cost savings and reduced chance of complications.

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## 21. RESEARCH GUIDED IMAGERY FOR GERD (GERD, ACID REFLUX, OR HEARTBURN): JAN, 2003:

**Definition of the Problem:** Gastro-esophageal Reflux Disease (GERD) occurs when the valve between the esophagus and stomach fails to keep stomach contents from leaking up into the esophagus. This valve, usually called the Lower Esophageal Sphincter (LES), is a ring of muscle. When working normally, it opens to allow swallowed food into the stomach, then shuts to prevent acidic stomach contents from coming back up into the esophagus. When the valve is weakened or enlarged, or when the pressure of gastric contents is too strong, leakage can occur, sometimes in large amounts. The stomach is protected against acid, but the esophagus is not. So, people experience burning pain and pressure (heartburn). They can also have other acid-related symptoms not only in the esophagus, but also in the unprotected throat, windpipe (trachea) and bronchial tubes. To be classified as GERD, heartburn or other symptoms must be frequent and severe. GERD is frequently accompanied and made worse by hiatal hernia. GERD is a major public health problem. Some experts estimate that one third to one half of all asthma cases are caused or worsened by GERD. Acid reflux can also cause chronic bronchitis and pneumonia. Severe cases lead to a condition called “Barrett’s Esophagus,” in which the esophageal wall becomes lined with gastric cells for protection against acid. These cells are often pre-cancerous. Other complications include painful ulcers and narrowing of the esophagus. Both of these conditions can interfere with swallowing and nutrition.

**Scope and Costs of the Problem:** Heartburn, in one form or another, affects more than 100 million Americans, according to Dr. M. Michael Wolfe, Chief of Gastroenterology at Boston Medical Center. More than 25 million take antacids at least twice a week. Heartburn sufferers spend over \$6 billion a year on over-the-counter and prescription heartburn medications. There are nearly 200,000 emergency room visits per year by people with heartburn who fear they are having a heart attack. Work loss due to GERD average about \$1,000 per year per patient. Total direct and indirect costs of GERD were about \$10 billion in 2000, making it the most expensive digestive disease, according to the American Gastroenterological Association. Treatment costs of GERD-related esophageal cancer and asthma are unknown but probably substantial.

**Medical Treatment:** Medicinal treatments include antacids, which neutralize the acid. These are available over-the-counter and are purchased by 25 million Americans every month. They are effective for mild, occasional heartburn, but inadequate for moderate to severe cases. A class a prescription medicine called H<sub>2</sub>- blockers, such as Tagamet, Zantac, and Pepcid AC, reduce the output of stomach acid. They are more effective than antacids, but must be taken three to four times a day for maximum effect. Propulsid (Cisapride) helps to get some contents out of the stomach before they can leak through the LES. The newest and most effective drugs for GERD are the proton-pump inhibitors. These are usually taken only once a day and reduce acid production much more than other medications. About 10% of patients on these drugs experience side effects, including diarrhea and headache. The drugs don’t cure GERD, however. And they are expensive, costing over \$200 per month. They often must be taken for life or until lifestyle changes reduce the need for them. An operation called a laparoscopic fundoplication can tighten the LES to keep acid from getting back up into the esophagus.<sup>7</sup> This surgery costs about as much as five years of treatment with a proton-pump inhibitor.

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**Non-drug Therapy Including Relaxation and Imagery:** Stress plays a major role in gastrointestinal disorders including GERD. Experimentally induced stress increases reported GERD symptoms in 40–50% of patients. The effect of stress on actual acid exposure in the esophagus is still in question. Relaxation training and hypnosis have been shown to reduce GERD symptoms and medication usage in as many as 58% of patients in various studies. In many cases, the best treatment for GERD is behavior change such as avoiding trigger foods and losing weight. Relaxation and guided imagery can aid patients undertaking behavior change.

**Conclusion:** Guided imagery can assist some patients with behavior change, improve coping, and reduce GERD symptoms and medication use.

### 22. RESEARCH GUIDED IMAGERY FOR HEADACHES: MAY, 2002:

**Prevalence and Costs:** More than 45 million Americans have recurring headaches, and 28 million of them have recurring migraines. The incidence of headache increased 60% in the years 1988-1998. Americans miss more than 156 million workdays a year due to migraines alone. Students miss 329,000 schooldays per month due to migraines. These missed workdays and the costs of associated medical benefits represent a loss to industry of \$50 billion annually. Headaches are also responsible for 10 million physician visits a year in the U.S.A.

**What is headache?** Headache is a general term used to describe head pain. The pain can occur in the blood vessels and muscles of the scalp, face, or neck, in the tissue around the brain, or in the attaching structures at the base of the brain. Of the many types of headache, three are the most common. Tension or muscle contraction headaches are usually caused by fatigue, stress, or environmental factors. Migraines are throbbing headaches that can last for hours or days. They usually affect one temple or side of the head, and are often accompanied by nausea, vomiting, and light/noise sensitivity. Cluster headaches are appropriately named because they occur in clusters. They are characterized by short periods (usually 30 to 40 minutes) of intensely excruciating head pain that can recur several times a day, often continuing for months at a time.

**Medical treatment of headache:** The classification of headache usually determines the treatments. For various headache conditions, over-the-counter or prescription pain medications (analgesics) are often used. Other approaches include various classes of prescription medications, including antidepressants, NSAIDs, antihistamines, anti-emetics, serotonin receptor blockers and vaso-constrictors, serotonin 1-D receptor agonists, triptan drugs, beta-blockers, ergot alkaloids, lithium, corticosteroids, calcium channel blockers, and anti-seizure medications.

**Non-pharmacologic treatment including imagery:** Lifestyle changes, including avoiding headache triggers, relaxation, diet, and exercise can lower stress and fatigue levels, and reduce or even prevent muscle contractions. In several studies, guided imagery, which combines deep relaxation with positive suggestion, has proven cost effective in decreasing the number, intensity, or duration of headaches, and/or increasing patients' ability to cope with them. For example, researchers studied a group of 260 patients with tension-type headaches. Among those in the imagery group, .7% reported headaches "much improved," compared to 7.6% of the control group. The authors of a 2003 review of the literature concluded that there is "considerable evidence" of the effectiveness of mind-body techniques such as imagery, relaxation, hypnosis, CBT in the treatment of headaches. In another review, researchers concluded that learning to relax and reduce stress may be just as effective in reducing headaches as taking medication.

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**Conclusion:** Guided imagery, especially as an adjunctive treatment, can be a cost-effective way to reduce the frequency, duration, and intensity of headaches, as well as the number of headache-related office visits.

### 23. RESEARCH GUIDED IMAGERY FOR CORONARY HEART DISEASE: JUNE, 2002:

**Definition of the Problem:** Coronary heart disease (CHD) results when deposits called plaques build up in arteries. This leads to atherosclerosis, a condition that reduces blood flow and oxygen. CHD, also called coronary artery disease (CAD), develops over time, and leads to partial or complete blockage of the arteries involved. One major cause of atherosclerosis is having high lipids (fats) such as cholesterol and triglycerides in the blood. Other major causes, are hypertension, and smoking. Stress, obesity, and a sedentary lifestyle also contribute to the development of CHD. Other risk factors are heredity, race, age, diabetes, depression, low socioeconomic status, social isolation and male gender. CHD can be ‘silent,’ producing no symptoms, or patients can experience shortness of breath, dizziness, chest pain (angina), or a heart attack.

**Scope and Cost of the Problem:** According to the American Heart Association, as of 1999 12.6 million Americans had CHD. The direct and indirect costs of CHD to the U.S. economy exceed \$129.9 billion annually. Medicare alone spends more than \$10.6 billion annually in its treatment. The most common form of heart disease, CHD is the leading cause of permanent disability in the U. S, and is the primary cause of death in Americans, both male and female -- over 725,000 deaths annually.

**Medical Treatment:** Treatment for CHD depends on many factors, including the severity of the disease and any comorbid conditions. Frequent treatments include aspirin, beta-blockers, nitrates, lipid-lowering medications, and ACE inhibitors. Surgical procedures include coronary artery bypass, and angioplasty. Recommended lifestyle changes include quitting smoking, maintaining correct weight, regular exercise, and following a diet low in fat and cholesterol.

**Lifestyle Changes, Emotions, and Well-Being:** A landmark 1998 study by Dean Ornish and associates demonstrated that lifestyle changes (diet, exercise, relaxation, and social support) can dramatically reverse CHD.<sup>6</sup> Other studies have shown that emotions play a major role in CHD. Fear, grief, and anxiety can trigger cardiac events. Anger can be a trigger and depression can affect the outcome of long-term survival. The role of stress in the development and progression of CHD both in men and women is also well documented.

**Mind-Body Approaches Including Guided Imagery:** Relaxation and guided imagery can reduce the impact of CHD in several ways. Anger and other possibly harmful emotional states are reduced by the inner-focused, relaxed state induced by guided imagery and other mind-body modalities. Additionally, a sense of emotional well-being can be improved by the use of these therapies. Guided imagery and relaxation can reduce stress, and lower heart rate and blood pressure. Meditation produces similar physiological results. According to a review of 23 major heart disease studies, when psychosocial approaches were added to standard medical treatments, survival and further cardiac event rates improved significantly.

Complementary approaches like relaxation training and imagery are so effective that they are routinely done at prestigious facilities such as Columbia Presbyterian Hospital’s Department



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of Surgery. Relaxation, imagery, and education are important parts of Stanford's Chronic Disease Self-Management Program.

The results of a lifestyle study showed that 80% of people who used complementary approaches were able to avoid cardiac surgery, a savings of almost \$30,000 per patient. Self-management of chronic conditions including CHD improves symptom management and reduces medical costs.

**Conclusion:** A low-cost guided imagery-based program can help to lower stress and blood pressure, enhance an overall sense of emotional well-being, and improve compliance with lifestyle changes. Each of these factors, in turn, can aid in slowing, halting or reversing the progression of CHD and in reducing the number of further coronary events, re-hospitalizations, and surgeries.

### 24. RESEARCH GUIDED IMAGERY FOR HEART SURGERY: DEC, 2003:

**Definition of the Problem:** Cardiac surgery can best be divided into five major classifications: cardiovascular operations, bypass surgeries, valve repair, repair of congenital defects, and other miscellaneous procedures.

**Scope and Cost of the Problem:** The American Heart Association reports that for the year 2000, there were a total of 5,939,000 in-patient cardiac surgeries, 686,000 of which were open heart procedures. This number includes 87,000 valve replacements, 561,000 Percutaneous Transluminal Coronary Angioplasties (PTCA's), 1,318,000 in-patient cardiac catheterizations, 34,000 implantable defibrillator procedures; 152,000 pacemaker procedures; 124,000 endarterectomies, and 519,000 bypass procedures. An American Heart Association report lists the average cost of an in-patient cardiac catheterization at \$16,838.1 The cost for Bypass (CABG) surgery is approximately \$27,000, with an average stay of 5-6 days (9 days for Medicare patients); most bypass patients are not able to return to work for 4-6 weeks (and, in some cases, 6-12 weeks).

**Mind-Body Approaches to Coping with Surgery:** Since pharmacologic sedation often increases the risk of low blood pressure and lack of oxygen, doctors have looked at other ways to reduce pre-surgical anxiety. Most effective have been relaxation with guided imagery (self-hypnosis) and pre-procedure provision of information. Self-hypnosis, or relaxation with guided imagery used before and during surgery has resulted in shorter procedures. These techniques can also significantly reduce post-surgical pain and the need for post-operative pain medication, shorten the time it takes for the intestines to return to normal functioning, and reduce the length of hospital stay. There is also some evidence that mind body therapies like hypnosis and imagery can reduce blood loss and speed wound healing. Hypnosis and guided imagery have been used effectively in cardiac bypass to reduce length of stay, decrease use of pain medications, and lower pharmacy costs.<sup>6</sup> These techniques also help to alleviate anxiety.<sup>6</sup> In one study, bypass patients using these techniques were more relaxed pre-operatively and had lower levels of post-operative depression, fatigue, and anger.<sup>6</sup> Anger can be particularly problematic for cardiac patients, since anger has been associated with cardiac events including heart attacks. High levels of anger are also associated with re-narrowing of heart arteries and the need for coronary artery bypass grafting. A simple mind-body technique like breathing therapy, similar to the breathing

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technique taught in this program, has been shown to reduce anger scores, and cut by 50% the risk of post-PTCA cardiac events.

**Acceptance of Mind-Body Approaches:** In a recent survey of middle-aged and older cardiac patients, over 80% of those responding said that they used Complementary and Alternative Medicine, including imagery and relaxation techniques.<sup>24</sup> High patient satisfaction with guided imagery tapes have been reported by several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles). World-renowned cardiac surgeon Mehmet Oz and his colleagues have stated: “Mind-body techniques and complementary care may assist people who are undergoing surgery and those recovering from cardiac surgery to cope with the event, the process of recovery, and accompanying lifestyle changes. These approaches can provide cardiac patients with nonpharmacologic tools that may prevent further coronary artery disease and the development of dysrhythmias.”

**Conclusion:** A low-cost guided imagery program can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

### 25. RESEARCH GUIDED IMAGERY FOR HERPES: DEC, 2003:

**Definition of the Problem:** There are two separate and distinct contagious viruses that make up the Herpes Simplex Virus. The viruses cause shingles, chicken pox, mononucleosis, oral herpes, and genital herpes. HVS-2 accounts for 90% of genital herpes; HVS-1 causes the other 10%. Herpes is spread from person to person through contact with bodily fluids. An infected person can also cause it to spread to more than one area of his own body. It can be spread whether or not the infected person has an active outbreak, since the active virus is continually being shed. Since shed virus can live for a time in the air, a person can be also infected by coming into contact with an infected towel or clothing. A herpes “episode” can have no symptoms, or it can start with flu-like symptoms, including fever and swollen glands. While the virus has no cure, the number of outbreaks tends to decrease over the years.

**Scope and Cost of the Problem:** At least one in six people have herpes<sup>1</sup>; other estimates place the number as high as one in four. This means about 45 million people have herpes, with one-third of those people possibly unaware that they are infected.<sup>1</sup> Since most people with HSV-2 never get lesions or have only mild symptoms<sup>4</sup>, it is easily possible for them not to know they have been infected. There are approximately 500,000 new cases annually. The number of Americans with genital herpes has increased 30% since the late 1970's, with the largest increase occurring in white teenagers. According to the National Institutes of Health, the annual costs of genital herpes is more than \$96 million.

**Medical Treatment:** Antiviral therapies can be used during outbreaks or to inhibit or reduce future outbreaks. Antirival medications include acyclovir (Zovirax), famciclovir (Famvir), and valaciclovir (Valtrex). Pain relief can usually be achieved using over-the-counter remedies such as acetaminophen or ibuprofen. Lifestyle changes (stress reduction, healthy diet, exercise, sleep, limiting sun exposure) can sometimes limit the number or severity of outbreaks.

**Mind-Body Approaches:** Since stress has been linked to the frequency and severity of outbreaks, stress reduction is always a goal. In one study, patients using a program that included stress reduction, education, and guided imagery were able to limit the number and severity of herpes outbreaks. Relaxation has also proven beneficial, as has hypnosis.

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**Conclusion:** Guided imagery can help to lower stress, improve coping skills, improve compliance with lifestyle changes, and possibly reduce the severity and frequency of outbreaks.

### 26. RESEARCH GUIDED IMAGERY FOR HYPERTENSION: JUNE, 2003:

**Dimensions of the problem:** Hypertension (HTN) is defined as a repeated blood pressure reading of greater than 140/90 mm Hg. An estimated 50 million Americans have HTN, and over 31% of those who have it don't know it. In approximately 90-95% of HTN, there is no specific physiological cause found. These cases are classified as essential or idiopathic. Predisposing factors include obesity, smoking, diets high in fat or salt, other co-existing conditions including diabetes, and a number of genetic, environmental, and behavioral factors.

**Costs:** The direct and indirect cost of hypertension in 2000 was \$50.3 billion (approximately \$37.2 billion in direct costs; \$13.1 billion in indirect costs).<sup>3</sup> HTN is a major contributor to coronary artery disease (740,000 deaths per year in U.S.A.), cerebrovascular disease (150,000 deaths per year), and kidney disease -- three of the leading causes of morbidity, mortality, and medical resource utilization in the USA.<sup>4</sup> In 2000, there were 35 million outpatient visits for hypertension. In 2000, 44,619 deaths were attributed directly to hypertension in this country, with HTN playing a part in 118,000 more. The benefits of controlling even mild hypertension are well accepted. Long-term reductions in mortality from coronary artery and cerebrovascular disease of between 15-25% have been reported in large-scale studies.<sup>6</sup> Incidence of stroke, in particular, can be sharply reduced by controlling hypertension.

**Medical Management:** Treatment of HTN with prescription drugs has steadily improved. A class of drug called ACE inhibitors are now often prescribed as first line treatment. These drugs replaced earlier use of diuretics (water pills) and beta blockers, which had a lot of side effects. The side effects often led to people not taking the drugs as prescribed ("noncompliance" or poor compliance). Lack of compliance with medications is still a major complicating factor in treatment.

**Nonpharmacologic management of hypertension:** The effectiveness and cost-effectiveness of behavioral interventions, when combined with drug therapy, were shown repeatedly in the 1980s. Chief among these interventions are exercise, weight loss programs, and relaxation. Behavioral approaches also have added advantages: improving quality of life, helping patients take better care of themselves; improve patients' feeling of being in control; and improving their compliance with therapy. Perhaps because of improvements in drug therapy, behavioral approaches have not become mainstream in the U.S.

**Mind-Body Management of Hypertension:** Guided imagery is a highly effective behavioral intervention for HTN. It combines deep relaxation with positive self-suggestion, both of which reduce blood pressure. Researchers from the Centers for Disease Control and Prevention recently stated that evidence for the effectiveness of certain non-drug approaches to HNT prevention and control is strong.<sup>13</sup> Individual studies support the effectiveness of imagery, relaxation training, biofeedback with relaxation training, hypnosis, and autogenic training. These results were further confirmed by two 2003 reviews of the medical literature. One study found "moderate evidence of efficacy" for using mind body modalities (relaxation, imagery, hypnosis, CBT) for managing HTN. A review of 22 studies showed that biofeedback combined with relaxation significantly decreased both systolic and diastolic blood pressures. One

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researcher reported in his 2002 study that “relaxation techniques (autogenic training or progressive muscular relaxation, behavioral therapy or biofeedback techniques), can lower elevated blood pressure by an average of 10 mmHg (systolic) and 5 mmHg (diastolic).” A low cost, self-managed program of taped imagery exercises and workbooks allows patients unlimited opportunity to practice on their own, and is structured for maximum gains in self-efficiency.

**Conclusion:** A low cost guided imagery program can be a valuable complement to medical treatment of hypertension. It does this by contributing to more effective management of blood pressure, better compliance with therapy, decreased need of doctor’s visits, and higher quality of life for patients.

### 27. RESEARCH GUIDED IMAGERY FOR IRRITABLE BOWEL SYNDROME: MAY 2002:

**Definition:** Irritable Bowel Syndrome (IBS), sometimes called spastic colon, irritable colon, or nervous stomach, is a functional disorder of the bowel. It is marked by abdominal pain, and associated with changes in bowel habit (either in frequency, urgency, or characteristics). A precise cause is unknown, but faulty interaction between the gut, brain, and central nervous system seems to result in the bowel becoming over-reactive.<sup>1</sup> Additionally, the pain receptors in many IBS patients’ guts are unusually sensitive.<sup>2</sup> Stress and diet don’t cause IBS, but they can trigger symptoms. There is a strong mind-body component, and emotions have been shown to affect gut activity. The major symptom of IBS is a change in the patient’s bowel function--usually diarrhea, constipation, or alternating between the two. Other symptoms include bloating, abdominal fullness, gas, nausea, and reflux (where stomach contents “back up”). Some people experience exhaustion or chest pain that is not heart-related. Depression is common in IBS patients. People with IBS often have a lower quality of life. IBS can affect sleep, sexual functioning, business and personal obligations, and social life. IBS is further complicated by when people also have other conditions, such as fibromyalgia, Chronic Fatigue Syndrome (CFIDS), and thyroid disease.

**Incidence and Costs:** IBS is more common than diabetes, asthma, heart disease, or hypertension.<sup>4</sup> It affects between 20-22% of Americans at any one time, 60- 65% of whom are women. IBS is responsible for up 40% of patient referrals to gastroenterologists; another 12% of IBS patients are treated by their primary care physicians; and up to 70% of those meeting the diagnostic criteria for IBS do not seek treatment. Annual U.S. direct medical costs are estimated at \$8 billion annually, with 3.5 million office visits and 2.2 million prescriptions filled. Indirect costs include frequent absenteeism. One study estimated that IBS patients are absent from work or school three times more often than their non-IBS counterparts.

**Diagnosis and Medical Treatment:** Since there are no conclusive diagnostic tests, IBS is a diagnosis of exclusion. This means that the doctors usually rule out other possible causes of the symptoms. Medication is geared toward reducing or relieving symptoms. These drugs can include antispasmodics, antidiarrhetics, laxatives, bulking agents, and prokinetic agents (to move food quickly through the bowel). If a patient is depressed or has severe pain that doesn’t respond to other treatment, two other classes of drugs (SSRIs and low-dose tricyclic antidepressants) are used. However, according to one expert said that there is “little evidence” that IBS medications are effective.

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**Complementary Treatment:** Early studies indicate that peppermint oil and Chinese herbal medicine warrant further study, as do Slippery elm, fenugreek, devil's claw, tormentil and wei tong ning. The results of one well-designed trial demonstrated that Chinese herbal medicine was significantly effective in improving symptoms, and quality of life. Other non-pharmaceutical treatment includes patient education, diet modification (including identification and avoidance of food triggers), and mind-body therapies.

**Mind-Body Approaches:** The literature supporting mind-body therapies is compelling. Relaxation<sup>11,12</sup> and biofeedback<sup>13</sup> have shown success in improving symptoms and preventing relapse. One approach (relaxation, therapy, and medication) was effective in two-thirds of patients who had not responded to medication alone. Another combination regimen (progressive muscle relaxation, thermal biofeedback, cognitive therapy, education) had a 50% success rate, maintained four years later. Hypnosis uses relaxation, suggestion, and imagery for its effects. Hypnosis has been shown to improve symptoms, even in severe refractory cases and in cases where psychotherapy has failed. Both the Forbes and the Galovsky studies<sup>19</sup> used gut-directed suggestion, and the results showed significant symptom improvement. Forbes specifically looked at the effect of therapeutic suggestions on audiotape and found them effective. The Houghton study results showed “profound” improvement in physical symptoms (pain bloating and bowel habit). People also feel that their quality of life was better, and that they felt more in control of their situation. They lost less time at work and needed fewer doctor’s office visits than the control group. Researchers of one review paper reported that, in 19 of 22 studies reviewed, psychotherapy was superior to medication. In another study, patients receiving therapy improved, while patients receiving medication deteriorated. Mind-body techniques are effective, not only in reducing IBS’s physical symptoms, but also in lifting depression and/or improving quality of life.

**Conclusion:** A very low-cost guided imagery program can improve patients’ abilities to cope with IBS pain, reduce or eliminate its symptoms and/or recurrences, reduce office visits, absenteeism and, in some cases, medications. These benefits can be long-lasting. It may improve patients’ quality of life and symptoms, even in difficult IBS cases.

## 28. RESEARCH GUIDED IMAGERY FOR GERIATRIC INSOMNIA: DEC, 2003:

**What is Insomnia?** Insomnia is defined as taking more than 30 minutes to get to sleep, waking for a period of more than 30 minutes, or waking earlier than desired, with feelings of fatigue and drowsiness during the day, recurring over at least a 30 day period.

**Dimensions of the Problem:** Insomnia is a very common problem in the elderly. People over age 65 experience sleeping problems more and are more sensitive to the residual effects of sleeping aids than any other group. The National Commission on Sleep Disorders Research reported \$15.9 billion as direct cost of sleep disorders and sleep deprivation, with an estimated \$50 to \$100 billion in indirect costs, mostly from accidents. In European studies, drowsiness has been found to be a greater traffic hazard than alcohol consumption. Americans spend approximately \$2 billion annually on sleep products<sup>5</sup>, with seniors or their insurance carriers paying a substantial percentage of that amount, since older people are prescribed sleep medicines twice as much as younger people.

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**Causes of Chronic Insomnia:** Although a number of medical conditions can cause insomnia, chronic insomnia is most commonly a behavioral or mind-body problem.<sup>1</sup> In the geriatric population, other conditions must also be considered, since their symptoms (e.g., chronic pain) can contribute to insomnia. Temporary sleeplessness during stressful times can lead people to form a link between bed and worrying. Insomniacs tend to have higher than normal levels of anxiety and depression, low self-efficacy, and expect too much of themselves --, all of which can either cause or effect sleeplessness. Hormonal changes and drug use, including prescription drugs, cigarettes, and alcohol, can also cause insomnia.

**Medical Treatment:** Until recently, sleeping pills have had as many risks as benefits. With older pills, people can build up a tolerance to them in about two weeks. With the newer ones, it can take about four weeks. In elderly patients, sleep medications can cause falls or breathing complications, and are associated with a high incidence of hip fracture. Sleep aids can interact with other medications or alcohol, and can disrupt natural sleep/awake cycles circadian rhythms. There is a rebound effect after people stop taking them. The next day, the after-effects of sleep medications can make people feel as bad as not sleeping does.

### Nonpharmacologic Treatment Including Guided Imagery

Behavioral therapy has been repeatedly demonstrated the most effective long-term approach to chronic insomnia, in both general and specific populations. The main categories of behavior therapy for insomnia are stimulus control, using bed only for sleep û a sleep hygiene program, keeping a sleep log, cognitive control, and progressive relaxation. These methods are often combined. Relaxation is effective, with or without stimulus control measures, in reducing sleep-onset insomnia. Effects are better when the two techniques are combined. In one well-designed clinical trial, seniors using Cognitive Behavioral Therapy (CBT) and relaxation therapy were able to fall asleep 54% faster and 16% faster respectively. Similar results were reported in a 2002 study of older patients: 54% of patients who received classroom CBT, and 35% of patients who used home-based audio relaxation treatment achieved significant changes. Since CBT and relaxation (including audio tapes) are both effective, evidence suggests that combining the two would yield greater benefits. This seems to be borne out by the Engle-Friedman study of older adults. It demonstrated that progressive relaxation and learning new sleep habits helped patients become less depressed, and achieve a better sense of control, fell asleep faster, and slept better, even two years later. Authors of three reviews of the literature of mind-body techniques (including techniques such as relaxation, meditation, biofeedback) concluded that there is, respectively, either “considerable,” “sufficient,” or “moderate” evidence of their effectiveness in insomnia.<sup>19-21</sup> A 2003 study found that at-home use of relaxation tapes was just as effective as massage in improving subjects’ sleep.

**Conclusion:** Guided imagery can help senior patients cope with chronic insomnia, and may save resources spent on prescription sleep medications. Effects will be stronger if included behavioral recommendations are followed.

## 29. RESEARCH FINDINGS USING GUIDED IMAGERY FOR MENOPAUSE: DEC, 2003:

**Definition of the Problem:** Menopause refers to the end of menstruation due to the ovaries’ decreased production of the hormones estrogen and progesterone. Menopause is usually considered to have occurred when 12 consecutive months go by without any signs of a menstrual

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period. Although menopause is a natural part of the life cycle, some women seek treatment for symptoms such as hot flashes, mood swings, confusion, vaginal dryness, heavy vaginal bleeding, decreased sex drive, and trouble sleeping. Decreased estrogen and progestin output also puts post-menopausal women at increased risk for osteoporosis (loss of bone density) and heart disease.

**Scope and Costs of the Problem:** According to the North American Menopause Society, there were almost 42 million women over age 50 in the United States in the year 2000. By 2020, it is estimated that nearly 46 million American women will be over age 55. Most women spend at least one-third of their lifetime in post-menopause. Over 1.8 million US women reach menopause each year. There are no direct statistics on the economic impact of menopausal symptoms. However the symptoms associated with menopause certainly result in numerous medical office visits, absenteeism from work, and sometimes medication. Greater costs can occur from bone fractures and heart disease as they move through post-menopause, especially in women who do not make necessary changes in diet and exercise habits.

**Medical Treatment of Menopause Symptoms:** The most widely used and effective medical treatment for menopause symptoms is hormone replacement therapy (HRT). Supplements of estrogen and progesterone bring these hormone levels up to near-normal. HRT is very effective in relieving many menopausal symptoms, but its long term risks and benefits, in terms of both cardiovascular disease and various types of cancer, are still being studied and hotly debated, especially after the Women's Healthcare Initiative study was ended early as a result of these possible risks. Natural HRT, which uses human progesterone (not progestin) and estradiol (not synthetic estrogens that contain animal hormones), is another option but its long-term effects have not yet been studied. Other medications used are NSAIDs for pain and antidepressants. Statin drugs are increasingly being prescribed to help prevent cardiovascular disease in menopausal women, but these drugs can cause liver problems.

**Non-Medical Approaches to Menopause:** Dietary changes may reduce symptoms such as hot flashes, and help to prevent osteoporosis and heart disease. Some authorities recommend a low-fat, low-salt, moderate-protein, low-sugar diet. Supplements of Vitamins D, E, calcium, and magnesium are often recommended. Soy protein has been found in some studies to reduce menopausal symptoms. Exercise, especially weight or resistance training, is known to prevent osteoporosis and reduce some menopausal symptoms. Various herbal treatments including "black cohosh" and the Chinese herb "dong quai" are often recommended in self-help books and health food stores. Acupuncture can also help with symptoms.

**Relaxation and imagery:** Regular relaxation, guided imagery, and biofeedback have been found effective in reducing hot flash frequency and intensity, decreasing tension and anxiety, and improving mood in women going through menopause. Researchers found that women who were taught to slow their respiration had significantly reduced hot flash activity. Other researchers found that daily relaxation reduced both hot flash intensity and depression. Hypnosis was also quite effective in reducing the frequency, duration, and severity of hot flashes. In the same study, the quality of sleep was also improved, women experienced fewer bouts of insomnia.

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**Conclusion:** Guided imagery can reduce the severity of certain menopause symptoms and increase women's coping abilities. This, in turn, can lead to increased comfort, less absenteeism, and fewer side effects when medication use is lowered.

### 30. RESEARCH FINDINGS USING GUIDED IMAGERY FOR MRI: DEC, 2003:

**The Value of MRI:** Magnetic Resonance Imaging (MRI) is among the safest and most valuable procedures in all of medicine. Over six million MRI procedures are performed in the U.S.A. each year, many of them to diagnose and evaluate injury, tumor growth, structural abnormalities and various disease processes.<sup>1</sup> MRI has several advantages over X-ray and computerized tomography (CT). Cross-sectional views can be taken from any angle, while CTs can view from only one direction at a time. By using different scanning parameters, MRI operators can highlight different aspects of the tissues they investigate, giving more complete information.

**Problems with MRI:** MRIs are expensive. For example, Medicare reimburses \$154 more for an MRI of the head than for a head CT. An MRI costs more than the equivalent X-ray.<sup>2</sup> Because patients must remain still in the tight space of the MRI scanner for up to two hours or more, MRIs frequently create anxiety and panic. This can cause significant harm to patients and greatly increasing costs. Five to ten percent of patients undergoing MRI experience severe claustrophobia or panic attacks, and 30% report milder distress. Severe anxiety can require the procedure to be canceled and rescheduled, increasing costs and delaying medical evaluation. Over 14% of patients require sedation to complete the examination, adding new costs and risks to the procedure. Many patients report that their MRI continued for several months after the exam.<sup>4,6</sup> Patient anxiety can lead to patient movement during the test, leading to poor quality images.

**The Role of Relaxation and Imagery:** Many studies have shown that relaxation with guided imagery or hypnosis can reduce patient anxiety and movement, increase patient tolerance of and satisfaction with the procedure, and reduce need for sedation in MRI. Similar benefits have been found in other medical procedures.

Reduced sedation decreases complications and cuts the need for expensive monitoring, as well as allowing patients and caregivers a more rapid return to their daily lives. Increased satisfaction improves willingness to have future procedures, if necessary.

**Conclusion:** Guided imagery can reduce patient anxiety and movement during MRI, improving quality of images. The use of guided imagery can save money by reducing need for sedation and/or cancellation of procedures, and increase patient satisfaction with the procedure.

### 31. RESEARCH GUIDED IMAGERY FOR NERVE PAIN: DEC, 2003:

**Definition of the Problem:** There are three major classifications of nerve pain: neuritis, neuralgia, and neuropathy. Neuritis is a term used to describe an inflammation of a nerve that results in pain, sensory disturbance, or the ability of the nerve to "react" properly. Among the many types of neuritis are optic, interstitial, and brachial. Neuralgia is characterized by shooting or sudden and recurring pain involving a nerve or nerves. It usually does not involve permanent damage or structural change to the nerve. Some types of neuralgia are migranous, cervico-occipital, post-herpetic, and ideopathic. Trigeminal neuralgia in the face (formerly, tic



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douloureux) is considered by many to be the worst possible pain anyone can experience. Neuropathy (also known as peripheral neuropathy, sensory peripheral neuropathy, or peripheral neuritis) is a painful condition that usually results from major or irreversible damage to the nerves. This damage can be from disease, injury, or a tumor. In the United States, diabetes is the leading cause of neuropathy. Most people with neuropathy experience periodic or constant muscle weakness, numbness, and tingling. Many also experience severe burning or electric-like shooting pain.

**Scope and Cost of the Problem:** According to a CDC survey in 1996, there were approximately 353,000 people with neuralgia or neuritis. Neuropathy affects more than 2 million Americans, although one expert estimated that the many undiagnosed cases could raise the estimate to 20 million. Total disease-related costs of neuropathy are estimated at \$50 billion a year, with drug costs alone in the \$1.1 billion range. According to the Neuropathy Association, “78 percent of those with peripheral neuropathy said it had a substantial impact on their ability to enjoy a normal life, and 61 percent said it affected their ability to do their job.”

**Medical Treatment:** Treatment of nerve pain is often geared toward relieving symptoms. No one therapy is completely successful, and it is not uncommon for two and three drugs to be used. Specific treatment is usually determined by the exact condition. For example, neuritis is treated with opiates, steroids, and NSAIDs. For neuralgia, carbamazepine is a frequent first treatment choice. Baclofen, clonazepam, gabapentin, and valproic acid have also been known to be somewhat effective. Most neuropathic pain is treated with any number of drug types: tricyclic antidepressants (TCA's); anticonvulsants such as gabapentin; systemic local anesthetics; SSRI's; corticosteroids; substance P depletors; autonomic drugs; NMDA receptor antagonists; and capsaicin cream. When these treatments fail, other interventions include trigger-point injections, pain “blocks,” epidural steroids, spinal cord stimulators, and morphine pumps. Surgery is rarely recommended.

**Other Treatments for Nerve Pain:** In addition to medication, physical therapy and nutritional supplements are sometimes recommended. Psychological approaches, specifically including behavior modification and relaxation training, are frequently recommended.

**Mind-Body Approaches:** Since stress can aggravate pain<sup>7</sup>, stress reduction is an indispensable part of any nerve pain treatment plan. This is one of the areas where mind-body techniques are particularly effective. There is also substantial evidence to support the use of mind-body techniques in the management of many types of pain. The effectiveness of guided imagery is well documented<sup>10-13</sup>, as are hypnosis and biofeedback.

**Conclusion:** Guided imagery involving relaxation and positive suggestion can help to lower stress, improve coping skills, enhance an overall sense of emotional well-being, and help with making lifestyle changes.

### 32. RESEARCH GUIDED IMAGERY FOR PEDIATRIC PAIN: DEC, 2003:

**Dimensions of the problem:** Chronic pain in children and adolescents is estimated to affect 15%-20% of children. Twelve million children (1 in 4) have chronic health conditions. Pain and disability pose significant emotional, social, and financial difficulties to families. Migraine headaches alone occur in over eight million children and adolescents and result in over

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one million lost school days per year. Recurrent abdominal pain (RAP) affects 10-20% of school age children.

**Causes of Chronic Pain in Children:** The most common causes of recurrent pain in children are headaches, recurrent abdominal pain (RAP) and cancer. Finding a cause for RAP (episodic abdominal pain over a period of at least three months) is difficult at best. Identifiable etiologies are determined in only about 10 per cent of patients. Some experts believe that RAP frequently results from psychological stresses. Headache is one of the most common complaints of children with recurrent pain. Both migraine and muscle contraction (tension-type) headaches occur frequently in children. By age 7, some 40% of children have had headaches, and by age 15, 75% have had them. Children are also affected by the pain of serious diseases like cancer. In the last 20 years, more effective treatment of pediatric cancer has resulted in longer life expectancies for young cancer patients. This improved prognosis has brought more attention to the need for effective treatments of pain and other cancer symptoms. Multidisciplinary approaches that use several techniques are now considered key to effective treatment of children's cancer symptoms.

**Issues in Childhood Pain Management:** Parents are profoundly affected by having a child in pain, particularly when the causes haven't been found. Doctors are often reluctant to run diagnostic tests that often don't pinpoint the cause of the pain. Parents and the medical community often fear the long-term effects of medications on children, and may treat pediatric pain far less aggressively than they would treat the same pain in adults. Behavioral and relaxation techniques for pediatric pain have received considerable study and have shown strong evidence of effectiveness.

**Complementary Treatment Including Relaxation, Imagery and Hypnosis:** Because of their natural ease of engaging in fantasy and imagination without the inhibitions of adults, children are able to use hypnosis and imagery easily. In one study, recurrent abdominal pain resolved within 3 weeks in 4 out of 5 pediatric patients after a single session of self-hypnosis. In several cancer treatment programs, it has been shown that hypnotic-like methods, involving relaxation, distraction with imagery, and positive suggestion hold the greatest promise for non-drug pain management. In addition to helping to control pain, these therapies are also known to increase a child's sense of control and ability to manage their situations. In many studies, it has been found that the benefits of using relaxation-type therapies are still present up to a year later.

**Conclusion:** Guided imagery can help child and adolescent patients and their families cope more effectively with pain.

### 33. RESEARCH GUIDED IMAGERY FOR PREPARING FOR SURGERY: AUG, 2003:

**RESEARCH FINDING USING GUIDED IMAGERY FOR PREPARING FOR SURGERY:** AUG, 2003: **Scope and Cost of the Problem:** In the year 2000, there were almost 40 million surgeries performed in U.S. hospitals.<sup>1</sup> There were also 32.5 million in-office surgery procedures in 1998, many of which routinely use some sedation.

**Mind-Body Approaches to Coping with Surgery:** Patients are often given drugs (sedation) to reduce and calm them before a procedure. However, sedation often increases the risk of low blood pressure or getting too little oxygen. As a result, researchers have looked at

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other ways to reduce pre-surgical anxiety. Some of the most effective alternative techniques include relaxation with guided imagery, self-hypnosis, and providing reassuring information prior to the procedure. Relaxation with guided imagery or self-hypnosis before and during surgery can shorten procedures. These techniques can also significantly reduce post-surgical pain and the need for pain medication. They can shorten the time it takes for patients' bowels to return to normal and shortens their hospital stay.

There is also some evidence that these techniques can reduce blood loss and speed wound healing. Several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles), have reported that patients who used guided imagery tapes to prepare for surgery were very satisfied with them, plus, it reduced their bills! In addition, guided imagery audio tapes are routinely used and recommended by many well respected physicians, including Mehmet Oz, M.D., heart surgeon and Director of the Complementary Care Center at Columbia Presbyterian Medical Center (New York).

**Conclusion:** Research available to date supports the conclusion that a low-cost guided imagery-based program to prepare patients for surgery can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

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34. RESEARCH GUIDED IMAGERY FOR PREMENSTRUAL SYNDROME: DEC, 2003:

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**Definition of the Problem:** Premenstrual Syndrome (PMS) refers to a cyclic group of symptoms, both physical and psychological, that can affect a woman in the days or weeks prior to the monthly onset of her period ("menses"). The pain that can accompany menstruation is called dysmenorrhea. Primary dysmenorrhea is the "normal" uterine contractions that occur during menses; its exact cause is unknown, but hormones probably play a primary role. Secondary dysmenorrhea is the result of an underlying condition (infection, inflammation, or other disorder).

**Scope and Cost of the Problem:** According to the American Academy of Obstetricians and Gynecologists, up to 85% of women have one or more symptoms of Premenstrual Syndrome. About 5-10% of women report being debilitated by severe symptoms. Some of the more intrusive symptoms include pain, headache, tension, mood swings, depression, and fatigue. Absenteeism due to the severity of PMS and menstrual pain is "underappreciated," and is the leading cause of absenteeism for women under thirty. While recent figures are not available, a 1984 study reported the annual indirect costs of dysmenorrhea at \$2 billion in lost productivity, and 600 million lost work hours.

**Treatment:** Dysmenorrhea and PMS are usually treated with either over-the-counter or prescription diuretics ("water pills" to reduce water retention) and NSAIDS (for pain). Oral contraceptives or prostaglandin inhibitors (both available only by prescription) are treatments for primary dysmenorrhea. Medications to regulate other hormone production are sometimes used. Severe psychological symptoms often respond to anti-depressants. All of these treatments vary in effectiveness from woman to woman. Calcium/magnesium supplements are clinically proven effective. Lifestyle modifications (diet, sleep, and exercise) are often effective in relieving symptoms.

**Mind-Body Therapies:** A recent review of the literature published in the American Journal of Obstetrics and Gynecology confirmed that women with PMS and PMDD widely use complementary and alternative medicine, and that there is "substantial evidence of efficacy" for mind-body approaches to these conditions. One such approach is Cognitive Behavioral Therapy. A 2002 study of 108 women showed that Cognitive Behavioral Therapy was as effective as fluoxetine in the treatment of PMDD, and that CBT was associated with better maintenance of treatment effects than was the prescriptive. Studies also support the use of the mind-body therapies relaxation and guided imagery for PMS and menstrual pain. In one study, women who participated in a regular relaxation program reported a significant 58% improvement in their severe premenstrual symptoms. Another study showed the effectiveness of relaxation training, either alone or combined with imagery, in reducing resting time for women with spasms of cramping.

Not only does relaxation help with menstrual pain and discomfort, but it is also effective in reducing absenteeism. These beneficial effects were long-lasting. While mind-body interventions can positively affect menstrual distress, they can also affect cycle rhythmicity. In addition to significantly decreasing perceived distress scores, women in a guided imagery study were also able to lengthen their cycles.

**Conclusion:** Using guided imagery to reduce the severity of PMS and menstrual pain can lead to increased comfort and decreased absenteeism, without the cost and potential undesirable side effects of some medications.

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## 35. RESEARCH GUIDED IMAGERY FOR PEOPLE UNDERGOING RADIATION: DEC, 2003:

**Scope of the Problem of Radiation Side Effects:** The American Cancer Society estimates that more than 1.2 million Americans were diagnosed with cancer in 2001.<sup>1</sup> More than half of these people received radiation therapy, either alone or in combination with surgery or chemotherapy. Possible radiation side effects depend on the area of the body treated. Some of the more common side effects are: loss of appetite; anemia; shortness of breath; fatigue; hair loss; insomnia; nausea and vomiting; skin rash/redness; and diarrhea. In some treatments, there can be painful and unpleasant oral side effects such as cavities, thickening saliva, and taste loss. Side effects such as hair loss and fatigue can add additional stress to an already stressful disease. The occurrence of side effects, or the fear of having side effects, often leads to patients missing or stopping treatments. About 50% of patients don't follow through with their full treatments, according to the American Cancer Society. Cancer patients often feel a loss of control and feel powerless. The frequent presence of depression "significantly influence[s]" the severity of fatigue and anxiety in cancer patients. The majority of patients report significant lifestyle changes. Some have insomnia. Some stop working or work shorter schedules. For others, cancer and its treatment badly affects their household duties and leisure activities. Quality of life is often significantly lessened. The physical and psychological issues of cancer and radiation can lead to loss of time at work for the patient and/or the caregiver, additional doctor's office visits, and failure to complete treatment -- all of which contribute to death and disability, and to the \$107 billion direct and indirect annual costs of cancer.

**Research in Mind/Body Interventions for Radiation:** Patients using guided imagery for coping with radiation therapy reported lower stress levels, more energy, and a better quality of life. Patients using audio relaxation and imagery programs reported that they took better care of themselves. Patients in one study who used radiation-specific guided imagery had "enhanced comfort levels" during treatment, especially in the first three weeks of treatment. The ability to stay perfectly still is vital during external beam radiation. People using hypnosis have been successful in eliminating unwanted movement<sup>15</sup>, and in coping with claustrophobia during radiation treatments. Patient's getting good information (including taped programs for self-help), and Cognitive Behavioral Therapy (CBT) have helped patients overcome helplessness and gain a better sense of control. Cognitive Behavioral Stress Management was also effective at lowering cancer patients' serum cortisol (a stress-related chemical). The effectiveness of guided imagery, and other mind/body approaches in coping with chronic pain, depression, anxiety, and insomnia have been well documented.

**Conclusion:** Guided imagery can help patient tolerate radiation therapy, and increase their likelihood of finishing all treatments. It gives patients the tools to improve coping skills, stay relaxed during treatments, and minimize the number and severity of radiation side effects by lowering stress, depression, and anxiety, and promoting a sense of being more in control.

## 36. RESEARCH GUIDED IMAGERY FOR SINUS PAIN: NOV, 2003:

**Definition of the Problem:** Chronic sinusitis is a long-term inflammation of the sinuses, the moist air spaces located in the bones of the upper face. The purpose of the sinuses is to warm

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and filter incoming air in order to protect the airways and lungs. It is the job of the mucus to trap pollutants, allergens, and infectious agents. Sometimes, however, infections, swelling, allergic reactions or blockages can block the proper flow of the mucus. When this happens, mucus (and sometimes pus) builds up and causes sinus pressure. Symptoms include facial pressure and pain, fatigue and difficulty concentrating. Chronic sinusitis can significantly affect patients' quality of life, and increase doctor visits and use of medication. It can also cause lost time at work.

**Scope and Cost of the Problem:** Sinusitis is either the first or second most common chronic condition in the United States, affecting approximately 38 million (12.6% of) adults. In 1996, medical costs for treating sinusitis were \$5.8 billion.<sup>5</sup> Over nine percent of all medical claims in the U.S.A. include a diagnosis of sinusitis. Economic costs of lost work time and decreased productivity are substantial, with sinus-related restricted or lost work days averaging over 36 million per year. Chronic sinusitis is particularly prevalent in polluted urban centers. Greater Los Angeles has one of the highest rates of sinusitis in the world.

**Medical Treatment:** Chronic sinusitis can have many components, such as infections, allergies, swelling, obstructives and, probably, psychological factors. Treating just one aspect (as with extended courses of antibiotics) rarely works.<sup>1,2</sup> Antihistamines, often used to control the allergic aspect of sinusitis, can dry the mucus and make it harder to drain. Anti-inflammatories, usually in the form of steroid nasal sprays, can only relieve symptoms but not the cause of the swelling. Surgery on an obstruction does greatly reduce symptoms in some patients, especially those whose sinuses are blocked by polyps or nasal deformities. These surgeries can now be done by endoscope, on an outpatient basis. A new and promising treatment approach is the use of antifungal drugs such as fluconazole.

**Non-pharmacologic treatment including Imagery and Self-Hypnosis:** As in any chronic condition, self-care measures play a large role in determining patient quality of life, disease progression and resource utilization in sinusitis. Environmental modification, such as removing carpets and drapes, using a humidifier, or setting up an air-cleaning device can promote sinus healing. Behavior changes such as stopping smoking, avoiding sinus triggers, drinking more fluids, and irrigating the nose daily with saline solution can help, soothe, and heal. Relaxation, guided imagery and self-hypnosis can reduce reactivity to allergens and decrease inflammatory response. In one study, a researcher named Madrid, along with his colleagues, taught a two-session course in self-hypnosis to a group of 34 patients with a variety of allergies. 76% reported improvement, and 86% reduced medication usage. Improvement was maintained through two years of follow-up. Mind/body measures such as imagery and relaxation can also help patients cope with their symptoms. Pain in the head and face is the most troubling symptom for most sinusitis patients. Pain control, and accompanying reduction in medication use, through imagery, relaxation and suggestion has been documented in patients with headaches of various types.

**Conclusion:** Guided imagery can improve patients' ability to cope with sinus problems, and may reduce sinus symptoms, office visits, and medication usage in many cases.

### 37. RESEARCH GUIDED IMAGERY FOR QUITTING SMOKING: AUG, 2003:

**SCOPE AND DIMENSIONS OF THE PROBLEM:** According to the Centers for Disease Control, cigarette smoking is the largest preventable cause of illness, death, and medical

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expenditures in the U.S.A. In 1993, direct medical costs associated with smoking totaled an estimated \$50 billion, and smoking was responsible for approximately 7 percent of total U.S. health care costs. This \$50 billion figure is highly conservative. Many factors were not included in the total medical costs: smoking-related burns from fires; perinatal care for low birth weight infants whose mothers smoked; and the costs of treating diseases in others caused by secondhand smoke. Also not included were the indirect costs of lost productivity and early death. A more recent study found that annual smoking-related medical expenditures reached \$72.7 billion in 1997, about 11% of total health care costs. The CDC estimates that 46.5 million adults in the United States smoke cigarettes. Their statistics show that it this will result in death or disability for half of all regular users. Cigarette smoking is responsible for more than 440,000 deaths each year, or one in every five deaths. Counting direct and indirect costs, smoking related illness costs the nation more than \$150 billion each year. It is estimated that Medicare will spend \$800 billion over the next 20 years caring for people with smoking-related illnesses.

**Effectiveness and Cost-effectiveness of Smoking Cessation Programs:** Smoking-related illness consumes so many health resources that smoking cessation has been called the “gold standard” of medical cost-effectiveness. A report from the University of Michigan School of Public Health found that: “A considered review of the evidence recommends support of all of the major forms of smoking-cessation intervention; even the most expensive are highly cost effective compared with all medical treatments studied.” For example, a simple instruction from a physician to stop smoking resulted in a 2% quit rate one year later, an effect study authors called “modest but highly cost effective. It cost \$1500 to save one life.” As interventions become more intensive, costs go up. However, even modestly effective programs will save far more than they cost.

**Issues in Smoking Cessation:** While it is typical for stop-smoking programs to achieve short-term success rates of 50-60%, the rate of relapse is often 60-80% in the year following the program.<sup>8</sup> Most widely-used programs have long-term success rates under 35%. Non-drug programs include psychotherapy, behavioral therapy, providing information, support groups, hypnosis, telephone monitoring, and rapid-smoking. The most commonly used medication is nicotine, given as a patch or in chewing gum. The prescription drugs bupropion and fluoxetine are also used. All these treatments have similar long-term success rates, varying from 15-32% in different studies. Combining nicotine replacement and/or bupropion with behavioral therapy and psychological support has consistently shown itself more effective than a single treatment alone, with 35% or more of patients remaining smoke-free for a year.

**Imagery and self-hypnosis in smoking cessation:** In two studies, groups who used guided imagery to relax and gain a sense of personal power had much higher 3-month abstinence rates than a control group which received only counseling. Smokers who practiced imagery at home and continued practicing after the training program ended had abstinence rates over 52% at three months. Even using self-hypnosis once resulted in 22% of 226 patients remaining smoke-free after two years. While this is a modest result, it is better than trying to quit without any help. Thus, imagery and self-hypnosis have been as effective as other behavioral and psychological approaches. The techniques were even more effective in patients who found them pleasant.

**Conclusion:** A low-cost, guided imagery based, self-care program is likely to be at least as effective as other behavioral or psychological treatments. It should help at least 20-32% of

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users stop smoking in the long term. The results may be even better if nicotine replacement is used at the same time. The benefits of smoking cessation in terms of patient outcomes and lower need of medical services make this program highly cost-effective.

### 38. RESEARCH GUIDED IMAGERY FOR STRESS: SEPT, 2003:

**Prevalence and Costs:** The American Institute of Stress reported that 75-90% of office visits to primary care physicians are stress-related. Stress reduction is important because stress has been linked to every major cause of death in this country. A 2000 Gallup Poll reported that 80% of Americans feel stress on their jobs, and almost half of these workers reported that they needed training to manage their stress. Stress-related absenteeism results in over 1,000,000 workers absent on an average day, with 550 million lost workdays annually. Stress-related workers' compensation claims and awards have skyrocketed. In California in 1987, the cost for workers' compensation medical and legal fees alone neared \$1 billion.<sup>2</sup> In 1988, the direct and indirect costs of job stress to the country's economy were \$50 billion.<sup>3</sup> By 1998, the number had risen to over \$300 billion.

**What Is Stress?** People experience stress when the demands on them exceed their perceived capacity to cope. Stress can show up in a lot of ways. It can affect every major organ and body system. Stress can cause or worsen any number of conditions, among them immune system suppression, gastrointestinal disorders, arthritis, diabetes, chronic back pain, angina, insomnia, hypertension, sleep disorders, and cancer.

**Medical Treatment of Stress:** While some patients visit doctors complaining of stress, more often they complain of digestive trouble, pain, insomnia, fatigue, or other stress-related symptoms. Medical treatment consists mainly of anxiety medications and antidepressants. Primary stress management is usually left to mental health professionals.

**Non-pharmacologic Treatment Including Imagery:** Stress-management programs using behavioral and mind/body approaches are widely used to reduce stress. Exercise, biofeedback, muscle relaxation, and psychotherapy have all been found useful. Guided imagery, which combines deep relaxation with positive suggestion, is a powerful stress management technique. Eight studies between 1983 and 1995 reported on groups of surgical, cardiac, and cancer patients, smokers, and people reporting high stress levels. After participating in guided imagery sessions, they had significant reduction in self-reported stress, physiological measures of stress, and anxiety (compared to control groups). Effects were stronger when patients could practice on their own. Results of a review of relaxation, hypnosis, and imagery in stress management showed that hypnosis can protect the immune system against the effects of stress. Hypnosis was even more effective when immune system-specific imagery ("targeted imagery") was used. Other mind-body approaches have also yielded impressive results. In a study of elderly congestive heart failure patients, cognitive-behavioral therapy was significantly effective in lowering perceived stress and anxiety levels. Improvement was also noted in other measurements. Two studies of mindfulness meditation programs also showed significant improvement over the control groups. In one of those studies, the reduction in distress and physical symptoms in the meditation group was particularly impressive. Stress management programs including imagery and relaxation are also cost effective. Workplace stress management programs save companies money. One company saved almost \$150,000 in worker's



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compensation costs, while the cost of the program itself was a mere \$6,000 (\$150 per person). Relaxation tapes, too, are a low-cost way to relieve stress. In a 2003 study, an at-home relaxation tape program was as effective than massage therapy in decreasing subjects' stress and improving their sleep. **Conclusion:** A low-cost stress-management intervention with guided imagery can reduce medical costs and improve patients' ability to cope with stress.

### 39. GUIDED IMAGERY FOR HEALTH AND HAPPINESS

#### **PICTURE OF HEALTH: AN INTRODUCTION TO GUIDED IMAGERY:**

**GOLDMAN** Diabetes Self-Management 1992: Guided imagery is a safe, easy way of creating positive mental images to promote positive physical changes. Medical researchers have demonstrated that sights, sounds, and feelings can trigger the nervous system to send neurohormones through the bloodstream, altering targeted cells to promote healing. This method depends on the power of the imagination to relax the individual and focus mental energy. Guided imagery appears to be effective for two reasons. First, during deep relaxation, rapid change and intense healing can occur. Secondly, images are just as real to the body as the actual event. These principles produce an ideal environment for substituting negative beliefs with positive ones. A typical session generally involves 20 minutes listening to a taped narrative designed to create the relaxation stage. Next, general images designed to produce an overall state of well-being may follow. In some cases, the images may be aimed at specific concerns such as love, anger, depression, anxiety, diabetes, or cancer. A tailored diabetes session might have the individual visualize body cells absorbing glucose in a balanced, steady way or picturing the healing of damaged nerves. Part of the narrative is meant to reinforce the holistic health message that the whole being, rather than just the body, is healing and will continue to heal. Those individuals with diabetes who are more relaxed and in tune with themselves, tend to respond better to other therapies because they are actively participating in their treatment. Imagery helps improve self-image and self-esteem and also allows better personal behavior control in developing improved coping skills. Since different images produce individual reactions, it is important to tailor therapy plans to fill specific needs and to be honest regarding needs and therapy effectiveness.

#### **GUIDED IMAGERY, SUPPORT GROUPS AND BREAST CANCER:**

**Richardson MA, Post-White J, Grimm EA, Moye LA, Singletary SE, Justice B.** Altern Ther Health Med 1997 Sep;3(5):62-70. **Alternative Medicine and Cancer, Alternative Medicine Research:** This study wanted to differentiate the effects of imagery and support on coping, life attitudes, immune function, quality of life, and emotional well-being in women after breast cancer. 47 Women who completed treatment for primary breast cancer were randomly assigned. 15 women received standard care; 16 women got six weekly support sessions; and 16 women received six weekly imagery sessions. Results showed that for all 3 groups of women the biological markers for immune functioning was improved in certain areas (interferon-gamma increased, neopterin decreased) and remained the same in other areas (natural killer cell activity). Quality of life also improved for all women.

However, compared with standard care, both the support group and the imagery group had improved coping skills (seeking support) and perceived social support. They also had enhanced meaning in their lives. The women in the support group had boosted overall coping and death acceptance. When comparing imagery with support, imagery participants tended to

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have less stress, increased vigor, and improved functional and social quality of life. Although imagery reduced stress and improved quality of life, both imagery and support improved coping, attitudes, and perception of support.

### **USING GUIDED IMAGERY AND HYPNOSIS FOR HEALTH AND HEALING:**

By Jeanne Fournier, Medical Hypnotherapist 1997: Guided imagery and hypnotherapy are examples of what is known as mind/body medicine, or more accurately, mind/body therapy. These are therapies which use the power of the mind to help heal the body. The idea that our thoughts and emotions can contribute to illness is not a new one, but the belief that they can also contribute to our health and sense of well-being is something that is often minimized due to lack of scientific proof. Even though the American Medical Association approved the use of hypnosis as a valid medical treatment in 1958, there has been little funding to do the type of studies being done for drug therapies. With the establishment of the new field of Psychoneuroimmunology (PNI) -- a rather long word for a study that seems to establish a link between our thoughts and the function of our immune cells -- and the establishment of the National Institute of Health's Office of Alternative Medicine, the value of these and other mind/body techniques is finally becoming better understood. Guided imagery and hypnosis are both ways of focusing the mind's attention. This is usually done by first relaxing the body, and then, shifting the attention away from the external environment toward a narrow range of ideas or images suggested by the hypnotherapist. The idea is that once the patient's conscious mind is quieted, the unconscious mind is more accessible. The unconscious mind, which is basically non-critical, then allows healing suggestions and images to have a better chance of being effective than they would if given during a normal waking state. While in this state of advanced relaxation, the patient has complete control of his participation while the hypnotherapist is the facilitator of the process.

Imagery and Hypnosis for Healing: In the last couple of years as I've begun to focus more in my practice on working with people with serious illness, I've noticed that these people are basically in a kind of trance state, with their thoughts, emotions, and actions pretty narrowly focused on the facts, the treatment, the helplessness, the limitations, and the fears associated with their disease. They are in an almost constant state of stress and anxiety; they are angry and frightened -- all conditions which are known to contribute to illness and impede the body's natural ability to heal. My belief has been that if we could change the focus of this near-trance state from one that is disease-based to one that is healing-focused, then it would allow a sense of well-being, empowerment, hope of recovery and an enhancement of the immune system to occur. At CBHP during the last year or so, I've been facilitating group healing guided imagery sessions. I believe that healing is much broader than curing, which is the worthy goal of most medical treatments; it is about wholeness, about bringing into balance all the aspects of who we are, our body, our mind, our emotions and our spirit. Healing involves looking within to discover meaning, looking to others to establish connections and looking beyond to face the future with hope and joy. The alternating Wednesday evening imagery sessions touch on all of these things. We are a kind of support group for each other; we spend time in a safe place, relaxing and shedding the stresses of our day, and we go within on a healing journey that may address the physical, emotional, or spiritual aspects of our lives. We may imagine healing energy moving throughout our body, aiding and strengthening our natural healing system, or we

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may seek inner guidance to assist us in finding meaning and joy during a difficult time. We've even shared hands-on healing with each other.

In addition, in my practice, I've created a protocol to support people throughout the various stages of their healing journey. Imagery and hypnosis is used to create relaxation and relieve stress, to allow for a shift in consciousness from disease to healing, to prepare patients for surgery and other medical treatments, to enhance recovery, and to focus powerful life energy on returning to health and well-being. This may include support for lifestyle changes such as weight control, or smoking cessation. The result has been that people have been able to move through their experience with more calm and hope, developing a strong sense of who they really are beyond the disease and how they want to live their lives. Many even use this experience as an opportunity to recreate their lives in a more healthy, meaningful way.

Guided imagery and hypnosis are powerful, yet gentle mind/ body therapies. They empower you to create and to fully participate in your own healing journey. See ONGOING AND UPCOMING EVENTS for dates of the guided imagery sessions at CBHP.

**GUIDED IMAGERY AND SURGERY:** Guided imagery uses the power of thought to influence psychologic and physiologic states. Some studies have shown that guided imagery can decrease anxiety, analgesic requirements, and length of stay for surgical patients. This study was designed to determine whether guided imagery in the preoperative period could improve the outcome of colorectal surgery patients.

The authors conducted a randomized trial of patients undergoing their first elective colorectal surgery. Patients were randomly assigned into one of two groups. Group 1 received standard perioperative care, and Group 2 listened to a guided imagery tape three days preoperatively; a music-only tape during induction, during surgery, and post operatively in the recovery room; a guided imagery tape during each of the first six postoperative days. Both groups had postoperative patient-controlled analgesia.

All patients rated their levels of pain and anxiety daily, on a linear scale of 0 to 100. Total narcotic consumption, time to first bowel movement, length of stay, and number of patients with complications were also recorded. Both groups were similar in age and gender distribution, diagnoses, and surgery performed. The median baseline anxiety score was 75 in both groups.

Before surgery, anxiety increased in the control group but decreased in the guided imagery group. Post operatively, median increase in the worst pain score was 72.5 for the control group and 42.5 for the imagery group. Least pain was also significantly different, with a median increase of 30 for controls and 12.5 for the imagery group.

Total narcotic requirements were significantly lower in the imagery group, with a median of 185 mg vs. 326 mg in the control group. Time to first bowel movement was significantly less in the imagery group (median, 58 hours) than in the control group (median, 92 hours). The number of patients experiencing postoperative complications (nausea, vomiting, pruritus, or ileus) did not differ in the two groups.

The authors conclude that guided imagery significantly reduces postoperative anxiety, pain, and narcotic requirements of colorectal surgery and increases patient satisfaction. Guided imagery is a simple and low-cost adjunct in the care of patients undergoing elective colorectal surgery.

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Guided imagery: a significant advance in the care of patients undergoing elective colorectal surgery. Tusek DL, Church JM, Strong SA, Grass JA, Fazio VW. *Dis Colon Rectum* 1997 Feb;40(2):172-178

**GUIDED IMAGERY EXERCISE FOR COLON HEALTH:** Guided imagery is a powerful tool for activating the body's own ability to achieve health. It is a method of communicating with the unconscious mind and requesting that the body function in the most optimal way. Once learned and practiced, it is very easy to do. One merely relaxes, closes his/her eyes and imagines various scenes. It is effective because the conscious mind thinks in terms of languages, such as English, Spanish, computer languages, math, etc., but the unconscious mind works with images and symbols. And the unconscious mind controls the automatic functioning of the body.

To do the exercise, sit in a comfortable position or lie down. Close your eyes and relax. Begin to imagine that you are in a beautiful and safe forest. Allow yourself to walk through the forest, feeling the safety. One by one, open up all of your senses. Let yourself look at the trees, the ground and the sky. Feel your feet on the spongy forest floor and feel the movement of your body as you walk. Smell the air and pick a blade of grass to chew on. Listen to the birds chirping in the distance or the rustle of the leaves in the wind. (It does not matter if the details of what you are sensing are the same as what is suggested. The important thing is to feel the safety in the forest and to feel connected with the earth.)

Imagine that you come to a very large, majestic tree. Lie down under the tree. In your imagination, close your eyes and let your attention go inward, into your body. Allow yourself to be aware of your colon and imagine that you can see what is happening inside of it. You are very surprised to see an army of tiny men busy at work inside your colon. Part of the men are using soap and water to totally clean the colon. Other men are attaching themselves to the wall of the colon. They are picking up nutrients and sending them into the body through the wall of the colon. Some of the men are being organized into a team that will attack any foreign invaders that may come into the body. All the men are very busy and some of them may be doing tasks that you do not understand. As you watch, the colon gets lighter and lighter. All darkness is removed and the colon is eventually bathed in a brilliant white light.

You may continue to see the colon as bathed in brilliant white light for as long as you like. Then simply let your attention come back to being in the room and allow your eyes to gently open. Know that, through your imagery, you have communicated your intent to have a healthy colon to your unconscious mind. (You can also add in imagery that would include spiritual help according to your own spiritual beliefs. For example, you might have Jesus walk up to you in the forest and heal you. You might have a dove take a request for help up to God. You might have a wise, loving ball of light come and beam energy into your colon.) Repeat the exercise from one to three times a day for as long as you feel is right.

**GUIDED IMAGERY IN MEDICINE:** By Matthew B. Zwierling, MD: Dr. Zwierling is a Santa Rosa orthopedic surgeon. Over the past few years, imagery has gained wide acceptance as a valuable tool in complementary medicine. Simply stated, imagery is a means of connecting with our conscious or subconscious perceptions of the world, with our dreams and our daydreams, with our intuitive wisdom. Marty Rossman, MD, cofounder of the Academy for Guided Imagery, describes imagery as "a flow of thoughts you can see, hear, feel, smell, or

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taste. An image is an inner representation of your experience or your fantasies a way your mind codes, stores, and expresses information. Imagery is a window to your inner world." [1]

While visualization techniques involve only the sensory modality of sight, imagery may use all forms of sensory input. As an example, imagine you are holding a lemon in your hand. See the shape and color, feel the texture, smell the lemon. Now take an imaginary knife and cut a slice of the lemon. Put the slice in your mouth and take a bite. Can you taste the lemon? Are you able to experience these sensations? If so, your imagination has prompted a physiologic response. Similar to the above exercise, with guided imagery a therapist "guides" a client in an exploration of psychologic or emotional issues. With Interactive Guided Imagery, as developed by the Academy for Guided Imagery, the client develops his or her own image, and then "interacts" verbally with that image to achieve a symptomatic response or to gain insight into the meaning of the symptoms. Biochemical Connections

The scientific basis for exactly how imagery works is still unclear, but research in psychoneuroimmunology during the past two decades has mapped a relationship between the brain, the neuroendocrine systems and the body's immune mechanism, along both cellular and neurotransmitter pathways. In 1974, Robert Ader, PhD, demonstrated that the immune system is subject to conditioned response. Candace Pert, PhD, opened the mind-body door even wider by identifying the presence of neuropeptides, the so-called chemical purveyors of emotions: "Receptor sites ... for neuropeptides have been found in virtually every system of the body." [2]

Positron emission tomography scans have shown similar patterns of brain activity in the cerebral cortex whether people are imagining something or actually experiencing it. A prevailing theory is that our images, which arise in different areas of the cerebral cortex, influence the limbic system (our emotional center) and then, by cellular or hormonal means, stimulate the autonomic nervous system (ANS).

**Imagery and Healing:** The physiologic effects of imagery are most effective in the treatment of conditions that have a strong connection with the ANS, including allergies, cardiovascular disease, hypertension, muscle tension syndromes, acute and chronic pain states, digestive or dermatologic disorders, and conditions caused or aggravated by stress. Imagery is used to help patients alter unwanted habits, develop a sense of purpose in life, and to explore personal wellness. It is also a valuable adjunct in supporting patients with life-threatening illnesses. Imagery gives patients a strong sense of control over their response to illness by providing a technique that is safe, effective and without adverse side-effects. If a person is open to the magic and possibilities of the healing process, Dr. Rossman states, "Imagery can help you tap inner strengths and find hope, courage, patience, perseverance, love, and other qualities that can help you cope with, transcend or recover from almost any illness." [1] Imagery in a Surgical Practice

In my practice, I have used imagery in preparing patients for surgery by teaching relaxation exercises and pain management, and by having patients visualize the entire procedure proceeding without complication. Loss of control is an important determinant in the stress response to surgery, and many patients have strong fears about surgery, often based on personal or family experiences. Recently one of my patients was extremely agitated and experiencing considerable pain in the recovery room. He was tense and hyperventilating, and morphine had little appreciable effect. Knowing he was an avid rider, I suggested he imagine cycling on a

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warm fall day, feeling the sun and wind in his face, enjoying the scenery and the freedom of the experience. The next day he described his mental state in the recovery room as "like having a slot machine going around in my head," and that using the cycling imagery helped him relax. Despite being just 30 minutes postoperative, he was alert enough to recall and successfully reuse this imagery several times during the night.

I have also used imagery in teaching self-care techniques of pain relief, as demonstrated by another patient, a computer specialist, who presented with moderately severe, stress-related headaches. I asked her to imagine the headache surrounded by her computer monitor. She then took her computer mouse and shrunk the headache to a more "manageable" size. In so doing, her real headache subsided. The exercise gave her a reusable, personally meaningful and drug-free technique for controlling her headaches.

The Shape of Pain: How might simple imagery interventions be integrated into medical practices? Our language is filled with imagery. Physicians can take advantage of this resource by asking questions such as "What does the pain look like? What is its shape, its color, its size? Of what does it remind you?" or "If your pain could talk, what would it say to you?" Both patient and physician develop a more vivid picture of what is being experienced when the symptoms are expressed in this way.

My experience with one patient offers a dramatic example of the power of description. She presented with the diagnosis of carpal tunnel syndrome, though her primary complaint was pain, not the typical numbness. I asked her to describe her pain, and she responded, "You know how you can sometimes feel your heart pounding in your body? That's the way my hands feel, pounding, throbbing." This description created a vivid image of her pain, one with more meaning than either of us knew.

I pointed out that images of the heart are often connected with emotions. Since she felt her "heart was in her hands," I asked if it was possible that she was holding something emotionally painful? There was! She revealed that her home had been vandalized, and she was in daily terror of being injured by "hit men." Past physical and emotional traumas in her life reinforced this paranoia. Through imagery, she experienced regular reductions in her pain and anxiety levels, and the insights helped her overcome her tremendous fear. Because of the strong psychosomatic connection, I elected to withhold surgical intervention until she was more emotionally stable.

Summary: In my experience, using imagery techniques is simple and highly effective. Symptom management and perisurgical benefits have been shown to be effective. The exploration of the metaphors and meanings of an illness through the imagery process can lead to insights and otherwise inaccessible understanding that is useful for both the patient and the physician. By providing a treatment modality that enhances innate healing abilities and puts the patient in control, imagery empowers patients and frees up medical resources.

### References:

- M. Rossman, *Healing Yourself: A Step-By-Step Program for Better Health Through Imagery*, Walker and Company (1987).
- D. Brigham, *Imagery for Getting Well: Clinical Applications of Behavioral Medicine*, Norton (1994).

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**GUIDED IMAGERY:** Guided imagery is a gentle but powerful technique that focuses and directs the imagination. It can be as simple as the athlete's 10-second reverie, just before leaping off the diving board, imagining how a perfect dive feels when slicing through the water. Or it can be as complex as imagining the busy, focused buzz of thousands of loyal immune cells, scooting out of the thymus gland on a search and destroy mission wipe out unsuspecting cancer cells. Although it has been called "visualization" and "mental imagery", these terms are misleading. Guided imagery involves far more than just the visual sense and this is a good thing, given the fact that only about 55% of the population is strongly wired visually. Instead, imagery involves all of the senses, and almost anyone can do this. Neither is it strictly a "mental" activity, it involves the whole body, the emotions and all the senses, and it is precisely this body-based focus that makes for its powerful impact.

When properly constructed, imagery has the built-in capacity to deliver multiple layers of complex, encoded messages by way of simple symbols and metaphors. You could say it acts like a depth charge dropped beneath the surface of the "body/mind", where it can reverberate again and again.

Over the past 25 years, the effectiveness of guided imagery has been increasingly established by research findings that demonstrate its positive impact on health, creativity and performance. We now know that in many instances even 10 minutes of imagery can reduce blood pressure, lower cholesterol and glucose levels in the blood, and heighten short-term immune cell activity. It can considerably reduce blood loss during surgery and morphine use after it. It lessens headaches and pain. It can increase skill at skiing, skating, tennis, writing, acting and singing; it accelerates weight loss and reduces anxiety; and it has been shown, again and again, to reduce the aversive effects of chemotherapy, especially nausea, depression and fatigue.

Because it is a right-brained trait, engaging in it will often be accompanied by other functions that reside in that vicinity: emotion, laughter, sensitivity to music, openness to spirituality, intuition, abstract thinking and empathy. And because it mobilizes unconscious and pre-conscious processes to assist with conscious goals, it can bring to bear much more of a person's strength and motivation to accomplish a desired end. So subtle and gentle as this technique is, it can be very powerful, and more so over time. One of the most appealing and forgiving features about imagery is that almost anyone can use it. Although children and women probably have a slight, natural advantage, imagery skips across the barriers of education, class, race, gender and age a truly equal opportunity, natural gift.

Even though it can be considered a kind of meditation, it is easier for most westerners to use than traditional meditation, as it requires less time and discipline to develop a high level of skill. This is because it seduces the mind with appealing sensory images that have their own natural pull. And because it results in a kind of natural trance state, it can be considered form of hypnosis as well.

People can invent their own imagery, or they can listen to imagery that's been created for them. Either way, their own imaginations will sooner or later take over, because, even when listening to imagery that's been created in advance, the mind will automatically edit, skip, change

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or substitute what's being offered for what is needed. So even a tape, CD or written script will become a kind of internal launching pad for the genius of each person's imagination.

Guided imagery works because of 3 very simple, common-sense principles. You already know them.

First Principle: The Mind-Body Connection: First of all, to the body, images created in the mind can be almost as real as actual, external events. The mind doesn't quite get the difference. That's why, when we read a recipe, we start to salivate. The mind is constructing images of the food -- how it looks, tastes and smells; it might even be evoking the sounds of the food cooking or the feel of its texture as it's being chewed. And all the while, your body is thinking dinner is served, and is responding with increased saliva and appetite.

The mind cues the body especially well if the images evoke sensory memory and fantasy sights, sounds, smells, feel and taste and when there is a strong emotional element involved. So, for instance, a strongly evocative image might be remembering the sound and timbre of Daddy's smiling voice, telling you he's proud of you; or the internal bristling of energy all through your body as you realize that you are about to triumph at something that you are home free golden. sensory images are the true language of the body, the only language it understands, immediately and without question.

Second Principle: The Altered State: Secondly, in the altered state, we're capable of more rapid and intense healing, growth, learning and performance. We are even more intuitive and creative. In this ordinary but profound mind-state, our brainwave activity and our biochemistry shift. Our moods and cognition change. We can do things we couldn't in a normal, waking state -- lift a tree that has fallen on a child; write an extraordinarily delicious poem; replace our terror of a surgical procedure with a calming sense of safety and optimism; abate a life-threatening histamine response to a bee sting. We wander in and out of altered states all through the day, as a matter of course. Sometimes it's not a conscious choice, and we drive past our exit on the highway. At best, this is a state of relaxed focus, a kind of calm but energized alertness, a highly functional form of focused reverie. Attention is concentrated on one thing or on a very narrow band of things.

As this happens, we find we have a heightened sensitivity to the object of our attention, and a decreased awareness of other things going on around us, things we would ordinarily notice. We are so engrossed, we lose track of time or don't hear people talking to us. Or we are so focused on our tennis, we don't realize we were playing on a broken ankle, and the pain isn't perceived until the game is over. The altered state is the power cell of guided imagery. When we consciously apply it, we have an awesome ally, a prodigious source of strength and skill.

Third Principle: Locus of Control: The third principle is often referred to in the medical literature as the "locus of control" variable. When we have a sense of being in control, that, in and of itself, can help us to feel better and do better. Feeling in control is associated with higher optimism, self esteem, and ability to tolerate pain, ambiguity and stress. Decades of research in ego psychology informs us that we feel better about ourselves and perform better when we have a sense of mastery over the environment. Conversely, a sense of helplessness lowers self-esteem, our ability to cope and our optimism about the future. Because guided imagery is an entirely internally driven activity, and the user can decide when, where, how and if it is applied, it has the salutary, if placebo, effect of helping us feel we are in charge. So, when you put all this together,



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you have a technique that generates an altered state, in which the mind is directed toward multi-sensory images that the body perceives as real. This is done exactly when, where and how the user wishes. And that's why it's so effective.

General Info & Practical: Here are some general facts and user-friendly tips about how to best use guided imagery and what to expect from it. Your skill and efficiency will increase with practice. You'll improve from whatever skill level you start with. Guided imagery functions in a way that is the opposite of addictive substances the more you use it, the less and less it will take for it to work. Imagery works best in a permissive, relaxed, unforced atmosphere. So try not to get too intense about "doing it right". There are many ways to do it right.

Your choice of imagery content needs to be congruent with your values, so don't try to impose imagery on yourself that doesn't sit right. Let your own images come up and work for you. Don't get stuck in somebody else's way. It's best to engage all the senses, especially your kinesthetic or feeling sense. Remember, only a little over half of the population is strongly visual. Imagery is generally more powerful in a group setting, mainly due to the contagious nature of the altered state. So a support group, special study group or healing group is a nice place to work with it (and try to sit next to a yoga instructor or some other heavy-hitter meditator!), when properly chosen, will increase the effects of imagery. You will intuitively know what music is right for what you need. A small percentage of people prefer no music at all.

Imagery that elicits emotion is generally more effective than imagery that doesn't. Responding with emotion is a good sign that the imagery is working for you in a deep way. If you're using self-talk with your imagery, try to avoid the imperative verb form on yourself, so that inadvertently "bossy" language doesn't get your back up and marshal unnecessary resistance. You do not have to be a "believer" in order for imagery to help. Positive expectancy helps, but even a skeptical willingness to give it a try can be quite sufficient. Touch may be the most powerful accompaniment to imagery you can employ, both to help with relaxation and to increase the kinesthetic power of the images. Imagery combined with therapeutic massage, energy work, or other kinesthetic modalities is very potent, and more than the sum of its parts. Using the same posture cues, gestures or hand-positioning with each imaging session creates an "anchor" that conditions you to respond immediately to the posture. You can then adopt the posture in a meeting, or while waiting in traffic, or while resting, and your body will respond the way it did during the imagery.

If you aren't used to being both relaxed and awake at the same time, you will routinely fall asleep during an imagery session, especially if you're listening to a tape. If you want to stay awake, you might try sitting up, standing, walking or listening with your eyes half-open. Even asleep, though, you'll benefit from repeated listening, as demonstrated in test results with sleeping diabetics and unconscious surgery patients.

Don't worry if you keep "spacing out" or losing track of a guided imagery narrative. This is not an indicator that you're listening wrong. On the contrary, a wandering mind often comes with the territory. You may tear up, get a runny nose, cough, yawn, feel heaviness in your limbs, get tingling along the top of their scalp or in your hands and feet, or experience minor, involuntary muscle-movements. These are entirely normal responses.

Other indicators of a strong response to imagery is unusual stillness, increased coloring in the face, and an ironing out of lines and wrinkles. After some imagery, your voice will be deeper

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and lower, slower and more relaxed. Usually an imaging exercise, regardless of what it's for, will clear a headache, relieve stress, lift mood and reduce chronic pain.

Eight categories of guided imagery: There are many kinds of effective healing imagery, and, because people respond differently to different kinds, it's good to be aware of the range of possibilities. Here are eight different categories of guided imagery content that I describe in my book, *Staying Well with Guided Imagery*. There are others, I'm sure, but this is a good place to start.

Feeling State Imagery: This is simple imagery that changes mood, such as seeing yourself in your favorite place, or recalling a happy, peaceful time. Any imagery that can genuinely elicit feelings of love, care, safety and gratitude, will crowd out feelings of fear, anxiety, resentment and anger. All of this qualifies as feeling state imagery.

End State Imagery: This is imagery that uses for its content any desired outcome or goal, in all it's realistic particulars. So imagining a strong, cancer-free body; a perfectly played, confident, relaxed, focused game of tennis; or the sound of a perfectly registered high C just before singing it, would all be end state imagery, sometimes called "mental rehearsal" in hypnosis.

Energetic Imagery: This is imagery, taken from Ayurvedic and Chinese medicine, as well as quantum physics, that uses the notion of plentiful, coherent, free-flowing, unblocked energy as the underlying dynamic of good health. Illness, in this paradigm, would be seen as stuck energy, or energy that is withheld from the general flow. This can be imagined as moving dots, a kind of sound, or an internal feeling of motion.

Cellular Imagery: This imagery focuses on the healthy interaction of the cells, and requires accurate technical knowledge, so it isn't for everyone. For asthma, it would be imagining the mast cells being less reactive to neutral particles floating by; for diabetes, it would be insulin attaching to energy hungry cells, so they can take in glucose from the bloodstream; and so on.

Physiological Imagery: This is imagery that focuses on larger healing processes in the body, such as sensing the widening, softening and clearing of the arteries for heart disease; imagining the feel of tumors shrinking in the body with cancer; and seeing the opening of swollen, constricted passageways in the lungs for asthma. This too requires accurate knowledge of how the body naturally operates to heal each condition.

Metaphoric Imagery: This is imagery that works with symbols instead of concrete reality, such as seeing a flower opening its petals as a metaphor for enhanced creativity blossoming again; or seeing a tumor as an enemy encampment, being decimated by a powerful supply of tanks, missiles and guns; or sensing insulin "keys" unlocking the "doors" to hungry cells for people with diabetes.

Psychological Imagery: This is imagery that specifically addresses a person's psychological issues by providing corrective emotional content. So, for instance, it might consist of imagining being surrounded by loving friends and allies to interrupt a sense of isolation and despair; or seeing oneself through kind and loving eyes, for someone who is relentlessly self-attacking; or perceiving the presence a beloved, recently lost parent to alleviate grief.

Spiritual Imagery: This imagery evokes the wider perspective and peaceful or transcendent feelings provided by mystical states of consciousness and prayer. This might involve sensing assistance from angels, guides, power animals, God, or specific religious figures

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and symbols; or imagery that fosters a sense of oneness and connection with all things; or any imagery that deeply opens the heart.

**GUIDED IMAGERY: CONSIDER THIS THERAPY:** Consider this therapy for guided imagery seeks to make beneficial physical changes in the body by repeatedly visualizing them. A form of mind-body therapy, it has been advocated for a number of chronic conditions, including stress, anxiety, high blood pressure, and headaches, and for people undergoing conventional cancer therapy or surgery. Although another mind-body technique, biofeedback, has been tested extensively and has been found effective for a variety of ailments, including certain types of chronic pain, guided imagery has no such track record. Currently there is no evidence that it can relieve any type of disease, though it does seem capable of promoting relaxation.

How the Treatments Are Done: Guided imagery is taught in small classes or one-on-one.

Practitioners emphasize that it's not a passive experience; you're expected to be an active participant in each session. You will be asked to wear comfortable clothing, and will either sit comfortably in a chair or lie on a table or a floor mat. The practitioner will not touch you, and no instruments will monitor you. Some practitioners use music as a background to aid relaxation. Sessions usually begin with general relaxation exercises, then move on to a specific visualization, described by the practitioner.

You'll be asked to build a detailed image in your mind, using all five senses, and then repeat the exercise with a different image. If you have a specific medical complaint, the practitioner may ask you to picture your body free of the problem. If it's a localized disorder, you'll probably be encouraged to picture the affected organs working properly, visualizing, for instance, your heart beating regularly, your lungs breathing freely, a tumor shrinking, or your legs moving strongly. For more generalized problems, you may need to picture your entire body as healthy, strong, and calm.

Athletes or performers picture themselves moving well and competing or performing perfectly. Between sessions, you can use a book or audiotape to help you practice visualization on your own. **Treatment Time:** Guided imagery sessions are typically 20 to 30 minutes long, or longer as needed. **Treatment Frequency:** Sessions are usually held once or twice a week, or more frequently if needed.

What Treatment Hopes To Accomplish: Also known as creative imagery, mental imagery, or creative visualization, guided imagery aims to help you focus your mind on positive images and, in so doing, work changes in your body. It is often used along with other mind-body techniques. Unlike its cousins meditation and hypnosis, guided imagery doesn't ask you to focus your mind on a single word or image, but instead takes you on a journey through several visualizations. It's been described as a "focused daydream" by some practitioners. Like other mind-body techniques, guided imagery is based on the assumption that the mind can indeed affect the functions of the body. Exactly how this might transpire is not completely understood, but there is certainly compelling evidence that it happens. Numerous studies have confirmed the ability of both biofeedback and meditation training to lower blood pressure, control heart rate; and there is some evidence that guided imagery can do so as well. However, claims that it

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relieves pain, reduces anxiety, improves the effectiveness of drugs, and has psychological benefits have yet to be verified. Further studies are underway.

How can visualizing something make it so? One theory proposes that picturing something and actually experiencing it are equivalent as far as brain activity is concerned. Brain scans have verified this effect, and proponents suggest stimulating the brain through imagery can therefore have a direct effect on both the nervous and endocrine systems, ultimately producing changes in the immune system and other body functions. Whatever the truth of the matter, if you have cancer, you should be aware of a specialized type of guided imagery called the Simonton

Method. Developed by oncologist O. Carl Simonton and his wife Stephanie Matthew-Simonton, this technique is designed to help patients who are undergoing standard treatments for cancer. Emphasizing the use of imagery to complement (not replace) other therapies, it requires patients to visualize their immune systems fighting and destroying cancer cells. While considered a useful tool by many, it has not been proven to increase survival time.

Who Should Avoid This Therapy? Used as a supplement to standard treatments, guided imagery is generally considered safe for everyone.

What Side Effects May Occur? There are no known side effects of guided imagery.

How to Choose a Therapist: Guided imagery is offered by many types of practitioners, including , nurses, and social workers, as well as others with no health care background. There is no central licensing or certification required for practitioners, so it is up to you to check into the credentials of the practitioner you choose. The national organizations listed below may be helpful in locating a practitioner in your area. If you wish, you can also try to learn guided imagery from books or audiotapes.

When Should Treatment Stop? Practitioners say there is an incremental increase in benefit over time, so you should allow several weeks before deciding whether guided imagery is working for you. If it's not, move on to other alternatives without delay. See a Conventional Doctor If...Because guided imagery is at best a supplement to other forms of treatment, you should also get standard care for whatever problems

**GUIDED IMAGERY: A PATH TO HEALING:** Patients undergoing surgery often experience a loss of control, feeling more like victims than participants. Anxiety, of the unknown, fear of pain, dependency, uncertainty, and helplessness are common emotions which can intensify the perception of pain associated with invasive medical procedures. Physical and psychological stress can also contribute to prolonged postoperative recovery and a suppressed immune system. To help retain a sense of control, patients can learn a range of positive skills including imagery, relaxation, self-talk, and positive outcome expectations.

Guided imagery is a technique that draws on the healing power of thought to influence psychological and physiological states. The patient listens to an audio tape to create mental images that bring about a state of focused healing concentration. This state, in turn, allows relaxation and produces a sense of physical and emotional well-being. Patients can use this technique to control their reactions to anxiety, depression, and stressful situations. Guided imagery may also help patients strengthen their immune system and enhance their own healing. A recent study at the Cleveland Clinic Foundation investigated the effect of guided

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Guided imagery on 130 patients undergoing colorectal surgery. A control group received standard surgical care. Another group listened to a guided imagery tape to help them become calm and focused.

The guided imagery tape included soft, soothing music, and a story that brought patients to a "special place" in their mind - a place that was safe, secure, protected, supported, and relaxed. The imagery story encouraged patients to confront and work through any feelings of fear, anxiety, and negativity. Patients were instructed to listen to the tape without interruption twice per day, once in the morning and once in evening, for three days before the operation and for six days after. During surgery and in the recovery room they listened to a tape with only the music. Those who listened to guided imagery tapes fared much better - both before and after surgery. Before surgery, anxiety increased in the control group but decreased in the guided imagery group. After surgery, pain and anxiety levels were significantly lower for the imagery patients. They needed only about half the amount of narcotic pain medications as the control group and their bowel function also returned much more quickly.

The number of patients experiencing postoperative complications such as nausea, vomiting, or disrupted bowel function did not differ significantly in the two groups. Nor were there enough participants to detect a statistically significant difference in length of hospital stay. But virtually all of the guided imagery patients reported that they appreciated using the tapes and attributed benefits including improved quality of sleep, speeded recovery, and reduced anxiety and pain after surgery. Most believed that all patients having major abdominal surgery should have the opportunity to use the guided imagery tapes.

How do the guided imagery tapes improve the surgical experience? The answer remains unclear at this point. Using the tapes may increase patients' sense of control and active participation, which in turn may reduce anxiety and change physiology. Music has been shown to influence mood and, perhaps, boosting immune function. The tapes also provide a temporary escape, blocking out annoying noises, and distracting the patients from pain and anxious thoughts. Guided imagery can help one relax, clear your mind, and engage physiologically and psychologically supportive images. Of course, one doesn't have to be facing surgery to enjoy these benefits.

## 40. HYPNOSIS AND SURGERY

**Surgery 1:** Adjunctive non-pharmacological analgesia for invasive medical procedures: a randomized trial. Elvira V Lang, Eric G Benotsch, Lauri J Fick, Susan Lutgendorf, Michael L Berbaum, Kevin S Berbaum, Henrietta Logan, David Spiegel. *The Lancet*, Vol 355, April 29, 2000, pages 1486-1490.

Summary: Background Non-pharmacological behavioral adjuncts have been suggested as efficient safe means in reducing discomfort and adverse effects during medical procedures. We tested this assumption for patients undergoing percutaneous vascular and renal procedures in a prospective, randomized, single-center study.

Methods 241 patients were randomized to receive intraoperatively standard care (n=79), structured attention (n=80), or self-hypnotic relaxation (n=82). All had access to patient-controlled intravenous analgesia with fentanyl and midazolam. Patients rated their pain and anxiety on 0-10 scales before, every 15 minutes during and after the procedures. Findings Pain

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increased linearly with procedure time in the standard group (slope 0.09 in pain score/15 min,  $p < 0.0001$ ), and the attention group (slope 0.04/15 min;  $p = 0.0425$ ), but remained flat in the hypnosis group. Anxiety decreased over time in all three groups with slopes of  $\leq 0.04$  (standard),  $-0.07$  (attention), and  $\leq 0.11$  (hypnosis). Drug use in the standard group (1.9 units) was significantly higher than in the attention and hypnosis groups (0.8 and 0.9 units, respectively). One hypnosis patient became haemodynamically unstable compared with ten attention patients ( $p = 0.0041$ ), and 12 standard patients ( $p = 0.0009$ ). Procedure times were significantly shorter in the hypnosis group (61 minutes) than in the standard group (78 min,  $p = 0.0016$ ) with procedure duration of the attention group in between (67 min). Interpretation Structured attention and self-hypnotic relaxation proved beneficial during invasive medical procedures. Hypnosis had more profound effects on pain and anxiety reduction, and is superior, in that it also improves haemodynamic stability.

**Surgery 2:** Self-hypnotic relaxation during interventional radiological procedures: effects on pain perception and intravenous drug use. Lang EV, Joyce JS, Spiegel D, Hamilton D, Lee KK. Department of Veterans Affairs Medical Center (DVAMC), Palo Alto, California International Journal of Clinical and Experimental Hypnosis 1996 Apr; 44(2):106-19. The authors evaluated whether self-hypnotic relaxation can reduce the need for intravenous conscious sedation during interventional radiological procedures. Sixteen patients were randomized to a test group, and 14 patients were randomized to a control group. All had patient-controlled analgesia. Test patients additionally had self-hypnotic relaxation and underwent a Hypnotic Induction Profile test. Compared to controls, test patients used less drugs (0.28 vs. 2.01 drug units;  $P < 0.01$ ) and reported less pain (median pain rating 2 vs. 5 on a 0-10 scale;  $P < 0.01$ ). Significantly more control patients exhibited oxygen desaturation and/or needed interruptions of their procedures for hemodynamic instability. Benefit did not correlate with hypnotizability. Self-hypnotic relaxation can reduce drug use and improve procedural safety. The effects of hypnosis/guided imagery on the postoperative course of children. Lambert SA. University Hospitals of Cleveland, Rainbow babies and Children's Hospital, Frances Payne Bolton School of Nursing, Case Western Reserve University, Cleveland, Ohio. Journal of Developmental and Behavioral Pediatrics 1996 Oct; 17(5):307-10 Hypnosis, guided imagery and relaxation have been shown to improve the postoperative course of adult surgical patients. Children have successfully used hypnosis/guided imagery to significantly reduce the pain associated with invasive procedures and to improve selected medical conditions. The purpose of this study was to examine the effect of hypnosis/guided imagery on the postoperative course of pediatric surgical patients.

Fifty-two children (matched for sex, age and diagnosis) were randomly assigned to an experimental or control group. The experimental group was taught guided imagery by the investigator. Practice of the imagery technique included suggestions for a favorable postoperative course. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient. Hypnotic technique for sedation of patients during upper gastrointestinal endoscopy. Zimmerman J.

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Gastroenterology Unit, Hadassah University Hospital, Jerusalem, Israel. American Journal of Clinical Hypnosis 1998 Apr; 40(4):284-7

A method of sedation of patients undergoing gastrointestinal endoscopy is described. This technique employs a variety of elements, including 'pacing and leading,' metaphors, use of psychological reactions to deepen the relaxation, imagery and post hypnotic suggestions. It is a simple and effective method which does not require any preparation. It spares the need for a pharmacological sedation and obviates the possible hazards of such a sedation. The author has successfully used this technique to sedate more than 200 patients undergoing upper gastrointestinal endoscopy. The duration of examinations performed this way compares with that using conventional pharmacology sedation. However, unlike the case of pharmacological sedation, no further monitoring is needed after the completion of the examination and the patients can leave the clinic immediately to resume their activities. L'hypnose et son application en chirurgie (Hypnosis and its application in surgery) Faymonville ME, Defechereux T, Joris J, Adant JP, Hamoir E, Meurisse M. Service d'Anesthesie-Reanimation, Universite de Liege. Revue Medicale de Liege 1998 Jul; 53(7):414-8

Since 1992, we have used hypnosis routinely in more than 1400 patients undergoing surgery. We found that hypnosis used in patients as an adjunct to conscious sedation and local anesthesia was associated with improved intraoperative patient comfort, and with reduced anxiety, pain, intraoperative requirements for anxiolytic and analgesic drugs, optimal surgical conditions and a faster recovery of the patient. We reported our clinical experience and our fundamental research. Hypnosis for pediatric fracture reduction. Iserson KV. Arizona Bioethics Programs and Section of Emergency Medicine, University of Arizona, Tucson Journal of Emergency Medicine 1999 Jan-Feb; 17(1):53-6

Hypnosis can diminish pain and anxiety for many emergency patients during examinations and procedures. While hypnosis has been used for millennia and was demonstrated to be of use in clinical medicine more than a century ago, modern physicians have been reluctant to adopt this technique in clinical practice. This article describes four children with angulated forearm fractures who had no possible access to other forms of analgesia during reduction, and in whom hypnosis was used successfully. A simple method for hypnotic induction is described. Using hypnosis to accelerate the healing of bone fractures: a randomized controlled pilot study. Ginandes CS, Rosenthal DI. Department of Psychiatry, Harvard Medical School. Alternative Therapies in Health and Medicine 1999 Mar; 5(2):67-75

CONTEXT: Hypnosis has been used in numerous medical applications for functional and psychological improvement, but has been inadequately tested for anatomical healing.

OBJECTIVE: To determine whether a hypnotic intervention accelerates bodily tissue healing using bone fracture healing as a site-specific test.

DESIGN: Randomized controlled pilot study.

SETTING: Massachusetts General Hospital, Boston, Mass and McLean Hospital, Belmont, Mass.

PATIENTS: Twelve healthy adult subjects with the study fracture were recruited from an orthopedic emergency department and randomized to either a treatment (n=6) or a control group (n=6). One subject, randomized to the treatment group, withdrew prior to the intervention.

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**INTERVENTION:** All 11 subjects received standard orthopedic care including serial radiographs and clinical assessments through 12 weeks following injury. The treatment group received a hypnotic intervention (individual sessions, audiotapes) designed to augment fracture healing.

**MAIN OUTCOME MEASURES:** Radiological and orthopedic assessments of fracture healing 12 weeks following injury and hypnotic subjects' final questionnaires and test scores on the Hypnotic Induction Scale.

**RESULTS:** Results showed trends toward faster healing for the hypnosis group through week 9 following injury. Objective radiographic outcome data revealed a notable difference in fracture edge healing at 6 weeks. Orthopedic assessments showing trends toward better healing for hypnosis subjects through week 9 included improved ankle mobility, greater functional ability to descend stairs, lower use of analgesics in weeks 1, 3, and 9; and trends towards lower self-reported pain through 6 weeks.

**CONCLUSION:** Despite a small sample size and limited statistical power, these data suggest that hypnosis may be capable of enhancing both anatomical and functional fracture healing, and that further investigation of hypnosis to accelerate healing is warranted. Bilateral neck exploration under hypnosedation: a new standard of care in primary hyperparathyroidism? Meurisse M, Hamoir E, Defechereux T, Gollogly L, Derry O, Postal A, Joris J, Faymonville ME. Department of Surgery, University of Liege, Belgium *Annals of Surgery* 1999 Mar; 229(3):401-8

**OBJECTIVE:** The authors review their experience with initial bilateral neck exploration under local anesthesia and hypnosedation for primary hyperparathyroidism. Efficacy, safety and cost effectiveness of this new approach are examined.

**BACKGROUND:** Standard bilateral parathyroid exploration under general anesthesia is associated with significant risk, especially in an elderly population. Image-guided unilateral approaches, although theoretically less invasive, expose the patients to the potential risk of missing multiple adenomas or asymmetric hyperplasia. Initial bilateral neck exploration under hypnosedation may maximize the strengths of both approaches while minimizing their weaknesses.

**METHODS:** In a consecutive series of 121 initial cervicotomies for primary hyperparathyroidism performed between 1995 and 1997, 31 patients were selected on the basis of their own request to undergo a conventional bilateral neck exploration under local anesthesia and hypnosedation. Neither preoperative testing of hypnotic susceptibility nor expensive localization studies were done. A hypnotic state (immobility, subjective well-being, and increased pain thresholds) were induced within 10 minutes; restoration of a fully conscious state was obtained within several seconds. Patient comfort and quiet surgical conditions were ensured by local anesthesia of the collar incision and minimal intravenous sedation titrated throughout the surgery. Both peri- and postoperative records were examined to assess the safety and efficacy of this new approach.

**RESULTS:** No conversion to general anesthesia was needed. No complications were observed. All the patients were cured with a mean follow-up of 18 +/- 12 months. Mean operating time was < 1 hour. Four glands were identified in 84% of cases, three glands in 9.7%. Adenomas were found in 26 cases; among these, 6 were ectopic. Hyperplasia, requiring subtotal



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parathyroidectomy and transcervical thymectomy, was found in five cases (16.1%), all of which had gone undetected by localization studies when requested by the referring physician.

Concomitant thyroid lobectomy was

performed in four cases. Patient comfort and recovery and surgical conditions were evaluated on visual analog scales as excellent. Postoperative analgesic consumption was minimal. Mean length of hospital stay was 1.5 +/- 0.5 days.

**CONCLUSIONS:** Initial bilateral neck exploration for primary hyperparathyroidism can be performed safely, efficiently and cost-effectively under hypnosedation, which may therefore be proposed as a new standard of care. Medical hypnosis and orthopedic hand surgery: pain perception, postoperative recovery and therapeutic comfort. Mauer MH, Burnett KF, Ouellette EA, Ironson GH, Dandes HM. University of Miami, Coral Gables, Florida. *International Journal of Clinical and Experimental Hypnosis* 1999 Apr; 47(2):144-61 Orthopedic hand-surgery patients experience severe pain postoperatively, yet they must engage in painful exercises and wound care shortly after surgery; poor patient involvement may result in loss of function and disfigurement. This study tested a hypnosis intervention designed to reduce pain perception, enhance postsurgical recovery, and facilitate rehabilitation. Using a quasi-experimental design, 60 hand-surgery patients received either usual treatment or usual treatment plus hypnosis. After controlling for gender, race and pretreatment scores, the hypnosis group showed significant decreases in measures of perceived pain intensity (PPI), perceived pain affect (PPA) and state anxiety. In addition, physician's ratings of progress were significantly higher for experimental subjects than for controls, and the experimental group had significantly fewer medical complications. These results suggest that a brief hypnosis intervention may reduce orthopedic hand-surgery patients' postsurgical PPI, PPA and anxiety; decrease comorbidity; and enhance postsurgical recovery and rehabilitation. However, true experimental research designs with other types of controls must be employed to determine more fully the contribution of hypnosis to improved outcome.

Researchers at the Department of Anesthesia and Intensive Care Medicine, the University of Liege, Belgium investigated the benefits of hypnotherapy in assisting local anesthesia for patients undergoing plastic surgery. 337 patients requiring minor and major plastic surgery requiring local anesthesia together with conscious intravenous sedation were divided into three groups. The first group received intravenous sedation, the second group received hypnotherapy during which patients achieved a hypnotic trance level, and third group received general relaxation incorporating hypnotherapy without the required hypnotic trance level. Pain scores, anxiety scores and levels of intravenous sedative required were recorded and then compared.

The results showed that anxiety scores were significantly lower in the hypnotherapy and relaxation groups and the levels of sedative required were also significantly lower in the hypnotherapy and relaxation groups. Furthermore, postoperative vomiting and nausea was only 1.2 per cent in the hypnotherapy group compared to 12.8 per cent in the relaxation group and 26.7 per cent in the intravenous sedation group. The hypnotherapy group also reported higher satisfaction with the anesthetic procedure and greater surgical comfort.

The researchers concluded that hypnotherapy as an adjunct sedation procedure to conscious intravenous sedation produced greater relief from pain and anxiety than conventional

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intravenous sedation, enabled significant reduction in drug sedative requirements and significantly improved patients satisfaction and comfort.

### 41. HYPNOSIS, THESIS BY B. ENAVIST

**ABSTRACT:** In a medical setting patients are often dependent, vulnerable and easily influenced by information, which may be interpreted in a way that creates anxiety and expectations of pain and complications. Information is often forgotten. Time can be experienced as very short or long, and there may be a feeling of unreality. Regression, time distortion, dissociation, suggestibility and amnesia are other expressions for these phenomena which can also be recognized as characteristics of hypnosis. Thus hypnosis and altered states of consciousness may be part of the daily clinical routines. This increased suggestibility is seldom systematically utilized for a beneficial influence. **In the present thesis presurgical hypnosis and suggestions in anesthesia by means of audio tape were used with the following aims:**

- \* To give the patients better control of anxiety, pain and rehabilitation.
- \* To influence the patients in a beneficial way regarding bleeding, oedema and rehabilitation.
- \* To use therapeutic suggestions during anesthesia alone or in combination with preoperative hypnosis to improve peri- and post-operative behavior.

The audio tapes started with a hypnotic induction-relaxation. The suggestions given were adapted to resolve problems associated with the various surgical procedures. The audio tapes lasted for 20 minutes and daily listening was recommended during the week before surgery. Therapeutic suggestions during anesthesia by means of audio tape were also used to improve peri- and postoperative behavior. Hypnosis by means of listening to a "hypnosis tape" preoperatively alone or in combination with suggestions during anesthesia produced the following (significant) results compared to the control groups. Study/Hypnosis before maxillo-facial surgery performed in general anesthesia reduced peri-operative blood loss. The addition of suggestions during anesthesia did not increase the effects. Suggestions during anesthesia only lowered blood pressure and reduced the duration of hospital stay. Study 2/ The combination of preoperative hypnosis and suggestions during anesthesia reduced postsurgical oedema and fever. Less anxiolytic medication was needed.

- \* Study 3/Hypnosis before surgical removal of wisdom teeth produced more calmness in the hypnosis group and reduced the postoperative analgesic requirements.
- \* Study 4/Hypnosis before breast reduction surgery reduced postoperative nausea, vomiting and consumption of analgesics.
- \* Study 5/ The same suggestions as in the previous study given during anesthesia only, did not influence postoperative nausea and vomiting in breast surgery. Relaxation-hypnosis and instructions in stress reduction can influence factors like perioperative bleeding and postoperative swelling, nausea and vomiting. Pain medication can be reduced. The effects of suggestions given during anesthesia seem to be marginal. If the effects are due to increased calmness, improved expectations, posthypnotic suggestions, increased levels of plasma cortisol, or a combination of the above mentioned factors is not known. Several of the effects shown in study 1-4 have been possible to achieve with eg procedural information, increased care, behavior modification and/or cognitive therapy. Hypnotherapy has much in common with other sorts of therapy, and

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indications for the different preparatory methods are desirable, as well as a simple diagnostic tool to select the right patient to the right method.

### 52. BRAIN IMAGING STUDIES INVESTIGATE PAIN REDUCTION BY HYPNOSIS: UNIV OF IOWA: APRIL 2005

Although hypnosis has been shown to reduce pain perception, it is not clear how the technique works. Identifying a sound, scientific explanation for hypnosis' effect might increase acceptance and use of this safe pain-reduction option in clinical settings. Researchers at the University of Iowa Roy J. and Lucille A. Carver

College of Medicine and the Technical University of Aachen, Germany, used functional magnetic resonance imaging (fMRI) to find out if hypnosis alters brain activity in a way that might explain pain reduction. The results are reported in the November-December 2004 issue of *Regional Anesthesia and Pain Medicine*.

The researchers found that volunteers under hypnosis experienced significant pain reduction in response to painful heat. They also had a distinctly different pattern of brain activity compared to when they were not hypnotized and experienced the painful heat. The changes in brain activity suggest that hypnosis somehow blocks the pain signal from getting to the parts of the brain that perceive pain.

"The major finding from our study, which used fMRI for the first time to investigate brain activity under hypnosis for pain suppression, is that we see reduced activity in areas of the pain network and increased activity in other areas of the brain under hypnosis," said Sebastian Schulz-Stubner, M.D., Ph.D., UI assistant professor (clinical) of anesthesia and first author of the study. "The increased activity might be specific for hypnosis or might be non-specific, but it definitely does something to reduce the pain signal input into the cortical structure."

The pain network functions like a relay system with an input pain signal from a peripheral nerve going to the spinal cord where the information is processed and passed on to the brain stem. From there the signal goes to the mid-brain region and finally into the cortical brain region that deals with conscious perception of external stimuli like pain.

Processing of the pain signal through the lower parts of the pain network looked the same in the brain images for both hypnotized and non-hypnotized trials, but activity in the top level of the network, which would be responsible for "feeling" the pain, was reduced under hypnosis.

Initially, 12 volunteers at the Technical University of Aachen had a heating device placed on their skin to determine the temperature that each volunteer considered painful (8 out of 10 on a 0 to 10 pain scale). The volunteers were then split into two groups. One group was hypnotized, placed in the fMRI machine and their brain activity scanned while the painful thermal stimuli was applied. Then the hypnotic state was broken and a second fMRI scan was performed without hypnosis while the same painful heat was again applied to the volunteer's skin. The second group underwent their first fMRI scan without hypnosis followed by a second scan under hypnosis.

Hypnosis was successful in reducing pain perception for all 12 participants. Hypnotized volunteers reported either no pain or significantly reduced pain (less than 3 on the 0-10 pain scale) in response to the painful heat. Under hypnosis, fMRI showed that brain activity was reduced in areas of the pain network, including the primary sensory cortex, which is responsible for pain perception.

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The imaging studies also showed increased activation in two other brain structures -- the left anterior cingulate cortex and the basal ganglia. The researchers speculate that increased activity in these two regions may be part of an inhibition pathway that blocks the pain signal from reaching the higher cortical structures responsible for pain perception. However, Schulz-Stubner noted that more detailed fMRI images are needed to definitively identify the exact areas involved in hypnosis-induced pain reduction, and he hoped that the newer generation of fMRI machines would be capable of providing more answers.

"Imaging studies like this one improve our understanding of what might be going on and help researchers ask even more specific questions aimed at identifying the underlying mechanism," Schulz-Stubner said. "It is one piece of the puzzle that moves us a little closer to a final answer for how hypnosis really works.

"More practically, for clinical use, it helps to dispel prejudice about hypnosis as a technique to manage pain because we can show an objective, measurable change in brain activity linked to a reduced perception of pain," he added.

In addition to Schulz-Stubner, the research team included Timo Krings, M.D., Ingo Meister, M.D., Stefan Rex, M.D., Armin Thron, M.D., Ph.D. and Rolf Rossaint, M.D., Ph.D., from the Technical University of Aachen, Germany.

University of Iowa Health Care describes the partnership between the UI Roy J. and Lucille A. Carver College of Medicine and UI Hospitals and Clinics and the patient care, medical education and research programs and services they provide.

### 53. HYPNOSIS FOR HAY-FEVER SUFFERERS: (4 ARTICLES)

**HYPNOSIS COULD BANISH HAY-FEVER:** BBC NEWS: APRIL 2005: Hay fever sufferers could benefit from using self-hypnosis, researchers say. A Swiss team at Basle University taught 66 people with hay-fever the art of hypnosis and found it helped them alleviate symptoms such as runny nose. The volunteers also took their regular anti-hay-fever drugs, but the effect of hypnosis appeared to be additive and reduce the doses they needed to take. The findings appear in the medical journal *Psychotherapy and Psychosomatics*.

**Self-hypnosis:** The study took place over two years and included two hay fever seasons. During the first year, some of the volunteers with hay-fever were taught and asked to regularly practice hypnosis as well as take their usual allergy medicine. The hypnosis training consisted of one two-hour session with an experienced trainer. The remaining volunteers had no other treatment apart from their normal allergy medication.

After a year, the researchers found the volunteers who had been using self-hypnosis had reported fewer symptoms related to hay-fever than their fellow volunteers.

**Runny noses:** During the second year, the researchers taught the remaining "untrained" volunteers how to use hypnosis. By the end of this year, these volunteers also reported improvement in their hay-fever symptoms. Although the improvement in symptoms was not statistically significant and, therefore, could have been down to chance alone, the researchers also found that the volunteers had cut down on the amount of hay-fever medication they used after learning self-hypnosis.

While our findings are not a definite answer, this simple intervention is worth investigating further Lead researcher Professor Wolf Langewitz

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Professor Wolf Langewitz and his team also tested the volunteers in the laboratory to see what effect the hypnosis was having on the body. Using a machine that measured how forcefully a person could exhale through their nose, the researchers found that the hypnosis was helping to improve nasal airflow, even when the volunteers were exposed to things that triggered their hay-fever, such as pollen and grass. Professor Langewitz said: "While our findings are not a definite answer, this simple intervention is worth investigating further. "It is cheap and only takes a couple of hours to teach."

**How it might work:** He suspects that hypnosis might work by altering blood flow and helping alleviate congestion in the nose that can occur with hay-fever. Dr Peter Whorwell from Wythenshawe Hospital in Manchester, who uses hypnotherapy to treat people suffering from irritable bowel syndrome, said some of his own patients who also had hay-fever had commented to him that their noses were less runny after hypnotherapy sessions.

He said: "It is known that you can alter blood flow with hypnosis. "Hypnosis has been used for a variety of medical conditions, including asthma, eczema and migraines. "It's definitely an area that is worth researching."

A spokeswoman from Allergy UK said they had heard anecdotal reports of hay-fever sufferers using hypnotherapy. However, they said they were unable to recommend any approaches that had not been extensively investigated and backed by strong scientific evidence. Dr Adrian Morris, a GP in Surrey with a special interest in allergic disorders, said although hypnotherapy might be useful, what was far more helpful to lessen hay-fever symptoms was gradual, graded exposure to the trigger to increase tolerance.

**SELF-HYPNOSIS EFFECTIVE ON HAY FEVER SYMPTOMS:** JOURNAL OF PSYCHOTHERAPY AND PSYCHOSOMATICS: APRIL 2005: A group of researchers of the University of Basel, Switzerland, has performed a randomized controlled trial on the use of self-hypnosis (which was likely to induce relaxation) on a hay fever symptoms. Many people suffer from hay fever symptoms. Hypnosis has proved to be a useful adjunct in the treatment of conditions where allergic phenomena have an important role.: Randomized parallel group study over an observation period of two consecutive pollen seasons. Outcome data include nasal flow under hypnosis, pollinosis symptoms from diaries and retrospective assessments, restrictions in well-being and use of anti-allergic medication.

We investigated 79 patients with a mean age of 34 years (range 19-54 years; 41 males), with moderate to severe allergic rhinitis to grass or birch pollen of at least 2 years duration and mild allergic asthma. The intervention consisted of teaching self-hypnosis during a mean of 2.4 sessions (SD 1.7; range 2-5 sessions) and continuation of standard anti-allergic pharmacological treatment. Of 79 randomized patients, 66 completed one, and 52 completed two seasons. Retrospective VAS scores yielded significant improvements in year 1 in patients who had learned self-hypnosis: pollinosis symptoms -29.2 (VAS score, range 0-100; SD 25.4;  $p < 0.001$ ), restriction of well-being -26.2 (VAS score, range 0-100; SD 28.7;  $p < 0.001$ . In year 2, the control group improved significantly having learned self-hypnosis as well: pollinosis symptoms -24.8 (SD 29.1;  $p < 0.001$ ), restriction of well-being -23.7 (SD 30.0;  $p < 0.001$ ). Daily self-reports of subjects who learnt self-hypnosis do not show a significant improvement. The hazard ratio of reaching a critical flow of 70% in nasal provocation tests was 0.333 (95% CI 0.157-0.741) after having learnt and applied self-hypnosis.

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**HYPNOSIS & HAY-FEVER RESEARCH:** FRY L. MASON A, A. PEARSON: APRIL 2000 Effect of hypnosis on allergic skin responses in asthma and hay-fever. *BMJ* 1964;114S.1 148: Forty-seven subjects with known skin sensitivity to pollen and/or house-dust were divided into five groups and tested with four strengths of allergen. The prick-test method was employed. In the first part of the investigation a group of un hypnotized subjects were compared with a group who had suggestions made under hypnosis that their skin reactions to the allergen would not occur when tested a second time. A significant diminution in the size of the weal was obtained in the hypnosis group at the lower two strengths of allergen. In the second part of the investigation the subjects were divided into three groups. All were hypnotized, no suggestions regarding skin reactions were given to one group, the second group were given suggestions that only on one arm would the skin reactions be less or not recur, and in the third group the suggestion was made about the reactions on both arms. There was found to be a similar decrease in the response to prick-tests after hypnosis in all three groups.

**HYPNOSIS FOR HAY FEVER SYMPTOMS RESEARCH: Abstract:**

**Background:** Many people suffer from hay fever symptoms Hypnosis has proved to be a useful adjunct in the treatment of conditions where allergic phenomena have an important role  
**Methods:** Randomized parallel group study over an observation period of two consecutive pollen seasons. Outcome data include nasal flow under hypnosis, pollinosis symptoms from diaries and retrospective assessments, restrictions in well-being and use of anti-allergic medication. We investigated 79 patients with a mean age of 34 years (range 19-54 years; 41 males), with moderate to severe allergic rhinitis to grass or birch pollen of at least 2 years duration and mild allergic asthma The intervention consisted of teaching self-hypnosis during a mean of 2.4 sessions (SD 1.7; range 2-5 sessions) and continuation of standard anti-allergic pharmacological treatment. **Results:** Of 79 randomized patients, 66 completed one, and 52 completed two seasons. Retrospective VAS scores yielded significant improvements in year 1 in patients who had learned self-hypnosis: pollinosis symptoms -29.2 (VAS score, range 0-100; SD 25.4;  $p < 0.001$ ), restriction of well-being -26.2 (VAS score, range 0-100; SD 28.7;  $p < 0.001$ . In year 2, the control group improved significantly having learned self-hypnosis as well: pollinosis symptoms -24.8 (SD 29.1;  $p < 0.001$ ), restriction of well-being -23.7 (SD 30.0;  $p < 0.001$ ) Daily self-reports of subjects who learnt self-hypnosis do not show a significant improvement. The hazard ratio of reaching a critical flow of 70% in nasal provocation tests was 0.333 (95% CI 0.157-0.741) after having learnt and applied self-hypnosis. [Prof. Wolf Langewitz Div. Psychosomatic Medicine/Internal Medicine University Hospital.]

**54. RESEARCHER EXPLORES WAYS TO MAKE HYPNOSIS A MORE EFFECTIVE THERAPEUTIC TECHNIQUE: GAIL C. GLOVER: FEB 2005**

Hypnosis can serve as a valuable adjunct to certain kinds of psychotherapy, says Steven Lynn, professor of psychology at Binghamton University, State University of New York. But not everyone responds to it equally well.

In the popular imagination, a person who submits to hypnosis falls into a trance. The subject slavishly follows the hypnotist's commands, perhaps to squawk like a chicken, re-enact events from childhood or develop a lasting aversion to cigarettes. When the subject "awakens," he or she forgets everything that happened during the session.

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Actually, hypnosis is not like that at all, said Lynn, who has devoted much of his career to establishing a clear, scientific understanding of hypnotic suggestion. A person who responds well to hypnosis takes an active rather than a passive role, working in partnership with the hypnotist. "Hypnosis involves the participant thinking and imagining along with whatever is suggested, in an expectant manner," he said.

In some of his latest work, Lynn tries to pinpoint what makes certain people especially good hypnotic subjects and determine if it's possible to raise others to their level. One project, supported by a \$376,000 grant from the National Institute of Mental Health, explores the idea that the ability to respond to hypnotic suggestions "can be changed and enhanced when participants are instructed," Lynn said. Janet Ambrogne, assistant professor in Binghamton University's Decker School of Nursing, is working on this study along with Lynn and his team of graduate students.

The research team tests subjects to determine how well each responds to hypnotic suggestions. Then researchers provide information about how hypnosis works, trying to eliminate the subject's misconceptions—for example, that people under hypnosis are gullible and easily led. "We try to encourage them to use their imaginations, rather than to passively respond to the suggestions, and to actively immerse themselves in the experience of whatever is suggested," Lynn said. Researchers also teach subjects how to interpret hypnotic suggestions, so that a misunderstanding won't lead to an inappropriate response.

Two years into the three-year project, the research indicates that instruction does indeed help people respond better to hypnotic suggestions. By speaking with subjects and letting them watch how others perform under hypnosis, "we can get at least half of initially low-hypnotizable subjects to test as high hypnotizing subjects," Lynn said. The team still needs to figure out, though, which elements of the training do the trick. "Is it telling people they should make an active response? Is it the imagination part of it, when we ask people to vividly imagine what we've been suggesting? We don't know what components are responsible for the effectiveness."

Lynn will also investigate the malleability of hypnotic response in a new study of "mindfulness"—the ability to stay non-judgmentally aware of one's fluctuating thoughts and feelings. "Many psychotherapies are now recognizing that people try to suppress or conceal feelings," but the more they try to push away unwelcome mental experiences, the more those experiences come back to trouble them, Lynn said. By learning to observe and accept whatever flows through their minds, "individuals can come to desensitize themselves to unsettling thoughts and feelings."

Lynn and his graduate students are working to develop scales that measure a person's aptitude for mindfulness and see how one's ranking on those scales correlates to other traits. "Initial results suggest that the ability to be mindful is associated with a variety of positive characteristics, such as positive self esteem and the ability to be absorbed in different experiences, from watching a sunset to reading novels," he said.

Along with other traits, they want to determine if mindfulness correlates to strong hypnotic response. "If we had scales where we could pre-select people who tend to be mindful, and contrast them with people who in everyday life tend to not be especially mindful, we could see whether, for example, there were differences in the way they responded to hypnotic

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suggestions," Lynn said. "Or we could ask the question, 'Would combining a hypnotic induction with suggestions to be mindful increase people's suggestibility?'"

If the researchers can figure out what sort of instruction or encouragement helps subjects gain greater benefit from hypnosis, this knowledge could help therapists put hypnosis to better use for clients who want to manage anxiety, lose weight or make other positive changes.

It might also settle certain theoretical controversies. Along with the general public, some schools of psychologists also contend that hypnosis is a state apart from ordinary consciousness, Lynn said. In their research, he and his team "try to consistently debunk that position and show that the same variables that account for non-hypnotic behaviors and experiences account for hypnotic behaviors and experiences."

"My way of thinking," Lynn said, "is that hypnotic responsiveness is associated with attitudes, beliefs, expectancies, motivation, using your imagination and the kinds of strategies people use." If he is correct, and if therapists can help subjects fine-tune those variables, that could.

### 55. HYPNOTHERAPY IN PALLIATIVE CARE

**Aim of the Study:** To study the benefits of Hypnotherapy, as a supplement therapy in the management of terminally ill patients.

**Background:** Hypnotherapy is a brief psychotherapeutic approach, which utilizes the persons' ability to enter into trance and thus make ones mind receptive to therapeutic suggestions given during the session. Hypnosis has been recognized as an effective psychotherapeutic instrument in panoply of psychological and psychosomatic conditions.

**Method:** 22 cancer patients were offered three hypnotherapy sessions and were assessed with the Hospital Anxiety and Depression Scale before and after the third session together with a follow up after 3 to 4 months after the last session. To avoid bias, patients were also, independently assessed by the nursing staff using a visual assessment scale of 1 to 10.

**Particular attention was paid to:**

- \* management of anxiety, depression, anger, frustration
- \* management of pain, fatigue, insomnia
- \* management of side-effects of chemotherapy and \* radiotherapy

All hypnotherapy sessions were individually tailored to cover the specific individual needs and symptoms.

**Results:** Of the 22 patients who took part in the study all reported reduction in their anxiety level, feelings of improved well-being and self-confidence and much better day to day coping skills. There was no significant improvement in the depression level.

**Conclusions:** The present study represents a small number of patients who showed a clear benefit from the use of hypnosis in alleviating a number of symptoms associated with cancer illness. Despite the limitations of the small number of patients and the short-term follow-up, the findings suggest that hypnotherapy is a valuable tool especially with regard to enhancing the coping mechanisms of cancer patients.

### 56. RESEARCH FINDINGS: ACADEMY FOR GUIDED IMAGERY: 2002-2003



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**Definition of the Problem:** Allergies are one of the greatest causes of illness and disability in the United States. As many as 50 million Americans have allergies of some kind. The most common allergy is probably hay fever (“allergic rhinitis”), which affects about 36 million people. There are many other types of common allergies, including sensitivity to pets, food, and insect bites, and also various allergies that can cause rashes or scaly skin. Add to these the uncommon or atypical allergies that many people seem to experience, and it’s no wonder that they are so common. Nearly everyone seems to be allergic to something. Having allergies can also make you more prone to other problems (including asthma, recurring ear infections, and sinus problems), or they can often make these problems worse. Typical allergy symptoms include itching, sneezing, runny nose, and cough, fatigue, and insomnia. The symptoms are not only physical, for allergies can even slow down your thinking. Any of these symptoms can significantly affect the quality of one’s life, and they also can impose significant financial burdens on employers, their customers, insurers, and the economy from lost work due to increased sick leave time.

**Scope and Cost of the Problem:** Each year, Americans lose 3 million workdays because of allergies at an estimated cost to the economy of \$639 million. Allergies in children result in a loss of about 2 million school days each year. Allergies result in about 16 million physician visits per year. The cost of medical tests, medications, and allergy shots for allergies costs about \$2 billion (\$2,000,000,000) a year. When you add economic costs to medical costs, the numbers are even larger. For example, the total estimated cost to the economy for allergic rhinitis alone was \$2.7 billion in 1995, exclusive of the additional costs for associated medical problems such as sinusitis and asthma.

**Medical Treatment:** Standard medical treatment for allergies includes antihistamines, decongestants, steroids, cromolyn (for respiratory tract allergies), skin ointments, eye drops, nasal sprays, and a variety of new medicines called LTRA’s. Unfortunately, none of these medications can cure allergies, and many of them can produce significant side effects or complications. Some, such as antihistamines, may cause drowsiness. Others, such as decongestants, can raise blood pressure and heart rate, and others, such as steroids, can cause many other problems. Desensitization injections (“allergy shots”) may be helpful for some people, but they are expensive and require frequent clinic visits.

**Complementary Treatment Including Imagery and Self-Hypnosis:** The causes of allergies are thought to include heredity factors, past and present environmental exposure, and stress.<sup>6</sup> Anxiety is also strongly linked with many kinds of allergies, especially rhinitis and dermatitis.

Anti-anxiety programs using relaxation and guided imagery have been used with great success in allergic dermatitis.<sup>11-13</sup> These methods have not been studied as much in allergic rhinitis (AR). This may be because results are harder to measure in AR than they are in dermatitis. When one researcher taught self-hypnosis to a group of patients with a variety of allergies, 76% said they felt better, and 86% reduced their medication usage. They continued to show improvement when they were examined for follow-up two years later. Since allergies are usually mediated by the immune system, anything that affects the immune system can affect allergies, as well. Research in psychoneuroimmunology has demonstrated that psychological interventions, including relaxation and guided imagery, tend to “calm down” the immune system, and a calmer immune

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system appears to be beneficial for many allergic reactions. Thorough cleaning and effective ventilation to reduce allergens, avoiding allergy triggers, regular relaxation, exercise and healthier eating<sup>6</sup> can also help to reduce or eliminate some types of allergies.

**Conclusion:** Research available to date supports the conclusion that guided imagery can help people cope with allergies, and reduce allergy symptoms, office visits, and medication usage in many cases.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR ANGIOGRAPHY, ANGIOPLASTY, AND CARDIAC CATHETERIZATION:**

**The Value of Angiography:** An angiography is an X-ray of the arteries. It is an invasive procedure, meaning that the X-ray is taken from inside the body, usually by injecting a dye into a blood vessel. In cardiac catheterization, the heart chambers as well as the arteries are entered, and measurements of blood flow and pressure in various parts of the heart and vessels that supply the lungs are often done. In angioplasty, the clinician attempts to open partially blocked arteries with a small tool designed to reduce deposits that cause narrowing or “hardening” of the arteries.<sup>1</sup> This procedure is very valuable. Many authorities recommend an angiography for any patient who is having surgery on blood vessels because it gives the medical team a “snapshot” of the patient’s individual body. Angiography is also useful for diagnostic and prognostic purposes. Angioplasty can treat some blocked arteries. This allows some people to avoid surgery. Angiography is a widely performed and expensive procedure (about \$3500 for an uncomplicated coronary arteriogram in 1999).<sup>4</sup> In 1999, 2 million angiographies with contrast materials (dye) were performed in American hospitals. There were 1.27 million cardiac catheterizations performed.

**The Role of Patient Anxiety:** Patient anxiety appears to be a significant problem in invasive procedures including angiography. Dr. Elvira Lang and associates wrote: “Insufficient treatment of pain and anxiety can cause cardiovascular strain and restlessness, which may jeopardize the success of the procedure. On the other hand, pharmacologic oversedation [over-medication] can provoke respiratory and cardiovascular depression, thereby increasing the procedural risks and delaying the patient's recovery.” High levels of patient anxiety can prolong angiographies. Patient anxiety can also increase use of sedation and pain medication, and increase risks of complication.

**Non-drug treatment of patient anxiety:** Among the most effective non-drug approaches to reducing patient anxiety are relaxation with guided imagery (self-hypnosis) and pre-procedure provision of information. Pre-procedure teaching, especially if tailored to how individual patients cope with stress, can reduce tachycardia (racing heartbeat) and signs of distress during procedures. Self-hypnosis, or relaxation with guided imagery can result in shorter procedures, less need for medication, lower anxiety, and fewer complications. Self-hypnosis (guided imagery) was effective even in patients with low hypnotizability scores. In one study, imagery in which patients develop their own images (“interactive imagery”) was more effective than pre-scripted imagery presented to patients. Similar benefits have been found for imagery and self-hypnosis in other procedures including endoscopy and MRI.

**Conclusion:** Guided imagery can reduce patient anxiety and medication use, and probably reduce time of procedures and frequency of complications.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR ANXIETY:**

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**Prevalence and Costs:** Anxiety disorders are the most common psychiatric condition in the United States, affecting more than 19 million people.<sup>1</sup> In 1996, anxiety disorders cost the US economy over \$46.6 billion in direct and indirect costs<sup>1</sup> and were responsible for 4.8 million office visits.

**What is Anxiety?** Anxiety disorders is an umbrella term used to describe a group of psychological conditions. The two major anxiety disorders are Generalized Anxiety Disorder (GAD) and Panic Disorder. Others include Post-Traumatic Stress Disorder (PTSD), phobias, separation anxiety, performance anxiety, and Obsessive-Compulsive Disorder (OCD). All of these conditions are marked by feelings of apprehension, tension, or uneasiness which can range from mild to incapacitating. Physical symptoms can include stress, palpitations, and sweating. The severity of these symptoms can vary. No single cause seems to be responsible for anxiety disorders. Both psychological and physical causes are usually involved. Genetics can also play a role.

**Medical Treatment of Anxiety:** Treatment depends on the precise anxiety disorder. Serotonin-reuptake inhibitors (SSRIs) are the most frequent initial medications prescribed. Other medications include benzodiazepines, tricyclics (if depression is also involved), MAO inhibitors (for OCD), beta-blockers (for phobias), and clonidine (for PTSD).

**Non-pharmacologic treatment including imagery:** The most effective approach is cognitive-behavior therapy (CBT). It is usually combined with medication. Many medical studies confirm the effectiveness of CBT<sup>3-7</sup> for anxiety. CBT can sometimes be so effective that it can replace medication in treating the symptoms of OCD and PTSD.<sup>8</sup> Studies also confirm the effectiveness of the mind-body techniques of guided imagery, relaxation, hypnosis, meditation<sup>21,22</sup>, and biofeedback. CBT and/or mind-body therapies have been effective in all types of anxiety disorders and across all age ranges, and patients reported feeling more in control of their lives. These positive benefits have been sustained in follow-ups as long as six years.<sup>2</sup> In a study of over 1000 patients, behavioral medicine (relaxation response, cognitive restructuring, exercise and nutrition) was able to significantly reduce anxiety as well as its medical symptoms. A biofeedback study of 45 people with GAD showed “significant reduction” in one measure of anxiety and its physical and psychological symptoms. Herbert Benson, a researcher famous for his studies on relaxation, and his colleagues reported the effectiveness of meditation-based relaxation and self-hypnosis in the treatment of anxiety. A small study (20 subjects) showed that anxiety and platelet MAO levels were significantly lower after using relaxation training. A study of people with OCD showed that mental imagery could be used successfully to “freeze” the anxiety “trigger” in order to reduce fear and avoidance behavior in subjects. Self-help audiotapes and/or multimedia self-help programs have also been effective.

**Conclusion:** A program that includes imagery, relaxation, and behavioral changes can be a low cost, effective way for patients to actively participate in managing the symptoms of anxiety disorders.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR ARTHRITIS:**

**Definition of the Problem:** Arthritis refers to a group of more than 100 conditions that cause pain, stiffness, and swelling in the joints. Occasionally there is damage to other structures as well. All the major forms of arthritis are chronic conditions, and most get worse over time.

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Osteoarthritis, the most common form, is a degenerative joint disease. Rheumatoid arthritis (RA), the second most common form, is considered an autoimmune condition.

**Scope and cost of Problem:** Arthritis is the most common chronic illness in the United States.<sup>1</sup> According to the Centers for Disease Control, almost 70,000 people in the United States have some form of arthritis or joint pain.<sup>1</sup> Arthritis is also the leading cause of disability in this country.<sup>1</sup> The CDC reports direct and indirect annual costs of arthritis were over \$82 billion<sup>1</sup> in 1995. Arthritis accounts for 36 million physician visits per year and 750,000 hospital admissions.<sup>1</sup>

**Medical and Complementary Treatment:** The main classes of arthritis medications are the non-steroidal anti-inflammatory drugs (NSAIDs). There are also many secondary treatments including methotrexate, gold compounds, d-penicillamine, hydroxychloroquine, sulfasalazine, and newer drugs such as Enbril (anti-tumor-necrosis factor). All of these medicines ôhelp but do not cure,ö according to rheumatologist Earl J. Brewer, Jr., MD. People also take a tremendous variety of nutritional supplements and herbal medications for arthritis, the most popular of which are glucosamine and chondroitin. The annual cost of prescription arthritis medications is \$9.4 billion and money spent on herbal and other nonprescription medicines is \$2 billion. Acupuncture has been found useful for some people with osteoarthritis.

**Arthritis Self-Management Programs:** The Arthritis Self-Management Program (ASMP), developed at Stanford and now presented at over 200 facilities worldwide, has been highly successful and cost-effective.<sup>4,5,6</sup> The Arthritis Foundation now markets this course as the Arthritis Self-Care Program. Along with education about arthritis, exercise, nutrition, and medication use, ASMP features practice with relaxation, guided imagery, other cognitive pain management techniques, communication skills, doctor-patient relationship skills, and group support. Imagery and relaxation exercises are used in five of the six ASMP sessions, and are considered important parts of the program's success.

Benefits include better self-reported health, improved routine function and comfort levels, and decreased healthcare usage (doctors visits?). These benefits could not be adequately explained by improved health behaviors, and better self-sufficiency (self-care?) is considered a likely major contributor to the positive outcomes.

**Imagery and Self-Hypnosis:** Dozens of studies show moderate effectiveness for relaxation, hypnosis, and psychological support in arthritis. A literature review of relaxation and psychotherapy in people with RA found significant reduction of pain and disability, and improvement on several psychological characteristics. A study comparing hypnosis with relaxation in osteoarthritis showed that both had significant benefits in reducing pain and medication for pain, with hypnosis somewhat more effective. Varni and Gilbert published a case study showing self-hypnosis reduced pain medication use in an arthritic patient with hemophilia. Imagery, relaxation and self-hypnosis have proven effective in a number of chronic pain conditions.

**Conclusion:** Guided imagery and relaxation are valuable skills for increasing self-efficacy and self-management behavior. Used with appropriate medical treatment, a guided imagery program can help increase patients' perceived well-being and self-management skills, and reduce consumption of medical resources.

## RESEARCH FINDINGS USING GUIDED IMAGERY FOR ASTHMA:

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**Prevalence and Costs:** Asthma is a large, growing, and expensive health problem in all industrialized countries.<sup>1</sup> As of 1998, 17 million Americans (12.2 million adults) were affected by asthma.<sup>2</sup> Asthma generated 9.3 million office visits and was responsible for 4487 deaths in America in 2000. In 1994, cost to the economy totaled \$10.7 billion -- \$6.1 billion in direct health care costs, and \$4.6 billion in indirect costs.<sup>2</sup> In 1994, there were 451,000 hospital admissions for asthma, and in 1995, acute asthma episodes resulted in 1.8 emergency room visits. Fifteen percent of disabling asthma cases are Occupational Asthma, triggered by exposure to irritants at work.<sup>4</sup> Occupational asthma is the most prevalent form of occupational lung disease in industrialized nations. Asthmatic workers are twice as likely to retire early; they miss more work, and rate their work ability and general health as poorer than workers without asthma. Occupations most at risk include baking, electronics, chemical and metal manufacturing, paints and plastics, farming, and house cleaning.

**What is asthma?** Asthma is thought to result from genetic sensitivity, environmental exposure to irritants and stress responses that lead to a cycle of “hyper-responsiveness” and inflammation in the bronchi. This inflammation, along with excess mucus production, can close airways and make breathing out difficult. Once established, this cycle is difficult to stop.

**Medical treatment of asthma:** Standard medical treatment includes daily use of an inhaled steroid medication, as-needed use of a bronchodilator (or “rescue medication”), and avoidance of environmental asthma “triggers.” (Oral medications are sometimes needed as well.) The biggest problem in asthma care is noncompliance (failing to obey doctors’ instructions or take medication as directed), particularly with the steroid inhalers. Seventy percent of patients in some studies either failed to take prescribed daily inhalers, or never received them.

**Non-pharmacologic treatment including imagery:** Behavioral and mind/body approaches are also used to control inflammation and spasm. In two British studies, hypnosis reduced hyperresponsiveness, and increased forced expiratory volume (ability to breathe out) through one year of follow up in adult patients who were easily hypnotized (susceptibility).<sup>9</sup> In a group of 250 patients who had not been tested for susceptibility, 59% of those receiving hypnotic suggestion were rated as “much better,” compared with 40% of a group who received relaxation training without hypnotic suggestions. Guided imagery uses deep relaxation and positive suggestion in ways nearly identical to hypnosis. The terms “self-hypnosis” or “auto-hypnosis” are used almost interchangeably with “guided imagery” in the literature. A meta-analysis by Hackman, Stern, and Gershwin showed that, though larger, more randomized studies were needed, hypnosis has shown definite, long-term effectiveness in asthma, and that effectiveness is enhanced by the use of self-hypnosis. In one study, 303 pediatric asthmatics were offered hypnosis; some patient’s symptoms resolved after one session, and there was measurable improvement in 80% of those participating. No patients’ symptoms worsened. In another study of self-hypnosis with children, the researcher followed participants for a mean of nine months post-hypnosis. Positive results were recorded in 13 patients. Two of the children had no more symptoms and were able to discontinue their medication. Hypnosis, combined with an education program, improved pediatric cooperation and compliance with taking peak flow measurements. In another study, adult asthmatics who listened to imagery tapes were less depressed and anxious, and were able to use less medication. Asthma education programs that instruct patients about

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asthma, medications, and avoiding triggers, as this program does, help to reduce asthma morbidity.

**Conclusion:** A low-cost imagery intervention may reduce asthmatic patients' anxiety and use of medical services, and improve their pulmonary function.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR BACK OR NECK PAIN:**

**Scope of the Problem:** Estimates indicated that at any given time, 15%-20% of Americans have back pain, and 70% have had back pain at least once in their lives. Back pain is the second leading cause of absenteeism from work. Work-related back injuries are the country's number one occupational hazard. The cost to Americans of lower back pain is \$50 billion a year. According to government statistics, there were 14.3 million office visits for conditions associated with back pain. One study estimated that almost one-third (or 203 million) of all visits to CAM providers in 1997 were for back or neck pain. Being in chronic pain can result in many psychological side effects, including anger, anxiety, depression, low perceived quality of life, low self-efficacy, and poor coping skills.

**Mind-Body Approaches:** Many studies demonstrate the effectiveness of cognitive-behavioral measures, including relaxation, meditation, and guided imagery, in reducing pain perception, physician visits and narcotic use, and increasing feelings of well-being and self-efficacy in pain conditions. One study found that cognitive-behavioral intervention, including relaxation and imagery, was able to stop back and neck pain from becoming a chronic disability in 88% of the 253 cases studied.. J. Kabat-Zinn found meditation successful in a mixed group of chronic pain patients, including those with back pain. Location of pain did not appear to make a difference in its effectiveness. Researchers recently conducted an extensive review of published research studies that involved psychosocial-mind-body interventions (including imagery, relaxation, CBT meditation, imagery, and hypnosis) and concluded that "there is considerable evidence" that these approaches are effective in the treating chronic lower back pain. Another study reported that a higher percentage of patients had used complementary therapies for their back and neck pain than had used conventional approaches (54% vs. 37%). A higher percentage of those using complementary methods found those approaches "more helpful" than those who used conventional approaches. Other studies of imagery in chronic pain include a study of tension headache patients.<sup>11</sup> The imagery group were three times as likely to report major pain reduction ( $p=.004$ .) Relaxation and imagery has significantly reduced pain in studies involving patients with cancer, arthritis, fibromyalgia, hemophilia, and migraine headaches. In all studies with follow-up, improvements in pain, function, and mental outlook were sustained through follow-up lasting as long as 18 months.

**Conclusion:** Guided imagery can be a cost-effective complementary treatment for chronic pain, including back pain.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR BACK AND NECK SURGERY:**

**Definition of the Problem:** Back and neck surgeries are usually done to repair a lesion that hasn't responded to more conservative treatment. Lesions can be caused either by disease or injury. Some of the most frequently performed back and neck surgeries are discectomy, laminectomy, spinal fusion, and device implantation.

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**Scope and Cost of the Problem:** Back pain is the second most common medical complaint in the country, and accounts for 16.2 million office visits per year. Lower back pain alone results in direct and indirect costs to the U.S. economy of \$100 billion.<sup>1</sup> Between the years 1983-1994, the incidence of lower back surgery rose from 190,000 to 335,000.<sup>3</sup> About 200,000 lumbar laminectomies and discectomies are performed annually<sup>4</sup>; about 90,000 spinal fusions are performed. For the year 1999, American Association of Neurological Surgeons members alone performed 533,839 spine surgeries.

**Medical Treatment:** Most chronic back and neck pain patients are initially treated with more conservative approaches, including medications to relax the muscles oral and topical pain medications, TENS and other devices, physical therapy, acupuncture, and learning about how to change your environment to make it more “body friendly” (ergonomics modification). Back and neck surgeries are usually performed because these other methods of treatment have failed.

**Mind-Body Approaches to Coping with Surgery:** Since pharmacologic sedation often increases the risk of low blood pressure and lack of oxygen, doctors have looked at other ways to reduce pre-surgical anxiety. Most effective have been relaxation with guided imagery (self-hypnosis) and pre-procedure provision of information. Self-hypnosis, or relaxation with guided imagery, used before and during surgery has resulted in shorter surgical and medical procedures. These techniques can also significantly reduce post-surgical pain and the need for post-operative pain medication, shorten the time it takes for the intestines to return to normal functioning, and reduce the length of hospital stay. There is also some evidence that mind body therapies like hypnosis and imagery can reduce blood loss and speed wound healing. Hypnosis and guided imagery have been used effectively in back and neck surgeries. High patient satisfaction with guided imagery tapes have been reported by several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles); and “guided imagery with the use of audio tapes” is routinely used and recommended by Mehmet Oz, MD, a cardiac surgeon and Director of the Complementary Care Center at Columbia Presbyterian Medical Center (New York).

**Conclusion:** Guided imagery can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR BIOPSY:

**Value, Prevalence and Costs of Biopsy:** A biopsy is the removal of a small piece of tissue for microscopic examination or testing. Biopsies can be done on almost any part of the body. Biopsies are among the most commonly performed medical procedures in the America. For example, in 1995, about 600,000 prostate biopsies were performed in the U.S.A.<sup>1</sup> 700,000 breast biopsies were performed, at an average cost of \$1,500 each.<sup>1</sup> And a half million biopsies of the GI tract were done in that year. Other areas frequently biopsied include the liver, lungs, and lymph structures.

Biopsies are an extremely valuable diagnostic tool, not only for confirming or ruling out cancer, but for assessing other conditions in the lungs, liver, and GI tract. According to the National Institutes of Health<sup>2</sup>, the two major methods of biopsy are needle biopsy and open biopsy, which is a surgical procedure. Needle biopsies generally cost one third to one half as much as surgical biopsy, and have a quicker recovery time. Endoscopic biopsies are also frequently performed.

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**Problems with Biopsy:** The complication rate in all types of biopsies is quite low. One to two percent of patients may develop significant low blood pressure, which is often stress-related.<sup>4</sup> However, biopsies sometimes cause significant pain. For example, the American Journal of Gastroenterology Editors wrote that patient facing liver biopsy “frequently have anticipatory anxiety, which would be expected of a procedure that is associated with pain in 30% of patients, severe complications in 0.3%, and death in 0.03%.”

A far greater problem for many patients is fear of the results of biopsy. For example, women who are called back after screening mammography “may interpret need for further examination as meaning a definite diagnosis of cancer, referral to an operation, or even death,” according to Arja Aro, Senior Researcher at the National Public Health Institute of Finland.” This fear of bad news keeps some patients from getting timely biopsies. This delay, however, endangers their lives and adds an unknown, but significant amount to medical costs. Even when patients do come for their biopsies, they may suffer from tremendous anxiety, which can increase their need for sedation and worsen their quality of life.<sup>6</sup> Therefore, interventions that reduce patients’ anxiety and increase their level of confidence are needed.

**Pharmacologic and Non-pharmacologic Anxiety Treatment in Biopsy:** Most patients undergoing biopsy receive pain medication and sedation, either orally or intravenously. Because sedation requires increased monitoring by medical staff, it increases the costs, the recovery time, and the risk of low blood pressure. Hypnosis, self-hypnosis, relaxation and guided imagery can reduce anxiety and pain in adults undergoing liver and breast biopsies, and in children undergoing bone marrow aspiration. Similar techniques have resulted in reduced anxiety, fewer complications, less need for medication and, in some cases, shorter procedures in angiography, upper intestinal endoscopy, abdominal surgery, and Magnetic Resonance Imaging.

**Conclusion:** Guided imagery can reduce patients’ anxiety and improve their ability to cope with biopsy-related stress. This anxiety reduction could potentially result in improved patient cooperation with ordered biopsies, reduced medication use, and lower cost savings in some cases.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR CANCER PAIN:

**Definition and Scope of the Problem of Cancer Pain:** Pain is among the most common and most feared symptoms of cancer. According to the Kansas Cancer Pain Initiative, about 51% of all cancer patients experience significant pain at some point during the course of their disease. Based on analysis of numerous studies, this same study states that approximately 25% of early stage cancer patients have significant pain. This figure jumps to 75-80% of patients in advanced stages. National costs of cancer pain management are difficult to estimate. However, in 1990, a single hospital, City of Hope, estimated their costs for hospitalizations for uncontrolled cancer pain at over \$5 million. This cost would have risen to \$9 million if their patients receiving home parenteral infusions of morphine had been in-patients.

**Medical Treatment of Cancer Pain:** Various types of drugs are used to control cancer pain: non-steroidal anti-inflammatories (NSAIDs), COX-2 inhibitors, and opioids (such as morphine or Demerol). Non-pain medications can also help: drugs to relieve cramps, stabilize the heart rhythm, seizure medications, sleep aids, and drugs to relieve depression and anxiety.<sup>3</sup> Used correctly, these medications can completely control pain in over 50% of cases, according to cancer specialist Daniel Brookoff, MD. For pain that doesn’t respond to oral medications, opiates



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can be given intravenously (I.V.s) or directly into the spinal canal. In even more severe cases, surgery and radiation are sometimes used effectively. Use of a TENS (Transcutaneous Electrical Nerve Stimulation) device sometimes helps. Pain specialists estimate that pain could be effectively controlled in nearly all cancers. Failure to adequately treat cancer pain can lower quality of life and lead to unnecessary hospital stays. The indirect costs in lost productivity and missed work for patients and caregivers are unknown but must be substantial, as is the burden of unrelieved suffering.

**Problems in Cancer Pain Treatment:** Some physicians are not adequately informed about the value of non-narcotic medications, particularly anti-depressants. Likewise, many patients do not request or use available medications. They may avoid anti-depressants and take less of their narcotics because they are afraid of addiction. Depression, insomnia and stress can greatly increase the perception of pain and suffering.

**Non-medical Treatments Including Guided Imagery:** Various complementary therapies have been found successful to varying degrees in cancer pain. These include acupuncture, hypnosis, and guided imagery. Two studies at the Fred Hutchinson Cancer Center demonstrated significant relief of cancer pain with relaxation and self-hypnosis consisting of relaxation and guided imagery. Researchers at Sloan-Kettering Memorial Cancer Center reported that “randomized trials support the value of hypnosis for cancer pain and nausea; relaxation therapy, music therapy, and massage for anxiety. Such complementary therapies are increasingly provided at mainstream cancer centres.” A University of Minnesota researcher reported significant pain relief from a hypnosis technique called glove anesthesia. Self-hypnosis, relaxation and meditation have been significantly effective in many types of pain, including cancer. Kabat-Zinn and others reported dramatic improvement in the chronic pain in a group of 90 patients who participated in a 10-week meditation program. These patients had increased comfort and less psychological distress. In some cases, they were able to use less medication. Other researchers’ patients achieved profound relief of arthritis pain with self-hypnosis (guided imagery). Many times, doctors aren’t the first ones to suggest alternative pain approaches. One doctor at the Eastern Virginia School of Medicine found that many cancer patients come to that clinic familiar with hypnosis and request it for their pain. In a 2003 review of the literature, the authors reviewed complementary and alternative medicine (CAM) use in end-of-life issues such as pain. They found that self-hypnosis was one of the techniques that may provide relief in cancer pain, and that relaxation and imagery specifically could help with the pain of mouth sores (oral musositis).

**Conclusion:** When used along with prescribed medications, guided imagery can contribute to controlling pain and anxiety in cancer patients. In some cases, guided imagery can allow reduction of medication usage.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR CORONARY HEART DISEASE:**

**Definition of the Problem:** Coronary heart disease (CHD) results when deposits called plaques build up in arteries. This leads to atherosclerosis, a condition that reduces blood flow and oxygen. CHD, also called coronary artery disease (CAD), develops over time, and leads to partial or complete blockage of the arteries involved. One major cause of atherosclerosis is having high lipids (fats) such as cholesterol and triglycerides in the blood. Other major causes ,

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are hypertension, and smoking. Stress, obesity, and a sedentary lifestyle also contribute to the development of CHD. Other risk factors are heredity, race, age, diabetes, depression, low socioeconomic status, social isolation and male gender. CHD can be “silent,” producing no symptoms, or patients can experience shortness of breath, dizziness, chest pain (angina), or a heart attack.

**Scope and Cost of the Problem:** According to the American Heart Association, as of 1999 12.6 million Americans had CHD.<sup>1</sup> The direct and indirect costs of CHD to the U.S. economy exceed \$129.9 billion annually. Medicare alone spends more than \$10.6 billion annually in its treatment. The most common form of heart disease, CHD is the leading cause of permanent disability in the U.S, and is the primary cause of death in Americans, both male and female -- over 725,000 deaths annually.<sup>4</sup>

**Medical Treatment:** Treatment for CHD depends on many factors, including the severity of the disease and any comorbid conditions. Frequent treatments include aspirin, beta-blockers, nitrates, lipid-lowering medications, and ACE inhibitors. Surgical procedures include coronary artery bypass, and angioplasty. Recommended lifestyle changes include quitting smoking, maintaining correct weight, regular exercise, and following a diet low in fat and cholesterol.

**Lifestyle Changes, Emotions, and Well-Being:** A landmark 1998 study by Dean Ornish and associates demonstrated that lifestyle changes (diet, exercise, relaxation, and social support) can dramatically reverse CHD.<sup>6</sup> Other studies have shown that emotions play a major role in CHD. Fear, grief, and anxiety can trigger cardiac events.<sup>7-9</sup> Anger can be a trigger<sup>7,10-13</sup>, and depression can affect the outcome of long-term survival. The role of stress in the development and progression of CHD both in men and women is also well documented.

**Mind-Body Approaches Including Guided Imagery:** Relaxation and guided imagery can reduce the impact of CHD in several ways. Anger and other possibly harmful emotional states are reduced by the inner-focused, relaxed state induced by guided imagery and other mind-body modalities. Additionally, a sense of emotional well-being can be improved by the use of these therapies. Guided imagery and relaxation can reduce stress, and lower heart rate and blood pressure.<sup>20-23</sup> Meditation produces similar physiological results. According to a review of 23 major heart disease studies, when psychosocial approaches were added to standard medical treatments, survival and further cardiac event rates improved significantly. Complementary approaches like relaxation training and imagery are so effective that they are routinely done at prestigious facilities such as Columbia Presbyterian Hospital’s Department of Surgery. Relaxation, imagery, and education are important parts of Stanford’s Chronic Disease Self-Management Program. The results of a lifestyle study showed that 80% of people who used complementary approaches were able to avoid cardiac surgery — a savings of almost \$30,000 per patient.<sup>29</sup> Self-management of chronic conditions including CHD improves symptom management and reduces medical costs.

**Conclusion:** A low-cost guided imagery-based program can help to lower stress and blood pressure, enhance an overall sense of emotional well-being, and improve compliance with lifestyle changes. Each of these factors, in turn, can aid in slowing, halting or reversing the progression of CHD and in reducing the number of further coronary events, re-hospitalizations, and surgeries.

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**RESEARCH FINDINGS USING GUIDED IMAGERY FOR CHEMOTHERAPY:**

**Scope of the Problem of Chemotherapy Side Effects:** Approximately 1,334,100 Americans are expected to be diagnosed with cancer in 2003<sup>1</sup>, and about half will receive chemotherapy as part of their treatment regimen. As many as 25% of chemotherapy patients experience anticipatory nausea. Vomiting, nausea, fatigue, and depression are common after having chemotherapy. Painful side effects (e.g., mouth sores) can also occur. Severe side effects like fatigue and anemia can lead to loss of time at work for the patient and/or the caregiver, additional office visits, and failure to complete chemotherapy treatment -- all of which contribute to morbidity and mortality, and to the total in 2002 of \$171.6 billion direct and indirect costs of cancer.

**Research in Mind/Body Interventions for Chemotherapy:** Some people undergoing chemotherapy become nauseated prior to a chemotherapy treatment. This is called “anticipatory nausea.” Hypnosis has been successful in reducing or eliminating anticipatory and post-treatment nausea in both adults and children.<sup>4-6</sup> Relaxation training is also effective in reducing anticipatory nausea.<sup>7</sup> The authors of one meta-analysis concluded that relaxation training was so effective at helping emotional adjustment, tension, mood, and anxiety that “relaxation training should be implemented into clinical routine for cancer patients in acute medical treatment.” Imagery’s effectiveness as a complementary treatment extends to pain as well. One study demonstrated that imagery, relaxation and cognitive behavioral training can reduce the pain of certain chemotherapy side effects. Guided imagery can also help people tolerate chemotherapy treatments and have a better sense of well-being. In one study patients using chemotherapy-specific guided imagery reported a “significantly more positive experience”. Having a better chemotherapy experience is important because as many as 31% of chemotherapy patients prematurely stop treatment because of anxiety or depression.<sup>11</sup> Relaxation and imagery can directly relieve anxiety and depression. They can also indirectly help these conditions by improving quality of life and reducing side effects. This may let patients successfully complete treatment. A study of 96 breast cancer patients who used guided imagery and relaxation were more relaxed during chemotherapy, and had a better quality of life. This led the study’s authors to conclude that relaxation and guided imagery were “simple, inexpensive and beneficial” for patients undergoing chemotherapy. Researchers recently concluded that chemotherapy patients who use self-help programs to manage their stress do even better than people who receive professional stress-reduction help. They have more energy, can function better, and feel better mentally. The economic consequences are equally impressive. The self-help program studied cost 66% to 68% less than a typical professional psychosocial chemotherapy preparation.

**Conclusion:** Relaxation with guided imagery is a safe, inexpensive technique that can improve chemotherapy patients’ quality of life, reduce side effects, and improve their chances of completing therapy.

**RESEARCH FINDINGS USING GUIDED IMAGERY FOR CHILDBIRTH:**

**The value of childbirth preparation:** About four million births take place annually in the United States.<sup>1</sup> Many of the mothers involved are looking for ways to participate more actively in preparation for delivery and in the process of labor, and to avoid “medicalized” births. A search for books on “natural childbirth” on Amazon.com, conducted on June 9, 2003, yielded 309 titles. Another indicator of this trend is the rise in the use of midwives, which rose from

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0.9% in 1975<sup>2</sup>, to nearly 10% of vaginal deliveries in 2001.<sup>3</sup> A recent survey of nurse midwives revealed that 48.8% of CNM'S recommend mind-body techniques for the birthing process. Although the programs of Lamaze and Dick-Read are the most widely used forms of childbirth preparation in this country, psychological and educational preparation with self-hypnosis and guided imagery have proven effective in several studies. Self-hypnosis and guided imagery ù the terms are used interchangeably in the literature, combining deep relaxation with positive suggestion for a normal, comfortable birth.

In one study , a group of 22 women who learned self-hypnosis in a four-session program had shorter hospital stays and fewer surgical interventions than a matched control group who received psychosocial counseling sessions. Harmon, Hynan, and Tyre studied 60 pregnant women, half of whom received hypnotic suggestions for an enjoyable childbirth, deep relaxation, and glove anesthesia. The treatment group had quicker progress through Stage 1 of labor, less reported pain, less use of medication, and their babies had higher Apgar scores at 1 and 5 minutes.

Imagery and self-hypnosis have also demonstrated effectiveness in reducing complications of pregnancy. For example, Mehl<sup>9</sup> used guided imagery with 100 women whose babies were in breech positions at 37 to 40 weeks' gestation. He compared them with a matched comparison group. In the hypnosis group, 81% of the babies spontaneously "turned" to the proper position, compared with 48% of the comparison group. Gentz<sup>4</sup>, in her recent review of the literature, concluded that hypnosis is "a helpful adjunct" for women during the birthing process.

**Potential Cost Savings:** According to the CDC, in 2001 the number of cesarean births in the United States increased by 5%, representing a rise for the fifth consecutive year.<sup>11</sup> Reduction of cesarean birth rates to European levels would save approximately \$1.5 billion per year in the U.S., according to a New England Journal of Medicine article of Jan. 7, 1999. Whatever the method of birth, reduction of hospital stays and complications, like those demonstrated in the studies mentioned above, would save additional resources, although the amount has not been calculated.

**Conclusion:** Guided imagery can increase women's feelings of control and confidence in the labor process, significantly reduce their perception of pain, help them handle complications that might arise, and reduce costs by shortening hospital stays and lowering the frequency of surgical interventions.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR CHILDREN WITH ALLERGIES:**

**Definition of the Problem:** Pediatric allergies affect more than 20% of school age children. Types of allergies include allergic rhinitis, atopic eczema and dermatitis, and allergies to food, pets, and insect stings. Allergies frequently contribute to childhood asthma, chronic otitis media, and sinusitis. Allergy symptoms include itching, sneezing, runny nose, rash, itching and cough. Allergies can also cause fatigue, difficulty concentrating and thinking, and insomnia, all of which can significantly affect patients' quality of life.

**Scope of the Problem:** According to the American Academy of Allergy, Asthma and Immunology, allergies rank sixth in cost on the list of chronic diseases in the United States. One in five children visiting a pediatrician has a major allergy problem. According to the National Institute of Allergy and Infectious Disease, approximately 2 million children have allergies.

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Atopic dermatitis is the most common skin problem in children under age eleven.<sup>7</sup> If both parents have allergies, there is a 70% chance that their child will also have allergies. Each year, American children lose 2 million school days because of allergies. While no specific cost figures are available for pediatric allergies, the total treatment cost of allergies in the United States is about \$2 billion a year. There are 16.7 million office visits a year just for allergic rhinitis (AR), and AR's estimated cost, based on direct and indirect costs, was \$2.7 billion in 1995. This number does not include the costs for related problems such as sinusitis and asthma.

**Medical Treatment:** Standard medical treatment for allergies includes antihistamines, decongestants, steroids, cromolyn (in the respiratory tract), skin ointments, eye drops, decongestant and antihistamine nasal sprays, and newer medications including leukotriene receptor antagonists. None of these medications cure allergies, and all oral medications have significant side effects. Antihistamines cause drowsiness, although newer drugs are less sedating. Decongestants raise blood pressure and heart rate, and steroids can cause a variety of physical and mental symptoms. Allergy shots do reduce sensitivity to allergens in some patients, but the shots are expensive, require frequent clinic visits, and do not work for a significant group of patients.

**Complementary Treatment including Imagery and Self-Hypnosis:** The causes of allergy include hereditary tendencies, past and present environment, and stress. Anxiety is strongly linked to allergies, especially rhinitis and dermatitis. Anti-anxiety programs including relaxation and guided imagery have been used with great success in allergic dermatitis. In one study, 19 out of 20 children showed immediate improvement in their severe, resistant atopic dermatitis after using hypnotherapy.

These methods have been less studied in allergic rhinitis (AR), probably because treatment results are harder to measure in AR than they are in dermatitis. However, when Madrid et al. taught a two-session course in self-hypnosis to a group of 34 patients with a variety of allergies, 76% reported improvement, and 86% reduced medication use. Improvement was maintained through two years of follow-up.<sup>21</sup> Behavioral approaches with demonstrated effectiveness include cleaning and ventilation to reduce allergens, allergen avoidance, regular relaxation, exercise and healthier eating.

**Conclusion:** Guided imagery can improve children's ability to cope with allergies, and reduce allergy symptoms, office visits, and medication use in many cases.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR CHILDHOOD ASTHMA:**

**Definition of the problem:** Pediatric asthma is chronic inflammation of the airways. Children with asthma have inflammation of their bronchial tree, leading to partial airway blockage by swelling and mucus. Their airways also narrow. This combination can make breathing extremely difficult. The causes of asthma are not fully understood, but include genetic tendencies, exposure to environmental irritants, and stress.

**Dimensions and costs of the problem:** Statistics for the year 1998 indicate that chronic pediatric asthma affects 4.8 million children in the United States. The incidence of pediatric asthma increased 72% between 1980 and 1994, probably due to increased indoor and outdoor air pollution.<sup>3</sup> Asthma is a leading cause of missed school (10 million), 570,000 emergency room visits, and the care of asthmatic children cost the economy \$1 billion due to missed work days for parents. According to Glaxo, Smith, Kline's web site the estimated annual cost of treating

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asthma in children under 18 years of age in 1999 was \$3.2 billion. Asthma is the most prevalent chronic condition in American children.

**Medical Treatment of Pediatric Asthma:** A wide range of asthma medications has greatly improved treatment of young asthmatics. Steroid inhalers can now reduce inflammation. Bronchodilators can open constricted airways. A number of oral medications can moderate immune response and reduce airway sensitivity. Improved home monitoring of asthma can greatly reduce the incidence of respiratory emergencies. Use of peak flow meters to check children's respiratory status can give ample warning of an impending attack.

**Problems in treating pediatric asthma:** Several difficulties remain in medical management of pediatric asthma. As many as 70% of patients do not take their steroid inhalers as prescribed. Most patients and families still do not have a peak flow meter or do not use it. The expense of asthma medications and medical care is a major problem for some families. Many families do not regard asthma as a serious problem, and stressful family dynamics can worsen a child's condition or ability to cope with it.

**Non-medical therapies including imagery:** There is a large body of research on the effective use of self-hypnosis, guided imagery, hypnosis and relaxation in asthma in adults, and children. For example, pulmonologist Ran Anbar found that 13 of 16 pediatric patients who learned self-hypnosis (guided imagery) had no shortness of breath within one month, and this improvement continued for nine months of follow-up. Two of seven patients on inhaled steroids were able to discontinue them, and their lung function remained normal. In another Anbar study, 303 pediatric asthmatics were offered hypnosis (with 254 participating and continuing to follow up). Some of these children's symptoms resolved after one session, and there was measurable improvement in 80% of the others. No one's symptoms got worse. In another study, after 25 preschoolers and their parents used a relaxation and imagery program, the children's symptoms were less severe and they needed fewer office visits. The number of asthmatic episodes did not change significantly, but their ability to cope did. Preschoolers developed new cooperation in asthma-care skills, including cooperative and consistent performance of peak flow measurements. In addition, relaxation and imagery has been found to reduce stress and improve patient and family coping with asthmatic children. Pulmonary rehabilitation breathing exercises, massage, and increased self-monitoring with peak flow meters<sup>5</sup> have also been shown effective in pediatric asthma.

**Conclusion:** Guided imagery can improve coping skills, willingness to follow treatment regimens and lifestyle changes, and reduce the severity, though perhaps not the frequency, of asthmatic episodes.

### **EVIDENCE OF EFFICACY FOR GUIDED IMAGERY FOR CHILDREN AND ADOLESCENTS UNDERGOING CHEMOTHERAPY:**

**Scope of the Problem:** According to the National Cancer Institute, approximately 8,600 American children were diagnosed with cancer in 2001.<sup>1</sup> The most common childhood cancer, totaling almost one-third of these cases, is leukemia, a condition for which chemotherapy is the most effective treatment. Unfortunately, chemotherapy is associated with numerous side effects. Vomiting, nausea, fatigue, and depression are common after treatments. Other side effects are nerve pain, mouth sores, and pain upon touching or being touched. There are also significant behavioral effects. Younger children's behavioral distress usually decreases as treatment goes

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on, while adolescents' tends to increase. Adolescents also tend to have more nausea and vomiting than their younger children. Failure to cooperate with medical recommendations is frequently a problem, with adolescents tending to be less compliant than young children. Severe side effects, and non-compliance because of those side effects, can lead to loss of time at school for the child, loss of time at work for the caregiver, and additional office visits to the doctor -- all of which contribute both to death and disability, and to the annual costs of cancer.

**Research in Mind/Body Interventions for Chemotherapy:** Nausea can occur both after treatment, and before treatments ("anticipatory nausea"). Hypnosis has been successful in reducing or eliminating both types of nausea in adults and children. Relaxation training has also proven effective in reducing anticipatory nausea adults and children. As early as 1982, a study reported that relaxation significantly reduced anticipatory nausea. In one pediatric study, the hypnosis group had less anticipatory nausea and lower need for anti-nausea medication during both the first and second courses of chemotherapy ). Hypnosis, as well as distraction and relaxation, reduced both distress and nausea. Patients' well-being and ability to tolerate treatment are also enhanced by the use of guided imagery. Adult patients using guided imagery specifically geared toward chemotherapy reported a "significantly more positive experience".<sup>12</sup> Imagery is effective in pain relief, too. Imagery, relaxation and a psychological approach called cognitive behavioral training can reduce the pain of certain chemotherapy side effects. Relaxation and imagery can also relieve anxiety and depression by improving quality of life, and reducing side effects. Breast cancer patients who used guided imagery and relaxation were more relaxed during chemotherapy, and had a better quality of life. This lead the study's authors to conclude that relaxation and guided imagery were "simple, inexpensive and beneficial" for patients undergoing chemotherapy.<sup>14</sup> The National Cancer Institute has also recommended "relaxation therapy, guided imagery, hypnosis, music, and other techniques, ease your child's discomfort and fear" before and during cancer procedures. A pediatric guided imagery program can increase relaxation, coping skills, and compliance, and reduce anxiety, discomfort, and side effects of chemotherapy. A caregivers' guided imagery program can enable parents and others involved in the care of the child to reduce their stress, and increase their relaxation and coping skills.

**Conclusion:** Relaxation with guided imagery is a safe, inexpensive intervention that can improve pediatric chemotherapy patients' quality of life, reduce side effects, and help with anxiety and depression. This can help to improve compliance and lower incidents of stopping treatment before it is finished.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR COLONOSCOPY:**

**The value of colonoscopy:** Nearly 2.5 million colonoscopies are performed yearly in the United States, about 80% of them on an outpatient basis (that is, without a hospital stay). The majority of colonoscopies are done to detect colon cancer, the second leading cause of cancer death in the U.S. There are about 130,000 new cases and 57,000 deaths from colon cancer annually. According to the American Cancer Society, early detection can increase survival in colon cancer by 90%, but only 37% of colon cancers are detected early. Large HMOs including Kaiser Permanente and Group Health encourage regular screening with sigmoidoscopy and follow-up colonoscopy because it highly cost-effective, too.

**Problems with colonoscopy:** Many patients avoid recommended sigmoidoscopies and colonoscopies out of fear of the procedure itself, or fear of what the procedure will find.

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Sometimes people are simply don't know about its potential benefits. Studies show that pre-colonoscopy anxiety is a significant problem. Providing people with information about the procedure can reduce anxiety and improve acceptance of the procedure. Distress due to intestinal cramping can make colonoscopy much harder for both patient and medical team. Severe anxiety sometimes prevents completion of the examination. But using intravenous (I.V.) sedation may cause hypoxia (low oxygen) and hypotension (low blood pressure) in some patients.

**The role of relaxation and imagery:** Many studies have shown that relaxation with guided imagery, hypnosis, and/or music can reduce patient discomfort, raise patient tolerance of and satisfaction with the procedure, and reduce need for sedation in colonoscopies, endoscopies, and some vascular procedures. Reduced sedation decreases complications, cuts the need for expensive monitoring, and allows patients and caregivers to quickly return to their daily lives. Increased satisfaction improves willingness to have future procedures, if needed.

**Conclusion:** Guided imagery is a safe, effective, and can increase patient compliance and satisfaction with colonoscopy, a procedure with known cost-effectiveness and outcome benefits. Guided imagery can reduce need for sedation, leading to direct cost savings and reduced chance of complications.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR CARPAL TUNNEL SYNDROME:**

**What is Carpal Tunnel Syndrome?** Carpal Tunnel Syndrome is a disorder of the hand that is caused by pressure on the median nerve, usually resulting from swollen tendons in the wrist. The "carpal tunnel" is actually a narrow tunnel formed by the bones and other tissues in the wrist. Nerves, tendons and ligaments pass through this tunnel to the hand. Repetitive motions, vibration, or stress day after day can cause the tendons to swell, become inflamed, and compress the median nerve.

**Dimensions of the Problem:** Carpal tunnel syndrome (CTS) results in the highest median number of days of work loss among all major work-related injury or illness categories.<sup>1</sup> In the past ten years, the medical literature has reported increasing numbers of cases of working people afflicted with CTS. Reasons for the increases of cases seems to be largely due to job automation and specialization. There were 3.4 million doctor office visits for CTS in 2000( and approximately 260,000 carpal tunnel release operations were performed in 2000 each year, with approximately 47% of these being work related. It is estimated that the economic burden of CTS to industry in the United States currently exceeds \$2 billion per year.

**Treatment for CTS:** Standard medical treatment usually begins with a wrist splint, resting the affected hand, and anti-inflammatory medications. Sometimes, the workplace can be modified to avoid repetitive motion, undue stress, and strain. Surgery is recommended if these initial treatments or steroid injections fail to relieve the pain, numbness or weakness. Full use of the hand usually returns approximately six weeks after surgery. As with any surgical procedure, there can be complications such as infection, bleeding, or unintended injury to other tissues.

**Mind/Body Treatments for Pain and Other Symptoms:** Mind/Body effects are part of almost every health-related issue. Patients with pain symptoms can clearly benefit from relaxation techniques, hypnosis, cognitive-behavioral therapy and meditation. Imagery has been shown in dozens of research studies to affect almost all major physiologic control systems of the body, including heart rate, blood pressure, metabolic rates in cells, and even immune



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responsiveness. Imagery has been shown to be especially helpful in working with pain. In a study involving patients with another repetitive motion injury were treated with biofeedback, relaxation training or a combination of both. Patients in all three treatment groups showed significantly greater reductions in pain than the control group. Patients receiving relaxation training showed the strongest short-term benefits on measures of pain, distress, interference in daily living, depression, and anxiety. In another study treating repetitive strain injuries, patients using hypnosis with biofeedback showed significant increases in hand temperature, with significant reductions in pain, compared to the control group.

**Conclusion:** Used as a complementary treatment, a low-cost guided imagery program can help patients cope better with their CTS, reduce their CTS symptoms, and save healthcare resources.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR DENTAL PROCEDURES:**

**Dental Procedures: Scope and Purpose:** About 78% of Americans say they saw a dentist between six months and a year ago.<sup>1</sup> American Dental Association surveys found that there were around 150,000 professionally active dentists in the U.S. in 1996, with the average dentist seeing about 3,900 patients per year. Dental procedures include cleaning, repair, and pulling (extraction) of teeth, treating infection of teeth and gums, replacing damaged teeth, and sometimes cleaning, treatment and repair of underlying bone. Dental procedures have significant medical value because dental infections can spread to other parts of the body, including the heart valves. Dental infections can challenge the immune system even when they remain confined to the teeth and gums. They can cause tooth loss, impair patient nutrition, contribute to high blood sugar and atherosclerosis (“hardening of the arteries”), and cause pain and suffering. Thus, timely, effective treatment of dental problems can prevent more expensive and damaging problems.

**Problems with Dental Procedures:** Unfortunately, 15 - 25 % of all patients have anxiety about dental work severe enough to cause them to delay needed treatment. As many as 15% can be classified as dental phobic, meaning they have strong anxiety at even the thought of going to a dentist. Dental phobia can lead to spread of infection and premature loss of teeth. Dental anxiety can cause longer, more difficult dental procedures, requiring some kinds of sedation or anesthesia. Sedation and anesthesia both add to the difficulty and cost of procedures.

**The Role of Relaxation and Imagery:** Many studies have shown that relaxation with guided imagery or hypnosis can reduce patient anxiety and increase the ability to tolerate procedures, improve patient satisfaction, speed healing and reduce the need for analgesic medication and sedation.<sup>7-9</sup> Similar benefits have been found in other medical procedures.<sup>10-12</sup> Reduced sedation decreases complications and cuts the need for expensive monitoring, as well as allowing patients and their caregivers a more rapid return to their daily lives.<sup>13</sup> Increased patient satisfaction also improves patient willingness to have other follow-up procedures done.

**Conclusion:** Guided imagery can reduce anxiety and medication use in dental patients, leading to increased patient satisfaction. This can result in shorter procedures, lower costs, and more regular dental visits.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR DEPRESSION:**

**Dimensions and Costs of the Problem:** Depression or Major depressive disorder (MDD), to use the medical diagnosis -- is the leading cause of disability in the U.S. and

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established market economies worldwide.<sup>1</sup> MDD affects approximately 9.9 million American adults annually. This figure represents about 5% of the population age 18 and older. About two thirds of these are women. MDD is defined as a depressed mood, accompanied by loss of interest in usual activities, changes in appetite, energy level, or sleep pattern, hampered mental and physical function, or suicidal thoughts or action. The annual medical costs of depression in the United States is over \$20 billion, which includes approximately 7 million hospital days and 13 million physician visits. The cost to business is estimated at \$24 billion per year in lost productivity, and depression accounts for more than half of all corporate mental health claims. Depression ranks among the top three workplace problems for employee assistance professionals, following only family crisis and stress. The milder form of depression, called dysthymic disorder, affects approximately 5.4% of the population age 18 and older during their lifetime, or almost 11 million Americans.<sup>2</sup> About 40% of dysthymics also meet the criteria for MDD. Depression can end lives as well as impoverish them. In 1997, 30,535 people died from suicide in the U.S. The vast majority of these people suffered from depression. Depression also contributes to increased deaths and severity of heart disease and other conditions. The causes of depression are thought to include genetic predisposition, stress, loss, physical symptoms such as pain or disability, low sense of self-efficiency, learned helplessness, repressed anger, distorted, negative thinking, and metabolic processes.<sup>9</sup> Decreased levels of the neurotransmitter serotonin are usually found in depressed patients.

**Treatment of Depression:** Selective Serotonin Reuptake Inhibitors (SSRIs) have largely replaced the somewhat more dangerous tricyclics and monamine oxidase inhibitors. Still, SSRIs are no more effective than those older drugs for most indications. SSRIs can have many side effects, especially gastrointestinal symptoms, loss of sexual desire or ability, tremors and nervousness. Fifteen to 30% percent of patients in various studies took themselves off an SSRI because of side effects. And 20-50% fail to show any benefit from these medications. Even when SSRIs work, they leave the patient unprepared for future episodes of depression, which may require re-treatment.

**Non-drug Approaches Including Imagery:** Psychotherapeutic approaches include cognitive therapy (changing patients' distorted negative thinking), behavioral therapy (especially stress management programs), psychodynamic approaches, solution-oriented brief therapy, and others. Many experts believe that combining psychotherapy or behavioral therapy with SSRIs is a more effective approach for depression than either treatment alone, at least in women.

Exercise often has lasting positive effects. Relaxation and guided imagery improved mood and decreased depressive symptoms in postpartum first-time mothers, cancer patients, post-op patients, multiple sclerosis patients, healthy adults, and college students.<sup>12-18</sup> The anti-depressant effects of guided imagery and relaxation may result from reduced anxiety and an increased sense of control over life stresses.

**Conclusion:** Guided imagery can improve people's ability to cope with depression, and will lift mood in many cases. This leads to decreased use of medical resources, better quality of life, and possibly, improved physical health status in some users.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR DIABETES:

**Definition of the Problem:** Diabetes mellitus (DM) refers to two related illnesses. Both affect how a person metabolizes glucose (sometimes called ôblood sugarö). In Type I diabetes,

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the pancreas stops producing insulin, possibly because of an autoimmune process of some kind. Type I diabetics need carefully monitored insulin replacement therapy to survive. Type I diabetics make up around 10% of the diabetic population. In Type II diabetes, the pancreas may or may not be producing enough insulin, but the insulin receptor cells have closed down (“insulin resistance”). The liver may also be affected, producing more glucose than the body needs.<sup>1</sup> Type II diabetes is associated with high-fat, high-calorie diets, sedentary lifestyles, overweight, and economic hardship. Stress is a major contributing factor in diabetes. It raises blood glucose by stimulating the release of glucose by the liver, and can also interfere with people following their doctors’ orders and recommendations.

**Scope and Cost of the Problem:** Diabetes is one of the most prevalent, most expensive, and fastest growing chronic conditions in the U.S.A. and the world. About 7 million Americans had diagnosed diabetes in 1996. In 1998, their care involved 513,000 hospital admissions, averaging 5.2 days per stay.<sup>7</sup> Direct medical expenditures for diabetes in 1997 totaled \$44.1 billion, about \$7.7 billion for glycemic care, and \$36.4 billion for treatment of complications and excess prevalence of general medical conditions. People visited doctor’s offices 21.4 million times in 1997. According to the American Diabetes Association, indirect costs of diabetes (from premature mortality and disability) in 1997 totaled \$54.1 billion. Total medical expenditures incurred by people with diabetes totaled \$77.7 billion or \$10,071 per person, compared with \$2,669 for people without diabetes. ADA research also found that: “In the United States alone, diabetes accounted for a loss of nearly 88 million disability days in 1997.” Diabetes is a chronic illness in which outcomes, quality of life, and use of medical resources depend almost entirely on patient compliance. That is, the ability to follow prescribed diet, exercise, glucose monitoring, infection prevention, and medication regimens. But many find this program burdensome and frustrating. Noncompliance is the biggest cause of diabetic complications, including kidney failure, blindness, amputation, and heart disease. Any program that enables patients to better comply with treatment plans will be extremely valuable and cost-effective.

**Medical Treatment:** Medical treatment of Type I diabetes centers on insulin replacement, which is usually done by self-administered injections. Continuous insulin pumps are now available for some patients and allow for greater glycemic control and ease of treatment. Type II diabetics are usually treated with oral medications (sulfonylureas, biguanides, alpha-glucosidase inhibitors, and thiazolidinediones).

**Compliance with Diabetes Treatment:** The Diabetes Clinical Control Trial demonstrated that diabetics who maintain excellent glycemic control face relatively little risk of kidney failure, retinopathy, or amputation. Improvements in glucose testing technology and medications have made glucose control possible for a greater number of diabetics. Still, the physical and psychological demands of tight control are difficult for many patients.

**The Role of Relaxation, Hypnosis, and Imagery:** Stress reduction is a vital part of diabetes management. This is especially true in Type II diabetes, where it appears to lower blood glucose directly. In Type I, the advantages of relaxation, hypnosis, biofeedback and guided imagery appear to stem largely from improved behaviors, although there is some evidence of a direct effect. Researchers found that both depression and anxiety worsen glycemic control directly, and indirectly (through behavior). Depression and anxiety can be partially relieved through relaxation and self-hypnosis (guided imagery). Other researchers found that several

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areas of diabetes self-care behavior improved in a group of patients who listened to guided imagery tapes.

**Conclusion:** A low-cost guided imagery-based program can improve compliance in diabetics of both types and improve glycemic control in Type II diabetics.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR ENDOSCOPY:**

**The value of endoscopy:** Endoscopy is the visual examination of the esophagus, stomach and the duodenum (the first part of the small intestine) using a lighted, thin flexible tube (an "endoscope"). Nearly 2.5 million upper gastrointestinal endoscopies are performed yearly in the United States, about 60% of them on an outpatient basis. Endoscopy is a valuable, safe procedure to investigate various problems, such as trouble swallowing, nausea, vomiting, reflux, bleeding, indigestion, abdominal pain, or chest pain. It is the best way of diagnosing many problems in the digestive tract, including ulcers, cancer, bleeding, and hernias. It also makes it possible for some people to avoid surgery for abnormal vessels, ulcers, narrowing of passageways, polyps, and some tumors.

**Problems with endoscopy:** Many patients avoid recommended endoscopies out of fear of the procedure, or of what the procedure will find. Studies show that pre-endoscopic anxiety is a significant problem and that providing information about the procedure can reduce anxiety and improve acceptance of the procedure. Distress due to gagging and intestinal cramping can make endoscopy much harder for both patient and provider and sometimes prevents completion of the examination. Intravenous sedation may cause low oxygen and low blood pressure in some patients.

**The role of relaxation and imagery:** Many studies have shown that relaxation with guided imagery, hypnosis, and/or music can reduce patient discomfort, raise patient tolerance of and satisfaction with the procedure. They can also reduce need for sedation in endoscopies and other procedures. Procedures also tended to go more smoothly and require less time. Reduced sedation decreases complications and cuts the need for expensive monitoring. It also allows patients and caregivers to quickly return to their daily lives. Increased satisfaction improves willingness to have future procedures, if necessary.

**Conclusion:** Guided imagery is a safe and effective method that can increase patient compliance and satisfaction with endoscopy. Guided Imagery can reduce need for sedation, leading to direct cost savings and reduced chance of complications.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR GERD: (GERD, ACID REFLUX, OR HEARTBURN):**

**Definition of the Problem:** Gastro-esophageal Reflux Disease (GERD) occurs when the valve between the esophagus and stomach fails to keep stomach contents from leaking up into the esophagus. This valve, usually called the Lower Esophageal Sphincter (LES), is a ring of muscle. When working normally, it opens to allow swallowed food into the stomach, then shuts to prevent acidic stomach contents from coming back up into the esophagus. When the valve is weakened or enlarged, or when the pressure of gastric contents is too strong, leakage can occur, sometimes in large amounts. The stomach is protected against acid, but the esophagus is not. So, people experience burning pain and pressure (heartburn). They can also have other acid-related symptoms not only in the esophagus, but also in the unprotected throat, windpipe (trachea) and bronchial tubes.<sup>1</sup> To be classified as GERD, heartburn or other symptoms must be frequent and

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severe. GERD is frequently accompanied and made worse by hiatal hernia. GERD is a major public health problem. Some experts estimate that one third to one half of all asthma cases are caused or worsened by GERD. 18-20 Acid reflux can also cause chronic bronchitis and pneumonia. Severe cases lead to a condition called “Barrett’s Esophagus,” in which the esophageal wall becomes lined with gastric cells for protection against acid. These cells are often pre-cancerous. Other complications include painful ulcers and narrowing of the esophagus. Both of these conditions can interfere with swallowing and nutrition.

**Scope and Costs of the Problem:** Heartburn, in one form or another, affects more than 100 million Americans, according to Dr. M. Michael Wolfe, Chief of Gastroenterology at Boston Medical Center. More than 25 million take antacids at least twice a week. Heartburn sufferers spend over \$6 billion a year on over-the-counter and prescription heartburn medications. There are nearly 200,000 emergency room visits per year by people with heartburn who fear they are having a heart attack. Work loss due to GERD average about \$1,000 per year per patient. Total direct and indirect costs of GERD were about \$10 billion in 2000, making it the most expensive digestive disease, according to the American Gastroenterological Association. Treatment costs of GERD-related esophageal cancer and asthma are unknown but probably substantial.

**Medical Treatment:** Medicinal treatments include antacids, which neutralize the acid. These are available over-the-counter and are purchased by 25 million Americans every month. They are effective for mild, occasional heartburn, but inadequate for moderate to severe cases. A class a prescription medicine called H<sub>2</sub>- blockers, such as Tagamet, Zantac, and Pepcid AC, reduce the output of stomach acid. They are more effective than antacids, but must be taken three to four times a day for maximum effect. Propulsid (Cisapride) helps to get some contents out of the stomach before they can leak through the LES. The newest and most effective drugs for GERD are the proton-pump inhibitors. These are usually taken only once a day and reduce acid production much more than other medications. About 10% of patients on these drugs experience side effects, including diarrhea and headache. The drugs don’t cure GERD, however. And they are expensive, costing over \$200 per month. They often must be taken for life or until lifestyle changes reduce the need for them. An operation called a laparoscopic fundoplication can tighten the LES to keep acid from getting back up into the esophagus. This surgery costs about as much as five years of treatment with a proton-pump inhibitor.

**Non-drug Therapy Including Relaxation and Imagery:** Stress plays a major role in gastrointestinal disorders including GERD. 10 Experimentally induced stress increases reported GERD symptoms in 40-50% of patients. The effect of stress on actual acid exposure in the esophagus is still in question. Relaxation training and hypnosis have been shown to reduce GERD symptoms and medication usage in as many as 58% of patients in various studies. In many cases, the best treatment for GERD is behavior change such as avoiding trigger foods and losing weight. Relaxation and guided imagery can aid patients undertaking behavior change.

**Conclusion:** Guided imagery can assist some patients with behavior change, improve coping, and reduce GERD symptoms and medication use.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR GERIATRIC INSOMNIA:**

**What is Insomnia?** Insomnia is defined as taking more than 30 minutes to get to sleep, waking for a period of more than 30 minutes, or waking earlier than desired, with feelings of fatigue and drowsiness during the day, recurring over at least a 30 day period.

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**Dimensions of the Problem:** Insomnia is a very common problem in the elderly. People over age 65 experience sleeping problems more and are more sensitive to the residual effects of sleeping aids than any other group. The National Commission on Sleep Disorders Research reported \$15.9 billion as direct cost of sleep disorders and sleep deprivation, with an estimated \$50 to \$100 billion in indirect costs, mostly from accidents. In European studies, drowsiness has been found to be a greater traffic hazard than alcohol consumption. Americans spend approximately \$2 billion annually on sleep products<sup>5</sup>, with seniors or their insurance carriers paying a substantial percentage of that amount, since older people are prescribed sleep medicines twice as much as younger people.

**Causes of Chronic Insomnia:** Although a number of medical conditions can cause insomnia, chronic insomnia is most commonly a behavioral or mind-body problem. In the geriatric population, other conditions must also be considered, since their symptoms (e.g., chronic pain) can contribute to insomnia. Temporary sleeplessness during stressful times can lead people to form a link between bed and worrying. Insomniacs tend to have higher than normal levels of anxiety and depression, low self-efficacy, and expect too much of themselves --, all of which can either cause or effect sleeplessness. Hormonal changes and drug use, including prescription drugs, cigarettes, and alcohol, can also cause insomnia.

**Medical Treatment:** Until recently, sleeping pills have had as many risks as benefits. With older pills, people can build up a tolerance to them in about two weeks. With the newer ones, it can take about four weeks. In elderly patients, sleep medications can cause falls or breathing complications, and are associated with a high incidence of hip fracture.<sup>7-9</sup> Sleep aids can interact with other medications or alcohol, and can disrupt natural sleep/awake cycles circadian rhythms. There is a rebound effect after people stop taking them. The next day, the after-effects of sleep medications can make people feel as bad as not sleeping does.

**Nonpharmacologic Treatment Including Guided Imagery:** Behavioral therapy has been repeatedly demonstrated the most effective long-term approach to chronic insomnia, in both general and specific populations. The main categories of behavior therapy for insomnia are stimulus control, using bed only for sleep, a sleep hygiene program, keeping a sleep log, cognitive control, and progressive relaxation. These methods are often combined. Relaxation is effective, with or without stimulus control measures, in reducing sleep-onset insomnia. Effects are better when the two techniques are combined. In one well-designed clinical trial, seniors using Cognitive Behavioral Therapy (CBT) and relaxation therapy were able to fall asleep 54% faster and 16% faster respectively.<sup>16</sup> Similar results were reported in a 2002 study of older patients: 54% of patients who received classroom CBT, and 35% of patients who used home-based audio relaxation treatment achieved significant changes. Since CBT and relaxation (including audio tapes) are both effective, evidence suggests that combining the two would yield greater benefits. This seems to be borne out by the Engle-Friedman study of older adults. It demonstrated that progressive relaxation and learning new sleep habits helped patients become less depressed, and achieve a better sense of control, fell asleep faster, and slept better, even two years later. Authors of three reviews of the literature of mind-body techniques (including techniques such as relaxation, meditation, biofeedback) concluded that there is, respectively, either “considerable,” “sufficient,” or “moderate” evidence of their effectiveness in insomnia.<sup>19-</sup>

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21 A 2003 study found that at-home use of relaxation tapes was just as effective as massage in improving subjects' sleep."

**Conclusion:** Guided imagery can help senior patients cope with chronic insomnia, and may save resources spent on prescription sleep medications. Effects will be stronger if included behavioral recommendations are followed.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR HEADACHES:

**Prevalence and Costs:** More than 45 million Americans have recurring headaches, and 28 million of them have recurring migraines.<sup>1</sup> The incidence of headache increased 60% in the years 1988-1998.<sup>2</sup> Americans miss more than 156 million workdays a year due to migraines alone. Students miss 329,000 schooldays per month due to migraines. These missed workdays and the costs of associated medical benefits represent a loss to industry of \$50 billion annually. Headaches are also responsible for 10 million physician visits a year in the U.S.A.

**What is headache?** Headache is a general term used to describe head pain. The pain can occur in the blood vessels and muscles of the scalp, face, or neck, in the tissue around the brain, or in the attaching structures at the base of the brain. Of the many types of headache, three are the most common. Tension or muscle contraction headaches are usually caused by fatigue, stress, or environmental factors. Migraines are throbbing headaches that can last for hours or days. They usually affect one temple or side of the head, and are often accompanied by nausea, vomiting, and light/noise sensitivity. Cluster headaches are appropriately named because they occur in clusters. They are characterized by short periods (usually 30 to 40 minutes) of intensely excruciating head pain that can recur several times a day, often continuing for months at a time.

**Medical treatment of headache:** The classification of headache usually determines the treatments. For various headache conditions, over-the-counter or prescription pain medications (analgesics) are often used. Other approaches include various classes of prescription medications, including antidepressants, NSAIDs, antihistamines, anti-emetics, serotonin receptor blockers and vaso-constrictors, serotonin 1-D receptor agonists, triptan drugs, beta-blockers, ergot alkaloids, lithium, corticosteroids, calcium channel blockers, and anti-seizure medications.

**Non-pharmacologic treatment including imagery:** Lifestyle changes, including avoiding headache triggers, relaxation, diet, and exercise can lower stress and fatigue levels, and reduce or even prevent muscle contractions. In several studies, guided imagery, which combines deep relaxation with positive suggestion, has proven cost effective in decreasing the number, intensity, or duration of headaches, and/or increasing patients' ability to cope with them. For example, researchers studied a group of 260 patients with tension-type headaches.<sup>4</sup> Among those in the imagery group, 21.7% reported headaches "much improved," compared to 7.6% of the control group. The authors of a 2003 review of the literature concluded that there is "considerable evidence" of the effectiveness of mind-body techniques such as imagery, relaxation, hypnosis, CBT in the treatment of headaches. In another review, researchers concluded that learning to relax and reduce stress may be just as effective in reducing headaches as taking medication.

**Conclusion:** Guided imagery, especially as an adjunctive treatment, can be a cost-effective way to reduce the frequency, duration, and intensity of headaches, as well as the number of headache-related office visits.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR HEART SURGERY:

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**Definition of the Problem:** Cardiac surgery can best be divided into five major classifications: cardiovascular operations, bypass surgeries, valve repair, repair of congenital defects, and other miscellaneous procedures.

**Scope and Cost of the Problem:** The American Heart Association reports that for the year 2000, there were a total of 5,939,000 in-patient cardiac surgeries, 686,000 of which were open heart procedures. This number includes 87,000 valve replacements, 561,000 Percutaneous Transluminal Coronary Angioplasties (PTCA's), 1,318,000 in-patient cardiac catheterizations, 34,000 implantable defibrillator procedures; 152,000 pacemaker procedures; 124,000 endarterectomies, and 519,000 bypass procedures. An American Heart Association report lists the average cost of an in-patient cardiac catheterization at \$16,838.1 The cost for Bypass (CABG) surgery is approximately \$27,000, with an average stay of 5-6 days (9 days for Medicare patients); most bypass patients are not able to return to work for 4-6 weeks (and, in some cases, 6-12 weeks).

**Mind-Body Approaches to Coping with Surgery:** Since pharmacologic sedation often increases the risk of low blood pressure and lack of oxygen, doctors have looked at other ways to reduce pre-surgical anxiety. Most effective have been relaxation with guided imagery (self-hypnosis) and pre-procedure provision of information. Self-hypnosis, or relaxation with guided imagery used before and during surgery has resulted in shorter procedures. These techniques can also significantly reduce post-surgical pain and the need for post-operative pain medication, shorten the time it takes for the intestines to return to normal functioning, and reduce the length of hospital stay. There is also some evidence that mind body therapies like hypnosis and imagery can reduce blood loss<sup>17-20</sup> and speed wound healing. Hypnosis and guided imagery have been used effectively in cardiac bypass to reduce length of stay, decrease use of pain medications, and lower pharmacy costs. These techniques also help to alleviate anxiety. In one study, bypass patients using these techniques were more relaxed pre-operatively and had lower levels of post-operative depression, fatigue, and anger. Anger can be particularly problematic for cardiac patients, since anger has been associated with cardiac events including heart attacks. High levels of anger are also associated with re-narrowing of heart arteries and the need for coronary artery bypass grafting. A simple mind-body technique like breathing therapy, similar to the breathing technique taught in this program, has been shown to reduce anger scores, and cut by 50% the risk of post-PTCA cardiac events.

**Acceptance of Mind-Body Approaches:** In a recent survey of middle-aged and older cardiac patients, over 80% of those responding said that they used Complementary and Alternative Medicine, including imagery and relaxation techniques. High patient satisfaction with guided imagery tapes have been reported by several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles). World-renowned cardiac surgeon Mehmet Oz and his colleagues have stated: "Mind-body techniques and complementary care may assist people who are undergoing surgery and those recovering from cardiac surgery to cope with the event, the process of recovery, and accompanying lifestyle changes. These approaches can provide cardiac patients with nonpharmacologic tools that may prevent further coronary artery disease and the development of dysrhythmias."



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**Conclusion:** A low-cost guided imagery program can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR HERPES:

**Definition of the Problem:** There are two separate and distinct contagious viruses that make up the Herpes Simplex Virus. The viruses cause shingles, chicken pox, mononucleosis, oral herpes, and genital herpes. HVS-2 accounts for 90% of genital herpes; HVS-1 causes the other 10%. Herpes is spread from person to person through contact with bodily fluids. An infected person can also cause it to spread to more than one area of his own body. It can be spread whether or not the infected person has an active outbreak, since the active virus is continually being shed. Since shed virus can live for a time in the air, a person can be also infected by coming into contact with an infected towel or clothing. A herpes “episode” can have no symptoms, or it can start with flu-like symptoms, including fever and swollen glands. While the virus has no cure, the number of outbreaks tends to decrease over the years.

**Scope and Cost of the Problem:** At least one in six people have herpes<sup>1</sup>; other estimates place the number as high as one in four.<sup>2</sup> This means about 45 million people have herpes, with one-third of those people possibly unaware that they are infected.<sup>1</sup> Since most people with HSV-2 never get lesions or have only mild symptoms, it is easily possible for them not to know they have been infected. There are approximately 500,000 new cases annually. The number of Americans with genital herpes has increased 30% since the late 1970's, with the largest increase occurring in white teenagers. According to the National Institutes of Health, the annual costs of genital herpes is more than \$96 million.

**Medical Treatment:** Antiviral therapies can be used during outbreaks or to inhibit or reduce future outbreaks. Antirival medications include acyclovir (Zovirax), famciclovir (Famvir), and valaciclovir (Valtrex). Pain relief can usually be achieved using over-the-counter remedies such as acetaminophen or ibuprofen. Lifestyle changes (stress reduction, healthy diet, exercise, sleep, limiting sun exposure) can sometimes limit the number or severity of outbreaks.

**Mind-Body Approaches:** Since stress has been linked to the frequency and severity of outbreaks, stress reduction is always a goal.<sup>6-8</sup> In one study, patients using a program that included stress reduction, education, and guided imagery were able to limit the number and severity of herpes outbreaks.<sup>9</sup> Relaxation has also proven beneficial<sup>10-12</sup>, as has hypnosis.<sup>13-15</sup>

**Conclusion:** Guided imagery can help to lower stress, improve coping skills, improve compliance with lifestyle changes, and possibly reduce the severity and frequency of outbreaks.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR HYPERTENSION:

**Dimensions of the problem:** Hypertension (HTN) is defined as a repeated blood pressure reading of greater than 140/90 mm Hg. An estimated 50 million Americans have HTN, and over 31% of those who have it don't know it.<sup>1</sup> In approximately 90-95% of HTN, there is no specific physiological cause found. These cases are classified as essential or idiopathic. Predisposing factors include obesity, smoking, diets high in fat or salt, other co-existing conditions including diabetes, and a number of genetic, environmental, and behavioral factors.

**Costs:** The direct and indirect cost of hypertension in 2000 was \$50.3 billion (approximately \$37.2 billion in direct costs; \$13.1 billion in indirect costs).<sup>3</sup> HTN is a major contributor to coronary artery disease (740,000 deaths per year in U.S.A.), cerebrovascular

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disease (150,000 deaths per year), and kidney disease -- three of the leading causes of morbidity, mortality, and medical resource utilization in the USA. In 2000, there were 35 million outpatient visits for hypertension.<sup>5</sup> In 2000, 44,619 deaths were attributed directly to hypertension in this country, with HTN playing a part in 118,000 more. The benefits of controlling even mild hypertension are well accepted. Long-term reductions in mortality from coronary artery and cerebrovascular disease of between 15-25% have been reported in large-scale studies. Incidence of stroke, in particular, can be sharply reduced by controlling hypertension.

**Medical Management:** Treatment of HTN with prescription drugs has steadily improved. A class of drug called ACE inhibitors are now often prescribed as first line treatment. These drugs replaced earlier use of diuretics (water pills) and beta blockers, which had a lot of side effects. The side effects often led to people not taking the drugs as prescribed (“noncompliance” or poor compliance). Lack of compliance with medications is still a major complicating factor in treatment.

**Nonpharmacologic management of hypertension:** The effectiveness and cost-effectiveness of behavioral interventions, when combined with drug therapy, were shown repeatedly in the 1980s.

Chief among these interventions are exercise, weight loss programs, and relaxation. Behavioral approaches also have added advantages: improving quality of life, helping patients take better care of themselves; improve patients’ feeling of being in control; and improving their compliance with therapy. Perhaps because of improvements in drug therapy, behavioral approaches have not become mainstream in the U.S.

**Mind-Body Management of Hypertension:** Guided imagery is a highly effective behavioral intervention for HTN. It combines deep relaxation with positive self-suggestion, both of which reduce blood pressure. Researchers from the Centers for Disease Control and Prevention recently stated that evidence for the effectiveness of certain non-drug approaches to HNT prevention and control is strong.<sup>13</sup> Individual studies support the effectiveness of imagery, relaxation training, biofeedback with relaxation training, hypnosis, and autogenic training. These results were further confirmed by two 2003 reviews of the medical literature. One study found “moderate evidence of efficacy” for using mind body modalities (relaxation, imagery, hypnosis, CBT) for managing HTN.<sup>14</sup> A review of 22 studies showed that biofeedback combined with relaxation significantly decreased both systolic and diastolic blood pressures. One researcher reported in his 2002 study that “relaxation techniques (autogenic training or progressive muscular relaxation, behavioral therapy or biofeedback techniques), can lower elevated blood pressure by an average of 10 mmHg (systolic) and 5 mmHg (diastolic).” A low cost, self-managed program of taped imagery exercises and workbooks allows patients unlimited opportunity to practice on their own, and is structured for maximum gains in self-efficiency.

**Conclusion:** A low cost guided imagery program can be a valuable complement to medical treatment of hypertension. It does this by contributing to more effective management of blood pressure, better compliance with therapy, decreased need of doctor’s visits, and higher quality of life for patients.

**RESEARCH FINDINGS USING GUIDED IMAGERY FOR IRRITABLE BOWEL SYNDROME:**

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**Definition:** Irritable Bowel Syndrome (IBS), sometimes called spastic colon, irritable colon, or nervous stomach, is a functional disorder of the bowel. It is marked by abdominal pain, and associated with changes in bowel habit (either in frequency, urgency, or characteristics). A precise cause is unknown, but faulty interaction between the gut, brain, and central nervous system seems to result in the bowel becoming over-reactive. Additionally, the pain receptors in many IBS patients'

guts are unusually sensitive.<sup>2</sup> Stress and diet don't cause IBS, but they can trigger symptoms. There is a strong mind-body component, and emotions have been shown to affect gut activity. The major symptom of IBS is a change in the patient's bowel function-- usually diarrhea, constipation, or alternating between the two. Other symptoms include bloating, abdominal fullness, gas, nausea, and reflux (where stomach contents "back up"). Some people experience exhaustion or chest pain that is not heart-related. Depression is common in IBS patients. People with IBS often have a lower quality of life. IBS can affect sleep, sexual functioning, business and personal obligations, and social life. IBS is further complicated by when people also have other conditions, such as fibromyalgia, Chronic Fatigue Syndrome (CFIDS), and thyroid disease.

**Incidence and Costs:** IBS is more common than diabetes, asthma, heart disease, or hypertension. It affects between 20-22% of Americans at any one time, 60- 65% of whom are women.<sup>5</sup> IBS is responsible for up 40% of patient referrals to gastroenterologists; another 12% of IBS patients are treated by their primary care physicians; and up to 70% of those meeting the diagnostic criteria for IBS do not seek treatment. Annual U.S. direct medical costs are estimated at \$8 billion annually, with 3.5 million office visits and 2.2 million prescriptions filled.<sup>6</sup> Indirect costs include frequent absenteeism. One study estimated that IBS patients are absent from work or school three times more often than their non-IBS counterparts.

**Diagnosis and Medical Treatment:** Since there are no conclusive diagnostic tests, IBS is a diagnosis of exclusion. This means that the doctors usually rule out other possible causes of the symptoms. Medication is geared toward reducing or relieving symptoms. These drugs can include antispasmodics, antidiarrhetics, laxatives, bulking agents, and prokinetic agents (to move food quickly through the bowel). If a patient is depressed or has severe pain that doesn't respond to other treatment, two other classes of drugs (SSRIs and low-dose tricyclic antidepressants) are used. However, according to one expert said that there is little evidence that IBS medications are effective.

**Complementary Treatment:** Early studies indicate that peppermint oil and Chinese herbal medicine warrant further study, as do Slippery elm, fenugreek, devil's claw, tormentil and wei tong ning. The results of one well-designed trial demonstrated that Chinese herbal medicine was significantly effective in improving symptoms, and quality of life. Other non-pharmaceutical treatment includes patient education, diet modification (including identification and avoidance of food triggers), and mind-body therapies.

**Mind-Body Approaches:** The literature supporting mind-body therapies is compelling. Relaxation and biofeedback have shown success in improving symptoms and preventing relapse. One approach (relaxation, therapy, and medication) was effective in two-thirds of patients who had not responded to medication alone. Another combination regimen (progressive muscle relaxation, thermal biofeedback, cognitive therapy, education) had a 50% success rate, maintained four years later. Hypnosis uses relaxation, suggestion, and imagery for its effects.

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Hypnosis has been shown to improve symptoms, even in severe refractory cases, and in cases where psychotherapy has failed. Both the Forbes and the Galovsky studies used gut-directed suggestion, and the results showed significant symptom improvement. Forbes specifically looked at the effect of therapeutic suggestions on audiotape and found them effective. The Houghton study results showed “profound” improvement in physical symptoms (pain bloating and bowel habit). People also feel that their quality of life was better, and that they felt more in control of their situation. They lost less time at work and needed fewer doctor’s office visits than the control group. Researchers of one review paper reported that, in 19 of 22 studies reviewed, psychotherapy was superior to medication. In another study, patients receiving therapy improved, while patients receiving medication deteriorated. Mind-body techniques are effective, not only in reducing IBS’s physical symptoms, but also in lifting depression and/or improving quality of life.

**Conclusion:** A very low-cost guided imagery program can improve patients’ abilities to cope with IBS pain, reduce or eliminate its symptoms and/or recurrences, reduce office visits, absenteeism and, in some cases, medications. These benefits can be long-lasting. It may improve patients’ quality of life and symptoms, even in difficult IBS cases.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR MENOPAUSE:**

**Definition of the Problem:** Menopause refers to the end of menstruation due to the ovaries’ decreased production of the hormones estrogen and progesterone. Menopause is usually considered to have occurred when 12 consecutive months go by without any signs of a menstrual period. Although menopause is a natural part of the life cycle, some women seek treatment for symptoms such as hot flashes, mood swings, confusion, vaginal dryness, heavy vaginal bleeding, decreased sex drive, and trouble sleeping. Decreased estrogen and progestin output also puts post-menopausal women at increased risk for osteoporosis (loss of bone density) and heart disease.

**Scope and Costs of the Problem:** According to the North American Menopause Society, there were almost 42 million women over age 50 in the United States in the year 2000. By 2020, it is estimated that nearly 46 million American women will be over age 55. Most women spend at least one-third of their lifetime in post-menopause. Over 1.8 million US women reach menopause each year. There are no direct statistics on the economic impact of menopausal symptoms. However the symptoms associated with menopause certainly result in numerous medical office visits, absenteeism from work, and sometimes medication. Greater costs can occur from bone fractures and heart disease as they move through post-menopause, especially in women who do not make necessary changes in diet and exercise habits.

**Medical Treatment of Menopause Symptoms:** The most widely used and effective medical treatment for menopause symptoms is hormone replacement therapy (HRT). Supplements of estrogen and progesterone bring these hormone levels up to near-normal. HRT is very effective in relieving many menopausal symptoms, but its long term risks and benefits, in terms of both cardiovascular disease and various types of cancer, are still being studied and hotly debated, especially after the Women’s Healthcare Initiative study was ended early as a result of these possible risks.<sup>8</sup> Natural HRT, which uses human progesterone (not progestin) and estradiol (not synthetic estrogens that contain animal hormones), is another option but its long-term effects have not yet been studied. Other medications used are NSAIDs for pain and antidepressants.

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Statin drugs are increasingly being prescribed to help prevent cardiovascular disease in menopausal women, but these drugs can cause liver problems.

**Non-Medical Approaches to Menopause:** Dietary changes may reduce symptoms such as hot flashes, and help to prevent osteoporosis and heart disease. Some authorities recommend a low-fat, low-salt, moderate-protein, low-sugar diet. Supplements of Vitamins D, E, calcium, and magnesium are often recommended. Soy protein has been found in some studies to reduce menopausal symptoms. Exercise, especially weight or resistance training, is known to prevent osteoporosis and reduce some menopausal symptoms. Various herbal treatments including “black cohosh” and the Chinese herb “dong quai” are often recommended in self-help books and health food stores. Acupuncture can also help with symptoms.

**Relaxation and imagery:** Regular relaxation, guided imagery, and biofeedback have been found effective in reducing hot flash frequency and intensity, decreasing tension and anxiety, and improving mood in women going through menopause. Researchers found that women who were taught to slow their respiration had significantly reduced hot flash activity. Other researchers found that daily relaxation reduced both hot flash intensity and depression. Hypnosis was also quite effective in reducing the frequency, duration, and severity of hot flashes. In the same study, the quality of sleep was also improved, women experienced fewer bouts of insomnia.

**Conclusion:** Guided imagery can reduce the severity of certain menopause symptoms and increase women's coping abilities. This, in turn, can lead to increased comfort, less absenteeism, and fewer side effects when medication use is lowered.

### RESEARCH FINDINGS USING GUIDED IMAGERY FOR MRI:

**The Value of MRI:** Magnetic Resonance Imaging (MRI) is among the safest and most valuable procedures in all of medicine. Over six million MRI procedures are performed in the U.S.A. each year, many of them to diagnose and evaluate injury, tumor growth, structural abnormalities and various disease processes.<sup>1</sup> MRI has several advantages over X-ray and computerized tomography (CT). Cross-sectional views can be taken from any angle, while CTs can view from only one direction at a time. By using different scanning parameters, MRI operators can highlight different aspects of the tissues they investigate, giving more complete information.

**Problems with MRI:** MRIs are expensive. For example, Medicare reimburses \$154 more for an MRI of the head than for a head CT. An MRI costs more than the equivalent X-ray. Because patients must remain still in the tight space of the MRI scanner for up to two hours or more, MRIs frequently create anxiety and panic. This can cause significant harm to patients and greatly increasing costs. Five to ten percent of patients undergoing MRI experience severe claustrophobia or panic attacks, and 30% report milder distress. Severe anxiety can require the procedure to be canceled and rescheduled, increasing costs and delaying medical evaluation.<sup>4,5</sup> Over 14% of patients require sedation to complete the examination, adding new costs and risks to the procedure.<sup>7</sup> Many patients report that their MRI continued for several months after the exam.<sup>4,6</sup> Patient anxiety can lead to patient movement during the test, leading to poor quality images.

**The Role of Relaxation and Imagery:** Many studies have shown that relaxation with guided imagery or hypnosis can reduce patient anxiety and movement, increase patient tolerance

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of and satisfaction with the procedure, and reduce need for sedation in MRI.<sup>8-11</sup> Similar benefits have been found in other medical procedures.<sup>12</sup> Reduced sedation decreases complications and cuts the need for expensive monitoring, as well as allowing patients and caregivers a more rapid return to their daily lives.<sup>13</sup> Increased satisfaction improves willingness to have future procedures, if necessary.

**Conclusion:** Guided imagery can reduce patient anxiety and movement during MRI, improving quality of images. The use of guided imagery can save money by reducing need for sedation and/or cancellation of procedures, and increase patient satisfaction with the procedure.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR NERVE PAIN:**

**Definition of the Problem:** There are three major classifications of nerve pain: neuritis, neuralgia, and neuropathy. Neuritis is a term used to describe an inflammation of a nerve that results in pain, sensory disturbance, or the ability of the nerve to react properly. Among the many types of neuritis are optic, interstitial, and brachial. Neuralgia is characterized by shooting or sudden and recurring pain involving a nerve or nerves. It usually does not involve permanent damage or structural change to the nerve. Some types of neuralgia are migratory, cervico-occipital, post-herpetic, and idiopathic. Trigeminal neuralgia in the face (formerly, tic douloureux) is considered by many to be the worst possible pain anyone can experience. Neuropathy (also known as peripheral neuropathy, sensory peripheral neuropathy, or peripheral neuritis) is a painful condition that usually results from major or irreversible damage to the nerves. This damage can be from disease, injury, or a tumor. In the United States, diabetes is the leading cause of neuropathy. Most people with neuropathy experience periodic or constant muscle weakness, numbness, and tingling. Many also experience severe burning or electric-like shooting pain.

**Scope and Cost of the Problem:** According to a CDC survey in 1996, there were approximately 353,000 people with neuralgia or neuritis.<sup>1</sup> Neuropathy affects more than 2 million Americans, although one expert estimated that the many undiagnosed cases could raise the estimate to 20 million. Total disease-related costs of neuropathy are estimated at \$50 billion a year, with drug costs alone in the \$1.1 billion range. According to the Neuropathy Association, “78 percent of those with peripheral neuropathy said it had a substantial impact on their ability to enjoy a normal life, and 61 percent said it affected their ability to do their job.”

**Medical Treatment:** Treatment of nerve pain is often geared toward relieving symptoms. No one therapy is completely successful, and it is not uncommon for two and three drugs to be used. Specific treatment is usually determined by the exact condition. For example, neuritis is treated with opiates, steroids, and NSAIDs. For neuralgia, carbamazepine is a frequent first treatment choice. Baclofen, clonazepam, gabapentin, and valproic acid have also been known to be somewhat effective. Most neuropathic pain is treated with any number of drug types: tricyclic antidepressants (TCA's); anticonvulsants such as gabapentin; systemic local anesthetics; SSRI's; corticosteroids; substance P depletors; autonomic drugs; NMDA receptor antagonists; and capsaicin cream. When these treatments fail, other interventions include trigger-point injections, pain blocks, epidural steroids, spinal cord stimulators, and morphine pumps. Surgery is rarely recommended.

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**Other Treatments for Nerve Pain:** In addition to medication, physical therapy and nutritional supplements are sometimes recommended. Psychological approaches, specifically including behavior modification and relaxation training, are frequently recommended.

**Mind-Body Approaches:** Since stress can aggravate pain, stress reduction is an indispensable part of any nerve pain treatment plan. This is one of the areas where mind-body techniques are particularly effective. There is also substantial evidence to support the use of mind-body techniques in the management of many types of pain. The effectiveness of guided imagery is well documented, as are hypnosis and biofeedback.

**Conclusion:** Guided imagery involving relaxation and positive suggestion can help to lower stress, improve coping skills, enhance an overall sense of emotional well-being, and help with making lifestyle changes.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR PEDIATRIC PAIN:**

**Dimensions of the problem:** Chronic pain in children and adolescents is estimated to affect 15%-20% of children. Twelve million children (1 in 4) have chronic health conditions. Pain and disability pose significant emotional, social, and financial difficulties to families. Migraine headaches alone occur in over eight million children and adolescents and result in over one million lost school days per year. Recurrent abdominal pain (RAP) affects 10-20% of school age children.

**Causes of Chronic Pain in Children:** The most common causes of recurrent pain in children are headaches, recurrent abdominal pain (RAP) and cancer.<sup>6-9</sup> Finding a cause for RAP (episodic abdominal pain over a period of at least three months) is difficult at best. Identifiable etiologies are determined in only about 10 per cent of patients. Some experts believe that RAP frequently results from psychological stresses. Headache is one of the most common complaints of children with recurrent pain. Both migraine and muscle contraction (tension-type) headaches occur frequently in children. By age 7, some 40% of children have had headaches, and by age 15, 75% have had them. Children are also affected by the pain of serious diseases like cancer. In the last 20 years, more effective treatment of pediatric cancer has resulted in longer life expectancies for young cancer patients. This improved prognosis has brought more attention to the need for effective treatments of pain and other cancer symptoms. Multidisciplinary approaches that use several techniques are now considered key to effective treatment of children's cancer symptoms.

**Issues in Childhood Pain Management:** Parents are profoundly affected by having a child in pain, particularly when the causes haven't been found. Doctors are often reluctant to run diagnostic tests that often don't pinpoint the cause of the pain. Parents and the medical community often fear the long-term effects of medications on children, and may treat pediatric pain far less aggressively than they would treat the same pain in adults. Behavioral and relaxation techniques for pediatric pain have received considerable study and have shown strong evidence of effectiveness.

**Complementary Treatment Including Relaxation, Imagery and Hypnosis:** Because of their natural ease of engaging in fantasy and imagination without the inhibitions of adults, children are able to use hypnosis and imagery easily.<sup>18</sup> In one study, recurrent abdominal pain resolved within 3 weeks in 4 out of 5 pediatric patients after a single session of self-hypnosis. In several cancer treatment programs, it has been shown that hypnotic-like methods, involving

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relaxation, distraction with imagery, and positive suggestion hold the greatest promise for non-drug pain management.<sup>10,13,18</sup> In addition to helping to control pain, these therapies are also known to increase a child's sense of control and ability to manage their situations. In many studies, it has been found that the benefits of using relaxation-type therapies are still present up to a year later.

**Conclusion:** Guided imagery can help child and adolescent patients and their families cope more effectively with pain.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR SURGERY FOR CHILDREN AND ADOLESCENTS:**

**Scope of the Issue:** There were 1,951,000 in-hospital surgeries<sup>2</sup> and 2,318,000 outpatient surgeries<sup>3</sup> performed on children under the age of 15 in the years 2000 and 1996 respectively.

**Children and Surgery:** Children have a kaleidoscope of fears around surgery. Some of these fears are of mutilation, needles, loss of control, pain, the unknown, separation from family and friends, and fear of the unfamiliar staff, routines, and equipment in the hospital. Their anxiety can increase their pain and slow their recovery. It can also lead to lack of cooperation with staff. Surgery can also cause regressive behavior, including nightmares, bedwetting, and acting out behaviors that can last for months; this can be a significant problem for families.<sup>6</sup> With over 4 million pediatric surgeries per year, speeding recovery even slightly could provide significant savings.

**Research in Mind/Body Interventions:** Pre-operative preparation for pediatric surgical patients has been found helpful in improving children's following instructions in the hospital. It can also reduce problems at home after the surgery. Reducing children's anxiety, and increasing their sense of control is also beneficial, leading to shorter hospital stays and less need for some medications.

Surgical prep programs have also been found to increase patient satisfaction with the surgical experience.<sup>10</sup> Surgical preparation with guided imagery has been found to reduce pain and anxiety, and accelerate recovery in adult surgical patients. Tusek, Church and Fazio studied 130 patients undergoing abdominal surgery for colorectal disorders. The imagery group needed significantly less pain medication, had faster return of bowel function, and reported less pain and anxiety. Daake and Gueldner<sup>12</sup> found that patients who participated in guided imagery pre-operatively had less need for pain medication post-operatively, and Holden-Lund documented faster wound healing in patients who relaxed with guided imagery. Clinical studies have also shown that patients who use relaxation and guided imagery have fewer complications, reduced bleeding, are more comfortable after surgery, and spend less time in the hospital.

Mind-body studies have also been done involving the pediatric population. Jones used hypnosis/imagery in addition to general anesthesia in children undergoing spinal surgery. The imagery group needed less chemical anesthesia. Lambert studied 52 children undergoing a variety of surgeries. Those who received guided imagery/hypnosis pre-operatively had shorter hospital stays and reported less pain.

Guided imagery/self-hypnosis has been shown to help children tolerate procedures (including needle sticks) with less need for sedation, and less pain and anxiety. Olness used



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imagery with 25 pediatric cancer patients who tolerated procedures including bone marrow aspiration, lumbar puncture, and chemotherapy with less pain and nausea than a control group.

**Conclusion:** Guided imagery is an effective way to help pediatric patients and families cope with the stress of surgery and hospitalization, cooperate with invasive procedures, and speed readiness for discharge from hospital.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR PREMENSTRUAL SYNDROME:**

**Definition of the Problem:** Premenstrual Syndrome (PMS) refers to a cyclic group of symptoms, both physical and psychological, that can affect a woman in the days or weeks prior to the monthly onset of her period ("menses"). The pain that can accompany menstruation is called dysmenorrhea. Primary dysmenorrhea is the "normal" uterine contractions that occur during menses; its exact cause is unknown, but hormones probably play a primary role. Secondary dysmenorrhea is the result of an underlying condition (infection, inflammation, or other disorder).

**Scope and Cost of the Problem:** According to the American Academy of Obstetricians and Gynecologists, up to 85% of women have one or more symptoms of Premenstrual Syndrome. About 5-10% of women report being debilitated by severe symptoms. Some of the more intrusive symptoms include pain, headache, tension, mood swings, depression, and fatigue. Absenteeism due to the severity of PMS and menstrual pain is "underappreciated," and is the leading cause of absenteeism for women under thirty.<sup>3</sup> While recent figures are not available, a 1984 study reported the annual indirect costs of dysmenorrhea at \$2 billion in lost productivity, and 600 million lost work hours. **Treatment:** Dysmenorrhea and PMS are usually treated with either over-the-counter or prescription diuretics ("water pills" to reduce water retention) and NSAIDS (for pain). Oral contraceptives or prostaglandin inhibitors (both available only by prescription) are treatments for primary dysmenorrhea. Medications to regulate other hormone production are sometimes used. Severe psychological symptoms often respond to anti-depressants. All of these treatments vary in effectiveness from woman to woman. Calcium/magnesium supplements are clinically proven effective. Lifestyle modifications (diet, sleep, and exercise) are often effective in relieving symptoms.

**Mind-Body Therapies:** A recent review of the literature published in the American Journal of Obstetrics and Gynecology confirmed that women with PMS and PMDD widely use complementary and alternative medicine, and that there is "substantial evidence of efficacy" for mind-body approaches to these conditions. One such approach is Cognitive Behavioral Therapy. A 2002 study of 108 women showed that Cognitive Behavioral Therapy was as effective as fluoxetine in the treatment of PMDD, and that CBT was associated with better maintenance of treatment effects than was the prescriptive. Studies also support the use of the mind-body therapies relaxation and guided imagery for PMS and menstrual pain. In one study, women who participated in a regular relaxation program reported a significant 58% improvement in their severe premenstrual symptoms. Another study showed the effectiveness of relaxation training, either alone or combined with imagery, in reducing resting time for women with spasms of cramping. Not only does relaxation help with menstrual pain and discomfort, but it is also effective in reducing absenteeism. These beneficial effects were long-lasting. While mind-body interventions can positively affect menstrual distress, they can also affect cycle rhythmicity. In

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addition to significantly decreasing perceived distress scores, women in a guided imagery study were also able to lengthen their cycles.

**Conclusion:** Using guided imagery to reduce the severity of PMS and menstrual pain can lead to increased comfort and decreased absenteeism, without the cost and potential undesirable side effects of some medications.

### **RESEARCH FINDING USING GUIDED IMAGERY FOR PREPARING FOR SURGERY:**

**Scope and Cost of the Problem:** In the year 2000, there were almost 40 million surgeries performed in U.S. hospitals.<sup>1</sup> There were also 32.5 million in-office surgery procedures in 1998, many of which routinely use some sedation.

**Mind-Body Approaches to Coping with Surgery:** Patients are often given drugs (sedation) to reduce and calm them before a procedure. However, sedation often increases the risk of low blood pressure or getting too little oxygen. As a result, researchers have looked at other ways to reduce pre-surgical anxiety. Some of the most effective alternative techniques include relaxation with guided imagery, self-hypnosis, and providing reassuring information prior to the procedure. Relaxation with guided imagery or self-hypnosis before and during surgery can shorten procedures.<sup>8,9</sup> These techniques can also significantly reduce post-surgical pain and the need for pain medication. They can shorten the time it takes for patients' bowels to return to normal and shortens their hospital stay. There is also some evidence that these techniques can reduce blood loss<sup>18-20</sup> and speed wound healing. Several sources, including Blue Shield of California and Cedars Sinai Medical Center (Los Angeles), have reported that patients who used guided imagery tapes to prepare for surgery were very satisfied with them — plus, it reduced their bills! In addition, guided imagery audio tapes are routinely used and recommended by many well respected physicians, including Mehmet Oz, M.D., heart surgeon and Director of the Complementary Care Center at Columbia Presbyterian Medical Center (New York).

**Conclusion:** Research available to date supports the conclusion that a low-cost guided imagery-based program to prepare patients for surgery can help to lower pre-surgical anxiety, reduce pain and the need for post-operative medication, shorten procedure time and hospital stay, and possibly reduce surgical bleeding, and speed recovery.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR PEOPLE UNDERGOING RADIATION:**

**Scope of the Problem of Radiation Side Effects:** The American Cancer Society estimates that more than 1.2 million Americans were diagnosed with cancer in 2001. More than half of these people received radiation therapy, either alone or in combination with surgery or chemotherapy. Possible radiation side effects depend on the area of the body treated. Some of the more common side effects are: loss of appetite; anemia; shortness of breath; fatigue; hair loss; insomnia; nausea and vomiting; skin rash/redness; and diarrhea. In some treatments, there can be painful and unpleasant oral side effects such as cavities, thickening saliva, and taste loss. Side effects such as hair loss and fatigue can add additional stress to an already stressful disease. The occurrence of side effects, or the fear of having side effects, often leads to patients missing or stopping treatments. About 50% of patients don't follow through with their full treatments, according to the American Cancer Society. Cancer patients often feel a loss of control and feel

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powerless. The frequent presence of depression “significantly influence[s]” the severity of fatigue and anxiety in cancer patients. The majority of patients report significant lifestyle changes. Some have insomnia. Some stop working or work shorter schedules. For others, cancer and its treatment badly affects their household duties and leisure activities. Quality of life is often significantly lessened. The physical and psychological issues of cancer and radiation can lead to loss of time at work for the patient and/or the caregiver, additional doctor’s office visits, and failure to complete treatment -- all of which contribute to death and disability, and to the \$107 billion direct and indirect annual costs of cancer.

**Research in Mind/Body Interventions for Radiation:** Patients using guided imagery for coping with radiation therapy reported lower stress levels, more energy, and a better quality of life. Patients using audio relaxation and imagery programs reported that they took better care of themselves. Patients in one study who used radiation-specific guided imagery had “enhanced comfort levels” during treatment, especially in the first three weeks of treatment. The ability to stay perfectly still is vital during external beam radiation. People using hypnosis have been successful in eliminating unwanted movement, and in coping with claustrophobia<sup>16</sup> during radiation treatments. Patient’s getting good information (including taped programs for self-help), and Cognitive Behavioral Therapy (CBT) have helped patients overcome helplessness and gain a better sense of control. Cognitive Behavioral Stress Management was also effective at lowering cancer patients’ serum cortisol (a stress-related chemical). The effectiveness of guided imagery, and other mind/body approaches in coping with chronic pain, depression, anxiety, and insomnia have been well documented.

**Conclusion:** Guided imagery can help patient tolerate radiation therapy, and increase their likelihood of finishing all treatments. It gives patients the tools to improve coping skills, stay relaxed during treatments, and minimize the number and severity of radiation side effects by lowering stress, depression, and anxiety, and promoting a sense of being more in control.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR SINUS PAIN:**

**Definition of the Problem:** Chronic sinusitis is a long-term inflammation of the sinuses, the moist air spaces located in the bones of the upper face. The purpose of the sinuses is to warm and filter incoming air in order to protect the airways and lungs. It is the job of the mucus to trap pollutants, allergens, and infectious agents. Sometimes, however, infections, swelling, allergic reactions or blockages can block the proper flow of the mucus. When this happens, mucus (and sometimes pus) builds up and causes sinus pressure. Symptoms include facial pressure and pain, fatigue and difficulty concentrating. Chronic sinusitis can significantly affect patients’ quality of life, and increase doctor visits and use of medication. It can also cause lost time at work.

**Scope and Cost of the Problem:** Sinusitis is either the first or second most common chronic condition in the United States, affecting approximately 38 million (12.6% of) adults. In 1996, medical costs for treating sinusitis were \$5.8 billion. Over nine percent of all medical claims in the U.S.A. include a diagnosis of sinusitis.<sup>6</sup> Economic costs of lost work time and decreased productivity are substantial, with sinus-related restricted or lost work days averaging over 36 million per year. Chronic sinusitis is particularly prevalent in polluted urban centers. Greater Los Angeles has one of the highest rates of sinusitis in the world.

**Medical Treatment:** Chronic sinusitis can have many components, such as infections, allergies, swelling, obstructives and, probably, psychological factors.<sup>7,8</sup> Treating just one aspect

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(as with extended courses of antibiotics) rarely works.<sup>1,2</sup> Antihistamines, often used to control the allergic aspect of sinusitis, can dry the mucus and make it harder to drain. Anti-inflammatories, usually in the form of steroid nasal sprays, can only relieve symptoms but not the cause of the swelling. Surgery on an obstruction does greatly reduce symptoms in some patients, especially those whose sinuses are blocked by polyps or nasal deformities. These surgeries can now be done by endoscope, on an outpatient basis. A new and promising treatment approach is the use of antifungal drugs such as fluconazole.

**Non-pharmacologic treatment including Imagery and Self-Hypnosis:** As in any chronic condition, self-care measures play a large role in determining patient quality of life, disease progression and resource utilization in sinusitis. Environmental modification, such as removing carpets and drapes, using a humidifier, or setting up an air-cleaning device can promote sinus healing. Behavior changes such as stopping smoking, avoiding sinus triggers, drinking more fluids, and irrigating the nose daily with saline solution can help, soothe, and heal. Relaxation, guided imagery and self-hypnosis can reduce reactivity to allergens and decrease inflammatory response.

In one study, a researcher named Madrid, along with his colleagues, taught a two-session course in self-hypnosis to a group of 34 patients with a variety of allergies. 76% reported improvement, and 86% reduced medication usage. Improvement was maintained through two years of follow-up. Mind/body measures such as imagery and relaxation can also help patients cope with their symptoms. Pain in the head and face is the most troubling symptom for most sinusitis patients. Pain control, and accompanying reduction in medication use, through imagery, relaxation and suggestion has been documented in patients with headaches of various types.

**Conclusion:** Guided imagery can improve patients' ability to cope with sinus problems, and may reduce sinus symptoms, office visits, and medication usage in many cases.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR QUITTING SMOKING:**

**SCOPE AND DIMENSIONS OF THE PROBLEM:** According to the Centers for Disease Control, cigarette smoking is the largest preventable cause of illness, death, and medical expenditures in the U.S.A. In 1993, direct medical costs associated with smoking totaled an estimated \$50 billion, and smoking was responsible for approximately 7 percent of total U.S. health care costs. This \$50 billion figure is highly conservative. Many factors were not included in the total medical costs: smoking-related burns from fires; perinatal care for low birth weight infants whose mothers smoked; and the costs of treating diseases in others caused by secondhand smoke. Also not included were the indirect costs of lost productivity and early death. A more recent study found that annual smoking-related medical expenditures reached \$72.7 billion in 1997, about 11% of total health care costs.

The CDC estimates that 46.5 million adults in the United States smoke cigarettes. Their statistics show that it this will result in death or disability for half of all regular users. Cigarette smoking is responsible for more than 440,000 deaths each year, or one in every five deaths. Counting direct and indirect costs, smoking related illness costs the nation more than \$150 billion each year.

It is estimated that Medicare will spend \$800 billion over the next 20 years caring for people with smoking-related illnesses.

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**Effectiveness and Cost-effectiveness of Smoking Cessation Programs:** Smoking-related illness consumes so many health resources that smoking cessation has been called the “gold standard” of medical cost-effectiveness. A report from the University of Michigan School of Public Health found that: “A considered review of the evidence recommends support of all of the major forms of smoking-cessation intervention; even the most expensive are highly cost effective compared with all medical treatments studied.” For example, a simple instruction from a physician to stop smoking resulted in a 2% quit rate one year later, an effect study authors called “modest but highly cost effective. It cost \$1500 to save one life.” As interventions become more intensive, costs go up. However, even modestly effective programs will save far more than they cost.<sup>7</sup>

**Issues in Smoking Cessation:** While it is typical for stop-smoking programs to achieve short-term success rates of 50-60%, the rate of relapse is often 60-80% in the year following the program.<sup>8</sup> Most widely-used programs have long-term success rates under 35%. Non-drug programs include psychotherapy, behavioral therapy, providing information, support groups, hypnosis, telephone monitoring, and rapid-smoking. The most commonly used medication is nicotine, given as a patch or in chewing gum. The prescription drugs bupropion and fluoxetine are also used. All these treatments have similar long-term success rates, varying from 15-32% in different studies. Combining nicotine replacement and/or bupropion with behavioral therapy and psychological support has consistently shown itself more effective than a single treatment alone, with 35% or more of patients remaining smoke-free for a year.

**Imagery and self-hypnosis in smoking cessation:** In two studies, groups who used guided imagery to relax and gain a sense of personal power had much higher 3-month abstinence rates than a control group which received only counseling.<sup>8,13</sup> Smokers who practiced imagery at home and continued practicing after the training program ended had abstinence rates over 52% at three months.<sup>8</sup> Even using self-hypnosis once resulted in 22% of 226 patients remaining smoke-free after two years. While this is a modest result, it is better than trying to quit without any help.<sup>14</sup> Thus, imagery and self-hypnosis have been as effective as other behavioral and psychological approaches. The techniques were even more effective in patients who found them pleasant.

**Conclusion:** A low-cost, guided imagery based, self-care program is likely to be at least as effective as other behavioral or psychological treatments. It should help at least 20-32% of users stop smoking in the long term. The results may be even better if nicotine replacement is used at the same time. The benefits of smoking cessation in terms of patient outcomes and lower need of medical services make this program highly cost-effective.

### **RESEARCH FINDINGS USING GUIDED IMAGERY FOR STRESS:**

**Prevalence and Costs:** The American Institute of Stress reported that 75-90% of office visits to primary care physicians are stress-related. Stress reduction is important because stress has been linked to every major cause of death in this country.<sup>1</sup> A 2000 Gallup Poll reported that 80% of Americans feel stress on their jobs, and almost half of these workers reported that they needed training to manage their stress. Stress-related absenteeism results in over 1,000,000 workers absent on an average day, with 550 million lost workdays annually. Stress-related workers' compensation claims and awards have skyrocketed. In California in 1987, the cost for workers' compensation medical and legal fees alone neared \$1 billion. In 1988, the direct and

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indirect costs of job stress to the country's economy were \$50 billion. By 1998, the number had risen to over \$300 billion.

**What Is Stress?** People experience stress when the demands on them exceed their perceived capacity to cope. Stress can show up in a lot of ways. It can affect every major organ and body system. Stress can cause or worsen any number of conditions, among them immune system suppression, gastrointestinal disorders, arthritis, diabetes, chronic back pain, angina, insomnia, hypertension, sleep disorders, and cancer.

**Medical Treatment of Stress:** While some patients visit doctors complaining of stress, more often they complain of digestive trouble, pain, insomnia, fatigue, or other stress-related symptoms. Medical treatment consists mainly of anxiety medications and antidepressants. Primary stress management is usually left to mental health professionals.

**Non-pharmacologic Treatment Including Imagery:** Stress-management programs using behavioral and mind/body approaches are widely used to reduce stress. Exercise, biofeedback, muscle relaxation, and psychotherapy have all been found useful. Guided imagery, which combines deep relaxation with positive suggestion, is a powerful stress management technique. Eight studies between 1983 and 1995 reported on groups of surgical, cardiac, and cancer patients, smokers, and people reporting high stress levels. After participating in guided imagery sessions, they had significant reduction in self-reported stress, physiological measures of stress, and anxiety (compared to control groups). Effects were stronger when patients could practice on their own.

Results of a review of relaxation, hypnosis, and imagery in stress management showed that hypnosis can protect the immune system against the effects of stress. Hypnosis was even more effective when immune system-specific imagery ("targeted imagery") was used. Other mind-body approaches have also yielded impressive results. In a study of elderly congestive heart failure patients, cognitive-behavioral therapy was significantly effective in lowering perceived stress and anxiety levels. Improvement was also noted in other measurements. Two studies of mindfulness meditation programs also showed significant improvement over the control groups. In one of those studies, the reduction in distress and physical symptoms in the meditation group was particularly impressive. Stress management programs including imagery and relaxation are also cost effective. Workplace stress management programs save companies money. One company saved almost \$150,000 in worker's compensation costs, while the cost of the program itself was a mere \$6,000 (\$150 per person).<sup>18</sup> Relaxation tapes, too, are a low-cost way to relieve stress. In a 2003 study, an at-home relaxation tape program was as effective than massage therapy in decreasing subjects' stress and improving their sleep.

**Conclusion:** A low-cost stress-management intervention with guided imagery can reduce medical costs and improve patients' ability to cope with stress.

### 57. MEMORY RESEARCH: MITCHELL EISEN & HENN-HAASE: NOV 1995

**Memory and suggestibility for events occurring in and out of hypnosis.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Antonio, TX. Resistance to misinformation uses two paradigms: 1. Elizabeth Loftus - expose Subject to slides or videotape, give misinformation with leading or misleading questions 2. Martin Orne - pseudomemory, i.e. age regress people in hypnosis and suggest events occurred.

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Each approach yields mixed results. Misinformation is accepted more readily in context of hypnosis; but there is no relationship to hypnotizability. Spanos found that highs were more responsive to social pressure. In general, in the absence of social pressure, when presented subtly and outside the context of hypnosis, the relationship diminishes. Other factors play a more prominent role: source of information, type of information, salience of information, etc. They examined whether events occurring in context of hypnosis were more prone to distortion when assessed in biased fashion with use of misleading information, than outside hypnosis. Also, form of questions (dichotomous or with 'I don't remember' option).

They gave the Harvard and asked afterwards 3 misleading items (e.g. did you clench your fist, when they didn't do it). Also asked them to circle items if they had no memory of it. Tellegen Absorption Scale and Dissociation scale (DES) were administered a week later. Also a week later asked about events that occurred, including confederate items. Half of Ss had 2 choices, half had also 'I don't remember' as a third option. In a previous study, resistance to misleading information was related to the strength of the initial memory and not to hypnotizability (article published in AJCH).

**RESULTS.** When given 3 choices, the number of misleading items endorsed dropped from .7 to 0.4 which is the most robust finding in the study and affects the rest of the study. Many Ss who endorsed the items reported minutes later that they had no memory for the event (on the check list). While many Ss given only two choices wrote in the margin that the event had never occurred. Offering an 'I don't know' third option decreased endorsement of the Harvard items also, from 6.4 to 5.2 which is significant. The relationship between hypnotizability and endorsement of misleading items became much weaker when accounting for this.

Scoring high on DES is significantly related to accepting misinformation. Tellegen: Absorption Scale also related to accepting misleading information. Harvard Hypnotizability Scale was not related to accepting misinformation. Total memory on the Harvard (before cue plus after cue) did not correlate with resistance to misleading information. History of abuse was related to hypnotizability. Have to evaluate whether it was traumatizing, multiple abuse, etc. Eisen, Mitchell L.; Goodman, Gail S.; Qin, Jianjian (1995, November). Child witnesses: Dissociation and memory and suggestibility in abused children. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Antonio, TX.

Bowers, Kenneth S. (1995, November). **Revisiting a Century-Old Freudian Slip -- from Suggestion Disavowed to the Truth Repressed.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Antonio, TX. Cites J. Herman, Mason, and Miller who accused Freud of retreating from trauma theory to save his theory. Feminists view the Oedipal theory as a coverup for the denial of child sexual abuse. This moral position fuels trauma theory and practice. It is the moral dimension of this debate that gives so many problems for the investigation of traumatic memory. The intellectual origins of repressed trauma are examined here. Freud's early trauma theory, his later conflict theory.

Etiology of Hysteria (1896) presents Freud's argument, based on 18 patients: child is passive victim of experience imposed on them; memory is repressed and hysterical symptoms are derivatives of these repressed memories; when memories return as pictures the task of therapy is easier than if returning as thoughts. Bartlett's memory research showed visual image is followed by sense of confidence that surpasses what should be there.

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The fact that patients had to be compelled to remember was offered by Freud as evidence against the idea that the memories were suggested. The patients initially would deny the reality of their memories, which Freud used in saying that we should not think that patients would falsely accuse themselves. In letter to Fleiss, he presented the conflict theory, which he presented in 1905 in *Three Essays on Sexuality* and later in *My Views...on Etiology of Neurosis*. In 1905 Freud indicated he was unable to distinguish fantasy from true reports (and did not deny the existence of the latter). Freud often reconstructed the "memories" from dreams, transference, signs, symptoms, fantasies, etc. They were not produced as conscious memories, and it was Freud who inferred the sexual abuse. From signs of distress he took evidence of proof.

Freud presented his theory to his patients and then sought confirmation. Freud asks us to abandon historical for narrative truth. The problems with Freud's first theory became worse with his second theory. In *Introductory Lectures* Freud states that opponents say his treatment talks patients into confirming his theories. He relies on the patient's inner reality confirming the theoretical ideas given to him. Success depends on overcoming internal resistance, however. The danger in leading a patient astray by suggestion has been exaggerated, because the analyst would have had to not allow the patient to "have his say." Freud denied strongly ever having done this. Incorrect interpretations would not be accepted by the patients, and if believed would be suggestion. Brunbaum, another writer, said that this doesn't mean acceptance of a faulty idea won't occur. Both Milton Erickson and especially Pierre Janet reported cases in which suggestions were used to give benign memories to replace malignant ones.

Freud also viewed patient resistance to his interpretations as evidence that the interpretations were correct. Thus both resistance and acquiescence were thought to be validating. Popper's critiques using philosophy of science note that this makes his theory untestable.

Freud could not distinguish between the patient's reluctant acceptance of the truth and reluctant acceptance of a suggestion.

Contemporary theorists struggle less than Freud did with the problem of suggestion and suggestibility (and Freud did not have available the research on those areas!) Emotional upheaval that accompanies "insight" is readily taken to be validating. It may be true that bad memories are repressed, but that doesn't mean that all bad memories are true.

Treatment groups focus on recalling memories and sharing memories with others in the group, not on current relationships. Hermann states that the group provides powerful stimulus for remembering. The group, of course, is reinforced by others remembering. Repeatedly considering the possibility of abuse can increase the sense of familiarity.

Current views expressed by some clinicians that certain symptoms and syndromes (eating disorders, etc.) indicate early sexual trauma are similar to Freud's theory of hysteria. In these proposals, the inability to recall abuse becomes evidence that it occurred; and it tallies with the patient not having a sense of remembering.

Because some believe it is necessary to bring memory to light for cure to occur, there is a tendency to believe the reports of early childhood abuse. Recognizing that some "memories" may have been a product of a therapist's suggestion helps prevent untoward effects. Modern therapists recapitulate Freud's "slip" when they do not acknowledge the role of suggestion. Endorsing repression does not commit us to a belief that recovered memories must be accurate



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in all particulars. A memory that is repressed does not escape the usual kinds of degradation of memory. And just because the material comes from unconscious sources, or has emotional accompaniments, it doesn't mean it is true. (Bowers gave an example of his dream that Israel and Venezuela shared a common border, which was rectified by his waking awareness of the Atlantic Ocean and the Mediterranean. He noted that nothing like the Atlantic can be called upon if the dream is that one's parent molested oneself at the age of six.)

Ian Hacking, in *Rewriting the Soul*, labels a more fundamental indeterminacy (for the historical past itself). Bathing rituals in childhood can be redescribed as abuse, which determines the historical past rather than describing it. It is thus easier to justify abuse if the event is something that can be reinterpreted. For example, the conflicts of adolescents with their parents, may be reinterpreted later if personality problems continue. If in adulthood one concludes that abuse occurred, then bathing rituals can be reinterpreted as if it were earlier abuse, as if the abuse has continued for years

Our study looked at suggestibility and resistance to suggestion. During 5-day hospitalization for investigation of child abuse. The first day patient gets physical exam; 2nd day a genital exam, heart arousal, stress arousal; a later day had mental status, emotional functioning, cognitive functioning--and gross screen of IQ for age 5 and up and the digit span for 6 and up, plus rating of global functioning and provisional diagnosis. On Day 5 each child was given structured interview that included questions about the anal-genital exam, with some misleading questions included.

35 minutes after the psychological examination they were given questions about the exam, for brief memory. Next exam was forensic examination of memory for abuse. Gave memory for sentences, perceptual alterations scale (PAS), adolescent version of Dissociative Experiences Scale (A-DES); gave questionnaire to parents.

Hypotheses: suggestibility would be negatively related to age (more errors when younger). Sexually and physically abused children would show more dissociation or psychopathology. Dissociation or psychopathology should be inversely related to memory ability. IQ should be related to memory and resistance to misinformation. Wanted to reconcile two models of post traumatic stress disorder (PTSD): one says they have poorer memory, and the other says they are hypervigilant.

Over 100 children in the 200 received the questionnaire on Day 5. 39% were 3-5 years old, 41% 6-10 years old. 76% were African American. 22% had no documented abuse or neglect; 13% had experienced physical abuse; 30% sex abuse; 12% both types of abuse; 15% neglect; 8% parental addiction.

Measuring dissociation in kids is problematic. The concept is used to describe a huge range of phenomena. Scores on the DES are more highly correlated with the F Scale on the MMPI than with any other measure (Michael Nash's research). So the DES measures psychopathology. Also, children have healthy kinds of dissociation-- daydreaming, etc. Josephine Hilgard noted that young kids are naturally involved in imagination. Early traumas may lead to this dissociative style. How do we sort out the healthy imaginal involvements of children from the psychopathology? There is not sufficient data at this time. Available measures are not validated well. The CDC indicates behavior problems in children. The C-PAS conceptualizes dissociation as relating to eating disorders; the A-DES is a self report measure

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that related to psychopathology. CDC scores increase, in 3-5 year olds, as the amount of abuse increases. This looks like general psychopathology, and it is a parental rating. The A-DES and C-PAS were not related to abuse or neglect. In the older groups the CDC related to poor performance on memory tests; but only for the 6-10 year olds. (Poorer memories in younger children could have masked the effect in them.) The main finding for the study was clinician's estimate of Global Adaptive Functioning was significantly related to Resistance to Misleading Information. The effect did not show for the 3-5 yr old group, perhaps because their memory functioning is poor anyway. Also age was related to memory and suggestibility. Frischholz, Edward J. (1995, November). A critical evaluation of the 1985 AMA Report on hypnosis and memory. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Antonio, TX. JAMA 1985 concluded that hypnotically refreshed memories are less reliable than nonhypnotic recall. There are two problems with their conclusion: 1. No consensually validated definition of 'hypnosis' is identified. They talk about administration of induction, and differences in hypnotic susceptibility. 2. Empirical criteria for discriminating the unique and/or moderating effects attributable to hypnosis are not specified.

For example Loftus showed that memory errors can be created without hypnosis. You should not just add hypnosis to that model. The criticisms have not led to remedial practices. No research has been done to show how to minimize errors or how to facilitate accuracy. 'What is Hypnosis?' Something that is done vs. something that happens? A procedure or responsivity? Questions like this are relevant to research on whether hypnotically refreshed memories are less reliable than ordinary recall. Hypnosis is not a 'valid therapeutic modality' (i.e., 'hypnotherapy' is a misnomer). Hypnosis can be used adjunctively with many different types of therapeutic modalities: --psychodynamic therapies --behavior modification treatments --cognitive restructuring strategies --systematic desensitization --flooding --direct suggestion

There is a specious communality: hypnosis is used in a different kind of way with each approach. If hypnosis is defined in terms of whether an hypnotic induction procedure was administered to the subject, then hypnosis is a universal phenomenon (i.e., everyone can be administered an hypnotic induction procedure). This, in the AMA report, permitted the courts to define it this way, which leads to a number of ridiculous results.

We need to highlight 'What are the variables that are the source of the errors?' The sources are not hypnosis. We can minimize the sources by the way we ask questions, instruct the subjects, etc.

If hypnosis is defined in terms of the nature of the subjects' response to the procedures, then hypnosis is not a universal phenomenon (i.e., there are wide individual differences in hypnotic responsivity). I have shown that it is possible to alter memories, using the Loftus model, in people who are both low and high hypnotizable.

We need to take into account induction procedure, hypnotizability, type of memory, and the retrieval/influence procedure. The demand characteristics re forced responding, expectancies about memory (e.g. video recorder model), expectancies about hypnosis (e.g., everyone remembers) must be accounted for. Dependent variables in this type of research include memory accuracy, memory errors, and subjective confidence.

Aronoff, J.; Green, J. P.; Malinoski, P.; Zelikovsky, N.; Lynn, S. J. (1994, October).

**Hypnosis and autobiographical memories:** The impact of contextual factors. [Paper]

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Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Francisco. We examined the individual differences in recall for early memories, in a college population, using the Autobiographical Memory Scale (AMS) along with other scales and with a hypnotizability scale (measured in same and different contexts). 75 male and 171 females subjects participated.

Presented as two separate experiments, so Ss would not make an explicit link between autobiographical memories and things measured in the second study. Exper 1. Administered AMS which indicates we are interested in their memories of events, and not what they were later told about the events. First 5 birthdays, first day of school, etc. Rate the detail, vividness, and accuracy. Exper 2. Administered Fantasy Proneness (Wilson & Barber), Cognition, Imagery Control Scale, Derogotis, SAC (Brier's symptoms of child abuse), and Dissociative Experiences Scale.

Final sample of 247 Ss.

**Earliest memory was 3.8 years.** Ss ratings of details, vividness, and accuracy were highly correlated. These were negatively correlated with age of first memory. Bloom, Peter B. (1994). Clinical guidelines in using hypnosis in uncovering memories of sexual abuse: A master class commentary. *International Journal of Clinical and Experimental Hypnosis*, 42 (3), 173-178. "Joan," a clinical psychologist, requested a psychiatric consultation to determine whether hypnosis could recover accurate memories of suspected child abuse by her still living father. Are there clinical guidelines in using hypnosis in uncovering such possible memories of sexual abuse? We asked Dr. Peter B. Bloom to share his views with us.

### **NOTES: Gives case example and clinical guidelines for using hypnosis in uncovering memories of sexual abuse.**

1. In medical practice, "Primum non nocere," i.e. "First do no harm."
2. "No therapist should ever, either directly or indirectly, suggest abuse outside of a specific therapeutic context--certainly not to a client who is on the phone making a first appointment!"
3. "A therapist must not jump quickly to the conclusion that abuse occurred simply because it is plausible."
4. "A therapist should never simply assume that a client who cannot remember much from childhood is repressing traumatic memories or is in denial."
5. "Remember 'a client is most vulnerable to suggestion and the untoward influence of leading questions when therapy begins to delve into painful life situations from the past, particularly from childhood.'"
6. "Therapists ... should be cautious about suggesting that clients cut off communication with their families."
7. "Therapists should reconsider the 'no pain, no gain' philosophy of treatment."
8. "The context of therapy is as important as the content."
9. "Tolerate ambiguity." (Sincerity and conviction on the part of the patient reporting abuse are not in and of themselves reason to believe the material.)
10. "Respect the current science of memory."
11. "Maintain responsibility for making the diagnosis and choosing the treatment."
12. "Pursue alternative diagnoses to account for the symptoms."
13. "Historical and narrative truth: Understand the difference."

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**COMMENT:** The tenet that insight is necessary for change and growth is not true. Change can occur without insight, although insight may be helpful in maintaining change once it has occurred.

**SUMMARY:** These guidelines are presented to enhance safe practice, however, clinicians should use their own judgement to determine the best path to follow with each patient.

**NOTE:** Guidelines 1, 8, 9, 10, 11, 12, and 13 are those of Peter B. Bloom. Those labeled as Guidelines 2, 3, 4, 5, 6, and 7 were taken with permission from Yapko, M. (1993 September/October). "The seductions of memory. The false memory debate." *Family Therapy Networker*, 17, pp. 30-37. All discussions, however, are those of Peter B. Bloom.

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It is not reasonable to say there is no evidence for fugue states, when seeing one, if it has not been demonstrated in the laboratory. But you can investigate some of the phenomena in the laboratory.

Most of the time it is an affectively loaded idea that is repressed; in contrast, trauma usually lead to intrusions into consciousness. So repression of a traumatic event may be a rare way to deal with the event. Claims for repression and ESP differ in that there are probably observable mechanisms in the former (e.g. thought avoidance). If a person ejects thoughts about a topic frequently enough, the ejections become automatic. Freud's original description of repression used the word "intentional" and it was a footnote that took out that idea. (See Erdelyi's publications). Recent research we conducted on intuition and on problem solving is relevant to this problem.

[The remainder of Bowers' presentation is not summarized here.] 1994 Farvolden, Peter; Bowers, Kenneth S.; Woody, Erik Z. (1994, October). Hypnotic amnesia: Avoiding the intentional loop. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Francisco. Social-cognitive position is that suggestions for amnesia lead to motivated attempts to forget, and the sense of nonvolition is due to attributional error. Neo-dissociation position is that post-hypnotic amnesia is activated by suggestions, and material is not available to consciousness. Ss may mistakenly attribute their amnesia to their own efforts, or to their imaginings. (See their analgesia studies.)

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Used a recall organization paradigm. Ss learn 16 item categorized word list, then are given suggestion to forget one category. After suggestion is canceled, Ss are told to report again. In their heart rate study, highs were amnesic and recalled words not targeted for amnesia. Highs weren't trying to forget, even though they were experiencing things happening cognitively during the waiting period.

**Study II.** One group of highs engaged in a distraction task, which would prevent their participating in task relevant practice. Ss in the distraction condition recalled fewer words, just as in the standard hypnosis condition. However, their subjective report indicated they had even a stronger feeling that something had happened beyond their volition or control than did Ss in the standard hypnotic condition.

It appears that task relevant thoughts and imagery reported by Highs are not necessary. They are co-suggestion effects. See Hargedon, Bowers, & Woody in similar work, on analgesia.

However, during the recall period Highs did not work as hard as the Lows in trying to remember according to both their self-reports and the heart rate measure.

**Standard hypnosis condition.** However, their subjective report indicated they had even a stronger feeling that something had happened beyond their volition or control than did Ss in the standard hypnotic condition.

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### **Three studies purporting to establish repression:**

1. Briere & Comte sampled 450 adults who reported abuse. They asked, "Was there ever a time when you couldn't remember the forced experience?" How does respondent understand the question? Clients were all in therapy.
2. Herman and Schatzow (1989) "verification of abuse" study. 53 Ss in a survivor's group. Reports percentages who had no or little recall. Authors don't acknowledge that the group discussion and the attitude of therapist may have shaped the response. It is also not clear how many Ss who claimed to have "verified" their accounts were among those who had severe amnesia for the event. They could be Ss who had never lost the memory in the first place.
3. Williams interviewed women who earlier were in Emergency Rooms because of abuse being suspected. 38% did not report childhood abuse when questioned, and author concluded it was due to repression. Significant numbers of adults cannot remember things even past the age of 5. Problem with wording of questions. Some of the women interviewed might have preferred not to report the event. This was not investigated in the study. Freyd, Jennifer J. (1994). Betrayal-trauma: Traumatic amnesia as an adaptive response to childhood abuse. *Ethics and Behavior*,

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4. Betrayal-trauma theory suggests that psychogenic amnesia is an adaptive response to childhood abuse. When a parent or other powerful figure violates a fundamental ethic of human relationships, victims may need to remain unaware of the trauma not to reduce suffering but rather to promote survival. Amnesia enables the child to maintain an attachment with a figure vital to survival, development, and thriving. Analysis of evolutionary pressures, mental modules, social cognitions, and developmental needs suggests that the degree to which the most fundamental human ethics are violated can influence the nature, form, processes, and responses to trauma. A logical extension of this research direction, based on a strategy that has been very effective in cognitive neuroscience, would be to look for neuroanatomical underpinnings of the cognitive mechanisms implicated in dissociation. ... For instance, the ability to dissociate current experience may depend partly on representational structures that support spontaneous perceptual transformations of incoming events. One possible perceptual transformation that is amenable to scientific investigation, would be the creation of spatial representations in which the mental 'observer' is spatially distinct from the real body of that observer. Such a representation would fit patient descriptions of 'leaving their body' during a traumatic episode and viewing the scene as if from afar. Additionally one could investigate the role of mental recoding and restructuring during memory 'recovery' and psychotherapy" (pp. 19-20).

To scientific investigation, would be the creation of spatial representations in which the mental 'observer' is spatially distinct from the real body of that observer. Such a representation would fit patient descriptions of 'leaving their body' during a traumatic episode and viewing the scene as if from afar. Additionally one could investigate the role of mental recoding and restructuring during memory 'recovery' and psychotherapy" (pp. 19-20). Ganaway, George K. (1994, October). The thin line: Reality and fantasy in hypnotically facilitated memory retrieval during psychotherapy. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Francisco. Historical review: Every hundred years there has been a peak in interest in altered states--a fin de siècle zeitgeist. It is the Brigadoon effect, i.e. something materializing for one day every 100 years. The theories developed then suffer from "paradigm grandiosity." In hypnosis, we can refer back to: 1694 Salem witch trials

1790s Gausson's exorcism (see Ellenberger); in a 1775 showdown between him and Mesmer, there occurred the turning point between exorcism and psychotherapy. 1880s Charcot at Salpêtrier 'demonstrated' that hypnosis was an organic, pathological condition. Ultimately this contributed information about the plasticity of hypnotized people. (In the 1880s Bernheim thought it wasn't pathological and thought that suggestion was the important element in hypnosis.)

Recent historical contributions have influenced our views of MPD. Spiegel and Kardiner published book about hypnosis and war neuroses. Cheek & LeCron developed ideomotor questioning, which ignores the contribution of unconscious fantasy. Jacob Arlow's metaphor for MPD is two movie projectors aiming at a screen from two different sides. The subjectively known experiential world thereby combines external reality and the person's internal, motivated perceptions. The author presented a case study of female therapist, who had been previously diagnosed as MPD, who presented with dissociative symptoms that she thought were due to abuse by her grandmother. She fabricated the memories in order to get the holding and physical nurturing from her therapist for being courageous and remembering the abuse.

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Maintenance of professional boundaries is very important in treatment. Krippner, Stanley (1994, August). Improvement of academic skills for children and adolescents with hypnosis. [Paper] Presented at the annual meeting of the American Psychological Association, Los Angeles. Literature and research in this area are sparse, though there is clinical evidence that hypnosis is useful. My definition of hypnosis is a procedure facilitating a variety of structured goals or procedures in which a suggestion or motivation is enhanced by a mechanical device, another person, or oneself.

### **There are 3 areas of application in academics:**

- \* study habits
- \* test taking
- \* strengthening academic motivation

The hypnotist should know the specifics of academic achievement, because specific suggestions (e.g. "Imagine you are at desk focusing well for 20 minutes,") are better. Emphasis on the positive is better than negative. Use the words "imagination," "concentration," or "imagining pictures," rather than "hypnosis." I try to determine what they expect, based in part on what words they use.

In elementary school I focus on attitude and self esteem. I have them imagine reading a story, then how well they feel; that when they notice mistakes they won't be bothered because everyone makes mistakes.

For high school, I help them develop good habits for time motivation (e.g. suggestions to "make an outline to follow while you study"). At college level, I introduce self hypnosis. I make frequent use of mental imagery, at all levels--especially imagery rehearsal, in which the person is engaged in a particular activity.

In the NSF report on accelerated learning techniques (a project sponsored by the Army), Lozonov's "suggestopedia" techniques were studied. This review indicated it might enhance training effectiveness and reduce training time. I have observed the suggestopedia classes in Bulgaria and Hungary. Classes had a relaxed comfortable learning environment. Rather than individual learning, it was group learning. It included preliminary exercises, new material, and a review of what was learned. The first stage used 2/3 of the time. Then suggestions were given by the teacher to promote learning. The presentation phase took one third of the time. The method encourages students to make mental images of the material. In foreign language classes, people take on new roles. positive is better than negative. Use the words "imagination," "concentration," or "imagining pictures," rather than "hypnosis." I try to determine what they expect, based in part on what words they use.

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Bennett, Henry L. (1993, October). Hypnosis and suggestion in anesthesiology and surgery. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. He began by saying that he is opposed to using hypnosis for surgery, though he favors a theory of how hypnosis effects physiological change, and cites T. X. Barber's classic "Changing Unchanging Bodily Processes."

Relaxation puts patient in a "psychological strait jacket" because surgery is so highly stressful. He gives information "about how to go through the surgery more comfortably," gets across the idea about coping style, tells them surgery is exertional and that they are tired afterward, that he can help them "using things you already know how to do," and specifies exactly what they can do--using model of himself as a trainer.

In some recent research he used pairs of pictures, some of which lead to pupillary constriction (blood pressure goes down) or dilation (blood pressure goes up). Instructing them to look, patients looked twice as long at the pictures than they did during free gaze. When not instructed to look, heart rate went down; when told to look, heart rate went up. So the researchers went back to free gaze. He uses this as a metaphor for many of the pre-surgery preparation activities that encourage relaxation "inappropriately." He cites Cohen & Lazarus re vigilant copers, Price et al (1957), and some other studies on epinephrine effects. He uses examples of work patients may have done (e.g. planting a garden) when talking with patients prior to surgery, that gives them a sense of accomplishment later.

You have to give specific instructions or suggestion, not general relaxation suggestions. Question from the audience: Can preoperative instructions (not hypnosis) diminish blood loss. In Bennett's answer he seems to be reporting the earlier study: they found 150- 4000 cc blood loss, high variability. Extent of blood loss was determined by extent of surgery, by instructions to patients vs no instructions. This study was replicated by Enqvist, Bystedt, & von Konow in the Anesthesia conference at Emory University in 1992.

May 1993 Western Journal of Medicine article, Disbrow, Bennett, & Owinos, with 40 lower abdominal surgery patients who got specific instructions or not. The SHCS was used to measure hypnotizability: highs resolved quicker than low hypnotizable patients. They also found that instructed patients did better than those who did not get specific instructions.

There are now 3 replications of McClintock's study: people use less medications after surgery, when tapes about rapid recovery are played \*during\* surgery. Bennett is now using tapes with suggestions for recovery during surgery. Question from the audience: Can preoperative instructions (not hypnosis) diminish blood loss.

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May 1993 Western Journal of Medicine article, Disbrow, Bennett, & Owinos, with 40 lower abdominal surgery patients who got specific instructions or not. The SHCS was used to measure hypnotizability: highs resolved quicker than low hypnotizable patients. They also found that instructed patients did better than those who did not get specific instructions.

There are now 3 replications of McClintock's study: people use less medications after surgery, when tapes about rapid recovery are played \*during\* surgery. Bennett is now using tapes with suggestions for recovery during surgery. 1992 Barrett, Deidre (1992). Fantasizers and dissociaters: Data on two distinct subgroups of deep trance subjects. Psychological Reports, 71, 1011-1014. The study delineated two subgroups of highly hypnotizable subjects. The first subgroup (fantasizers) entered trance rapidly, scored high on absorption (mean of 34 on the 37-item Absorption Scale), and described hypnosis as much like their rich, vivid, and very realistic waking fantasy life. None of the fantasizers experienced unsuggested amnesia, and 5/19 failed to produce suggested amnesia. Only 2/19 fantasizers described hypnosis as very different from their other experiences. The earliest memories of fantasizers were all identified as occurring before age 3, and before age 2 for 11 of 19. The second subgroup (dissociaters) took time to achieve a deep trance (unlike Wilson and Barber's fantasy-prone subjects, but they did achieve as deep a trance as fantasizers), experienced hypnosis as different from any prior experiences, and were more likely to exhibit amnesia for both hypnotic experience and waking fantasies. None of the dissociaters described their waking imagery as entirely realistic, and the earliest memories in this group were all over the age of 3 (mean age - 5). Of the 15 dissociaters, 7 scored below the norm on the Absorption Scale (Mean - 26). Blankfield, Robert; Scheurman, Kathleen; Bittel, Sue; Alemagno, Sonia; Flocke, Sue; Zyzanski, Stephen (1992, October). Taped therapeutic suggestions and taped music as adjuncts in the care of coronary artery bypass graft patients. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington, VA. 18 studies have explored the issue with an experimental design; half used tapes, half didn't; majority of studies found benefits; 2 were of heart surgery patients.

This study used taped suggestions with coronary bypass patients. Used tape recorder rather than person delivering suggestions because it was more convenient; used tape intra-surgery and post-operatively for more impact. We hypothesized: shorter length of stay, less narcotic analgesia, less anxiety, faster recovery, more positive mental outlook, resume activities sooner, have less symptoms postoperatively, etc.

Used a prospective, randomized, single-blind trial in 2 community hospitals in Cleveland with coronary artery bypass graft surgery patients. Study was done between Dec 1989 - Feb 1992.

### **3 groups were involved:**

- (1) Suggestion,
- (2) music, and
- (3) tape. Control subjects had a blank tape. Tapes were played continuously and repeatedly with headphones. Postoperatively, a different tape was played. Excluded: Patients with emergent surgery, hearing impairment, poor comprehension of English, patients who died in hospital,

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patients whose hospital stay lasted longer than 14 days (3 of them). 5% of sample were eliminated for last 2 reasons.

Music: Herb Ernst, Dreamflight II. Suggestions: Music background, permissive, based on Evans & Richardson's study.

Outcome Measures: Nurse assessment of anxiety and progress post operatively, Symptom scale, Depression scale.

Mean age 62, 3/4 men, 92% white, 75% married. The groups were same on a variety of preoperative variables (status of heart and arteries). Length of stay was 6.5 in all 3 groups. No difference in narcotics use, in nurse assessment of anxiety or of progress; of depression scale, or activities of daily living. Recategorized data into patients who said the tapes were helpful (both music and suggestion) N = 33 vs the other patients N = 62. No difference in the variables evaluated. 1992

Christianson, S-A (1992). Emotional stress and eyewitness memory: A critical review. *Psychological Bulletin*, 112, 284-309. Although not addressing hypnosis specifically, this is a comprehensive review of literature on memory for negative emotional events relevant to issues of hypnosis and memory. The final conclusion is that emotional events are indeed remembered differently than neutral or ordinary events and are well retained with respect to the event itself and concerning central, critical detail (not peripheral detail). Such memories seem less susceptible to forgetting. There is evidence for dissociation between memory for emotional information and memory for specific event information. There is also evidence of amnesia or memory impairment effects after high-arousal events, with memory increasing as more time passes after the event. The functional amnesia effects are probably due to an interaction between altered encoding operations and the specific retrieval circumstances aiding consciously and unconsciously controlled reconstructive processes. There is little evidence to support Loftus' contentions that emotional stress is bad for memory.

Claridge, Karen (1992). **Reconstructing memories of abuse:** A theory-based approach. *Psychotherapy*, 29, 243-252. The recovery of traumatic memories is an important part of therapy with survivors of abuse. This article describes a conceptual framework for memory reconstruction based on Horowitz' (1986) theory of stress response syndromes. The client's history of intrusive symptoms provides a way to anticipate the nature of the trauma, even when no memory of it exists. Ongoing intrusive symptoms are used to retrieve memory fragments, and their emotional impact is used to build the client's emotional tolerance. Emphasis is placed on preparing for memories by identifying what the client will need when the memories return, building coping skills, and beginning to restructure cognitions at the "what if" stage of remembering. Case material is used to illustrate. Darken, Rachel (1992). Hypnosis in the treatment of survivors of sexual abuse. *Australian Journal of Clinical and Experimental Hypnosis*, 20, 105-110. This paper outlines the problems of child sexual abuse and its long-term sequelae, often reaching down generations. In psychotherapy with survivors of childhood sexual abuse, hypnosis offers a flexible treatment modality and the paper focuses particularly on the use of hypnosis and self-hypnosis for the "reparenting" element of psychotherapy. Erdelyi, Matthew, Hugh (1992). Psychodynamics and the unconscious. *American Psychologist*, 47, 784-787. The original New Look integrated the constructivist-psychodynamic traditions of Bartlett and Freud. The unconscious (Greenwald's "New Look 3") is a logically different idea, although

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in practice it is often intertwined with constructivist - psychodynamic approaches. The unconscious is a pretheoretic term with a variety of problems: It has multiple and unsettled meanings; null reports need not signify null awareness; the conscious-unconscious dichotomy implied by the limen may not exist; even "absolute subliminality" (chance-level accessibility) is relative to the time interval of testing, as accessibility can increase to above-chance levels over time (hypermnnesia). Yet, the phenomena that the unconscious sloppily subsumes are not simple or dumb. The capacity of subliminal perception should not be confused with the capacity of subliminal (unconscious) memory and cognition. Faller, Kathleen Couborn (1992, Summer). Can therapy induce false allegations of sexual abuse?. The Advisor (Published by American Professional Society on the Abuse of Children), 5 (3), 3-6. "Concern about the impact of therapy on children's accounts of sexual abuse should be understood in the context of two phenomena: (1) the adult need to deny that children are sexually abused, and (2) adult identification with the alleged abuser. These phenomena operate at both individual and societal levels" (p. 3). "Research related to impact of stressful situations on children's ability to recall provides mixed results, some studies finding children are less accurate if the event is traumatic (Peters, 1991) and others finding they are not (Goodman, Reed, & Hepps, 1985).

"Research reveals that it is rare for children to falsely allege that they have been touched in their private parts. In one study, a substantial proportion of children who experienced genital and anal touch during a physical examination by a doctor did not volunteer this information when asked general questions about the examination. The majority of children in the study revealed genital and anal touch only when they were asked specific questions like, "Did the doctor touch you there?" (Saywitz, Goodman, Nicholas, & Moan, 1991)" (pp. 3-4). "Clarke-Stewart and her colleagues (1989) have demonstrated that children's interpretation of ambiguous events can be manipulated and altered by an authority figure who insists upon a particular interpretation (see also Lindberg, 1991)" (p.4).

"In sum, the research suggests that older children are likely to provide more complete unassisted disclosure than younger children. Younger children may need more memory cues in the form of specific questions than older children. Therapists are much more likely to find false negatives than false positives. Finally, therapists should be aware of the possibility the child may identify the wrong person. ... Generally, however, the research indicates that concern about the contaminating effects of therapy on children's recollections of sexual abuse is exaggerated" (pp. 4-5).

"Research indicates that the proportion of fabricated reports may be higher in the divorce scenario than in other contexts (Faller, 1990; Jones & Seig, 1988). Studies suggest most false reports are made by adults, not children (Jones & McGraw, 1987; Jones & Seig, 1988)" (p. 5).

"Clinical research (Sorenson & Snow, 1991) and experience (Faller, 1988) indicate that for most children, revealing sexual abuse is a process which occurs over time. A typical pattern is one in which children begin with the least overwhelming experience and gradually disclose more and more as their accounts are accepted and believed" (p. 5).

"[In conclusion]... therapists should be aware of the findings from research on children's memory and suggestibility. This research indicates that there are vulnerabilities which should be taken into account during therapy" (p. 6).

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"[In conclusion]... therapists should be aware of the findings from research on children's memory and suggestibility. This research indicates that there are vulnerabilities which should be taken into account during therapy" (p. 6). Gravitz, Melvin A. (1992, October). Historical and legal issues. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington, VA. The 1976 Chowchilla kidnaping case in California stimulated interest in using hypnosis for forensic investigation; in the same year, it was used in a case of airline hijacking in the Mediterranean to Uganda. Hypnosis is used for obtaining "leads" and doesn't claim to develop "the truth."

Other uses include: lifting amnesia of witnesses and victims of trauma--including but not limited to crime; obtaining additional information in nonamnesic Ss; evaluation of a subject's mental condition (e.g. multiple personality disorder vs malingering, as in the Bianchi case). In each use, hypnosis is not infallible, is not complete. But no procedure is. Motivation, resistance, transference are all critical.

**Historic questions:**

1. whether coercion is entailed
2. impact of hypnosis on memory
3. possible harm to subject, physically and mentally

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The coercion issue dates to Mesmer, whose procedures led to accusations of immoral suggestions. In the 1880s Charcot said no one could be forced to do anything while the Nancy school (Liebeault) said they could. Since then we have seen laboratory studies using student volunteers, fake "poison," rubber daggers, etc., as well as recent "real life" studies where Ss were induced to violate their morals (see Watkins). Review articles include those by Jacob Conn of Baltimore and the 1985 JAMA article written by a panel headed by Martin Orne. For impact of hypnosis on memory, see the Orne report which did not fully support using hypnosis for memory enhancement. Regarding possible harm to a hypnotic subject in the 19th century, a young man's death was attributed to nervousness and exhaustion and diabetes due to repeated hypnosis. Other studies of death (of chickens, of a frog) due to repeated hypnotization were published. Now the consensus is that hypnosis is not dangerous (but incompetence using hypnosis may be dangerous). **LEGAL PRECEDENTS.** In 1897 a California court refused to accept testimony of a Subject who had been hypnotized. *People vs Eubanks*. The 1950's Cornell case established that a person can be hypnotized for their own defense.

In 1963 the California supreme court ruled that a lower court made a mistake in not admitting testimony from someone who had been hypnotized. In *Harding* (a Maryland case), the trauma victim, amnesic, was hypnotized one month later. The testimony was accepted. A 1983 Maryland appeals court overturned it, influenced by the California *Shirley* case. In 1983 *Hurd* case, a victim, hypnotized, identified her husband as attacker. Lower court didn't permit the testimony; then a higher court reversed it.

**The court issued what are known as the Hurd rules, governing testimony that is acceptable:**

1. hypnotist is licensed psychologist or psychiatrist with training in hypnosis
2. hypnotist must be independent of both the prosecution and defense
3. all information given to the hypnotist about the case must be written
4. hypnotist must obtain a nonhypnotic account of the memory before hypnosis is used.
5. must have taped record of the hypnosis sessions (preferably videotaped)
6. only hypnotist and subject should be present in the room

Soon after, California had the *Shirley* case. The California court ruled hypnosis per se is unreliable because it produces confabulation. This decision had a chilling effect throughout the country for several years. In 1987 we had *Rock vs Arkansas*, the first and only case involving hypnosis to come before the U. S. Supreme Court. Vicky Rock shot her husband. Under hypnosis, she remembered she did not have her finger on the trigger, and her husband grabbed her and shook her. Lower court wouldn't admit the testimony of the gun expert, who testified the trigger was sensitive to jarring. Supreme Court ruled defendants (not necessarily others) could use hypnosis in their own defense.

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Recent research has established several empirical results that are widely agreed to merit description in terms of unconscious cognition. These findings come from experiments that use indirect tests for immediate or long-term residues of barely perceptible, perceptible-but-unattended, or attended-but-forgotten events. Importantly, these well-established phenomena--insofar as they occur without initially involving focal attention--are limited to relatively minor cognitive feats. Unconscious cognition is now solidly established in empirical research, but it appears to be intellectually much simpler than the sophisticated agency portrayed in psychoanalytic theory. The strengthened position of unconscious cognitive phenomena can be

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related to their fit with the developing neural network (connectionist) theoretical framework in psychology.

Jacoby, Larry L.; Lindsay, D. Stephen; Toth, Jeffrey P. (1992). **Unconscious influences revealed: Attention, awareness, and control.** *American Psychologist*, 47, 802-809. Recent findings of dissociations between direct and indirect tests of memory and perception have renewed enthusiasm for the study of unconscious processing. The authors argue that such findings are heir to the same problems of interpretation as are earlier evidence of unconscious influences--namely, one cannot eliminate the possibility that conscious processes contaminated the measure of unconscious processes. To solve this problem, the authors define unconscious influences in terms of lack of conscious control and then describe a process dissociation procedure that yields separate quantitative estimates of the concurrent contributions of unconscious and consciously controlled processing to task performance. This technique allows one to go beyond demonstrating the existence of unconscious processes to examine factors that determine their magnitude. Kihlstrom, John F.; Barnhardt, Terrence M.; Tatarzyn, Douglas J. (1992). The psychological unconscious. *American Psychologist*, 47, 788-791. In response to Greenwald's article on contemporary research on unconscious mental processes, the authors address three issues: (a) the independence of much recent research and theory from psychodynamic formulations; (b) the broad sweep of the psychological unconscious, including implicit perception, memory, thought, learning, and emotion; and (c) the possibility that the analytic power of unconscious processing may depend both on the manner in which mental contents are rendered unconscious and the manner in which they are to be processed. Lewicki, Pawel; Hill, Thomas; Czyzewska, Maria (1992). Nonconscious acquisition of information. *American Psychologist*, 47, 796-801. The authors review and summarize evidence for the process of acquisition of information outside of conscious awareness (covariations, nonconscious indirect and interactive inferences, self-perpetuation of procedural knowledge). Data indicate that as compared with consciously controlled cognition, the nonconscious information - acquisition processes are not only much faster but are also structurally more sophisticated, in that they are capable of efficient mechanisms of non-conscious acquisition of information provide a major channel for the development of procedural knowledge that is indispensable for such important aspects of cognitive functioning as encoding and interpretation of stimuli and the triggering of emotional reactions.

**Processing of multidimensional and interactive relations between variables.** Those mechanisms of non-conscious acquisition of information provide a major channel for the development of procedural knowledge that is indispensable for such important aspects of cognitive functioning as encoding and interpretation of stimuli and the triggering of emotional reactions 1991

Block, Robert I.; Ghoneim, M. M.; Sum Ping, S. T.; Ali, M. A. (1991). Efficacy of therapeutic suggestions for improved postoperative recovery during general anesthesia. *Anesthesiology*, 75, 746-755. There have been claims that the postoperative course of patients may be improved by presentation during general anesthesia of therapeutic suggestions which predict a rapid and comfortable postoperative recovery. This study evaluated the effectiveness of such therapeutic suggestions under double-blind and randomized conditions. A tape recording predicting a smooth recovery during a short postoperative stay without pain, nausea, or vomiting was played

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during anesthesia to about half the patients ( $N = 109$ ), while the remaining, control patients were played a blank tape instead ( $N = 100$ ). The patients were primarily undergoing operations on the fallopian tubes, total abdominal hysterectomy, vertical banding gastroplasty, cholecystectomy, and ovarian cystectomy or myomectomy. The anesthesia methods consisted of either isoflurane with 70% nitrous oxide in oxygen to produce end-tidal concentrations of 1.0, 1.3, or 1.5 MAC; or 70% nitrous oxide in oxygen combined with high or low doses of opioids. Assessments of the efficacy of the therapeutic suggestions in the recovery room and throughout the postoperative hospital stay included: the frequency of administration of analgesic and antiemetic drugs; opioid doses; the incidence of fever; nausea, retching, and vomiting; other gastrointestinal and urinary symptoms; ratings of pain; ratings of anxiety; global ratings of the patients' physical and psychological recoveries by the patients and their nurses; and length of postoperative hospital stay. There were no meaningful, significant differences in postoperative recovery of patients receiving therapeutic suggestions and controls. These negative results were not likely to be due to insensitivity of the assessments of recovery, as they showed meaningful interrelations among themselves and numerous differences in recovery following different types of surgery. Widespread utilization of therapeutic suggestions as a routine operating room procedure seems premature in the absence of adequate replication of previously published positive studies. (Key words: Anesthesia, depth: Awareness, Memory, Recall, Learning.)

Patients ages 19-55 were accepted into the study and they were paid for participation. (Older patients were excluded to guard against memory or hearing problems.) Other criteria for exclusion were: ASA physical status 4 or 5 indicating significant systemic disease, visual or hearing problems, middle ear disease (because it increases probability of nausea and vomiting), if their condition might require heavy sedation, if they were currently taking medication that interferes with memory (e.g. benzodiazepines, if there were intolerance to opioids, or if there were a likelihood of using postoperative pain treatment other than opioids).

The Spielberger State-Trait Anxiety Inventory was administered before surgery. Either suggestions (lasting 6 minutes) or a blank tape were played through headphones, starting 5 minutes after the surgical incision. The tape was played once for the first 59 patients, continuously for the remaining 150 patients. The first 139 patients received additional verbal materials on the tape, for memory tests to test possibility of learning under anesthesia. Operating room sounds were recorded by a tape recorder near the patient's head, throughout period of unconsciousness (except when tape was being played).

After the first 25% of cases, the team decided that lack of effect on therapeutic suggestions attributable to type of anesthesia did not warrant restriction to a single anesthetic method; also, multiple presentations of the suggestions on tape did not show an effect different from a single presentation.

After the patient regained consciousness and was reoriented, pain, nausea, retching, and vomiting were assessed every 30 minutes. Pain was rated orally on a scale from 1 to 10 in the recovery room, then on visual analogue scales every 2 hours on the day of surgery and the second day, and every 4 hours on subsequent hospital days during waking hours. Variables that were rated by staff every 24 hours included: opioids, other analgesics, antiemetics, nausea, vomiting, retching, presence or absence of nasogastric tube, passage of flatus, bowel movement,



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fluid intake, solids intake, urination. Temperature was recorded every 4 hours for the first 2 days after surgery, and after that less often. The anxiety measures were repeated on Day 3 postsurgery, as well as self ratings and nurse ratings on physical and psychological recovery. Staff recorded length of postoperative hospital stay and reasons for any delay of discharge. Separate analyses were performed for patients receiving opioids via patient-controlled analgesia (52%) vs traditional administration (48%), but no differences were found for effects of therapeutic suggestions except on postoperative Day 8. "The inability to detect beneficial effects of therapeutic suggestions probably was not due to insensitivity of the measures of recovery. These measures were sensitive enough to show numerous significant differences in recovery after different types of surgery" (p. 751). The authors supported their contention that the measures were sufficiently sensitive by demonstrating meaningful correlations among the measures themselves; and by demonstrating adequate statistical power for detecting the effects of theoretical interest--at least 1 day in postoperative hospital stay or one half day in fever. Discussion: The authors note that a recent investigation that found positive results in a double-blind, randomized design with 39 hysterectomy patients (Evans & Richardson, 1988. Improved recovery and reduced postoperative stay after therapeutic suggestions during general anaesthesia. *Lancet*, 2:491-493) may not have controlled for variables such as presence of malignancy, physical status of patients before surgery, or ethnicity. Authors note that Evans and Richardson observed shorter periods of pyrexia despite there being no relevant suggestions, but no differences in pain intensity, nausea, vomiting, or urinary difficulties despite there being suggestions relating to those symptoms. There also were no differences in mood and anxiety test scores postoperatively for the experimental and control groups.

The authors note that McLintock, Aitken, Downie, & Kenny (Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions. *Br M J* 301:788-790. 1990) reported a 23% reduction in opioids by patients receiving suggestions, but no reduction in pain, nausea, or vomiting. They contrast the present study with these earlier studies that had obtained positive results.

"We studied patients who had more than one type of surgery to obtain a large sample size and to assess the possibility that beneficial effects of therapeutic suggestions would be restricted to certain types of operations. Had this been the case, interactions of therapeutic suggestions with type of surgery would have been significant in the overall analyses, and follow-up analyses would have indicated that they were attributable to beneficial effects of therapeutic suggestions for certain surgeries. This did not occur. The two types of surgeries involving the largest numbers of patients seemed particularly promising for demonstrating beneficial effects. It has been reported that therapeutic suggestions presented during anesthesia are likely to be less successful with major and extensive surgery. Certainly, surgery on the fallopian tubes and gastric stapling did not involve a great deal of tissue trauma and blood loss. Patients were motivated to have the surgery and to recover quickly; particularly motivated were those having operations on the fallopian tubes, who were very eager to become pregnant, and those having vertical banding gastroplasties, who wanted desperately to lose weight" (pp. 753-754). "In practice, we observed no beneficial effects of therapeutic suggestions, and there was no hint that anesthesia methods influenced the efficacy of the therapeutic suggestions. Interestingly, anesthetic methods also did not influence learning under anesthesia in the implicit

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memory tests we have used previously. Patients anesthetized with nitrous oxide and opioids did not differ from those anesthetized only with inhalational agents. In general, implicit or unconscious memory occurs in patients regardless of anesthesia methods or dosages of drugs" (p. 754).

"The few significant effects of therapeutic suggestions in our study did not point toward a beneficial influence of these suggestions. We found, in fact, an increased frequency of retching (but not nausea or vomiting) in the experimental group. The multiple variables examined in this study increased the likelihood of significant differences arising by chance, such that the null hypothesis was rejected when it should have been accepted. This is the way we interpret the effect on retching---i.e., as a type I error. We used in our therapeutic suggestions one negative or exclusionary sentence, 'You won't feel nauseous or have to vomit', among several positive or affirmative statements, e.g., 'You will enjoy eating, drinking...You will swallow to clear your throat and everything will go one way, straight down. . . The food will taste good....Your stomach will feel fine.' We do not think that the negative sentence led to paradoxical results. Evans and Richardson (personal communication) used in their therapeutic suggestions a negative sentence ('You will not feel sick'), which they repeated, yet the reported incidence of nausea and vomiting did not differ between the experimental and control groups" (p. 754).

**When tape was being played.** After the first 25% of cases, the team decided that lack of effect on therapeutic suggestions attributable to type of anesthesia did not warrant restriction to a single anesthetic method; also, multiple presentations of the suggestions on tape did not show an effect different from a single presentation.

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**Reported that therapeutic suggestions presented during anesthesia are likely to be less successful with major and extensive surgery.** Certainly, surgery on the fallopian tubes and gastric stapling did not involve a great deal of tissue trauma and blood loss. Patients were motivated to have the surgery and to recover quickly; particularly motivated were those having operations on the fallopian tubes, who were very eager to become pregnant, and those having vertical banding gastroplasties, who wanted desperately to lose weight" (pp. 753-754).

"In practice, we observed no beneficial effects of therapeutic suggestions, and there was no hint that anesthesia methods influenced the efficacy of the therapeutic suggestions. Interestingly, anesthetic methods also did not influence learning under anesthesia in the implicit memory tests we have used previously. Patients anesthetized with nitrous oxide and opioids did not differ from those anesthetized only with inhalational agents. In general, implicit or unconscious memory occurs in patients regardless of anesthesia methods or dosages of drugs" (p. 754).

"The few significant effects of therapeutic suggestions in our study did not point toward a beneficial influence of these suggestions. We found, in fact, an increased frequency of retching (but not nausea or vomiting) in the experimental group. The multiple variables examined in this study increased the likelihood of significant differences arising by chance, such that the null hypothesis was rejected when it should have been accepted. This is the way we interpret the effect on retching---i.e., as a type I error. We used in our therapeutic suggestions one negative or exclusionary sentence, 'You won't feel nauseous or have to vomit', among several positive or affirmative statements, e.g., 'You will enjoy eating, drinking...You will swallow to clear your throat and everything will go one way, straight down. . . The food will taste good....Your stomach will feel fine.' We do not think that the negative sentence led to paradoxical results. Evans and Richardson (personal communication) used in their therapeutic suggestions a negative sentence ('You will not feel sick'), which they repeated, yet the reported incidence of nausea and vomiting did not differ between the experimental and control groups" (p. 754). Bodden, Jack L. (1991). Accessing state-bound memories in the treatment of phobias: Two case studies. *American Journal of Clinical Hypnosis*, 34, 24-28. Two cases of simple phobia demonstrate the inadequacies of both behavioral and psychodynamic theories. These cases and their treatment outcomes provide support for the state-dependent memory and learning theory. Hypnosis and ideomotor signaling proved to be not only effective treatments but also useful means of illuminating the role and nature of symptom function. Issues of symptom removal and substitution are also discussed in relation to these cases. The authors state that Rossi and Cheek (1988) summarize a number of experimental studies on animal memory that demonstrate that different information substances are involved in different learning situations. For example, ACTH and cortisol are involved in avoidance learning while angiotensin is involved in operant conditioning. In hypnosis, state dependent memory seems to be implicated. "Hilgard (1977) interpreted the state-dependent memory studies by Overton and others as entirely consistent with and supportive of his theory of hypnosis. Milton Erickson (1948) has also strongly suggested that it is the altered levels of arousal and affect that are responsible for the encoding and recall of stress-related problems with hypnosis" (p. 26).

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"Affective experiences are apparently stored independently from their intellectual counterparts, or the emotional unit from one set may attach itself to a constellation of cues that make up a totally different cognitive set. Hypnosis may facilitate recall by providing relevant cues during an altered state of consciousness" (p. 27).

"In commenting upon [one of Erickson's cases], Rossi (1986) states that Erickson was effective because he helped the patient access state-bound memories by reviewing the context and sensory-perceptual cues that surrounded their original acquisition" (p. 27).

"When traditional behavior therapy fails it may be because the original fear stimulus is state bound or unconscious. What is conscious to the patient are those stimuli that are similar in some important respect to the original phobic stimulus and are acquired by stimulus generalization. Desensitization may reduce the patient's reactivity to the associated or acquired stimuli but cannot desensitize the original stimulus until it can be accessed consciously" (p. 27).

"The two main psychological explanations of phobic behavior are psychodynamic and behavioral. The psychodynamic approach is built upon the early writings of Freud (1956) on the traumatic basis of neurosis. Freud speculated that the intense anxiety (psychic pain) associated with the emotional trauma lead to dissociation, repression, and amnesia. Symptoms represented a dissociated or symbolic vestige of the repressed ('forgotten') trauma.

"Behavioral explanations (e.g., Rimm & Masters, 1974) are built upon classical and operant conditioning models of learning. Classical conditioning explains how a neutral stimulus (e.g., a bridge) can acquire reactivity and elicit a fear response. Avoidant behavior, which preserves the phobia, is acquired and maintained by operant conditioning. Treatment apparently involves gradual extinction of the fear response.

"These two divergent explanations have spawned quite different therapeutic approaches, with the behavioral approach (systematic desensitization) demonstrating greater empirical support for its effectiveness (Kaplan & Sadock, 1986). The problem is made complex theoretically by the fact that desensitization doesn't always work, even when applied in a competent fashion" (p. 25).

"Freud's early work on the traumatic basis of neurosis pointed to but offered an incorrect explanation of phobias whose origins were unconscious or state bound (i.e., not available to recall during the normal conscious state)" (p. 25). totally different cognitive set. Hypnosis may facilitate recall by providing relevant cues during an altered state of consciousness" (p. 27). "In commenting upon [one of Erickson's cases], Rossi (1986) states that Erickson was effective because he helped the patient access state-bound memories by reviewing the context and sensory-perceptual cues that surrounded their original acquisition" (p. 27).

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"Freud's early work on the traumatic basis of neurosis pointed to but offered an incorrect explanation of phobias whose origins were unconscious or state bound (i.e., not available to recall during the normal conscious state)" (p. 25). Bowers, Kenneth S. (1991). Dissociation in hypnosis and multiple personality disorder. *International Journal of Clinical and Experimental Hypnosis*, 39, 155-176. The first part of this paper examines the concept of dissociation in the context of hypnosis. In particular, the neodissociative and social psychological models of hypnosis are compared. It is argued that the social psychological model, in describing hypnotic enactments as purposeful, does not adequately distinguish between behavior that is enacted "on purpose" and behavior that serves or achieves a purpose. 2 recent dissertations (Hughes, 1988; Miller, 1986) from the University of Waterloo are summarized, each of which supports the neodissociative view that hypnotic behavior can be purposeful (in the sense that the suggested state of affairs is achieved) and nonvolitional (in the sense that the suggested state of affairs is not achieved by high level executive initiative and ongoing effort). The second part of the paper employs a neodissociative view of hypnosis to help understand the current epidemic of multiple personality disorder (MPD). In particular, it is argued that many symptoms of MPD are implicitly suggested effects--particularly prone to occur in persons who have a lifelong tendency to use dissociative type defenses. The present author believes that this account is easier to sustain conceptually and empirically than the current view, which states that a secondary (tertiary, etc.) personality accounts for the striking phenomenological discontinuities experienced by MPD patients.

As an example of the fact that behavior that serves a purpose is not always performed on purpose, the author cites not falling out of bed while sleeping, and waking up in response to signals from the bladder to go to the bathroom. Lower levels of control can be dissociated from executive initiative and/or monitoring. "Since the experience of volition is closely tied to executive initiative and effort, suggested behaviors that bypass such initiative and effort are typically experienced as nonvolitional" (p. 157). Dissociated control occurs under waking conditions also, as when one dials a very familiar phone number rather than the one that they intended to dial. In this case, the behavior that is enacted is not what one consciously intended. Miller's dissertation, also published as Miller & Bowers, 1986, is described on p. 158 ff. Without hypnosis, cold pressor pain (cold water immersion) reduced accuracy of performance on a multiple choice vocabulary test 35%. Both hypnotic analgesia and cognitive pain

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management strategies were equally effective in reducing pain of cold pressor test (and both interventions were more effective for high than for low hypnotizable Ss). However, the cognitive strategy group showed an additional drop of 30% in vocabulary performance from pre- to posttreatment cold water immersion (despite successfully reducing their pain). In the hypnosis condition, lows showed only a slight additional decrease (8%) while highs showed a slight (10%) increase in their vocabulary performance from pre- to posttreatment immersion.

Thus, the effect of hypnosis in pain control "does not depend on S's utilization of high-level cognitive strategies. Rather, hypnotic analgesia seems to involve the dissociated control of pain--that is, control which is relatively free of the need for high-level, executive initiative and effort. ... Because hypnotic analgesia minimizes the degree of executive initiative and ongoing effort required to reduce pain, however, it seems inappropriate to view such reductions as something achieved on purpose" (p. 161).

Hughes' dissertation is described on p. 162 and ff. Instead of performance decrement on a cognitive task like vocabulary testing, she used increased heart rate as an index of cognitive effort. If heart rate increases when Ss successfully use hypnotic imagery, that would confirm the social psychological view that "suggested effects are achieved by this kind of ongoing allocation of high-level cognitive force or work" (p. 162).

Highs and lows were hypnotized and administered three trials of neutral and three trials of fearful imagery in counterbalanced order. Each imagery trial lasted 1 minute, after which Ss rated vividness of imagery, effort required, and amount of fear experienced.

Average imagery vividness was higher in highs than lows, for both neutral and fear imagery. For lows the correlation between heart rate increases and ratings of cognitive effort were .54 (neutral imagery) and .49 (fear imagery). For highs, the correlations were -.05 (neutral) and -.52 (fear). Thus, "for low but not high hypnotizable Ss, we find the predicted positive relationship between a cardiac indicator of cognitive effort and the ratings of cognitive effort involved in producing neutral imagery" (p. 163).

"First, for low hypnotizables engaged in fear imagery, ratings of effort are correlated .66 with ratings of fear. In other words, the more low hypnotizable Ss work to produce a fearful image, the more frightening the image is. Second, for high hypnotizables engaged in fear imagery, the correlation between ratings of fear and effort is minus .68-- indicating that the less effort highs report in producing fear imagery, the more frightened they become. Finally, for high hypnotizables, the correlation between ratings of fear and heart rate increase is .59, indicating that the more fear high hypnotizable Ss experience when engaged in fear imagery, the more their heart rate increases (the comparable figure for low hypnotizables is .16)" (p. 164).

The authors discuss why the pattern of correlations is different for people high and low in measured hypnotizability, and summarize the implications of both Miller's and Hughes' research. Both investigations indicate that, at least for high hypnotizable people, less initiative and effort are required to effect a response to hypnotic suggestion than one would expect. They show how behavior can be both purposeful and nonvolitional (in the sense of not exhibiting conscious intention and strategic efforts). By noting that the sense of nonvolition that accompanies a response to suggestion is an actual alteration in executive control, they provide a model for dissociative psychopathology such as MPD. For although executive control is

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dissociated, these experiments do not suggest that there is a second executive system or 'personality' that is responsible for the behavior.

Patients diagnosed with MPD have very high measured hypnotizability (Bliss, 1984). In fact, they seem to engage in self hypnosis, withdrawing into a trance or a dissociated state (Bliss, 1984). The authors quote Wilson & Barber (1983) as indicating that highly hypnotized, fantasy-prone normal individuals may become so absorbed in a character being imagined that they lose awareness of their own identity.

The authors offer a neodissociative account of MPD: "People prone to MPD are very high in hypnotic ability and are, therefore, vulnerable to the suggestive impact of ideas, imaginings, and fantasies; what is more, they are high in hypnotic ability because they have learned to use dissociative defenses as a way of dealing with inescapable threat-- such as physical and sexual abuse (Kluft, 1987). ... Fantasied alternatives to reality (including a fantasied alter ego ... ) can become increasingly complex and differentiated. Gradually, these fantasied alternatives begin to activate subsystems of control more or less directly--that is, with minimal involvement of executive level initiative and control. Such 'dissociated control' of behavior does not necessarily eliminate consciousness of it, though one's actions are apt to be experienced as increasingly ego-alien. If and when the activating fantasies and resulting behaviors become sufficiently threatening, however, they can also be repressed into an unconscious (i.e., amnesic) status, thus further separating high-level executive and monitoring functions from the dissociated, ego-alien aspects of oneself. The fully realized result of this process is an individual who is subject to profound discontinuities in his or her sense of self. ... The experience of behaving in an outwardly uncharacteristic manner requires only that subsystems of control are more or less directly activated by ideas and fantasies in a manner that effectively bypasses executive initiative and control" (pp. 168-169).

923, Bowers, 1992 NOTES: Tart allegedly taught ESP skills based on reinforcement, using a machine that projected display and gave feedback immediately, so the subjects could learn to anticipate the picture better. But the picture presented next was time-linked to the S's response (so S could learn it).

1987 Behavioral and Brain Sciences review, with 2 target articles, makes one doubt strength of findings. ESP research doesn't distinguish between description of an observation and it's proposed cause.

MPD shares with ESP a tendency to predispose toward a certain explanation. Feeling like one has a separate personality leads to finding evidence for one. But an MPD account is wrong-headed because the diagnosis misconstrues a notion of personality, which is a developmental concept (a pattern of thought, feeling, and behavior). Mischel's (1968) account of human functioning competed with trait theory, so "personality" concept became extraneous.

Defining personality in terms of one's experiences or beliefs about oneself has lead to further problems, encouraged by the descriptive approach of DSM III (which depends on patient reports). Drew Weston distinguished between the self and self representation. One can't argue that a computer programmed to describe itself is the same as it's descriptions.

Personality can't be reduced to person's beliefs about themselves. A secondary personality cannot be reduced to bizarre experiences a person believes are due to a second personality. Clinicians do not accept as valid the beliefs of a paranoid schizophrenic; or of an



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anxious neurotic. With multiple personality disorder (MPD) the patient becomes the expert and the clinician the student. William Smith's 1986 SCEH paper: case study of patient who was convinced her problems were due to unresolved problems from a previous life. He didn't challenge her system but still worked with her successfully, communicating respect without validating her belief.

Advocates of MPDs think the observation that it is associated with high hypnotizability indicates great dissociation; critics think the association indicates great suggestibility. There is a historical parallel: Mesmer probably didn't suggest seizure-like episodes, but implicit suggestions for seizures were probably partially responsible. Mistaken attribution permitted Mesmer to see this as validation of his theory of animal magnetism.

Clinicians are not the only ones to "suggest" MPD syndrome. High profile cases are in the media. We should also remember Orne's 1959 research showing that students who received false information a week earlier in lecture on hypnosis showed the behavior when they were hypnotized.

problems, encouraged by the descriptive approach of DSM III (which depends on patient reports). Drew Weston distinguished between the self and self representation. One can't argue that a computer programmed to describe itself is the same as its descriptions.

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Janet's disaggregation (dissociation) theory said hysterics and hypnotized people responded to ideas dissociated from the main stream of consciousness. So his contemporaries thought that spontaneous amnesia was a defining feature of hypnosis; yet it is not thought to be so in our era. The idea may have circulated in Janet's time, by popular culture.

MPDs are always highly suggestible so can respond to circulating accounts in the media, and every account that reaches the media can influence these people. We could abandon the diagnosis of MPD in favor of Spiegel's "disorder of self integration." It is less provocative, does not imply any clinical benefit in the benefits of seeking out more personalities. This might reduce the incidence of this disorder, or likelihood that a suggestible person would develop the

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disorder iatrogenically. Davidson, T. M.; Bowers, K. S. (1991). Selective hypnotic amnesia: Is it a successful attempt to forget or an unsuccessful attempt to remember. *Journal of Abnormal Psychology*, 100, 133-143. Subjects in two experiments learned a 16-item, 4-category word list and were then administered hypnotic suggestions to be amnesic for all the words in one of the categories. Even when selective amnesia was completely successful, subjects in both experiments revealed a high level of recall for words not targeted for amnesia; moreover, these words were recalled in a highly organized, category-by-category fashion. Evidently, attention to relevant retrieval (i.e., organizational) cues does not oblige recall of words targeted for amnesia. Forgetting in the presence of such powerful mnemonic cues seems to characterize hypnotic amnesia and some spontaneous forms of forgetting as well. Grabowski, Karen L.; Roese, Neal J.; Thomas, Michael R. (1991). The role of expectancy in hypnotic hypermnesia: A brief communication. *International Journal of Clinical and Experimental Hypnosis*, 39, 193-197. Previous research has yielded equivocal evidence of hypnotic memory enhancement. This study assessed effects of expectancy and hypnotizability on recall for videotaped material under waking and hypnotic conditions. Ss (n = 138) were informed of hypnotic induction either before (expectancy condition) or after (no expectancy condition) watching a videotaped enactment of a crime and completing an initial waking recall test (R1). Both groups then underwent hypnotic induction, and completed the test again (R2). Ss' raw recall scores were significantly greater under hypnotic than waking conditions, but this hypermnesia was not evident when scores were corrected for mere increase in rate of responding. Ss expecting later hypnosis scored significantly higher than Ss with no such expectations, but again, this difference was not evident in corrected scores. Hypnotizability of Ss was, however, related to corrected recall, with high hypnotizability Ss displaying the greatest increase in rate of responding from R1 to R2. No evidence for the hypothesized "suppression effect" underlying hypnotic hypermnesia was found. Thus Ss tended to answer more questions on R2 but most of this increase was error. Moreover, high hypnotizability Ss displayed this pattern to a far greater extent than other Ss, indicating that they were more likely than others to increase the no. of responses made between tests. The finding of an interaction effect between hypnotizability and corrected recall suggests that hypnosis does play some role in the hypnotic hypermnesia described in the literature, possibly refuting the findings of several recent studies (e.g., Nogrady, McConkey, & Perry, 1986; Register & Kihlstrom, 1987). High hypnotizability Ss increased the number of responses made from R1 to R2 to a greater extent than other Ss. The lack of an interaction between hypnotizability and expectancy, however, fails to support the suggestion by Salzberg and DePiano (1980) that people of differing hypnotizabilities differ also in their susceptibility to demand biases.

As both Klazky and Erdelyi (1985) and Whitehouse et al. (1988) have noted, however, the use of hypnosis with witnesses of crimes may be useful if it can stimulate individuals to share uncertain recollections, perhaps providing otherwise unconsidered clues. The present data suggest that such guessing may also be increased by mere expectation of hypnosis. The value of forensic hypnosis may, therefore, be in part one similar to placebo: the simple notion of hypnosis placed in witnesses' minds may be sufficient to inspire useful leads. Hasher, L.; Stoltzfus, E. R.; Zacks, R. T.; Rypma, B. (1991). Age and inhibition. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 17 (1), 163-169. Two experiments assess adult

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age differences in the extent of inhibition or negative priming generated in a selective-attention task. Younger adults consistently demonstrated negative priming effects; they were slower to name a letter on a current trial that had served as a distractor on the previous trial relative to one that had not occurred on the previous trial. Whether or not inhibition dissipated when the response to stimulus interval was lengthened from 500 ms in Experiment 1 to 1,200 ms in Experiment 2 depended upon whether young subjects were aware of the patterns across trial types. Older adults did not show inhibition at either interval. The age effects are interpreted within the Hasher-Zacks (1988) framework, which proposes inhibition as a central mechanism determining the contents of working memory and consequently influencing a wide array of cognitive functions. Jansen, C. K.; Bonke, B.; Klein, J.; van Dassel, N.; Hop, W. C. J. (1991). Failure to demonstrate unconscious perception during balanced anaesthesia by postoperative motor response. *Acta Anaesthesiologica Scandinavica*, 35, 407-410. Eighty patients undergoing a standardized balanced anaesthesia were randomly assigned to either a suggestion group (N = 38) or a control group (N = 42), in a double-blind design. Anaesthesia was maintained with nitrous oxide, enflurane and fentanyl. Patients in the suggestion group were played seaside sounds, interrupted by statements of the importance of touching the ear during a postoperative visit, by means of a prerecorded audiotape and headphones. Tapes containing these suggestions were played from 30 min after the first incision, for a duration of 15 min. Patients in the control group were only played seaside sounds. There were no significant differences between the groups in either the number of patients touching their ears postoperatively or the number and duration of ear touches. This research follows upon other studies in which patients carried out postoperative motor responses while still being amnesia for the source of the suggestions for the action (e.g. Bennett, Davis, & Giannini, 1985; Goldmann, Shah, & Hebden, 1987). The earlier studies used widely varied anesthesia techniques, small sample sizes, and did not measure baselines for those responses or clearly delimit the amount of time for recording the responses postoperatively. This investigation was an attempt to improve on the research design of earlier investigations that had obtained positive results.

Patient assignment to groups was stratified over three levels of estimated intensity of pain stimulation during surgery (based on the type of surgery). The outcome measure, number of ear touches and their duration, was made by the anesthetist and an observer during the first 10 minutes of the pre- and postoperative interviews. (The observer was blind for the patient group assignment.) 75 of the patients were interviewed on the first postoperative day, and the remainder on the second postoperative day. The interview included questions regarding recall of the intravenous administration of drugs and of events during surgery. The outcome data may be seen in the Table below. Distribution of ear touches during the first 10 min of the preoperative interview and, after the intraoperative suggestion, during the first 10 min of the postoperative interview.

No. of patients with Total no. of ear touches for Duration of ear touches ear touches for all responders  
 Grp N Pre Post Pre Post Pre Post S 38 2 3 2 9 62 155 C 42 5 3 8 4 38 23 S = suggestion group C = control group

In discussing their results, the authors offer several reasons why they might not have obtained the same results as those of previous investigators. "First, our anaesthetic techniques were different from those used in the studies of Bennett et al., 1985, and Goldmann et al., 1987"

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(p. 408). "A second reason for the discrepancy between our results and those of the other two studies could be that our suggestion was perhaps less meaningful to the patients undergoing surgery than the one used by our fellow researchers. It has been argued that recollection of perioperative events is influenced by the salience of the stimuli [Dubovsky & Trustman, 1976, *Anesth Analg*; Goldmann & Levey, 1986 (letter) *Anaesthesia*]. This salience depends largely on the content of the message. It may be that the requested response, i.e., to touch the ear, is one that in our culture, or environment, has insufficient emotional impact and is thus ignored. It is interesting to note in this context that the percentage of patients touching the ear postoperatively was significantly lower (Fisher's exact test:  $P < 0.01$ ) in our study than in the study by Bennett et al., both for the suggestion group and the control group. On the other hand, recent findings showed robust effects with emotionally neutral stimuli [Jelicic, Bonke, & Appelboom, 1990, *Lancet*; Roorda-Hrdlickova, Wolters, Bonke, & Phaf, 1990, in Bonke, Fitch, Millar, Eds. *Memory and awareness in anesthesia*. Amsterdam: Swets & Zeitlinger]. Salience also depends on the timbre and strength of the requesting person's voice, the manner in which the response is requested and, possibly, many other subtle factors. We tried to increase the emotional impact of the message by adding reassuring phrases, as had been done in the previous studies. Furthermore, we had the message recorded by the anaesthetist who also conducted the pre- and post-operative interviews, assuming this would make the voice more familiar to the patient. During all interviews, as well as on the tape, the anaesthetist clearly introduced himself to the patient, mentioning his name a number of times. This was done to increase the possibility that the voice was 'recognized'" (p. 409).

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Bonnano, George A. (1990). Remembering and psychotherapy. *Psychotherapy*, 27, 175-186. **Reviews some of the empirical literature demonstrating the reconstructive nature of memory.** The notion that the memory trace can consist of different forms of information is integrated with J. S. Bruner's (see PA, Vol 38:6801) tripartite model of representation, using the concepts of narrative and memory schemata. A case illustration demonstrates the pervasive organizing quality of the nuclear script and how, through such a structure, childhood events can hold a lasting impact on adult behavior. It is concluded that conceptual understanding can be translated into schematic terminology provided it is adequately modified to account for the reconstructive nature of memory. Evans, Frederick J. (1990). Behavioral responses during sleep. In Bootzin, Richard R.; Kihlstrom, John F.; Schacter, Daniel L. (Ed.), *Sleep and Cognition* (pp. 77-87). Washington, DC: American Psychological Association. Subjects were 19 male student nurses who met a criterion of having EEG alpha density of at least 40% during an eyes closed, waking condition. They slept in the laboratory for two nights in succession, while being monitored by an EEG, and were told only that sleep cycles were being studied. Suggestions were presented while they were sleeping, e.g. "Whenever I say the word itch, your nose will feel itchy until you scratch it" "Whenever I say the word pillow, your pillow will feel uncomfortable until you move it." Then they were tested by Experimenter saying the cue word ("itch" or "pillow") during the word pillow, your pillow will feel uncomfortable until you move it." Then they were tested by Experimenter saying the cue word ("itch" or "pillow") during subsequent REM periods later that night and again on the next night. (The suggestions were not repeated on the second night; but two new suggestions were given on the second night when possible.)

After the Subjects awakened in the morning, they were interviewed to test their memory for the events that had occurred, and also cue words were presented in the context of a word association test to assess memory indirectly by observing behavioral and physiological responses. A more detailed inquiry was made after the second night.

The results were as follows. Ss responded to a mean of 21% of cue words administered. Ss continued to demonstrate REM sleep for at least 30 seconds for 71% of all cues administered, indicating that they were not aroused by the cue. When a suggestion was successfully completed (i.e., without eliciting alpha activity) it was not repeated. However, the cue words were tested in several subsequent REM periods. Cue word testing occurred immediately (during the same REM period as the suggestion) on the same night, as well as in a later REM period, and during REM on Night 2 (after the suggestion had been given during Night 1).

Correct responses were given for 20% of immediate, 23% of delayed, and 23% of carry-over conditions. Ss did not remember the suggestion, verbal cues, or their responses when they awoke. Since Ss often responded to the cue the next night without repetition of the suggestion itself, the authors inferred amnesia rather than forgetting had occurred. Responses were not elicited by repeating the cue word in the waking state, but appeared to be specific to the sleep condition. Six Ss returned five months later for a third night of testing. Four had shown carryover response on Night 2 to a Night 1 suggestion. When verbal cues were presented (without re-administering the suggestion) those 4 Ss responded, even though there was no

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intervening waking memory about the procedure or the suggestions. Some Ss responded even more frequently than during the original two nights; hypnotic depth did not seem to account for the increased responsivity. Experimenters attempted to reverse the amnesia observed during the waking condition by using hypnosis, age regression, and other hypnotic techniques, with some positive effect. The author speculates that perhaps the techniques originally used to probe morning recall were not sufficiently sensitive. He also raises the question of whether this waking state amnesia is related to the amnesia for night dreams when people awaken in the morning. The relationship between hypnotizability and sleep suggestibility was analyzed. Hypnotizability was measured with the Harvard Group Scale, several weeks later, by Experimenters who were blind to the Ss' rate of responding to suggestions given during sleep. More hypnotizable Ss slept through the verbal stimuli more than low hypnotizable Ss; so they slept longer and more cues could be tested. Ss who responded most frequently to sleep-induced suggestions were more responsive to hypnosis. Analysis of response rate percentage (which controls for higher number of cues administered when Ss slept longer) showed that correlations between sleep suggestibility and hypnotizability were higher for percentage of delayed responses than for percentage of immediate responses. Analysis by type of item on the hypnotizability scales suggested that the correlation with sleep suggestibility was due to the hallucinatory-reverie and the posthypnotic-dissociative clusters of hypnotic behavior, which are more difficult kinds of items. Correlations were significant for carry-over responses but not for immediate responses. These items represent phenomena experienced by Subjects who can be deeply hypnotized. The author reports that this relationship observed between hypnotizability and response to sleep-induced suggestions was not significant in a later study by Perry et al. (1978).

This author raises a question about why high hypnotizable subjects sleep better than low hypnotizables. The 6 Ss who were least susceptible accounted for 48% of all awakenings that occurred during the 2 experimental nights; the 6 Ss who were most hypnotizable accounted for only 26% of the awakenings ( $p < .01$ ). in a later study by Perry et al. (1978).

This author raises a question about why high hypnotizable subjects sleep better than low hypnotizables. The 6 Ss who were least susceptible accounted for 48% of all awakenings that occurred during the 2 experimental nights; the 6 Ss who were most hypnotizable accounted for only 26% of the awakenings ( $p < .01$ ). Because sleep learning ("hypnopedia") has been extensively practiced in Russia and Eastern Europe, especially for language learning, the author investigated language learning with nine subjects. (Hoskovec, 1966, and Rubin, 1968, have reviewed the hypnopedia literature, which suggests that only "suggestible" subjects respond; it is not clear whether "suggestible" refers to hypnotizable, or whether expectation of success is cultivated by information given in the waking state.) The nine Ss had responded to the suggestions at least twice while remaining asleep, had no waking recall of the suggestions, but were given pre-sleep instructions (increasing expectancy) that they would learn during sleep.

The verbal association material ("A is for apple; P is for palace;" etc.) was given during EEG sleep stages 2, 4, and REM. (Eight letter-word stimuli pairs were given, two per sleep stage whenever possible.) When they awakened, Ss were asked to check "any familiar word" on a list of 10 words beginning with the letter A, with the letter P, etc. So the probability was .10 for each of the eight lists that they might check one correct word by guessing. They also responded to two dummy lists containing letter-word pairs not used during sleep.

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None of the dummy list words were checked, whereas 28% of the administered words were correctly checked; also, Ss selected the correct letter (without identifying the word and with instructions not to "guess") in an additional 17% of all lists. Words were rarely recalled from Stages 2 and 4, but Ss often recognized letters from those stages. False positives (incorrectly recalled words or letters) was almost never observed. Furthermore, no control Subjects (people who had not received a presleep set that they would recall) recalled any words correctly.

It was observed that whenever words presented during REM were later recalled, a transient slower frequency alpha (10.25 Hz vs. 9.64 Hz,  $p < .01$ ) had been evoked within 30 sec after the presentation of the stimuli during sleep. Total recall of words correlated with the Harvard Group Scale of Hypnotic Susceptibility .69 and the Stanford individually administered scale .42, for the 7 Ss administered hypnotizability tests.

The author concludes that under optimal conditions, sleep learning of relatively easy material can occur with subsequent waking recall. Fischer, Donald G.; Elnitsky, Sherry (1990). A factor analytic study of two scales measuring dissociation. *American Journal of Clinical Hypnosis*, 32, 201-207. The present study was designed to investigate the construct validity of dissociation. We administered the PAS and the DES to 507 male (48%) and female (52%) undergraduate students. Factor analysis on each scale separately showed that neither the PAS nor the DES adequately measures the three dimensions hypothesized to underlie dissociative experience. For both scales, a single factor emerged as replicable and reliable. Use of the scales, in their present form, therefore, should be limited to a single dimension representing disturbances in affect-control in the case of the PAS and disturbances in cognition-control if the DES is used at least with normal populations. Analysis of the combined items showed that the scales are measuring conceptually different but statistically correlated dimensions of dissociation. Further development of both scales is desirable, and further research should investigate the effect of different response formats on the internal structure of the scales. Scales is desirable, and further research should investigate the effect of different response formats on the internal structure of the scales. The stated purpose of this study was to investigate the internal structure of the Perceptual Alterations Scale (PAS) and the Dissociative Experiences Scale (DES) using a large sample from a normal population.

"Sanders (1986) conceived of dissociation as a personality trait that is characterized by modification of connections between affect, cognition, and perception of voluntary control over behavior, as well as modifications in the subjective experience of affect, voluntary control, and perception. She chose items from the MMPI to represent this trait. Bernstein and Putnam (1986), utilizing the DSM-III definition of dissociation, constructed items from information derived from interviews with patients and clinicians to represent a number of different types of dissociative experiences" (0. 202). "The PAS (Sanders, 1986) is a 27-item scale; subjects respond by checking one of the following categories using a 4-point Likert format: never, sometimes, frequently, almost always. The items related to modifications of regulatory control, changes in self-monitoring, concealment from self and others, and modifications of sensory, perceptual, and affective experiences. "The DES (Bernstein & Putnam, 1986) contains 28 items. Subjects indicate the percentage of time they experience the feelings or behavior described by the items on a 10- point scale. The items related to the experience of disturbances in identity,

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memory, awareness and cognition, and feelings of derealization or depersonalization" (pp. 202-203).

**Results were as follows.** The one-factor solution for the PAS accounted for 18.5% of the total variance.; 11 of the 28 items did not load significantly on the factor. The one-factor solution for the DES accounted for 26.3% of the total variance; 7 of the 28 items did not load significantly on the factor. "The 3-factor solution obtained by Sanders (1986) for the PAS was not replicated. An obvious reason for the different is that principal factor extraction was used in the present study, whereas principal components extraction was utilized by Sanders. ... Even when principal components analysis is performed on the present data, however, there are difficulties with the 3-factor solution" (pp. 204-205).

"All of the criteria suggest that a single factor best represents the latent structure of dissociative experience as measured by the PAS and DES. Although the total amount of variance accounted for is low, the one-factor solutions for both scales are interpretable, replicable, and have high internal consistency. The items for the PAS appear to represent primarily the affect and control dimensions, whereas those for the DES represent the cognitive dimension" (pp. 205-206).

"Overall, both scales contain similar items, although the DES has more items relating to disturbances in memory and altered perception of time (i.e., cognition), whereas the PAS has more items reflecting specific disturbances in identity and control. It appears, therefore, that the scales are measuring conceptually separate but statistically correlated dimensions of dissociation" (p. 206). Friedman, Howard; Taub, Harvey A.; Sturr, Joseph F.; Monty, Richard A. (1990). Hypnosis and hypnotizability in cognitive task performance. *British Journal of Experimental and Clinical Hypnosis*, 7 (2), 103-107.

Gwynn, Maxwell I.; Quigley, Celia; Perlini, Arthur; Glatt, Richard; Spanos, Nicholas P. (1990, August). **Eyewitness testimony: Effects of hypnotic interrogation and witness preparation.** [Paper] Presented at the annual meeting of the American Psychological Association, Boston. There is notable absence of empirical research on the effects of witness preparation on subsequent testimony. The present study investigates the separate and combined effects of hypnotic recall procedures and witness preparation on subjects' confidence in, and maintenance during cross-examination, of mug-shot identifications. Session 1: Subjects viewed a 65 second videotape of a mock crime involving a shooting. The offender in this video was a male approximately 40-50 years old, whose face was partially obscured by the brim of a baseball cap. Subjects were then taken individually to another room, where a second experimenter presented them with a series of five photographic mug shots. Half of the series contained the mug shot; the other did not. Subjects indicate if any portrayed the offender and then to rate their confidence in their identification.

Subjects for Session 2 were randomly assigned to one of two conditions: Hypnotic condition ... followed by "reliving" instructions modeled after Reiser's procedures used in training police detectives.

Nonhypnotic condition ... Each subject was then presented with the mug shot lineup and rated their confidence as in Session 1 with the same second experimenter. Subjects who in Session 2 identified any mug shot as portraying the offender returned about one week after for a mock courtroom appearance. Subjects were randomly assigned to either a



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"prepared" condition, or a "nonprepared" condition, with the restriction of equal numbers of offender-present vs. offender-absent lineups and hypnotic vs. nonhypnotic subjects in each condition ... The subject-witness was questioned by the third same experimenter under direct examination and then cross-examined by a fourth experimenter in the role of defense attorney.

Subjects in the prepared condition were given pointers concerning their courtroom appearance. These pointers included counseling to answer all of the questions fully, to speak in complete sentences, and to present themselves confidently.

The videotapes of the subjects' testimonies were then shown to independent blind raters who rated the degree of confidence displayed by the subject-witness at two points, first after direct examination, and again after cross-examination.

### **To summarize the results:**

- 1) As in a number of previous studies, eyewitness confidence was unrelated to mug shot identification accuracy.
- 2) The use of hypnotic techniques as practiced by many police investigators did not lead to an increase in the frequency or accuracy with which subjects identified a mug shot as portraying a previously viewed offender.
- 3) Again consistent with previous research, the use of hypnosis did lead to an increase in eyewitness confidence, without a corresponding increase in accuracy, and this confidence increase was correlated with pretested levels of hypnotic susceptibility.
- 4) Contrary to the speculation of researchers such as Orne, Laurence & Perry, hypnotic procedures did not lead to the creation of unshakable witnesses who were impervious to cross-examination. And,
- 5) The usual practice of pre-trial preparation of witnesses did lead to a resistance of witnesses to be broken down under cross-examination.

In conclusion, the key factor found to affect eyewitness confidence and mug shot identification was not the use of hypnotic memory enhancement techniques, but rather the usual practice of pre-trial witness preparation. Hajek, P.; Jakoubek, B.; Radil, T. (1990). Gradual increase in cutaneous threshold induced by repeated hypnosis of healthy individuals and patients with atopic eczema. *Perceptual and Motor Skills*, 70, 549-550. Gradual increase in cutaneous pain threshold was found in healthy subjects and patients with atopic eczema during repeated hypnotic sessions with specific suggestions. This increase was less in the former than in the latter group. Repeated threshold measurements did not influence the threshold. The analgesic effect outlasted the hypnotic sessions by several months. It could be, however, suddenly reduced by appropriate hypnotic suggestion. Cutaneous pain threshold was measured in "time in seconds from onset of heat source of defined size, distance from skin, and temperature, to subjective threshold percept of pain" (p. 549). Used two symmetrical locations on both forearms, at healthy areas of the skin. Ten hypnotic sessions were induced in each S three times weekly, each lasting one hour. Suggestions were the following type: "The conduction of switch to the brain is interrupted." Your "immunologic system will digest the damaged skin cells like a shark."

Subjects were 14 healthy subjects and 13 patients with atopic eczema treated for years with the usual medications, unsuccessfully or with complications. There was gradual increase in cutaneous pain threshold across the 10 sessions, especially for the patient group. Control experiments with repeated threshold measurements in repeated sessions without hypnosis

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showed no changes. "Time of increases in cutaneous pain threshold was associated with improvement of atopic eczema. Both effects correlated significantly ( $r = 0.8$ ) with hypnotizability as measured by the Stanford scale" (pp. 549-550). "In 9 patients without further hypnotic sessions a slow spontaneous decay of the cutaneous pain threshold was observed during a 17-mo. period. Special experiments performed with six repeatedly hypnotized healthy subjects showing increased thresholds did prove, however, that the cumulative analgesic effect could be reduced to control values immediately by using the hypnotic suggestion that the 'skin sensitivity returns to normal values.'

"These results suggest a close association between hypnosis and activation and/or deactivation of endogenous analgesic systems (irrespective of whether they are of opioid or nonopioid nature)" (p.550) Kihlstrom, John F.; Schacter, Daniel L.; Cork, Randall C.; Hurt, Catherine A.; Behr, Steven E. (1990). Implicit and explicit memory following surgical anesthesia. *Psychological Science*, 1, 303-306. Paired associates were presented to 25 surgical patients following the induction of anesthesia by thiopental, vecuronium, and isoflurane. Postoperative testing (immediately or after two weeks) showed no free recall for the list; nor was there significant cued recall or recognition, compared to a matched control list. However, a free-association task showed a significant priming effect on both immediate and delayed trials. At least under some conditions, adequate surgical anesthesia appears to abolish explicit, but not implicit, memory for intraoperative events.

Anesthesia appears to abolish explicit, but not implicit, memory for intraoperative events. Labelle, L.; Laurence, J. R.; Nadon, R.; Perry, C. (1990). **Hypnotizability, preference for an imagic cognitive style, and memory creation in hypnosis.** *Journal of Abnormal Psychology*, 99, 222-228. 1989 The author notes a current trend toward viewing multiple personality disorder (MPD) and its variants as a form of chronic post-traumatic stress disorder based solely on exogenous childhood trauma, and cautions against prematurely reductionistic hypotheses. He focuses on Kluft's Third Etiological Factor, which includes the various developmental, biological, interpersonal, sociocultural, and psychodynamic shaping influences and substrates that determine the form taken by the dissociative defense. He hypothesizes a credibility continuum of childhood and contemporary memories arising primarily from exogenous trauma at one end, and endogenous trauma (stemming from intrapsychic adaptational needs) at the other. The author offers alternative multidetermined explanations for certain unverified trauma memories that currently are being accepted and validated as factual experiences by many therapists. He describes some potentially deleterious effects of validating unverified trauma memories during psychotherapy, and recommends that the MPD patients' need for unconditional credibility be responded to in the same manner as other transference-generated productions.

Lindsay, D. S.; Johnson, M. K. (1989). 17, 349-358. Examined the possibility that eyewitness suggestibility reflects failures of the processes by which people normally discriminate between memories derived from different sources. Mised and control subjects were tested either with a yes/no recognition test or with a "source-monitoring" test designed to orient Ss to attend to information about the sources of their memories. The results demonstrate that suggestibility effects obtained with a recognition test can be eliminated by orienting Ss toward thinking about the sources of their memories while taking the test. Findings indicate that

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although misled Ss are capable of identifying the source of their memories of misleading suggestions, they nonetheless sometimes misidentify them as memories derived from the original event. The extent to which such errors reflect genuine memory confusions (produced, for example by lay judgment criteria) or conscious misattributions (perhaps due to demand characteristics) remains to be specified. 1988 Boeke, S.; Bonke, B.; Bouwhuis-Hoogerwerf, M. L.; Bovill, J. G.; Zwaveling, A. (1988). Effects of sounds presented during general anaesthesia on postoperative course. *British Journal of Anaesthesia*, 60, 697-702. In a double-blind, randomized study, patients undergoing cholecystectomy were administered one of four different sounds during general anaesthesia: positive suggestions, nonsense suggestions, seaside sounds or sounds from the operating theatre. The effect of these sounds on the postoperative course was examined to assess intraoperative auditory registration. No differences were found between the four groups in postoperative variables. Postoperative course was evaluated by 5 variables: pain, nausea and vomiting, evaluation by nursing staff, subjective well-being, and duration of postoperative hospital stay. From the chart they used amount of postoperative analgesia, volume of nasogastric suction or drainage and fluid lost through vomiting over 6 days post-operatively; duration of postoperative hospital stay was registered after discharge. See p. 699 for details, including wording of questions. They cite their own earlier study that got positive results, and explain the difference as possibly due to use of only male voices on tapes, lack of difference in the sounds on tapes in this study, insensitivity of outcome measures (patients stayed longer in first study than in this one), and sample too small in this study (106).

Boeke et al. (1988) report that this double-blind, randomized study of positive suggestions, noise or sounds from the operating theatre presented to 3 groups of patients undergoing cholecystectomy during general anaesthesia had positive results for older patients. patients > 55 years who received positive suggestions had a significantly shorter postoperative hospital stay than the other patients in this age category.

Subjects received audiotaped instructions implying that they would perceive increases in odor or heaviness while comparing stimuli in a sensory-judgment task. Stimuli were actually indiscriminable. Subjects pretested as higher or indiscriminable. Subjects pretested as higher or lower in hypnotizability performed the task in either hypnotic or non-hypnotic conditions. In both treatments, greater hypnotizability was associated with more perceived changes in the stimuli and greater confidence in the reality of those perceptions. Results support a general factor underlying suggestibility in hypnotic and nonhypnotic situations. The findings are discussed in relationship to false confidence effects reported in hypermnesia research. Dywan, Jane (1988). The imagery factor in hypnotic hypermnesia. *International Journal of Clinical and Experimental Hypnosis*, 36, 312-326. Week-long repeated recall attempts were used as baseline against which to assess the effects of hypnosis on the recall of pictures. Hypnosis increased errors for all Ss but especially for high hypnotizables. In Experiment 1, dividing Ss on the basis of imagery ability had the same effect on recall as dividing them on the basis of hypnotic ability. In Experiment 2, imagery ability was found to interact with hypnosis in mediating the level of error during waking trials. Results do not support the claim that hypnosis enhances recall, but they do suggest that further study is needed to clarify the role that imagery ability plays in recall patterns over time. Author reviews research indicating that introduction of confident errors is a reliable finding in hypnosis-memory research, and notes that the role of imagery ability has not

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as yet been examined even though imagery is viewed as important to memory functioning. She also reviews the imagery- hypnotizability correlation literature.

**EXPERIMENT 1** involved 54 Ss screened by Harvard Scale and SHSS:C, divided into highs (7-12) and lows (1-6) by SHSS:C. Stimuli were 60 black and white line drawings. There were 3 baseline trials in the lab; Ss were then given 6 envelopes, each containing a 60 blank item recall sheet, and asked to complete one each day and return it via campus mail. (When unable to recall more items, they were asked to draw a line under the last item recalled and then use "educated guesses.") After a week of repeated recalls, Ss in the hypnosis condition were told they would be able to 'see' the slides appear before them; in the task motivating condition Ss were informed about such things as context dependent recall, the importance of focused attention, and the importance of good recall for forensic investigations.

Results were analyzed for increase in recall over the cumulative number of correct items recalled. Neither hypnotizability nor visual imagery ability influenced the cumulative baseline measures. High hypnotizable Ss produced a small but significantly greater increase in new, correct information during hypnosis than other Ss, but also made 3 times as many errors. Dividing Ss by imagery score produced similar results. That is, people with very good imaging ability reacted in the same manner as the highly hypnotizable Ss: in hypnosis they increased the number of items they were willing to call a memory but also increased the number of errors.

**EXPERIMENT 2:** differed from Experiment 1 in that Ss were selected for hypnotic ability and imagery ability so that both would be adequately represented. (The high hypnotizable - low visual imagery group is a group that hasn't been represented much in earlier research, and the author notes that those Ss are rather difficult to locate. ) The task motivation condition was not used, based on results of Experiment 1. Ss who were low on hypnotizability and imagery ability served as the controls. Ss were told that they could be either in a hypnosis condition or a control condition but actually all Ss received a hypnotic induction. (This is like the London-Fuhrer, 1961, research design, which goes on the assumption that low hypnotizables do not enter into hypnosis even though they are exposed to an induction. Thus, hypnotic effects are not assumed for lows in the hypnotic condition and they become "controls.")

Results of correct and error recall over the baseline week were analyzed. There was no difference in correct recall as a function of hypnotic ability or visual imagery ability. However, there was a main effect for visual imagery ability and for hypnotizability, and a significant interaction between trials, for cumulative errors over the baseline week. Effects of hypnosis were weaker than in Experiment 1 but followed same pattern. Those Ss most likely to have been hypnotized (highs) produced slightly more correct information than lows, and showed a greater increase in errors than lows. However high and low visualizers did not differ in response to hypnosis for correct information or for errors.

Since there was an interaction between hypnotic ability and visual imagery ability for error rate during waking trials, the author tested for the interaction during hypnosis. Using a 2 x 2 ANOVA with new errors as the dependent measure; no interaction was found. Hypnotic ability was therefore responsible for determining Ss' responses in the hypnosis condition. Author attributes the effect to being hypnotized rather than to individual differences in hypnotizability or to context effects.

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"Both high and low hypnotizable Ss produced more memories in the task- motivating condition, and low hypnotizables are not totally immune from the effect in the hypnotic context. What the report-criterion hypothesis does not explain is the reason why the memory reports of high hypnotizable Ss are differentially affected by task demands (e.g., task-motivating instructions versus hypnosis in Experiment 1) nor why hypnotized Ss so often seem surprised by the ease with which information seems to be 'recalled' during hypnosis. An alternative hypothesis is that being hypnotized results in a shift to a more imagistic style of information processing. The enhanced vividness of items generated during the retrieval process may convince Ss that these items must have been part of the original stimulus presentation (Dywan, 1985). "Whatever the mechanisms might be, it is clear that the hypnotic effect is the result of an interaction between contextual factors and pre-existing characteristics of the individual. Moreover, these same mechanisms would likely be at work when hypnosis is actually used in the forensic situation, where the pressure to retrieve information could be more acute than what can be mustered in the experimental context. This should cause some concern because the differential increase in errors did not occur only for the relatively small proportion of Ss who were very high in hypnotic ability. The 'high' hypnotizable group in these experiments consisted of Ss of moderate to high levels of hypnotic ability and so the results can be generalized to at least one-half the population" (p. 323).

"In summary, it would seem that any pressure for Ss to increase their recall-- whether it be repeated trials, task-motivating instructions, or hypnotic suggestion--results in higher levels of output and lower levels of accuracy. Repeated recall attempts lead to increases in recall and in

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errors. Some Ss (viz., those with high levels of hypnotic ability and low levels of imagery ability) are particularly prone to producing false-positive responses over the course of repeated recall attempts. When Ss are pressed to recall more information, they all try to do so by increasing their output and this increased output is usually accompanied by an increase in error. When hypnosis is introduced, however, those Ss who are hypnotizable show a differential increase in output. The amount of new correct information retrieved by hypnotized Ss is small and not a highly reliable phenomenon. The increase in errors that occurs in the recall of hypnotized individuals, however, is a substantial and highly reliable effect. Irrespective of how many errors were made as a function of repeated recall attempts, hypnosis can be counted on to increase errors over and above the increases in errors that occur when Ss are not hypnotized. Further work is needed to identify the mechanisms involved in the hypnotic distortion of recall. The role that imagery ability might have in the context of waking and hypnotic recall has not been resolved and this also presents an interesting problem for future study" (pp. 323-324).

Gudjonsson, Gisli H. (1988). **The relationship of intelligence and memory to interrogative suggestibility: The importance of range effects.** *British Journal of Clinical Psychology*, 27 (2), 185-187. 60 normal adults and 100 adult psychiatric patients completed a suggestibility scale and the Wechsler Adult Intelligence Scale (WAIS). Clear range effects of IQ and memory were evident in their relationship with suggestibility.

Kingsbury, Steven J. (1988). **Hypnosis in the treatment of posttraumatic stress disorder: An isomorphic intervention.** *American Journal of Clinical Hypnosis*, 31, 81-90. Reviews literature on hypnosis treatment for PTSD and presents a rationale, based on the type of symptoms presented (blunting vs intrusions). Case presentations are provided. "Several types of physiological processes may underlie dissociation. State- dependent learning, in which that learned during drug-induced alterations in consciousness may only be recalled during later similar alterations, is believed to be dependent upon hippocampal mechanisms (Gerrien & Chechile, 1977). The relationship of state-dependent learning to hypnosis has remained at the level of theory (Hilgard, 1977; Rossi, 1986). A second possible explanatory construct suggests everyday experience is primarily (but not exclusively) mediated by verbal, dominant hemisphere functioning. The images and sets mediating hypnosis, PTSD, and other forms of dissociation may be mediated by analogic processing and the nondominant hemisphere (Carter, Elkins, & Kraft, 1982; Galin, 1974; Hilgard, 1977; Watzlawick, 1978)" (p.83).

Kumar, V. K.; Pekala, Ronald J. (1988). **Hypnotizability, absorption, and individual differences in phenomenological experience.** *International Journal of Clinical and Experimental Hypnosis*, 36, 80-88. The phenomenological effects associated with a baseline condition of eyes- closed and a hypnotic induction condition were compared across individuals of differing absorption capacity and hypnotizability. The results indicated that individuals of differing absorption capacity and hypnotizability reported different intensities of phenomenological experience during the baseline eyes-closed condition. The induction further augmented intensity differences for low, medium, and high absorption and hypnotizable Ss, but more so for high (and medium) than low hypnotizable Ss. The results support both a trait and state interpretation of hypnotizability, and highlight the importance of the interaction between these factors on the resulting hypnotic experience of S. Based on a review of relevant literature, the authors predicted that

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- (1) during hypnosis and a baseline condition (eyes-closed), high absorption and high hypnotizable Ss will report the phenomenological effects at greater intensity relative to low absorption and low hypnotizable Ss, respectively;
- (2) hypnotic induction will be associated with increased absorption; greater alterations in awareness and experience; and decreased volitional control, rationality, and memory;
- (3) phenomenological intensity differences (hypnosis compared to eyes-closed) will be significantly greater for high than for low hypnotizable Ss.

They used the Phenomenology of Consciousness Inventory (PCI) developed by Pekala (1982), which is a 53 item self-report instrument that is completed retrospectively in reference to a preceding stimulus condition. The PCI measures the following dimensions and subdimensions: internal dialogue; self-awareness; state of awareness; imagery (amount, vividness); positive affect (joy, sexual excitement, love); negative affect (anger, fear, sadness); altered experience (time sense, body image, perception, unusual meanings); attention (absorption, direction); memory; rationality; volitional control; and arousal. The 217 Ss were administered the Tellegen Absorption Scale, then sat quietly with eyes closed for four minutes, then completed the PCI, Form 1, relative to that 4-minute period. They were administered a slightly shortened version of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A); before the posthypnotic suggestion and amnesia suggestion they experienced another 4-minute silent period during which they were told to 'continue to experience the state you are in right now.' After the HGSHS:A they completed PCI, Form 2, in reference to the silent period during the HGSHS:A, before they completed the 11-point questionnaire on the HGSHS:A.

Subjects who did not have reliable PCI response forms were removed from the sample, leaving 173 Ss who were divided into high, medium, and low Absorption groups, and high, medium, and low hypnotizability groups. The statistical analysis employed MANOVA on intensity scores for first the major PCI dimensions and then the 14 subdimensions using Conditions (eyes closed, hypnosis) and Groups. There were significant main and interaction effects. Subsequent ANOVAs for each (sub)dimension, Conditions by Hypnotizability Groups (2 x 3) were then performed.

Hypnosis "was associated with significantly less positive affect (joy, sexual excitement, love); negative affect (anger, sadness); visual imagery (amount, vividness); self-awareness, internal dialogue, rationality, volitional control, and memory; and significantly more altered experience (time sense, perception) and altered state of awareness.

"Significant main effects for Hypnotizability Groups were found for positive affect (joy, love); altered experience (body image, time sense, perception, meaning); attention (direction, absorption); self-awareness; altered state of awareness; rationality; volitional control; and memory

"Post-hoc comparisons for the eyes-closed condition revealed that high relative to low, hypnotizables reported significantly greater alterations in body image, time sense, meaning, and altered state of awareness. Medium hypnotizable Ss, compared to low hypnotizables, reported significantly increased alterations in body image and state of awareness.

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altered state of awareness. Medium hypnotizable Ss, compared to low hypnotizables, reported significantly increased alterations in body image and state of awareness.

Geiselman, R. Edward; Machlovitz, Helen (1987). **Hypnosis memory recall: Implications for forensic use.** American Journal of Forensic Psychology, 1, 37-47. Examines 38 major published experiments (1930-1985) on hypnosis memory recall. Concludes that differences in experimental methodology significantly predict the success versus failure of hypnosis aided recall and remarks that, "Even if forensic hypnosis aids in the solution of only a small percentage of cases, it is still a valuable tool from the perspective of law enforcement." As Tarasoff has balanced the right of the victim to enjoy protection from violence with the patient-litigant's right to confidentiality, so too does the increased acceptance of hypnotically induced testimony go toward redressing in part the uneven balance between the slender compensations afforded the innocent victim of violent crime and the multiple constitutional protections and indemnities enjoyed by criminal perpetrators in our judicial system. Goldmann, Les (1987, October). Ways of maximizing patient memory for events during anesthesia. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Los Angeles. Reported a series of experiments: 1. Under atropine, we did not get an orienting response to things having to do with the operation, but did get an orienting response to jokes, dogs barking, and the name of a polite anesthetist. 2. Replicated the research by Bennett and didn't get ear pulling response. 3. Studied cardiac patients. Gave subjects a pre-anesthesia speech of importance [of hearing under anesthesia? Notes here are not clear.] and a chin touch suggestion that was successful. 7 of 30 subjects gave reports of recall - usually recalled something of particular interest to them. These 7 subjects appeared more anxious postoperatively than previously. 4. Recognition study: Pre-op "IQ" test. Gave subjects answers to the questions while they were under anesthesia, and postoperatively they had better performance than previously. 5. Recall study, double blind. Interviewer learned something about the patient, and told them something about what was learned about the patient during anesthesia e.g., You have a lovely garden. After surgery they were hypnotized by someone who did not know what information was given, and then recall for information "heard" under anesthesia was tested. 6. 10 female patients who were good hypnotic subjects, all received the same statement under anesthesia, that they would believe for a moment that they had green hair. During the interview, one said she was fascinated by green things, one wanted to go home and wash her hair. Kihlstrom, John F. (1987). The cognitive unconscious. Science, 237, 1445-1452. Contemporary research in cognitive psychology reveals the impact of nonconscious mental structures and processes on the individual's conscious experience, thought, and action. Research on perceptual-cognitive and motoric skills indicates that they are automatized through experience, and thus rendered unconscious. In addition, research on subliminal perception, implicit memory, and hypnosis indicates that events can affect mental functions even though they cannot be consciously perceived or remembered. These findings suggest a tripartite division of the cognitive unconscious into truly unconscious mental processes operating on knowledge structures that may themselves be preconscious or subconscious. 1986 American Medical Association Council on Scientific Affairs (1986). Scientific status of refreshing recollection by the use of hypnosis. International Journal of Clinical and Experimental Hypnosis, 34, 1-12. The Council finds that recollections obtained during hypnosis can involve



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confabulations and pseudomemories and not only fail to be more accurate, but actually appear to be less reliable than nonhypnotic recall. The use of hypnosis with witnesses and victims may have serious consequences for the legal process when testimony is based on material that is elicited from a witness who has been hypnotized for the purposes of refreshing recollection. The Council finds that recollections obtained during hypnosis can involve confabulations and pseudomemories and not only fail to be more accurate, but actually appear to be less reliable than nonhypnotic recall. The use of hypnosis with witnesses and victims may have serious consequences for the legal process when testimony is based on material that is elicited from a witness who has been hypnotized for the purposes of refreshing recollection. Davidson, Thomas McCabe (1986, January). Recall organization and volitional/non-volitional experiencing in posthypnotic and intrahypnotic amnesia: Inattention versus dissociation hypotheses (Dissertation, University of Waterloo). Dissertation Abstracts International, 47 (7), 3103-B.

"Two studies are reported which seek to evaluate the relative merits of two differing hypotheses concerning the cognitive processes underlying suggested hypnotic amnesia. The inattention hypothesis maintains that amnesia effects are produced when subjects volitionally divert attention from relevant retrieval cues so that recall is inefficient. The dissociation position is that amnesic subjects are prevented from utilizing normally relevant retrieval cues by a dissociative barrier that blocks access to target memories -- a forgetting over which subjects experience no volitional control. The two hypotheses were evaluated by means of a selective amnesia suggestion in the recall organization paradigm. "In the first experiment, high, medium, and low hypnotic susceptible subjects were administered either hypnotic induction or task-motivating instructions. Results indicated that there was no disorganization of amnesia trial recall or forgetting of words not targeted for amnesia, contrary to predictions from the inattention hypothesis. "In the second experiment, high hypnotizable subjects received the selective amnesia suggestion in both posthypnotic and intrahypnotic conditions. Intrahypnotic subjects were also separated into one group that received a ten second interval between the administration of the amnesia suggestion and the amnesia trial, and another group that had a delay between the suggestion and the amnesia trial equivalent to the posthypnotic group. Eight subjects who had testified that they were volitionally amnesic on a pre-screening amnesia test were also included in the posthypnotic condition. Again, the results indicated no recall disorganization or reduction in recall of words not targeted for amnesia. Subjects also uniformly provided evidence that their amnesia was experienced as non-volitional. There was, however, evidence that some amnesiacs were aware during the amnesia trial of the specific category targeted for amnesia. "The most important finding of both experiments is that subjects may attend to normally relevant retrieval cues and yet continue to evidence amnesia. The evidence is therefore consistent with the dissociation hypothesis, but disconfirms the inattention account of hypnotic amnesia. It appears that the selective amnesia context effectively prevents the successful use of volitional forgetting strategies. (Abstract shortened with permission of author)" (p. 3103). Laurence, Jean-Roch; Nadon, Robert; Nogrady, Heather; Perry, Campbell (1986). Duality, dissociation, and memory creation in highly hypnotizability subjects. *International Journal of Clinical and Experimental Hypnosis*, 34, 295-310. The present paper reports an initial attempt to create a pseudomemory in a group of highly hypnotizable individuals. It was found that for approximately 50% of Ss tested, recall of a specific event was modified when Ss

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integrated hypnotically suggested material which then posthypnotically was believed to be veridical. This modification in a previously reported memory was linked to a particular cognitive style found in high hypnotizable Ss, namely dual cognitive functioning. Ss reporting duality in hypnotic age regression, and, to a lesser extent, the hidden observer effect, were found to be the most prone to accept a suggested memory as real. These findings suggest the need to emphasize the importance of a cognitive-phenomenological approach to hypnosis and hypnotizability. 1985

Acosta, Enrique; Crawford, Helen J. (1985). Iconic memory and hypnotizability: Processing speed, skill or strategy differences?. *International Journal of Clinical and Experimental Hypnosis*, 33, 236-245. The purported relationship between hypnotizability and speed of information transfer from iconic to short-term memory was studied in a comparison of 12 low and 12 high hypnotizable Ss. As in Ingram, Saccuzzo, McNeill, and

Ss. As in Ingram, Saccuzzo, McNeill, and McDonald (1979), high hypnotizable Ss showed less interference from a visual mask in the report of a briefly presented item than did low hypnotizable Ss when the mask delays were predictable. When the delay of the mask could not be anticipated, however, differences between high and low hypnotizable Ss disappeared. It is suggested that differences in information processing related to hypnotizability may be due to differences in strategy, skills, or other factors, rather than underlying information processing speed. Hypnosis may require concentrative or selective attention, which usually is measured by self-report (e.g. Absorption) or by experimental measures. Several investigations indicate that high hypnotizable people are better than low hypnotizables at focusing on a task and ignoring extraneous information (Brown, Crawford, Smith, Leu, & Brock, 1983; Graham & Evans, 1977; Karlin, 1979; Miller, 1975; Wallace, 1979; Wallace, Garrett, & Anstadt, 1974; Wallace, Knight, & Garrett, 1976). One way to study attentional processes is through the effect of presenting a mask (e.g. \$\$\$\$) shortly after presenting a stimulus (e.g. ABCDE). Ingram (1979) found that highs had faster information processing, but that might be due to anticipation bias associated with the method of limits employed. This study uses both an ascending method of limits, like Ingram, and a condition in which the mask delays were presented randomly within another block of trials. RESULTS

"While the present study replicated Ingram et al.'s (1979) findings when an ascending method of limits was used (the same used by Ingram et al.) differences were not found in processing when ISIs were presented randomly. Thus, these results suggest that high and low hypnotizable Ss do not differ in their information transmission rates, but rather they may differ in other aspects which mediate performance in this task" (pp. 241- 242).

"Several lines of evidence point towards strategy or skill differences between high and low hypnotizable Ss as a possible explanation for the present findings. First, it was found that when Ss could anticipate the mask delay (the ascending condition), high hypnotizable Ss outperformed the low hypnotizables. When this anticipation was controlled, as in the random condition, the two groups did not differ when the data were scored by serial position. When the data were scored by a free recall scheme, there was a nonsignificant trend for high hypnotizable Ss to score higher than did the low hypnotizables. This trend suggests that high hypnotizable Ss may be more willing to guess, and to guess more accurately than low hypnotizables, when they have partial information about a letter, and/or they may have greater skill in perceiving

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incomplete information. The latter suggestion finds indirect support from Crawford (1981) who reported that high hypnotizable Ss can process fragmented stimuli (Gestalt Closure tests, see Thurstone & Jeffrey, 1966), significantly better than can low hypnotizables. High imagers have been shown also to perform significantly better than low imagers in Gestalt Closure tasks (Ernest, 1980). At a speculative level, given that recent research has suggested that iconic memory may be a right hemisphere phenomenon (e.g. Cohen, 1976, but also see DiLollo, 1981), and high hypnotizable Ss outperform low hypnotizables on certain right hemisphere tasks (e.g. Crawford, 1981), it may be asked if the trends found with the free recall scoring scheme in the present study might be a reflection of differential right hemisphere processing. Such a hypothesis could be investigated in future research by comparing the performance of high and low hypnotizable Ss, as possibly moderated by visuo-spatial ability, for stimuli presented to the left versus the right visual hemifield (Ernest, 1983).

"A second set of evidence in favor of strategy differences was found in Saccuzzo et al. (1982) which was published after the data for the present experiment were collected. In the Saccuzzo et al. (1982) paper, which was an extension and replication of Ingram et al. (1979), the same mask delay was used throughout a 10-trial block. The order of the blocks (i.e., the mask delays) was random. Thus, while S did not know which mask delay was used in the first trial of a block, the remaining 9 trials were the same and could be anticipated. During the first session, high hypnotizable Ss outperformed the low hypnotizables, but these differences disappeared on the second testing session. These results suggest that practice may have affected performance, rather than any underlying information processing speed differences" (pp. 242-243). 1985

Bennett, Henry L.; Davis, H. S.; Giannini, Jeffrey A. (1985). Non-verbal response to intraoperative conversation. *British Journal of Anesthesiology*, 57, 174-179. In a double-blind study, 33 patients (herniorrhaphy, cholecystectomy and orthopedic) were randomly assigned to either suggestion or control groups. Under known clinical levels of nitrous oxide and enflurane or halothane anesthesia, suggestion patients were exposed to statements of the importance of touching their ear during a postoperative interview. Compared with controls, suggestion patients did touch their ear (tetrachoric correlation 0.61,  $P < 0.02$ ). test, U (Mann-Whitney frequently more so did they and Coe, William C.; Yashinski, Edward (1985). Volitional experiences associated with breaching posthypnotic amnesia. *Journal of Personality and Social Psychology*, 48 (3), 716-722. Highly responsive hypnotic subjects classified as having control over remembering (voluntaries) or not having control over remembering (involuntaries) during posthypnotic amnesia were compared during posthypnotic recall. Subjects reported their voluntariness after the experiment. Two contextual conditions were employed (2 x 2 design): a lie detector condition meant to create pressure to breach amnesia and a relax control condition. In contrast to earlier findings, the recall data showed that both voluntary and involuntary subjects breached under the lie detector condition compared with their counterparts in the relax condition; however, the degree of breaching was not great in any condition. The results are discussed as they relate to studies attempting to breach posthypnotic amnesia and characteristics of the voluntary-involuntary dimension. Eich, Eric; Reeves, John L.; Katz, Ronald L. (1985). Anesthesia, amnesia, and the memory/awareness distinction. *Anesthesia and Analgesia*, 64, 1143-1148. Several studies have shown that surgical patients cannot consciously recall or recognize events to which they had been exposed during general anesthesia. Might evidence of

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memory for intraoperative events be revealed through the performance of a postoperative test that does not require remembering to be deliberate or intentional? Results of the present study, involving the recognition and spelling of semantically biased homophones, suggest a negative answer to this question and imply that intraoperative events cannot be remembered postoperatively, either with or without awareness, question and imply that intraoperative events cannot be remembered postoperatively, either with or without awareness. "In this experiment, we attempted to apply the distinction between memory and awareness of memory to the question of whether adequately anesthetized and apparently unconscious patients can register and retain what is said in their presence during surgery. Prior research relating to this question has focused, for the most part, on the ability of postoperative patients to recall or recognize a specific item....The inference need not be drawn, however, that 'patients in so-called surgical planes of anesthesia cannot hear' (15, p. 89) or that anesthetized patients cannot encode and store in memory events that transpire during their surgery. The possibility remains that even though the effects of memory for intraoperative events may not--and probably cannot--be revealed in postoperative tests of retention that require remembering to be deliberate or intentional, such effects might be evident in the performance of tests that do not demand awareness of remembering.

"To explore the possible dissociation between memory and awareness of memory for intraoperative events, we modeled our experiment after a recent neuropsychological study by Jacoby and Witherspoon (5)" (p. 1143). "...it appears that the prior presentation of a word has a substantial impact on its subsequent interpretation and spelling, regardless of whether or not the word is correctly classified as 'old' in a later test of recognition memory" (p. 1144).

"Approached from the standpoint of anesthesia theory and practice, the idea that recognition and spelling tap different memory processes or systems raises an interesting question for research. Specifically, suppose that during surgery, an anesthetized patient listens to a series of short, descriptive phrases, each consisting of a homophone and one or two words that bias the homophone's less common interpretation (e.g., war and PEACE, deep SEA). Suppose further that several days after surgery, the patient is read a list composed chiefly of old and new homophones (i.e., ones that either had or had not been presented intraoperatively) on two successive occasions. On one occasion, the patient is simply asked to spell each list item aloud; on the other occasion, the patient is asked to state aloud which list items he or she recognizes as having been presented during surgery. Given the situation sketched above, might the patient spell significantly more old than new homophones in line with their less common interpretations, and yet fail to reliably discriminate between the two types of items in the test of recognition memory" (p. 1144). Geiselman, R. Edward; Fisher, Ronald P.; MacKinnon, David P.; Holland, Heidi L. (1985). Eyewitness memory enhancement in the police interview: Cognitive retrieval mnemonics versus hypnosis. *Journal of Applied Psychology*, 70, 401-412. Compared effectiveness of three interview procedures for optimizing eyewitness memory performance: (a) the 'cognitive interview' based on memory-retrieval mnemonics from current memory theory, (b) the presently controversial hypnosis interview, and (c) the standard (control) police interview. Both the cognitive and hypnosis procedures elicited a significantly greater number of correct items of information from the Ss than did the standard interview. This result, which held even for the most critical facts from the films, was most pronounced for crime

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scenarios in which the density of events was high. The number of incorrect items of information generated did not differ across the three interview conditions. The observed memory

Klatzky, Roberta L.; Erdelyi, Matthew H. (1985). **The response criterion problem in tests of hypnosis and memory.** *International Journal of Clinical and Experimental Hypnosis*, 33, 246-257. Past experimental research on the effects of hypnosis on memory indicates both that hypnosis produces increases in correct recalls and that hypnosis produces increased vulnerability to misleading information and intrusions in recall. The present paper uses the framework of signal detection theory to account for this pattern of data. It suggests that the effects of hypnosis on memory cannot be ascertained from previous work, because of a general failure to discriminate between effects on the amount of information retrieved from memory and the criterion adopted by Ss for reporting what they remember. Past experimental research indicates that hypnosis produces increases in correct recalls and as well as increased vulnerability to misleading information and intrusions in recall. This paper uses signal detection theory to account for the data. Signal detection theory describes performance as reflecting two underlying parameters--the information accessible to S at any point in time (designated as  $d'$ ) and the criterion adopted by S when making decisions about memory reports (report or decision criterion, response bias, or Beta).

They review the recent literature on hypnosis and memory and conclude:

1. When the response output is not controlled, hypnotic instructions and/or hypnotizable have been found to produce increases in the number of correct recalls but this does not mean that the accessible information in memory has increased. What may be changing is the criterion for report.
2. When the response output is not controlled, hypnotic instructions and/or hypnotizable have been found to produce increases in incorrect recalls, i.e., intrusions, and compliance with leading questions, but this does not mean diminution or distortion of accessible memory ( $d'$ ). What may be changing is the criterion for report.
3. When response bias is controlled, hypnosis has been found to produce no enhancement of recognition but this does not imply that (a) Beta cannot change in recognition tests where it is allowed to vary, nor that (b) hypnosis has no effect on recall.
4. The proper experiment to determine whether hypnosis affects the accessibility of information in memory should place demands on the retrieval process and control the criterion for memory report.

The most decisive experimental outcome for the forensic situation would be a null or negative one: the demonstration that hypnosis does not enhance measures of memory accessibility. Then there would be no reason to use hypnosis to enhance memory.

1983

Crawford, Helen J.; Allen, Steven N. (1983). **Enhanced visual memory during hypnosis as mediated by hypnotic responsiveness and cognitive strategies.** *Journal of Experimental Psychology: General*, 112 (4), 662-685. To investigate the hypothesis that hypnosis has an enhancing effect on imagery processing, as mediated by hypnotic responsiveness and cognitive strategies, four experiments compared performance of low and high, or low, medium, and high hypnotically responsive subjects in waking and hypnosis conditions on a successive visual memory discrimination task that required detecting differences

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between successively presented picture pairs in which one member of the pair was slightly altered. Consistently, hypnotically responsive individuals showed enhanced mean number of correct performance during hypnosis, whereas nonresponsive ones did not. Hypnotic responsiveness correlated .52 ( $p < .001$ ) with enhanced performance during hypnosis, but it was uncorrelated with waking performance (Experiment 3). Reaction time was not affected by hypnosis, although high hypnotizables were faster than lows in their responses (Experiments 1 and 2). Subjects reported enhanced imagery vividness on the self-report Vividness of Visual Imagery Questionnaire during hypnosis. The differential effect between lows and highs was in the anticipated direction but not significant (Experiments 1 and 2).

Two cognitive strategies appeared to mediate visual memory performance: (a) detail strategy (memorization and rehearsal of individual details) and (b) holistic strategy (looking at and remembering the whole picture with accompanying imagery). Both lows and highs reported predominantly detail-oriented strategies during waking; however the highs shifted to a more holistic strategy during hypnosis. It appears that high hypnotizables have a greater capacity than lows for cognitive flexibility (Battig, 1979). Results are discussed in terms of Paivio's (1971) dual coding theory and Craik and Tulving's (1975) depth of processing theory. The authors also discuss whether hypnosis involves a shift in cerebral dominance, as reflected by the cognitive strategy changes and enhanced imagery processing. Dillon, F. Richard; Spanos, Nicholas P. (1983). Proactive interference and the functional ablation hypothesis: More disconfirmatory data. *International Journal of Clinical and Experimental Hypnosis*, 31, 47-56. According to the functional ablation hypothesis, memories for which amnesia has been hypnotically suggested do not interact with other information in memory do not interact with other information in memory.

Geiselman, Ralph E.; Fishman, D. L.; Jaenicke, C.; Larner, B. R.; MacKinnon, D. P.; et al. (1983). **Mechanisms of hypnotic and nonhypnotic forgetting.** *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 9, 626-635. 40 undergraduates participated in 2 experimental sessions designed to study laboratory-induced amnesia, one using a standard hypnosis paradigm and one using a nonhypnotic directed forgetting paradigm. Two independent sources of variation were derived from the hypnotic amnesia data: retrieval inhibition and inhibition release. In the nonhypnotic directed-forgetting procedure, some items were cued to be either forgotten or remembered. At test, over 39% of the variance in the recall of the to-be-forgotten items could be accounted for by the inhibition and release constructs obtained with hypnosis. These relations between the 2 procedures were not mediated by verbal ability (WAIS) or cognitive style (Hidden Figures Test). It is concluded that the mechanisms of forgetting involved in laboratory demonstrations of hypnotic and nonhypnotic amnesia are related, and the implication is that some of them are the same, namely, retrieval inhibition and inhibition release. Possible demand characteristics that accompany the hypnosis procedure were not apparent with the nonhypnotic procedure. Results provide evidence that hypnotically induced amnesia is not entirely the result of Ss' reactions to demand characteristics. Kihlstrom, John F.; Easton, Randolph D.; Shor, Ronald E. (1983). Spontaneous recovery of memory during posthypnotic amnesia. *International Journal of Clinical and Experimental Hypnosis*, 31, 309-323. Repeated testing of posthypnotic amnesia indicates that some Ss, initially responsive to the suggestion, show appreciable recovery of memory before the pre-arranged signal is given to cancel the

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amnesia. Comparison of Ss who received 2 successive memory tests during amnesia with others who received only a single test preceded by a distracting activity indicated that the recovery effect was attributable to the passage of time rather than to prior testing. There were wide individual differences in the extent of recovery, with some Ss maintaining a fairly dense amnesia on the second test. Those Ss who maintained amnesia were more hypnotizable, and showed a denser initial amnesia, than those who breached it. An analysis of subjective reports lent credence to the notion of partial response among some hypnotizable Ss who fail to meet a standard criterion of complete amnesia, and pseudoamnesia among some insusceptible Ss who appear to pass it. Some Ss reported voluntarily engaging in cognitive activity designed to induce forgetting, but these reports were related to neither the occurrence of initial amnesia nor its persistence. A failure of memory which reflects momentary disorientation upon transition from one mental state to another should be conceptually distinguished from a reversible amnesia initiated by hypnotic suggestion by hypnotic suggestion 1981

Bower, Gordon H. (1981). **Mood and memory.** *American Psychologist*, 129-148. This article describes experiments in which happy or sad moods were induced in subjects by hypnotic suggestion to investigate the influence of emotions on memory and thinking. One result was that subjects exhibited mood-state-dependent memory in recall of word lists, personal experiences recorded in a daily diary, and childhood experiences; people recalled a greater percentage of those experiences that were effectively congruent with the mood they were in during recall. Second, emotion powerfully influenced such cognitive processes as free associations, imaginative fantasies, social perceptions, and snap judgments about others' personalities (e.g., angry subjects generated angry associates, told hostile stories, and were prone to find fault with others). Third, when the feeling-tone of a narrative agreed with the reader's emotion, the salience and memorability of events in that narrative were increased. Thus, sad readers attended more to sad material, identified with a sad character from a story, and recalled more about that character. An associative network theory is proposed to account for these several results. In this theory, an emotion serves as a memory unit that can enter into associations with coincident events. Activation of this emotion unit aids retrieval of events associated with it; it also primes emotional themata for use in free association, fantasies, and perceptual categorization. 1979

Cole, Randy D. (1979). Use of hypnosis in a course to increase academic and test-taking skills. *International Journal of Clinical and Experimental Hypnosis*, 27 (1), 21-28. The present study was undertaken to provide additional information on the effects of hypnosis on academic and test-taking skills. Previous research indicated inconclusive results with inadequate experimental design and statistical methodology. The present study used an experimental research design with appropriate statistical analysis. Ss were 93 college students and treatment was administered by pre-recorded cassette tapes over a 4-week period during regular class time. Tapes consisted of hypnotic and waking suggestions related to course content and general academic skills. Results indicated hypnotic and waking suggestions did not facilitate academic skill learning significantly more than class curriculum alone. Pre-post comparisons did indicate significant improvement by all groups on reading, writing, study skills, and spelling variables.

Holroyd, Jean; Nuechterlein, Keith; Shapiro, David; Ward, Frederick (1979). Biofeedback and hypnotizability. In Burrows, Graham D.; Collison, David R. (Ed.), *Hypnosis 1979: Proceedings of the 8th International Congress of Hypnosis and Psychosomatic*

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**Medicine**, Melbourne, Australia (pp. 335-343). New York: Elsevier/North Holland Biomedical Press. 8 high and 8 low hypnotizable Ss used biofeedback and hypnosis to lower blood pressure in one session and forehead EMG activity in another session. Results were analyzed by repeated measures analyses of covariance using baseline physiological level on the dependent variable as the covariate. Electromyographic level was reduced more immediately by biofeedback than by hypnosis. When the task was to lower blood pressure, blood pressure and skin conductance were more effectively reduced by hypnosis than by biofeedback, considering only the first half of each session to eliminate within-session transfer effects.

Hypnotizability did not predict overall outcome. Factors which may have prevented demonstrating a clearer relationship between hypnotizability and success using biofeedback or hypnosis are discussed. State and trait anxiety, cognitive strategies used during the tasks, and self-reported hypnotic depth are examined for correlates of successful performance. 1977

Chertok, Leon; Michaux, D.; Droin, M. C. (1977). **Dynamics of hypnotic analgesia: Some new data.** Journal of Nervous and Mental Disease, 164, 88-96. Following two surgical operations under hypnotic anesthesia, it was possible, during subsequent recall under hypnosis, to elicit a representation of the past operative experience. It would seem that under hypnosis there is a persistence of the perception of nociceptive information and of its recognition as such by the subject. From an analysis of these two experiments in recall, it is possible to formulate several hypotheses concerning the psychological processes involved in hypnotic analgesia. In consequence of an affective relationship, in which the hypnotist's word assumes a special importance for the subject, the latter has recourse to two kinds of mechanism: a) internal (assimilation to an analogous sensation, not, however, registered as dangerous--rationalization); and b) external (total compliance with the interpretations proposed by the hypnotist), which lead to a qualitative transformation of nociceptive information, as also the inhibition of the behavioral manifestations normally associated with a painful stimulus. Delprato, D. J. (1977). Pavlovian conditioning of Chevreul's movement. American Journal of Clinical Hypnosis, 20, 124-130. This essay deals with both the intra-individual and inter-individual varieties of arousal state-bound experiences. The former are labelled as "flashbacks" while the latter embrace the great fantasies and repetitive schemes, the ever re-written plots and images of literature, art, and religion.

Flashbacks are both arousal-state and stage (i.e., set and setting) bound experiences. Flashback and hypnotic recall differ only in the ways by which they are induced. Induction methods should be distinguished from induced states on the hyperaroused perception-hallucination and hypoaroused perception-meditation continuum.

Flashbackers may be characterized by their (a) variability on perceptual-behavioral tasks; (b) tendency to minimize (or reduce) sensory input; (c) high resting heart rates; (d) hypnotizability; and, hence (e) preferential right-cerebral-hemispheric cognition; and (f) a display of EEG-alpha dominance in the resting, waking state. Garver, R. B. (1977). Enhancement of human-performance through neuro-motor facilitation and control of arousal level. American Journal of Clinical Hypnosis, 19, 177-181. Coe, William C.; Basden, B.; Basden, D.; Graham, C. (1976). Posthypnotic amnesia: Suggestions of an active process in dissociative phenomena. Journal of Abnormal Psychology, 85, 455-458. A retroactive inhibition design was used to examine the process of posthypnotic amnesia. The results supported the



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notion that "forgotten" material is as available to amnesic subjects at some level as it is to nonamnesic subjects. Further, so-called forgetting appears to be the result of an active process, that is, something the subject does. Implications for understanding dissociative phenomena in general are discussed. Coe, William C.; Baugher, R. J.; Krimm, W. R.; Smith, J. A. (1976). A further examination of selective recall following hypnosis. *International Journal of Clinical and Experimental Hypnosis*, 24, 13-21. 29 Ss were tested for posthypnotic amnesia on SHSS:C. They rated each item for emotional tone (pleasant-unpleasant) and judged whether or not they had passed or failed it. There was some support for the notion that failed items are judged more unpleasant than passed items, but the emotional tone of an item was not related to its being recalled posthypnotically. There were minimal findings to suggest that Ss recall items which stand out in their experience. Discrepancies with earlier findings and the possible role of processes associated with normal memory are discussed.

Erickson, Milton H.; Rossi, Ernest L. (1976). **Two level communication and microdynamics of trance and suggestion.** *American Journal of Clinical Hypnosis*, 18, 153-171. The authors provide the transcript and commentaries of an hypnotic induction and an effort to achieve automatic writing. An unusual blend of Erickson's approaches to two level communication, dissociation, voice dynamics and indirect suggestion are made explicit in the commentaries. The junior author offers a 'context theory of two level communication' that conceptualizes Erickson's clinical approaches in terms consonant with Jenkins' (1974) recent contextual approach to verbal associations and memory. A summary of the microdynamics of Erickson's approach to trance induction and suggestion is outlined together with a utilization theory of hypnotic suggestion.

Jenkins, J. J. (1974). Remember that old theory of memory? Well, forget it! *American Psychologist*, 29, 785-795.

Psychologist, 29, 785-795. Illovsky, J.; Fredman, N. (1976). Group suggestion in learning disabilities of primary grade children. *International Journal of Clinical and Experimental Hypnosis*, 24, 87-97. This study reports the effects of tape-recorded hypnotic suggestions given to 48 hyperactive children between the ages of 6 and 8 from 3 public schools. The children had short attention spans, low frustration and tolerance [sic], and poor learning motivation. They were taught by the same method in class and received remedial instruction as in the previous year. In order to participate in this study, the children were brought from their regular classrooms every morning to listen in groups of 9, 10, or 19 -- according to the available accommodation in the school -- to suggestions of relaxation, to ideas of coping with emotional problems, and to suggestions of modifying attitudes towards learning. The corrective reading teachers conducted these 15-minute sessions. After the session was over, the children were returned to their respective classes. At the beginning and at the end of the school year, the classroom teachers evaluated the children's behavior in class and their attitudes toward learning. The addition of the modified hypnotic technique enabled 45 of 48 children to function better in school. The improvement ranged from decreased hyperactivity to better than average performance in class. Significant correlations were found between percent of relaxation with increased attention span ( $r = .40$ ) and number of sessions attended with increased self-confidence ( $r = .46$ ). Johnson, R. F. Q. (1976). Hypnotic time distortion and the enhancement of learning: New data pertinent to the Krauss-Katzell-Drauss experiment. *American Journal of*

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Clinical Hypnosis, 19, 98-102. Krauss, Katzell, and Krauss (1974) reported that free-recall learning can be markedly enhanced by suggestions given under hypnosis that three minutes of study time is equivalent to 10 minutes of study time. The present investigation, which incorporated features similar to the Krauss et al. study, did not yield similar results. Subjects learned a comparable number of words for a comparable amount of study time, regardless of whether they were exposed to hypnotic time distortion instructions, special motivating instructions, or control instructions. The results are discussed in terms of general problems in modern research on hypnotism. 1975

Cowings, Patricia S. (1975, September). **Observed differences in learning ability of heart rate self-regulation as a function of hypnotic susceptibility.** [Paper] Presented at the 3rd Congress of the International College of Psychosomatic Medicine, Rome. Three groups of eight men and women were given personality tests and were taught to control their own heart rates. Experimental group I and the control group had low hypnotic susceptibility (Stanford Hypnotic Susceptibility Scale), and subjects in experimental group II had high hypnotic susceptibility. The experimental groups received autogenic therapy and biofeedback, while the control group was given biofeedback only. Subjects who received autogenic therapy and biofeedback performed better than the control group. Significant differences, however, were found in all psychological test scores between high and low hypnotic susceptibles. Cedercreutz, C. (1972). The big mistakes: A note. International Journal of Clinical and Experimental Hypnosis, 20, 15-16. In his book, A System of Medical Hypnosis, Ainslie Meares writes, "Most books on hypnosis, from Bernheim to the present time, devote a great deal of space to the description of successful and dramatic cures. These accounts may be of prestige value to the author, and may do something to inform the profession of the potential value of hypnosis in medicine, but these success stories are really of little help to those who would learn the technique of hypnotherapy because the emphasis is always on the success of the treatment rather than on analysis of the psychodynamic mechanisms which brought it about. As in everything else, we learn most from a study of our failures [p. 3]." These comments remain as true today as they were ten years ago. With the notable exception of Meares, few colleagues have been willing to share their errors, allowing us to profit from their experience. Thus, when Dr. Cedercreutz sent along a note describing his experience with one of his patients, I was struck by his generosity, and it seemed most appropriate for all of us to share his experience by way of the Journal. Hopefully, this may encourage other colleagues to share their failures as well as their successes so that all of us may learn to be more effective therapists and better scientists. M.T.O. [Martin Orne] The case reported involves a patient who had migraine headache removed with hypnosis, but later developed gastrointestinal symptoms that were operated surgically with absence of positive (physical) pathology noted. Subsequent investigation of the psychological component of the problem with hypnosis revealed an early trauma (seeing a soldier killed with a bayonette) that led to migraine-like pain in the head and vomiting. Goldstein, M. S.; Sippelle, Carl N. (1970). Hypnotically induced amnesia versus ablation of memory. International Journal of Clinical and Experimental Hypnosis, 19 (3), 211-216. (Abstracted in Current Contents, 2, 35, 21) Divided 33 hypnotizable undergraduates, all capable of achieving the criterion of amnesia for a 7-digit number, into 3 groups: 2 hypnotized and 1 pretend. The distributions of errors for

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an amnesic performance of these groups were compared with the theoretical chance distribution of errors expected in an amnesic performance

errors expected in an amnesic performance. Both hypnotized groups differed significantly from the pretend group and from the theoretical distribution, while the performance of the pretend group did not differ significantly from the chance distribution. The performance of the pretend group conformed to the expectancy for amnesia significantly better than did the performance of either of the hypnosis groups. (Spanish & German summaries) (PsycINFO Database Record (c) 2003 APA, all rights reserved)1968

Graham, K. R.; Patton, Ann (1968). **Retroactive inhibition, hypnosis, and hypnotic amnesia.** International Journal of Clinical and Experimental Hypnosis, 16, 68-74. THE RELATIONSHIP OF HYPNOSIS AND POSTHYPNOTIC AMNESIA TO RETROACTIVE INHIBITION. 4 GROUPS OF 10 STUDENTS EACH LEARNED LISTS OF ADJECTIVES IN A RETROACTIVE INHIBITION PARADIGM. 2 GROUPS LEARNED THE INTERVENING LIST WHILE THEY WERE HYPNOTIZED. SS OF 1 OF THESE WERE GIVEN INSTRUCTIONS FOR POSTHYPNOTIC AMNESIA, WHILE SS OF THE OTHER WERE TOLD TO RECALL WHAT THEY HAD LEARNED UNDER HYPNOSIS. THE SAVINGS AND RECALL SCORES OF BOTH GROUPS FOR ITEMS OF THE ORIGINAL LIST WERE NOT DIFFERENT FROM A 3RD GROUP WHICH HAD LEARNED ALL 3 LISTS IN THE WAKING STATE. ALL GROUPS SHOWED SUBSTANTIAL RETROACTIVE INHIBITION WHEN COMPARED TO CONTROLS WHO HAD LEARNED NO INTERVENING LIST. (SPANISH + GERMAN ABSTRACTS) (PsycINFO Database Record (c) 2002 APA, all rights reserved)1966

Edmonston, William E., Jr.; Stanke, F. James (1966). **The effects of hypnosis and meaningfulness of material on verbal learning.** American Journal of Clinical Hypnosis, 8 (4), 257-260. Results: "The number of trials to criterion for each subject was analyzed in a two-way analysis of variance. The analysis indicates that hypnosis does not significantly effect the learning process. A significant difference does appear between the acquisition of high and low meaning words, the former being learned more rapidly. Also there are no interaction effects between hypnosis and the meaningfulness level of the material to be learned. The apparent gain of the hypnosis-low meaning over the nonhypnosis-low-meaning group is not statistically significant ( $t = 1.53$ ;  $p = .20$ )" (p. 258). Evans, Frederick J.; Thorn, Wendy A. (1966). Two types of posthypnotic amnesia: Recall amnesia and source amnesia. International Journal of Clinical and Experimental Hypnosis, 14 (2), 162-179. Posthypnotic recall amnesia refers to S's inability to recall, when challenged posthypnotically, the events which occurred during hypnosis. Posthypnotic source amnesia, occurs when S subsequently remembers the experiences of hypnosis, but has no recollection of acquiring the experiences. Data from 3 samples are presented to support the distinction between the 2 types of amnesia. Of 243 Ss, 18 experienced recall amnesia, 26 displayed source amnesia, but only 4 developed both kinds. There were no differences in rated depth of hypnosis of these 3 subgroups. Recall amnesia and source amnesia correlated .37, .38, and .39, respectively ( $p < .001$ ) in the 3 samples. The evidence indicates the 2 types of amnesia are different phenomena. Similarities between source amnesia and certain (dissociative) normal and psychopathological memory processes are discussed. (Spanish & German summaries) (32 ref.) (PsycINFO Database Record (c) 2002 APA, all rights reserved)

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The evidence indicates the 2 types of amnesia are different phenomena. Similarities between source amnesia and certain (dissociative) normal and psychopathological memory processes are discussed. (Spanish & German summaries) (32 ref.) (PsycINFO Database Record (c) 2002 APA, all rights reserved)

LeCron, Leslie M. (1963). **Uncovering early memories by ideomotor responses to questioning.** International Journal of Clinical and Experimental Hypnosis, 11, 137-142. The author argues for the veridicality of birth and prenatal memories elicited by hypnosis, and in any event states they are therapeutically useful fantasies. He also advocates use of ideomotor signalling as a means of access to unconscious material. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Dorcus, Roy M. (1960). Recall under hypnosis of amnesic events. International Journal of Clinical and Experimental Hypnosis, 8 (1), 57-61. The author reported on hypnosis work with eight cases, four dealing with attempts to recall misplaced or lost articles and four dealing with recall of information related to the commission of crimes. He concluded "that recall is not greatly improved under hypnosis. However, when strong emotional elements surround the events to be recalled some additional information may be secured" (p. 60).

1954 Hammer, Emanuel Frederick (1954). Post-hypnotic suggestion and test performance. Journal of Clinical and Experimental Hypnosis, 2, 178-185

College students were tested in Normal and Post-hypnotic suggestion conditions, in balanced order (N-P-P-N, or P-N-N-P) but were actually hypnotized before the Normal as well as the Post-hypnotic trials (i.e. without and with post-hypnotic suggestions, with suggestions for amnesia for the events in the hypnotic state).

"Summary. The purpose of this investigation was to determine whether or not post-hypnotic suggestion can improve some aspects of hypnotizable students' application and efficiency as applied to a number of selected performances connected directly or indirectly to schoolwork. Before the post-hypnotic testing periods, each subject was given post-hypnotic suggestions of ease, confidence, motivation, and increased ability. The study consisted of a comparison of normal and post-hypnotic performances of nine subjects in the areas of motor capacity, attention and perception, association, learning and memory, speed of reading comprehension, and application of abstract ability.

To the extent to which psychomotor speed and endurance, physical fatigue, span and duration of attention, clerical performance, speed of learning (as tested by Meaningful Syllable Lists and Digit Symbol Substitution), speed of association, mental alertness, concentration, mental efficiency, application of abstract number abilities, and speed of reading comprehension are related to schoolwork, the hypothesis is supported that post-hypnotic suggestion can be of aid in hypnotizable college students' schoolwork" (p. 184).

Guze, Henry (1953). **Posture, postural redintegration and hypnotherapy.** Journal of Clinical and Experimental Hypnosis, 1, 76-82. (Abstracted in Psychological Abstracts 53: 6559)

The use of postural analysis, and directives regarding posture and their importance in hypnotherapy are discussed. Theoretically, it is indicated that a chronic postural condition may act to elicit an emotional state with which it was originally associated. Such an emotional condition may have caused the posture in the first place, and then established a feed-back relationship with it. The breaking of feed-back mechanisms of this kind depends largely upon postural change when a chronic situation is established in the absence of realistic cause for the

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emotion. Posture may also act redintegratively, when directly suggested, in rearousing traumatic memories. Several clinical cases are reported.

### 58. RESEARCH ON SUGGESTION

**INTRODUCTION TO SUGGESTION:** A statement made to a hypnotized subject designed to elicit a nonvolitional response, usually involving an ideomotor reaction, a perception, or an affective reaction. For example "your hand is becoming so light that it is floating up in the air all by itself" is a suggestion. "Raise your hand up in the air" is a command. In the case of a suggestion the subject does not intentionally raise his hand. In the case of a command he does.

**Posthypnotic suggestion:** A suggestion made under hypnosis that is intended to be acted on in the subsequent waking state, either on the occurrence of some signal, or at a certain time. It may also involve the continuation into waking state of a response made while under hypnosis. Suggestion is also used every time a treatment plan is described by a physician to a patient or a prescription is given. Any instruction made in a kind, confident, assuring manner will be of potential aid in bringing about desired results.

**The following are some examples of related research.**

**1** DeKoninck, J.; Brunette, R. (1991). Presleep suggestion related to a phobic object: **Successful manipulation of reported dream affect.** *Journal of General Psychology*, 118, 185-200. When compared with subjects who received presleep, suggestions for negative affect, subjects who received positive affect suggestions had significantly higher levels of positive emotions in their dreams, rated their own dreams as more pleasant, and had significantly lower levels of anxiety, sadness, and aggression. This supports the hypothesis that presleep suggestion can be an effective technique in influencing the affective dimension of the dream.

**2** 1983 Borgeat, Francois; Goulet, Jean (1983). **Psychophysiological changes following auditory subliminal suggestions for activation and deactivation.** *Perceptual and Motor Skills*, 56, 759-766. This study was to measure eventual psychophysiological changes resulting from auditory subliminal activation or deactivation suggestions. 18 subjects were alternately exposed to a control situation and to 25-dB activating and deactivating suggestions masked by a 40-dB white noise. Physiological measures (EMG, heart rate, skin-conductance levels and responses, and skin temperature) were recorded while subjects listened passively to the suggestions, during a stressing task that followed and after that task. Multi variate analysis of variance showed a significant effect of the activation subliminal suggestions during and following the stressing task. This result is discussed as indicating effects of consciously unrecognized. perceptions on psycho- physiological responses.

**3** Classen, Wilhelm; Feingold, Ernest; Netter, Petra (1983). **Influence of sensory suggestibility on treatment outcome in headache patients.** *Neuropsychobiology*, 10, 44-47. In 45 headache patients the relationship between sensory suggestibility and three measures of treatment effect-ratings on (1) intensity of headaches; (2) efficacy of drugs, and (3) physician's competence - was investigated in a double-blind long-term crossover study. Subjects scoring high on sensory suggestibility clearly showed more relief of headaches upon the analgesic as well as upon the placebo. The physician's competence was rated higher by high-suggestible patients, whereas ratings on drug efficacy were low in all patients. The seemingly controversial behavior of high-

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suggestible patients was interpreted as a call for continuation of the physician's efforts in spite of the relief the patients already achieved.

**4** 1982 Belicki, Kathryn; Bowers, Patricia (1982, October). **Dimensions of dissociative processing, absorption and dream change following a presleep instruction.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Indianapolis, IN. NOTES Subjects' tendency to have things pop into their mind when asked to imagine, image them, or to do a divergent thinking task is correlated with behavior change out of awareness (dissociated), change in dream content in response to indirect suggestion - the request to pay attention to a certain element in their dreams. Effortless imagining (as opposed to working at it), a particular type of dissociative phenomenon, is associated with dream change.

**5** 1980 Bauer, Herbert; Berner, Peter; Steinringer, Hermann; Stacher, Georg (1980). **Effects of hypnotic suggestions of sensory change on event-related cortical slow potential shifts.**

Archiv fur Psychologie, 133 (3), 161-169. "The purpose of this study was to evaluate whether cortical slow potentials related to a S1-S2 paradigm are influenced by hypnotic suggestions of sensory change. Five healthy subjects susceptible to hypnosis participated each in two identical experiments with three conditions. In condition (1) and (2) each three intensities of 800 and 4000 Hz tones were presented. Preceding condition (2) hypnosis was induced and the subjects received the suggestion to hear the 800 but not the 4000 Hz tones. In condition (3), the tones were presented as S1 and a flash as S2. The subjects received the same suggestions as in (2) and a motor response to S2 was required. EEG was recorded from Cz. In (1) 800 and 4000 Hz tones caused negativities of equal amplitude, in (2) only minute negativities developed, possibly due to hypnosis induced deactivation. In (3) the S1-S2 related negativities were significantly smaller in amplitude during 4000 Hz tones than during 800 Hz tones, while the negativities preceding S2 differed only after the most intense S1. Hypnotic suggestions attenuate S1-S2 related negative potentials, possibly by affecting cognitive functions. **6** 1975 Barber, Theodore Xenophon (1975). **Responding to 'hypnotic' suggestions: An introspective report.** American Journal of Clinical Hypnosis, 18 (1), 6-22. The author first presents an introspective report which describes some of his attitudes, motivations, and expectancies and ongoing thought processes while he is responding to 'hypnotic' suggestions. The introspective report indicates that (a) suggested effects are experienced when a person thinks with and imaginatively focuses on those things that are suggested and (b) a person imaginatively focuses on the suggestions when he sees the test situation as useful and worthwhile and when he wants to and expects to experience those things that are suggested. It is then argued that the responsive subject in a hypnotic situation differs in every important respect from the sleepwalker and closely resembles the person who is involved in reading an interesting novel or in observing an interesting motion picture. Finally, the author outlines a course, now being developed, that aims to teach individuals how to respond to suggestions.

**7** Barber, Theodore Xenophon (1965). **Physiological effects of 'hypnotic suggestions': A critical review of recent research (1960-64).** Psychological Bulletin, 201-222. Recent studies are reviewed which were concerned with the effectiveness of suggestions given under "hypnosis" and "waking" experimental treatments in alleviating allergies, ichthyosis, myopia, and other conditions and in eliciting deafness, blindness, hallucinations, analgesia, cardiac acceleration and deceleration, emotional responses, urine secretion to sham water ingestion,

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narcotic-like drug effects, and other phenomena. The review indicates that a wide variety of physiological functions can be influenced by suggestions administered under either hypnosis or waking experimental treatments, and direct and indirect suggestions to show the particular physiological manifestations are crucial variables in producing the effects.

**8** Lee DY. Barak A. Uhlemann MR. Patsula P. **Effects of preinterview suggestion on counselor memory, clinical impression, and confidence in judgments.** *Journal of Clinical Psychology* 1995;51(5):666-75 This study examined the effects of schematic preinterview suggestion on counselors' (a) recognition memory of the information presented by the client; (b) clinical impression rating of the client; and (c) confidence in rating clinical impression. Fifty-two Master's-level counselor-trainees were assigned randomly to two conditions of preinterview suggestion about the status of the client (i.e., depression and no depression). After subjects had received appropriate preinterview information (i.e., depression or no-depression content) and had viewed a videotaped counseling interview, information was gathered from them. The results indicated that the preinterview suggestion (a) did not affect counselor-trainees' clinical impression rating of the client; (b) did not affect confidence of rating; and (c) yielded a weak, but significant, confirmatory memory. Implications for the interview setting are discussed.

**9** Barnier, Amanda J.; McConkey, Kevin M. (1995, November). **Posthypnotic suggestion: Knowing when to stop helps to keep it going.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Antonio, TX. **NOTES:** Posthypnotic suggestion sometimes leads to compulsive and involuntary responding, but we have little information about the parameters of such a response. In some research in our laboratory, we found that subjects who were given a posthypnotic suggestion that encouraged them to experience a desire to respond, showed a different pattern of response from those simply told to make a specific behavioral response. In another study, we gave subjects a posthypnotic suggestion to mail a postcard every day to the experimenter; some subjects were told to respond until they saw the hypnotist again (termination), others were given no specific information about how long they should respond (no termination). Those expecting a termination to the suggestion showed a different pattern of response across 16 weeks of testing. Thus, the information included in the suggestion about how or when to respond influences posthypnotic responding. **Present Experiment:** Laboratory test of including specific information in the posthypnotic suggestion about how long to respond - cancellation cue vs. no cancellation cue. Responding indexed on four different tests: formal, embedded, informal, postexperimental. Also used real/simulating methodology. We expected that responding would decline across the four tests, but that the decline would be slowest for those expecting a cancellation cue.

**Methodology:** High hypnotizable subjects scored 8-10 on SHSS:C, lows scored 0- 3 on SHSS:C. Given real/simulating instructions (Orne, 1959). Formal test was given immediately after deinduction; embedded test was given during an inquiry question; informal test was given as the hypnotist appeared to terminate the experiment and leave the room; postexperimental test was given by another experimenter during a postexperimental inquiry. The suggestion was to cough when Ss heard a particular response cue.

**Results:** On the formal test, there was no difference between reals or simulators in either the cue or no cue condition, although simulators in the cue condition tended to overplay their response.

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Across the tests, responding declined. In particular, the majority of reals and simulators in the no cue condition stopped responding after the formal test. In the cue condition, reals and simulators responded similarly on the embedded test, but differently on the informal test; more reals than simulators continued to respond across the tests. Few subjects responded on the postexperimental test. Subjects' postexperimental comments indicated that reals and simulators in the no cue condition believed that one response was sufficient; simulators in the cue condition were confused about whether to keep responding, and reals in the cue condition responded compulsively across the test.

**Conclusions:** The inclusion of a cancellation cue in a posthypnotic suggestions maintains responding for a longer period. Responding posthypnotically is not explained solely by demand characteristics. Rather, individuals respond on the basis of their interpretation of the implied intent of the hypnotist's message (c.f., Sheehan, 1971). Responding changes across test types. These findings contribute to a model of posthypnotic responding. They point to the active responding of hypnotized individuals (c.f., Kihlstrom: experimental subjects try to make sense of the message of the suggestions and instructions they receive).1994

**10. Barber, Joseph (1994, October). How to use and abuse boundaries with hypnosis.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, San Francisco. **NOTES:** (for only part of the presentation) I would like to focus on how we can productively use boundaries. Hypnosis experience reactivates archaic experiences with parents; if therapist can evoke trust, the patient can feel increasingly that they can relax into the experience.

**11 Bejenke, Christel J. (1993, October). A clinician's perspective.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** Presents point of view of a private practice anesthesiologist in Santa Barbara, California. Used hypnosis for 20 years. Use of hypnosis as hypnoanesthesia is rare since Esdaile, with brief resurgence in 50's, because surgery techniques advanced before anesthetics did in areas that were very risky. Now it is a matter of choice, and may be undertaken because of a patient's extreme fear of anesthesia, previous bad experience with anesthesia, fervent belief in holistic method, allergy, or previous experience with hypnosis. Still advised to use hypnosis for MRIs, radiation procedures, former drug addicts (who may have problems with drugs), burn patients, release of neck contractions, and medical procedures--especially with children--like lumbar puncture.

She disagrees with Kroger's estimate of only 10% of patients being able to use hypnoanesthesia; she does not believe it requires a lot of training, or profound muscle relaxation.

There is no indication of how many cases are actually done with hypnosis. Also, published cases are not representative of the quantity or complexity of cases; most published cases have a few extraordinary characteristics. The Irish surgeon Jack Gibson has done more than 4000 cases, some very complicated. I have used it for D & Cs, and complex cases that were not published. Most of my patients elected to be alert during the hypnosis and conversed with their surgeons. The most common benefit is that recovery from anesthesia is not necessary; but these days with newer anesthetics recovery from anesthesia is rapid anyway. However, if as we suspect anesthesia affects immune function, that would be another reason to use hypnosis.



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**Preparation for surgery may be of three types:** 1. formal hypnosis techniques 2. "hypnoidal" techniques that aren't formal 3. unprepared patients in whom hypnosis is used at last moment.

**Examples. 1.** Formal hypnosis: This symposium deals with this type of approach. Three groups derive particular benefit -- those requiring prolonged artificial ventilation postoperatively (because otherwise sedation must be used, which leads to complications), where prepared patients tolerate interventions calmly and comfortably -- cancer patients, for whom this can be first experience of patient to see self as active participant in care rather than a victim of the illness and of complicated technology -- pediatric patients. **2.** Hypnoidal (hypnosis like) techniques: This is the most important application. Time doesn't permit much discussion here. Patients are in an altered state when they come for surgery, highly suggestible, and suggestions appear to be as effective as during formal trance state. The doctor can elicit positive responses during "casual conversation" while seemingly giving information to the patient. (The reverse is true also, with inadvertent negative suggestions, to the detriment of the patient.) Scrupulous adherence to medical facts is important during this type of conversation.

Operating room fixtures are useful for focus of attention, and I have published this information in an article.

Recovery room also is place where case specific information and appropriate suggestions can be given. Patient can experience his ability to alter sensations, for the first time, following suggestions.

Remainder of the hospitalization offers opportunity for reinforcing case specific positive suggestions.

**12 Bennett, Henry L. (1993, October). Hypnosis and suggestion in anesthesiology and surgery.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** He began by saying that he is opposed to using hypnosis for surgery, though he favors a theory of how hypnosis effects physiological change, and cites T. X. Barber's classic "Changing Unchanging Bodily Processes."

Relaxation puts patient in a "psychological strait jacket" because surgery is so highly stressful. He gives information "about how to go through the surgery more comfortably," gets across the idea about coping style, tells them surgery is exertional and that they are tired afterward, that he can help them "using things you already know how to do," and specifies exactly what they can do--using model of himself as a trainer.

In some recent research he used pairs of pictures, some of which lead to pupillary constriction (blood pressure goes down) or dilation (blood pressure goes up). Instructing them to look, patients looked twice as long at the pictures than they did during free gaze. When not instructed to look, heart rate went down; when told to look, heart rate went up. So the researchers went back to free gaze. He uses this as a metaphor for many of the pre-surgery preparation activities that encourage relaxation "inappropriately." He cites Cohen & Lazarus re vigilant copers, Price et al (1957), and some other studies on epinephrine effects. He uses examples of work patients may have done (e.g. planting a garden) when talking with patients prior to surgery, that gives them a sense of accomplishment later.

You have to give specific instructions or suggestion, not general relaxation suggestions.

Question from the audience: Can preoperative instructions (not hypnosis) diminish blood loss.

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In Bennett's answer he seems to be reporting the earlier study: they found 150- 4000 cc blood loss, high variability. Extent of blood loss was determined by extent of surgery, by instructions to patients vs no instructions. This study was replicated by Enqvist, Bystedt, & von Konow in the Anesthesia conference at Emory University in 1992.

May 1993 Western Journal of Medicine article, Disbrow, Bennett, & Owinos, with 40 lower abdominal surgery patients who got specific instructions or not. The SHCS was used to measure hypnotizability: highs resolved quicker than low hypnotizable patients. They also found that instructed patients did better than those who did not get specific instructions.

There are now 3 replications of McClintock's study: people use less medications after surgery, when tapes about rapid recovery are played \*during\* surgery. Bennett is now using tapes with suggestions for recovery during surgery. Blankfield, Robert P. (1993, October). Suggestion, hypnosis, and relaxation as adjuncts for surgery patients: Lessons from studies involving cardiac surgery patients. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. NOTES The author stated that his research and the few other studies of cardiac surgery patients do not support idea that cardiac surgery patients benefit from hypnosis and suggestion.

**Types of intervention have varied:** hypnosis, suggestion, relaxation; pre-op, during, or post-op; with many different outcome variables. Aiken & Henrichs (1971) study was nonrandomized, nonblinded, for 30 patients getting open heart surgery. Treated patients had benefits. Surman, Hackett, Silverberg, & Behrendt (1974) had a randomized, single-blind design for 40 patients taught Self Hypnosis (S-H), for elective mitral valve surgery. No difference in benefits. But 45% of patients taught S-H reported a subjective sense of benefit (though objective indicators didn't support that). [He says the difference between subjective/objective outcome ratings is important.]

Hart (1980) used randomized, single-blind design for 40 patients who had open heart surgery. No differences found except initial 3 days post surgery. Greenleaf et al (1992) - see her paper presentation of this date. Blankfield et al (presented at Society of Clinical and Experimental Hypnosis meeting in 1992) used a randomized, single-blind design for 95 patients, who were randomly assigned to taped suggestions, music, or controls. No differences were found in benefits.

Our data were re-analyzed: patients who felt tape was helpful were compared to the remaining 62 patients, but there again were no differences in amount of narcotics used for pain, though there was a trend in the right direction; nursing assessments failed to identify less anxiety.

The point is, whereas the bulk of publications suggest benefits, there is little evidence with this population. Could these patients be different in personality, ability to respond to intervention, amount of external stimuli? They should be studied because there are a lot of these patients with only a few surgeons and you don't have to gain the cooperation of a lot of different surgeons to do this kind of research. Also, there is uniformity in cardiac surgery whereas standard operating surgery is in a state of flux in other areas (e.g. movement from generous incisions to micro procedures, and patients receiving this type of surgery remain in hospital for a week whereas this opportunity to study them during inpatient post-surgical period is disappearing in other areas). It is my opinion that cardiac patients may not be highly receptive to suggestion.

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Curiously, according to Surman and my research, 1/2 the subjects report benefits. Either some benefits are subtle, or they are reporting a placebo effect.

Future studies need more patients, and the investigators must stratify on personality inventory variables such as Type A personality, hypnotizability, motivation, anxiety, depression, family support, social support systems. This is labor intensive, to determine which characteristics determine differing outcomes. The patients used in this type of research require more presurgery evaluation than previously has occurred.

The MMPI can be self administered and is widely acceptable, but is cumbersome, not well suited to people who are acutely ill. Assessment of Type A personality is important because Type A's might be less receptive to suggestion. Structured interview is time consuming, but a 52-item questionnaire can be self administered. Other factors listed above are important.

**13** Bruehl, Stephen; Carlson, Charles R.; McCubbin, James A. (1993). **Two brief interventions for acute pain.** *Pain*, 54, 29-36. This study evaluated two brief (3-5 min) interventions for controlling responses to acute pain. Eighty male subjects were randomly assigned to 1 of 2 intervention groups (Positive Emotion Induction (PEI) or Brief Relaxation (BR)) or to 1 of 2 control groups (No-instruction or Social Demand). The PEI focused on re-creating a pleasant memory, while the BR procedure involved decreasing respiration rate and positioning the body in a relaxed posture. All subjects underwent a 60-sec finger pressure pain trial. Analyses indicated that the PEI subjects reported lower ratings of pain, fear, and anxiety, and experienced greater finger temperature recovery than controls. The BR procedure resulted in greater blood pressure recovery, but did not alter ratings of pain or emotion relative to controls. Further research is needed to explore the clinical use of the PEI for acute pain management.

De Pascalis, Vilfredo (1993). EEG spectral analysis during hypnotic induction, hypnotic dream and age regression. *International Journal of Psychophysiology*, 15, 153-166. EEG was recorded monopolarly at frontal (F3, F4), central (C3, C4) and posterior (in the middle of O1-P3-T5 and O2-P4-T6 triangles) derivations during the hypnotic induction of the Stanford Hypnotic Clinical Scale (SHCS) and during performance following suggestions of hypnotic dream and age-regression as expressed in the before-mentioned scale. 10 low-hypnotizable and 9 highly-hypnotizable and right-handed female students participated in one experimental session. Evaluations were Fast-Fourier spectral analyses during the following conditions: waking-rest in eyes-open and eyes-closed condition; early, middle, and late phases of hypnotic induction; rest-hypnosis in eyes closed condition; hypnotic dream and age regression. After spectral analysis of 0 to 44 Hz, the mean spectral amplitude estimates across seven Hz bands (theta 1, 4-6 Hz, theta 2, 6-8 Hz; alpha 1, 8-10 Hz; alpha 2, 10-13 Hz; beta 1, 13-16 Hz; beta 2, 16-20 Hz; beta 3, 20-36 Hz) and the 40-Hz EEG band (36-44 Hz) for each experimental condition were extracted. In eyes-open and -closed conditions in waking and hypnosis highly-hypnotizable subjects produced a greater 40-Hz EEG amplitude than did low hypnotizable subjects at all frontal, central and posterior locations. In the early and middle hypnotic induction highly-hypnotizables displayed a greater amount of beta 3 than did low hypnotizables and this difference was even more pronounced in the left hemisphere. With posterior scalp recordings, during hypnotic dream and age regression, high hypnotizables displayed, as compared with the rest-hypnosis condition, a decrease in alpha 1 and alpha 2 amplitudes. This effect was absent for low hypnotizables. Beta 1, beta 2 and beta 3 amplitudes increased in the left hemisphere during

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age regression for high hypnotizable; low hypnotizables, in contrast, displayed hemispheric balance across imaginative tasks. High hypnotizables during the hypnotic dream also displayed in the right hemisphere a greater 40-Hz EEG amplitude as compared with the left hemisphere. This difference was even more evident for posterior recording sites. This hemispheric trend was not evidenced for low hypnotizable subjects. Theta power was never a predictor of hypnotic susceptibility, 40-Hz EEG amplitude displayed a very high main effect ( $p < 0.004$ ) for hypnotizability in hypnotic conditions by displaying a greater 40-Hz EEG amplitude in high hypnotizables with respect to lows. NOTES 1:NOTES In the Discussion section, the authors indicate that they have no idea why they didn't replicate results of other theta studies, including their own, except maybe due to complex interaction among personality, subject selection, situation-specific factors, and hypnotizability.

**They observe that the alpha results conform with previous findings (p. 163).** Beta bands were sensitive. Highs showed left-hemisphere prevalence in all beta bands during age regression; they also showed hemispheric balance in the hypnotic dream condition. Beta 3 amplitude was also greater among highs than lows. "among high hypnotizables, beta 3 amplitude in the early hypnotic condition was greater in the left hemisphere as compared to the right and as the hypnotic induction proceeded hemisphere balancing, with reduced beta 3 amplitude, was displayed. This result appears in agreement with the predictions of the neurophysiological model proposed by Gruzelier et al. (1984) and Gruzelier (1988) as well as with other studies in which beta rhythm was found to discriminate performances between high and low hypnotizables (e.g., Meszaros et al., 1986, 1989; Sabourin et al., 1990)" (p. 163-164). 40 Hz amplitude was higher in highs and increased in right hemisphere during the hypnotic dream, especially in posterior areas. "This pattern of hemispheric activation may be interpreted as an expression of the greater right-hemisphere activation and of the release of posterior cortical functions during the hypnotic dream and is compatible with the predictions of the Gruzelier model of hypnosis, however, the results obtained in this study for 40-Hz EEG amplitude failed to reveal an inhibition of the left-hemisphere activity with the progress of the hypnotic induction" (p. 164).

(They note that De Pascalis & Penna, 1990, agreed with the Gruzelier 1988 model: highs in early induction had increase of 40-Hz in both hemispheres, but as induction proceeded they had inhibition of left and increase in right hemisphere activity. In this current experiment, only beta 3 showed the hemispheric trend of Gruzelier's model. They cite other details of current study, p. 164, not consonant with Gruzelier.)

"The 40-Hz EEG rhythm, which according to Sheer (1976) is the physiological representation of focused arousal, appeared to discriminate between differential patterns of high and low hypnotizables. Both during hypnotic induction and during hypnotic dream and age regression highly hypnotizables exhibit greater 40-Hz EEG amplitude with respect to the lows. These findings support the validity of the assumption that hypnosis is characterized by a state of focused attention (Hilgard, 1965) and that 40-Hz EEG activity reflects differential attentional patterns among subjects high and low in hypnotizability. On the basis of these findings it would appear that 40-Hz EEG and beta 3 spectral amplitudes may prove to be useful measures of individual hypnotizability" (p. 164).1992

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Anonymous (1992, May). Studies: Learning can occur while under anesthesia. Daily Breeze (South Bay, Los Angeles County). NOTES

"Surgical patients can absorb information while they're knocked out, and even learn tips that help with recovery, researchers reported Friday at a symposium on memory and anesthesia.

"Researchers at Papworth Hospital in Cambridge, England, studied 51 cardiac patients, one-third of whom heard a tape of positive 'therapeutic suggestions' during surgery. Another third heard batches of word associations; the rest heard a blank tape.

"Patients who were played the suggestion tape - which told them they were doing well, or wouldn't feel much pain - left the hospital 1 1/2 days earlier on average than other patients.

"Another study, from the University of Arizona College of Medicine, found that surgical patients who heard specific pain-relief suggestions recovered more easily than those hearing vague advice such as, 'Think of being well.' "These are still early days to invest in every operating suite buying a tape recorder to play for the patients,' said Dr. Sunit Ghosh, a researcher with the Papworth team. 'But this definitely does hold promise.'

"Scholars at the second annual Symposium on Memory and Awareness in Anesthesia said patients rarely wake up recalling - unprompted - something that happened during anesthesia.

"But several studies showed subconscious learning while the patients were out cold.

"Not everyone accepted the findings.

"It shows an enormous sensitivity on the part of the brain, if it can be shown,' said Eugene Winograd, an Emory University psychologist and organizer of the Emory-sponsored conference. 'I'm not confident it has been shown yet.' "Some researchers in other studies found no association between messages heard during anesthesia and learning.

"Dr. Alan Aitkenhead, professor of anesthesia at the University of Nottingham in England, found no significant difference between patients who heard recuperative suggestions and patients who were treated to a deliberately dull history of the hospital where they were.

"Aitkenhead said his study kept all patients quite deeply anesthetized, and that may be why they might not have learned as much as patients in other studies. "By far, most likely, it's a difference in levels of anesthesia,' he said. "The Papworth researchers, in another study, found that some patients showed strong word associations after hearing tapes of groups of words during surgery; but other patients under a different anesthesia didn't.

"There needs to be standardization of our testing,' Ghosh said. 'I think it's partly related to the anesthesia technique and partly related to the way in which material is presented to the patient.'

"Dr. Peter Sebel, an Emory anesthesiologist and conference organizer, said that if patients can retain information about a speedy recovery, they probably retain other information, too - for example, a surgeon's discouraging operating-room assessment of their prognosis." 1991

**14** Burish, Thomas G.; Snyder, Susan L.; Jenkins, Richard A. (1991). **Preparing patients for cancer chemotherapy: Effect of coping preparation and relaxation interventions.** Journal of Consulting and Clinical Psychology, 59 (4), 518-525. 60 cancer chemotherapy patients were randomly assigned to 1 of 4 treatments: (a) relaxation training with guided relaxation imagery (RT), (b) general coping preparation package (PREP), (c) both RT and PREP, or (d) routine clinic treatment only. All patients were assessed on self-report, nurse observation, family observation, and physiological measures and were followed for 5 sequential chemotherapy treatments. Results indicate that the PREP intervention increased patients' knowledge of the

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disease and its treatment, reduced anticipatory side effects, reduced negative affect, and improved general coping. RT patients showed some decrease in negative affect and vomiting, but not as great as in past studies. The data suggest that relatively simple, 1-session coping preparation intervention can reduce many different types of distress associated with cancer chemotherapy and may be more effective than often-used behavioral relaxation procedures. DeKoninck, J.; Brunette, R. (1991). Presleep suggestion related to a phobic object: Successful manipulation of reported dream affect. *Journal of General Psychology*, 118, 185-200. When compared with subjects who received presleep suggestions for negative affect, subjects who received positive affect suggestions had significantly higher levels of positive emotions in their dreams, rated their own dreams as more pleasant, and had significantly lower levels of anxiety, sadness, and aggression. This supports the hypothesis that presleep suggestion can be an effective technique in influencing the affective dimension of the dream. 1990

**15** Barber, Theodore Xenophon (1990, August). **Some things I've learned about hypnosis after 37 years.** [Audiotape] Presented at the annual meeting of the American Psychological Association, Boston. **NOTES:** "We are a unity of cells. Every cell is a citizen with its own jobs, communicating all the time; cells send messages; the way we communicate with them is by suggestions. Each \_cell\_ is a mind-body.... When I do it now [hypnotic inductions], I say, 'We're going to go into hypnosis, we're \_both\_ going to go into hypnosis. I'm going to close my eyes (etc.)' - modeling hypnosis for them."

**16** Biasutti, M. (1990). **Music ability and altered states of consciousness: An experimental study.** *International Journal of Psychosomatics*, 37, 82-85. The relationship between music and altered states of consciousness was studied with 30 subjects divided into hypnosis and control groups. The "Test di abilita musicale" was applied. The hypnosis group did the retest after posthypnotic suggestions and the second in waking conditions. The hypnosis group had better results than the control group, especially in the rhythm test ( $p < 0.0001$ ). 1989

**17** Baker, Elgan L.; Levitt, Eugene E. (1989). **The hypnotic relationship: An investigation of compliance and resistance.** *International Journal of Clinical and Experimental Hypnosis*, 37, 145-153. The purpose of this investigation was to assess the ability of hypnotic Ss to voluntarily resist a neutral suggestion when a monetary reward was offered for resistance. 19 of 40 Ss (47.5%) successfully resisted after money was offered by the "resistance instructor." The correlation between resistance/compliance and hypnotizability was  $-.44$  (high hypnotizables were more likely to comply). Ss' impressions of the hypnotist tended to be positive; impressions of the resistance instructor tended to be neutral. There was a tendency for nonresistors to have a more positive view of the hypnotist but it is not as marked as was found in an earlier study (Levitt & Baker, 1983). **NOTES:** Twelve (75%) of the high hypnotizables did not resist; two (16.7%) of the low hypnotizable Ss did not resist.

In their discussion, they state that "these data support the conclusion that hypnotizability or talent accounts for a significant portion of the variance in determining compliance with suggestions during trance. ... [Further], this research may be conceptualized as examining the contributions of a trait variable (hypnotizability) as compared with a variety of situational or state variables (motivation, social perception, environmental contingencies) in determining compliance and suggestibility. Inherent in this model of research is the assumption that many observed hypnotic phenomena (such as suggestibility) are interactive in nature, representing the

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outcome of the interplay between trait and state variables and between historically determined and contemporary forces. Such a perspective is consistent with the emerging view of trance behavior and experience and validly parallels the phenomenology of experimental and clinical hypnosis which describe both consistency and variability in hypnotic responsiveness for a specific subject or patient across varying conditions and time" (p. 151).

"This study also serves to clarify the important role of positive social perception and a positive sense of alliance with the hypnotist as a correlate of compliance with suggestion. It is clear that Ss who complied despite inducements to resist reported a more positive perception of the hypnotist and a more gratifying sense of relatedness with him than did their counterparts who resisted in response to financial inducement. These data do not indicate whether the positive perceptions contributed to compliance, as transference theories of trance involvement would predict, or whether they were consolidated after the fact due to other variables such as management of potential cognitive dissonance. It does seem reasonable to conclude, however, that the relationship is influential in the process of suggestibility and compliance" (p. 151).1988

**18 Azuma, Nagato; Stevenson, Ian (1988). 'Psychic surgery' in the Philippines as a form of group hypnosis.** American Journal of Clinical Hypnosis, 31, 61-67. Psychic surgeons and their patients were observed in the Philippines during a variety of procedures of 'minor surgery.' In six cases, subcutaneous tissues (cysts and benign tumors) were removed. Histological examination confirmed the gross diagnoses and left no doubt that the skin had been penetrated. Although the psychic surgeons used no analgesics or anesthetics, the patients appeared to experience little or no pain and only slight bleeding. The authors believe that a supportive group 'atmosphere' enables the patients to enter a quasi-hypnotic state that reduces pain and facilitates healing. Council, James R.; Loge, D. (1988). Suggestibility and confidence in false perceptions: A pilot study. British Journal of Experimental and Clinical Hypnosis, 5, 95-98. Subjects received audiotaped instructions implying that they would perceive increases in odor or heaviness while comparing stimuli in a sensory-judgment task. Stimuli were actually indiscriminable. Subjects pretested as higher or lower in hypnotizability performed the task in either hypnotic or non-hypnotic conditions. In both treatments, greater hypnotizability was associated with more perceived changes in the stimuli and greater confidence in the reality of those perceptions. Results support a general factor underlying suggestibility in hypnotic and nonhypnotic situations. The findings are discussed in relationship to false confidence effects reported in hypermnesia research.1986

**19 Chertok, Leon (1986). Psychotherapeutic transference, suggestibility.** Psychotherapy, 23 (4), 563-569. Discusses suggestion in psychotherapy and defines it as a body-affective process, an indissociable psychosociobiological entity that acts at an archaic unconscious level far beyond that of transference, mediates the influence of one individual on another, and is capable of producing manifest psychological and physiological changes. Present in all types of therapy, indirect (nondeliberate, nonintentional) suggestion is the element that plays an important role in change and can be observed in hypnotic experimentation. It is further argued that transference and suggestion are phenomena that do not altogether overlap. Suggestion is the condition of transference without which transference could not be established.1985 Bennett, Henry L.; Davis, H. S.; Giannini, Jeffrey A. (1985). Non-verbal response to intraoperative conversation. British Journal of Anesthesiology, 57, 174-179. In a double-blind study, 33 patients (herniorraphy,

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cholecystectomy and orthopedic) were randomly assigned to either suggestion or control groups. Under known clinical levels of nitrous oxide and enflurane or halothane anesthesia, suggestion patients were exposed to statements of the importance of touching their ear during a postoperative interview. Compared with controls, suggestion patients did touch their ear (tetrachoric correlation 0.61,  $P < 0.02$ ). test, U (Mann-Whitney frequently more so did they and Bolocofsky, David N.; Spinler, Dwayne; Coulthard-Morris, Linda (1985). Effectiveness of hypnosis as an adjunct to behavioral weight management. *Journal of Clinical Psychology*, 41 (1), 35-41. 109 17-67 year olds completed a behavioral treatment for weight management either with or without the addition of hypnosis. Results show that, at the end of the 9-week program, both interventions resulted in significant weight reduction. However, at 8-month and 2-year follow-ups, the hypnosis Ss showed significant additional weight loss, while those in the behavioral-treatment-only group exhibited little further change. More Ss who used hypnosis also achieved and maintained their personal weight goals. It is suggested that hypnosis may have been an effective motivator for Ss to continue practicing the more adaptive eating behaviors acquired during treatment. Findings support the utility of employing hypnosis as an adjunct to a behavioral weight management program. (25 ref) 1984

**19** Bryant-Tuckett, Rose; Silverman, Lloyd H. (1984). Effects of the subliminal stimulation of symbiotic fantasies on the academic performance of emotionally handicapped students. *Journal of Counseling Psychology*, 31 (3), 295-305. Divided 64 10.8 - 19.3 yr old emotionally disturbed residents of a treatment school into an experimental and control group matched for age, IQ, and reading ability. Both groups were seen 5 times/week for 6 weeks for tachistoscopic exposures of a subliminal stimulus. The stimulus for the experimental group was the phrase, "Mommy and I are one," conceived of as activating symbiotic fantasies that in a number of previous studies with varying groups of Ss had led to greater adaptive behavior. The control group was exposed to the phrase, "People are walking." Results show that experimental Ss manifested significantly greater improvement on the California Achievement Tests-- Reading than did the controls. On 5 of 6 secondary variables--arithmetic achievement, self-concept, the handing in of homework assignments, independent classroom functioning, and self-imposed limits on TV viewing--the experimental Ss showed better adaptive functioning. It is suggested that activation of unconscious symbiotic fantasies can increase the effectiveness of counseling and teaching. (42 ref)

**20** Critelli, Joseph W.; Neumann, Karl F. (1984). **The placebo: Conceptual analysis of a construct in transition.** *American Psychologist*, 39, 32-39. The placebo in psychotherapy has unfortunately retained the negative connotation of an inert "nuisance variable," a label that it originally incurred in the field of medicine. In addition, the transition toward more cognitive models of psychotherapy, particularly Bandura's theory of self-efficacy, has led to problems in defining the placebo within psychology. This transition has resulted in an awkward interface between certain preferred cognitive metaphors and the negative connotations of a presumably cognitive placebo construct. As a result, suggestions have recently been made to dismiss the placebo construct from psychology and to do away with the use of true placebo controls in outcome research. The present analysis maintains that (a) the placebo can be adequately defined within psychology, (b) the negative connotation of the placebo label is largely undeserved, (c) the placebo retains a continuing conceptual and empirical utility for evaluating psychotherapy,



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and (d) the therapeutic efficacy of current therapies is well established even though they have not generally been shown to be more effective than nonspecific treatment. 1983 Borgeat, Francois; Goulet, Jean (1983). Psychophysiological changes following auditory subliminal suggestions for activation and deactivation. *Perceptual and Motor Skills*, 56, 759-766. This study was to measure eventual psychophysiological changes resulting from auditory subliminal activation or deactivation suggestions. 18 subjects were alternately exposed to a control situation and to 25-dB activating and deactivating suggestions masked by a 40-dB white noise. Physiological measures (EMG, heart rate, skin-conductance levels and responses, and skin temperature) were recorded while subjects listened passively to the suggestions, during a stressing task that followed and after that task. Multi-variate analysis of variance showed a significant effect of the activation subliminal suggestions during and following the stressing task. This result is discussed as indicating effects of consciously unrecognized perceptions on psycho-physiological responses. Classen, Wilhelm; Feingold, Ernest; Netter, Petra (1983). Influence of sensory suggestibility on treatment outcome in headache patients. *Neuropsychobiology*, 10, 44-47. In 45 headache patients the relationship between sensory suggestibility and three measures of treatment effect-ratings on (1) intensity of headaches; (2) efficacy of drugs, and (3) physician's competence - was investigated in a double-blind long-term crossover study. Subjects scoring high on sensory suggestibility clearly showed more relief of headaches upon the analgesic as well as upon the placebo. The physician's competence was rated higher by high-suggestible patients, whereas ratings on drug efficacy were low in all patients. The seemingly controversial behavior of high-suggestible patients was interpreted as a call for continuation of the physician's efforts in spite of the relief the patients already achieved. 1982

**21 Belicki, Kathryn; Bowers, Patricia (1982, October). Dimensions of dissociative processing, absorption and dream change following a presleep instruction.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Indianapolis, IN.

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Subjects' tendency to have things pop into their mind when asked to imagine, image them, or to do a divergent thinking task is correlated with behavior change out of awareness (dissociated), change in dream content in response to indirect suggestion - the request to pay attention to a certain element in their dreams. Effortless imagining (as opposed to working at it), a particular type of dissociative phenomenon, is associated with dream change.

**22 Bowers, Patricia G. (1982). The classic suggestion effect: Relationships with scales of hypnotizability, effortless experiencing, and imagery vividness.** *International Journal of Clinical and Experimental Hypnosis*, 30 (3), 270-279. How well the Stanford Hypnotic Susceptibility Scales assess what Weitzenhoffer (1978) terms the "classic suggestion effect" is addressed by developing an index of nonvolitional behavior (N-VB) for a group form of the Stanford Hypnotic Susceptibility Scale, Form C of Weitzenhoffer and Hilgard (1962) given to 43 Ss. The N-VB index, reflecting the classic suggestion effect's dual criteria of both behavioral responsiveness to suggestion and nonvolition ratings, was correlated highly with the traditional scoring of the group SHSS:C and moderately with the Harvard Group Scale of Hypnotic Susceptibility, Form A. Effortless experiencing of imagination and imagery vividness relate similarly to traditional and N-VB scores of hypnotizability. In addition, the relationship

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between involuntary ratings and passing and failing an item of the group SHSS:C was examined for each of the 10 items. There was a significant relationship for 7 of the items.1980

**23 Bauer, Herbert; Berner, Peter; Steinringer, Hermann; Stacher, Georg (1980). Effects of hypnotic suggestions of sensory change on event-related cortical slow potential shifts.**

Archiv fur Psychologie, 133 (3), 161-169. "The purpose of this study was to evaluate whether cortical slow potentials related to a S1-S2 paradigm are influenced by hypnotic suggestions of sensory change. Five healthy subjects susceptible to hypnosis participated each in two identical experiments with three conditions. In condition (1) and (2) each three intensities of 800 and 4000 Hz tones were presented. Preceding condition (2) hypnosis was induced and the subjects received the suggestion to hear the 800 but not the 4000 Hz tones. In condition (3), the tones were presented as S1 and a flash as S2. The subjects received the same suggestions as in (2) and a motor response to S2 was required. EEG was recorded from Cz. In (1) 800 and 4000 Hz tones caused negativities of equal amplitude, in (2) only minute negativities developed, possibly due to hypnosis induced deactivation. In (3) the S1-S2 related negativities were significantly smaller in amplitude during 4000 Hz tones than during 800 Hz tones, while the negativities preceding S2 differed only after the most intense S1. Hypnotic suggestions attenuate S1-S2 related negative potentials, possibly by affecting cognitive functions.1979

**23 Barber, Joseph; Donaldson, David; Ramras, Susan; Allen, Gerald D. (1979). The relationship between nitrous oxide conscious sedation and the hypnotic state.** Journal of the American Dental Association, 99, 624-626. **NOTES** Nitrous oxide-oxygen produces a state of consciousness in the patient that is reported to be similar to the hypnotic state. In this investigation, the authors test the hypothesis that nitrous oxide-oxygen heightens a patient's responsiveness.

This study apparently did not have a control group receiving nitrous oxide but no suggestions, to evaluate the amnesia and analgesic effects of the drug alone.1978

**24 Connors, J. R.; Sheehan, P. W. (1978). The influence of control comparison tasks and between-versus within-subjects effects in hypnotic responsivity.** International Journal of Clinical and Experimental Hypnosis, 26, 104-122. Type of experimental design (between-versus within-subjects) and type of control task were examined for their differential effects on the magnitude of objective and state report test scores associated with response to items on the Stanford Hypnotic Scale of Susceptibility, Form C (Weitzenhoffer & Hilgard, 1962). In an integrated program of work exploring design effects in hypnotic research, Ss in each of 7 comparison conditions that involved hypnosis and 4 separate comparison conditions that did not involve hypnosis were tested twice on successive occasions. Three of the control tasks used (waking, imagination, and imagination [alert] instruction) were counterbalanced with hypnosis to analyze possible order effects associated with hypnotic test conditions. Data indexed the patterns of between- versus within-subjects effects associated with standard control tasks and also highlighted the order effects that accompanied them. Imagination instructions, in particular, pose specific difficulties that require attention when Ss are tested as their own controls.1977

**25 Anderson, J. W. (1977). Defensive maneuvers in two incidents involving the Chevreul pendulum: A clinical note.** International Journal of Clinical and Experimental Hypnosis, 25, 4-6. **NOTES:** "Hypnosis frequently facilitates increased access to the unconscious. In both of these cases, the hypnotized subject gained contact with a thought which otherwise would likely

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have remained out of awareness. Then the ego quickly resorted to defensive maneuvers in order to deny the thought" (p. 6).1976

**26** Chaves, John F.; Barber, Theodore Xenophon (1976). **Hypnotic procedures and surgery: A critical analysis with applications to 'acupuncture analgesia'**. American Journal of Clinical Hypnosis, 18 (4), 217-236. Although hypnotic procedures are useful for reducing the anxiety of surgery and helping patients tolerate surgery, they do not consistently eliminate pain. Six factors that are part of or associated with hypnotic procedures help patients tolerate surgery. These factors pertain to patient selection, the patient-physician relationship, the preoperative 'education' of the patient, the adjunctive use of drugs, and the use of suggestions of analgesia and distraction. It appears that the same factors account for the apparent successes of 'acupuncture analgesia' as well. A frequently-overlooked fact, that most internal tissues and organs of the body do not hurt when they are cut by the surgeon's scalpel, is also important in understanding how surgery can be performed with either 'hypnoanesthesia' or 'acupuncture analgesia.'1975

**27** Barber, Theodore Xenophon (1975). **Responding to 'hypnotic' suggestions: An introspective report**. American Journal of Clinical Hypnosis, 18 (1), 6-22. The author first presents an introspective report which describes some of his attitudes, motivations, and expectancies and ongoing thought processes while he is responding to 'hypnotic' suggestions. The introspective report indicates that (a) suggested effects are experienced when a person thinks with and imaginatively focuses on those things that are suggested and (b) a person imaginatively focuses on the suggestions when he sees the test situation as useful and worthwhile and when he wants to and expects to experience those things that are suggested. It is then argued that the responsive subject in a hypnotic situation differs in every important respect from the sleepwalker and closely resembles the person who is involved in reading an interesting novel or in observing an interesting motion picture. Finally, the author outlines a course, now being developed, that aims to teach individuals how to respond to suggestions.1974

**28** Chaves, John F.; Barber, Theodore Xenophon (1974). **Acupuncture analgesia: A six-factor theory**. Psychoenergetic Systems, 1, 11-21. The dramatic successes claimed for acupuncture suggest that Western medicine has failed to identify important factors that pertain to the nature of pain and its control. This may not be the case, as there are at least six factors which are often overlooked by writers describing the absence of pain (i.e., analgesia) during acupuncture: (a) the patients accepted for surgery under acupuncture usually believe that it will work, (b) drugs are frequently used in combination with acupuncture, (c) the pain associated with surgical procedures is less than is generally assumed, (d) the patients are prepared in special ways for surgery under acupuncture, (e) the acupuncture needles distract the patient from the pain of surgery and, (f) suggestions for pain relief are present in acupuncture treatment. It is concluded that more research is needed to determine whether additional factors are needed to help explain the phenomenon of acupuncture analgesia.1973 **29** Brown, H. Alan (1973). **Role of expectancy manipulation in systematic desensitization**. Journal of Consulting and Clinical Psychology, 41 (3), 405-411. Expectancy, relaxation, and hierarchy content were manipulated in a 2X2 factorial design with two additional control groups. It was hypothesized that a major portion of therapeutic change following desensitization could be accounted for by the subjects' responses to positive feedback inherent in the paradigm. Spider-phobic subjects saw either photographs of

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spiders or blank slides that they believed to be tachistoscopically presented pictures of spiders. In the factorial part of the design, half of the subjects believed their progress through the hierarchy to be contingent on autonomic responses; the others believed rate of progress to be random. Findings did not support the hypothesis that expectancy was the only factor in desensitization, but they did serve to clarify the role of expectancy vis-a-vis the counterconditioning elements typically discussed in the literature.1972

**30 Barber, Theodore Xenophon; de Moor, Wilfried (1972). A theory of hypnotic induction procedures.** American Journal of Clinical Hypnosis, 15 (2), 112-135. The first part of the paper delineates nine variables in hypnotic induction procedures that give rise to heightened responsiveness to test-suggestions: (a) defining the situation as hypnosis; (b) removing fears and misconceptions; (c) securing cooperation; (d) asking the subject to keep his eyes closed; (e) suggesting relaxation, sleep, and hypnosis; (f) maximizing the phrasing and vocal characteristics of suggestions; (g) coupling suggestions with naturally-occurring events; (h) stimulating goal-directed imagining; and (i) preventing or reinterpreting the failure of suggestions. Data are presented to support the theory that the nine variables augment responsiveness to test-suggestions by giving rise to positive attitudes, motivations, and expectancies which, in turn, tend to produce a willingness to think with and vividly imagine those things that are suggested. The second part of the paper specifies situational variables and variables involved in induction procedures that produce a trance-like appearance, changes in body feelings, and reports of having been hypnotized.

**31 Bowers, Kenneth S.; Kelly, P. (1970). Stress, disease, psychotherapy, and hypnosis.** Journal of Abnormal Psychology, 490-505. Presents evidence for the importance of suggestion and hypnotic ability in the healing or amelioration of various somatic disorders. It is argued that even in some treatment interventions that are not explicitly hypnotic, suggestion and hypnotic ability may be hidden factors that help to promote successful healing. Consequently, hypnotic ability may be an individual difference variable that influences treatment outcome in a manner not heretofore recognized by many investigators and clinicians involved in helping the psychologically and physically ill.

**32 Bartlett, Edmund E.; Faw, Terry T.; Liebert, Robert M. (1967). The effects of suggestions of alertness in hypnosis on pupillary response: Report on a single subject.** International Journal of Clinical and Experimental Hypnosis, 15 (4), 189-192. THE PUPIL SIZE OF A SINGLE S WAS RECORDED UNDER 2 TYPES OF HYPNOTIC SUGGESTION: ALERTNESS INSTRUCTIONS AND TRADITIONAL RELAXATION INSTRUCTIONS. IT WAS FOUND THAT THE SIZE OF THE PUPIL INCREASED SIGNIFICANTLY UNDER ALERTNESS INSTRUCTIONS. THIS RESULT WAS TAKEN AS FURTHER CORROBORATION OF THE HYPOTHESIS THAT CHANGES IN VARIOUS PARAMETERS OF AROUSAL APPARENTLY ASSOCIATED WITH HYPNOSIS MAY BE ATTRIBUTED TO SPECIFIABLE CHARACTERISTICS OF THE INSTRUCTIONS USED RATHER THAN TO STABLE CHARACTERISTICS OF THE "STATE" OF HYPNOSIS. (PsycINFO Database Record (c) 2002 APA, all rights reserved)1965

**33 Agosti, E.; Camerota, G. (1965). Some effects of hypnotic suggestion on respiratory function.** International Journal of Clinical and Experimental Hypnosis, 13 (3), 149-157. Several respiratory indices were measured in 10 Ss in 3 states: at rest, with hypnotic suggestion of

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relaxation, and with hypnotic instructions to imagine muscular work. The same suggestions were given to 10 control Ss in the waking state. The suggestion of relaxation produced a decrease in pulmonary ventilation in both groups, although it was substantial only in the hypnotic group which started from a higher baseline level. The imagined work produced an increase in ventilation, especially in the hypnotic group. However, in both instances because of compensatory changes in respiratory efficiency the actual uptake of oxygen remained almost unaffected. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

**34 Barber, Theodore Xenophon (1965). Physiological effects of 'hypnotic suggestions': A critical review of recent research (1960-64).** Psychological Bulletin, 201-222. Recent studies are reviewed which were concerned with the effectiveness of suggestions given under "hypnosis" and "waking" experimental treatments in alleviating allergies, ichthyosis, myopia, and other conditions and in eliciting deafness, blindness, hallucinations, analgesia, cardiac acceleration and deceleration, emotional responses, urine secretion to sham water ingestion, narcotic-like drug effects, and other phenomena. The review indicates that a wide variety of physiological functions can be influenced by suggestions administered under either hypnosis or waking experimental treatments, and direct and indirect suggestions to show the particular physiological manifestations are crucial variables in producing the effects.

**35 Das, J. P. (1965). Relationship between body-sway, hand-levitation, and a questionnaire measure of hypnotic susceptibility.** International Journal of Clinical and Experimental Hypnosis, 13 (1), 26-33. 67 randomly selected college students were administered the body-sway test, a questionnaire measure of tranceability, and an induction procedure utilizing hand-levitation to determine hypnotic susceptibility. The 6 Es varied in age, sex; 5 of them had little experience as hypnotists. All reference to "hypnosis" was omitted from the induction procedure. Significant phi-coefficients between body-sway and levitation (.52), levitation and tranceability frequency (.28) and intensity (.25), and body-sway and tranceability intensity (.33) were obtained. (16 ref.) (PsycINFO Database Record (c) 2002 APA, all rights reserved)1964

**36 Anderson, Milton L.; Sarbin, T. R. (1964). Base rate expectations and motoric alterations in hypnosis.** International Journal of Clinical and Experimental Hypnosis, 12 (3), 147-158. Degree of responsiveness to "suggestion" in an experiment which did not utilize hypnotic induction (the Berkeley Sample) was comparable to that obtained in an experiment which did utilize hypnotic induction (the Stanford Sample). Procedural differences between the 2 experiments--self-scoring vs. objective-scoring, and group vs. individual testing--were regarded as not crucial in making a comparison of the 2 experiments. The distribution of responses in the Berkeley Sample may be taken as the base rate. The slightly higher degree of responsiveness over the base rate in the Stanford Sample (on some tests) may be attributed to the "degree of volunteering" that characterized the sample. The importance for experiments in the future to create equal levels of motivation and expectation to perform well under both the hypnotic and the nonhypnotic conditions is stressed, and brief mention is made of a new metaphor to be used in the conceptualization of the problems of hypnosis. (25 ref.) (PsycINFO Database Record (c) 2002 APA, all rights reserved)

**37 Black, Stephen (1964). Mind and body.** London: Kimber. **NOTES:** Defines psychosomatic disease as one that responds to psychotherapy. Believes only 5% are highly hypnotizable, that hypnosis is learnable in 1/2 hour, that hypnosis is not a useful treatment for psychosomatic

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disorders because you can't use interpretation [of unconscious]. The 'unconscious' is "... a complex of informational systems derived from such primaevael mechanisms" (p. 133). "Primaevael mind is involved in these mechanisms of genetics and immunology" (p. 133). "There is thus a 'somatic mind' which is unconscious and presumably without any means of verbalization of experience--and a 'cerebral mind' which is conscious" (p. 133). The dividing line is not clear. Rapport is discussed on pp. 160, 169 as one of the spontaneous characteristics of hypnosis, in the absence of suggestion. The same for posthypnotic suggestion (rapport and amnesia). Spontaneous \_physiological\_ changes in hypnosis relate to mind-body relationships (p. 169) Conditioned reflex is discussed on p. 161 "...the subjective evidence indicates that a perceptual change involving any sensory modality can be produced by DSUH" [direct suggestion under hypnosis] p. 178. Suggestion can selectively affect different parts of the body p. 197. Research: "Hypnosis is not only the most important and practical way of \_proving\_ the existence of the unconscious--which is still in doubt in some circles--but is in fact the only way in which unconscious mechanisms can be manipulated under repeatable experimental conditions for purposes of investigation" (p. 152).

Mind-body is "amenability to control" Catatonia, which characterizes both animal and human hypnosis, seen in hypnosis, is induced by constriction (i.e. disorientation). The Cartesian concept of mind and body tends to confuse the issue p. 157.

Rapport is discussed (p. 157).

Suggestion (p. 159) "It was this concept of 'suggestion'--which so obviously parallels 'amenability to control' in animals--that eventually established hypnosis in the French schools of psychiatry as a state of increased suggestibility. ... still the standard definition of hypnosis in most medical psychiatric textbooks and in lay dictionaries" (p. 159).

Black (1969) did some biochemical sleuthing to learn how information transmitted by words becomes information encoded somatically, as when psychosomatic allergies flare and recede or disappear. What accounts for suggestion "curing" an allergic skin reaction in one part of the body while another part not included in the suggestion remains reactive? What accounts for the instantaneous skin allergy cure which sometimes occurs with suggestion (in 24 hours)? Skin sensitivity tests in highly hypnotizable Ss who were also very allergic were inhibited by direct suggestion under hypnosis under highly controlled experimental conditions--and in one subject the effect (inhibition) was relatively permanent--ruling out (he suggests) a neurological mechanism. He did further experiments to examine whether the result was due to an instant neurological mechanism and a long-term endocrinal mechanism. p. 212 He ruled out peripheral blood flow as the cause of diminished skin sensitivity (there was no change in blood flow with suggestions of heat or cold). Therefore decrease in blood flow couldn't explain in neurovascular terms the 'instant' inhibition of skin sensitivity (allergy) tests. Was it due to systemic--especially adrenal-- changes? He demonstrated increases in plasma cortisol under hypnosis with suggestions of fear. On p. 230 he summarizes the facts he established by skin sensitivity tests, plasma- cortisol studies, and histology - endocrinological. Black, Stephen; Edholm, O. G.; Fox, R. H.; Kidd, D. J. (1963). The effect of suggestion under hypnosis on the peripheral circulation in man. *Clinical Science*, 26, 223-230. **Summary:**

1. The effects on the circulation in the forearm and hand of both direct and indirect suggestion under hypnosis of thermal stimuli have been studied. 2. The induction of hypnosis did not

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significantly alter the forearm blood flow, but a small reduction in hand blood flow was usually observed. Pulse rate in general slowed slightly as did respiration rate. 3. The effect of body heating on forearm and hand blood flow was not modified by hypnosis. 4. Direct suggestion under hypnosis of body heating or body cooling, with and without body heating, produced only small changes. 5. The changes associated with suggestion were not related to the thermal suggestion. Whatever the suggestion, the usual response was a reduction in hand blood flow and an increase in forearm blood flow. 6. The rise of body temperature with heating was not modified by direct suggestion, under hypnosis, of body cooling. 7. No change in body temperature could be elicited by suggestion. 8. In a few experiments marked changes in forearm blood flow occurred. These appeared to resemble the changes in the circulation produced by emotional stimuli. 9. The smaller changes more frequently observed were also similar to those produced by mild emotional stimuli" (p. 229). [N.B. The Subjects were normal, healthy adults, N = 9, between 21-45 years old; highly hypnotizable, amnesic for trance.]1959

Conn, Jacob H. (1959). Cultural and clinical aspects of hypnosis, placebos, and suggestibility. *International Journal of Clinical and Experimental Hypnosis*, 7 (4), 175-185. Observation that student subjects often go into a deeper level of hypnosis after suggestions have been given for ending the session has led the writer to explore the reactions of subjects to this phenomenon and to set up a simple experiment using ideomotor responses in ten gynecological patients who needed hypnosis for therapy. In each of the ten patients there was a deepening of the trance after the suggestion to awaken had been given. It was the opinion of the subjects that they deepened the trance in rebellion against the direction for terminating a pleasant experience" (p. 227).1956  
**38** Barber, Theodore Xenophon (1956). **'Sleep' and 'hypnosis': A reappraisal.** *Journal of Clinical and Experimental Hypnosis*, 4, 141-159. **NOTES:** "Some recent experiments and a reevaluation of the electroencephalographic findings indicate that the term 'hypnosis' has subsumed at least two more or less distinct phenomena: (a) 'hypnosis' preceded by 'trance-inducing suggestions' which is closely related to 'light sleep' and (b) 'hypnosis' without 'trance-inducing suggestions' which is often a 'waking' state. "From this viewpoint we can begin to reevaluate the contradictory physiological experiments comparing sleep and hypnosis, the most favorable conditions for producing hypnosis, amnesia and decreased suggestibility in very deep hypnosis, and the reports of waking and sleeping hypnosis. We can also reappraise such thorny problems in hypnotic theory as the production of hypnosis by artificial means, autohypnosis, and animal hypnosis.

"The argument presented calls for further research. We should investigate (a) suggestibility during extreme relaxation; (b) response on hypnotic tests when the subject is told, "Go to sleep and I'll be back later to give you some tests"; (c) deep trance phenomena during sleep; (d) hypnotizability of good sleepers and insomniacs; (e) beneficial suggestions during sleep; (f) physiological functions during 'light sleep' and hypnosis; (g) the response of 'sleep-walkers' to standard hypnotic tests; (h) the relationship of 'light sleep' dreams to hypnotically induced dreams; and (i) the relationship of sleep amnesia to hypnotic amnesia" (pp. 153-154).

## 59. HYPNOSIS RESEARCH ON SURGERY

Lang, Elvira V.; Joyce, Janet S.; Spiegel, David; Hamilton, Donna; Lee, Kelvin K. (1995, November). **Self-hypnotic relaxation: Effect on use of intravenous medication during**

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**invasive procedures.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** I'm an interventional radiologist. Interventional radiologists do things like placing needles into the body, putting guide wires through them, advancing instruments (to get into vessels, to treat blockages, make diagnoses, drain urine, drain pus, remove gall stones) while progress is imaged. Procedures are usually performed on awake patients and may take 1-5 hours. Traditionally intravenous drugs are given for these procedures, most commonly a mixture of morphine derivatives and sedatives. Annually about 10 million invasive procedures are performed in the U.S. Among those 47,000 patients per year are estimated to be at risk of serious cardiovascular complications and 2,600 patients per year are estimated to die as a direct consequence of sedation. Hospital regulations also require a dedicated observer to be with the patient throughout the entire procedure and for extended times afterwards, when any intravenous drugs are given. This becomes very expensive. We started self-hypnotic relaxation with patients because of a nursing shortage. We used rapport techniques, relaxation training, imagery (neutralizing distressing imagery, enhancing pleasant imagery) and suggestions. Members of the procedure team apply these methods while the procedure takes place. During the time patients are prepared for the procedure, induction can be performed. Hypnosis can also be initiated in the procedure room, and a nurse or assistant reads a script. We give patients control over what happens, over the whole process, including even rejection of the self-hypnotic process. We did a randomized study with male veterans. Sixteen were attributed to a self-hypnotic relaxation group, 14 served as a control group. All patients had access to patient control intravenous analgesia. We assessed pain and anxiety on visual analogue self rating scales giving intensities between 0 (none at all) to 10 (maximum). We also recorded increases in blood pressure and heart rate, side effects that could be attributed to drugs or overexcitation. In the self-hypnotic relaxation group 50% of the patients reported distressing imagery at the onset. We helped them transform this negative imagery into imagery with neutral content, then enhanced the pleasant imagery, (often a pleasant scene at home). Twelve of 16 patients in the self-hypnosis group did not request medication at all; and only 1 in the control group did not request medication. The maximum pain perception was significantly less (2 vs 5) and procedural interruptions were fewer (2 vs 7) for the self-hypnosis group. There was no difference in the increases in blood pressure and heart rate. We concluded that use of self-hypnotic relaxation is a valuable adjunct for invasive procedures.1993

Bejenke, Christel J. (1993, October). **A clinician's perspective.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** Presents point of view of a private practice anesthesiologist in Santa Barbara, California. Used hypnosis for 20 years. Use of hypnosis as hypnoanesthesia is rare since Esdaile, with brief resurgence in 50's, because surgery techniques advanced before anesthetics did in areas that were very risky. Now it is a matter of choice, and may be undertaken because of a patient's extreme fear of anesthesia, previous bad experience with anesthesia, fervent belief in holistic method, allergy, or previous experience with hypnosis. Still advised to use hypnosis for MRIs, radiation procedures, former drug addicts (who may have problems with drugs), burn patients, release of neck contractions, and medical procedures--especially with children--like lumbar puncture. She disagrees with Kroger's estimate of only 10% of patients being able to use hypnoanesthesia; she does not believe it requires a lot of training, or profound muscle



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relaxation. There is no indication of how many cases are actually done with hypnosis. Also, published cases are not representative of the quantity or complexity of cases; most published cases have a few extraordinary characteristics. The Irish surgeon Jack Gibson has done more than 4000 cases, some very complicated. I have used it for D & Cs, and complex cases that were not published. Most of my patients elected to be alert during the hypnosis and conversed with their surgeons. The most common benefit is that recovery from anesthesia is not necessary; but these days with newer anesthetics recovery from anesthesia is rapid anyway. However, if as we suspect anesthesia affects immune function, that would be another reason to use hypnosis.

**Preparation for surgery may be of three types:** 1. formal hypnosis techniques 2. "hypnoidal" techniques that aren't formal 3. unprepared patients in whom hypnosis is used at last moment.

**Examples.** 1. Formal hypnosis: This symposium deals with this type of approach. Three groups derive particular benefit -- those requiring prolonged artificial ventilation postoperatively (because otherwise sedation must be used, which leads to complications), where prepared patients tolerate interventions calmly and comfortably -- cancer patients, for whom this can be first experience of patient to see self as active participant in care rather than a victim of the illness and of complicated technology -- pediatric patients. 2. Hypnoidal (hypnosis like) techniques: This is the most important application. Time doesn't permit much discussion here. Patients are in an altered state when they come for surgery, highly suggestible, and suggestions appear to be as effective as during formal trance state. The doctor can elicit positive responses during "casual conversation" while seemingly giving information to the patient. (The reverse is true also, with inadvertent negative suggestions, to the detriment of the patient.) Scrupulous adherence to medical facts is important during this type of conversation.

Operating room fixtures are useful for focus of attention, and I have published this information in an article.

Recovery room also is place where case specific information and appropriate suggestions can be given. Patient can experience his ability to alter sensations, for the first time, following suggestions.

Remainder of the hospitalization offers opportunity for reinforcing case specific positive suggestions.

Bennett, Henry L. (1993, October). **Hypnosis and suggestion in anesthesiology and surgery.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** He began by saying that he is opposed to using hypnosis for surgery, though he favors a theory of how hypnosis effects physiological change, and cites T. X. Barber's classic "Changing Unchanging Bodily Processes."

Relaxation puts patient in a "psychological strait jacket" because surgery is so highly stressful. He gives information "about how to go through the surgery more comfortably," gets across the idea about coping style, tells them surgery is exertional and that they are tired afterward, that he can help them "using things you already know how to do," and specifies exactly what they can do--using model of himself as a trainer.

In some recent research he used pairs of pictures, some of which lead to pupillary constriction (blood pressure goes down) or dilation (blood pressure goes up). Instructing them to look, patients looked twice as long at the pictures than they did during free gaze. When not instructed to look, heart rate went down; when told to look, heart rate went up. So the

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researchers went back to free gaze. He uses this as a metaphor for many of the pre-surgery preparation activities that encourage relaxation "inappropriately." He cites Cohen & Lazarus re vigilant copers, Price et al (1957), and some other studies on epinephrine effects. He uses examples of work patients may have done (e.g. planting a garden) when talking with patients prior to surgery, that gives them a sense of accomplishment later. You have to give specific instructions or suggestion, not general relaxation suggestions.

**Question from the audience:** Can preoperative instructions (not hypnosis) diminish blood loss. In Bennett's answer he seems to be reporting the earlier study: they found 150- 4000 cc blood loss, high variability. Extent of blood loss was determined by extent of surgery, by instructions to patients vs no instructions. This study was replicated by Enqvist, Bystedt, & von Konow in the Anesthesia conference at Emory University in 1992.

May 1993 Western Journal of Medicine article, Disbrow, Bennett, & Owinos, with 40 lower abdominal surgery patients who got specific instructions or not. The SHCS was used to measure hypnotizability: highs resolved quicker than low hypnotizable patients. They also found that instructed patients did better than those who did not get specific instructions. There are now 3 replications of McClintock's study: people use less medications after surgery, when tapes about rapid recovery are played \*during\* surgery. Bennett is now using tapes with suggestions for recovery during surgery.

Blankfield, Robert P. (1993, October). **Suggestion, hypnosis, and relaxation as adjuncts for surgery patients: Lessons from studies involving cardiac surgery patients.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** The author stated that his research and the few other studies of cardiac surgery patients do not support idea that cardiac surgery patients benefit from hypnosis and suggestion.

**Types of intervention have varied: hypnosis, suggestion, relaxation; pre-op, during, or post-op; with many different outcome variables.** Aiken & Henrichs (1971) study was nonrandomized, nonblinded, for 30 patients getting open heart surgery. Treated patients had benefits. Surman, Hackett, Silverberg, & Behrendt (1974) had a randomized, single-blind design for 40 patients taught Self Hypnosis (S-H), for elective mitral valve surgery. No difference in benefits. But 45% of patients taught S-H reported a subjective sense of benefit (though objective indicators didn't support that). [He says the difference between subjective/objective outcome ratings is important.]

Hart (1980) used randomized, single-blind design for 40 patients who had open heart surgery. No differences found except initial 3 days post surgery. Greenleaf et al (1992) - see her paper presentation of this date. Blankfield et al (presented at Society of Clinical and Experimental Hypnosis meeting in 1992) used a randomized, single-blind design for 95 patients, who were randomly assigned to taped suggestions, music, or controls. No differences were found in benefits.

Our data were re-analyzed: patients who felt tape was helpful were compared to the remaining 62 patients, but there again were no differences in amount of narcotics used for pain, though there was a trend in the right direction; nursing assessments failed to identify less anxiety.

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The point is, whereas the bulk of publications suggest benefits, there is little evidence with this population. Could these patients be different in personality, ability to respond to intervention, amount of external stimuli? They should be studied because there are a lot of these patients with only a few surgeons and you don't have to gain the cooperation of a lot of different surgeons to do this kind of research. Also, there is uniformity in cardiac surgery whereas standard operating surgery is in a state of flux in other areas (e.g. movement from generous incisions to micro procedures, and patients receiving this type of surgery remain in hospital for a week whereas this opportunity to study them during inpatient post-surgical period is disappearing in other areas). It is my opinion that cardiac patients may not be highly receptive to suggestion. Curiously, according to Surman and my research, 1/2 the subjects report benefits. Either some benefits are subtle, or they are reporting a placebo effect.

Future studies need more patients, and the investigators must stratify on personality inventory variables such as Type A personality, hypnotizability, motivation, anxiety, depression, family support, social support systems. This is labor intensive, to determine which characteristics determine differing outcomes. The patients used in this type of research require more presurgery evaluation than previously has occurred.

The MMPI can be self administered and is widely acceptable, but is cumbersome, not well suited to people who are acutely ill. Assessment of Type A personality is important because Type A's might be less receptive to suggestion. Structured interview is time consuming, but a 52-item questionnaire can be self administered. Other factors listed above are important. Don, Norman S. (1993, October). Trance surgery in Brazil. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** Showed a videotape of a Brazilian trance surgeon, who cuts without analgesia or asepsis. Patients later report no pain, infections, etc. The healer/surgeon is believed by everyone to be in a trance state, and the body is believed to be taken over by a spiritual doctor. The people involved deny that the patient is in trance.

Greenleaf, Marcia; Fisher, Stanley; Miaskowski, Christine; Du Hamel, Katherine (1993). **Hypnotizability and recovery from cardiac surgery.** American Journal of Clinical Hypnosis, 35, 119-128. **NOTES:** Notes were taken from author's presentation of this material at the Annual Meeting of the Society of Clinical and Experimental Hypnosis, Arlington Heights, Illinois. The paper presentation was part of a Symposium: Towards a Theory of Surgery: Hypnosis, Suggestion, Anesthesiology and Surgery, Methodological and Theoretical Issues and Dilemmas.

Authors outlined the reported advantages of using hypnosis. Their review found problems in much of the research on this topic published to date: many single subject studies, subjects were often selected and trained by the investigator, hypnotizability wasn't evaluated. Used the Hypnotic Induction Profile (HIP) before assignment of patients to groups, and also equated groups for age. Groups 1 & 2 had formal hypnosis and then either relaxation-imagery (Jancks' autogenic training) or specific outcome suggestions (e.g. to have a clean dry wound, and to look forward to being able to function well); Group 3 were controls.

No differences were found in outcome measures of length of time in ICU, time on respirator, length of stay, and cumulative index of recovery. Didn't publish our data on pain medications because learned it was poorly charted. Only difference found was: the relaxation imagery group got more wound drainage. It was degree of hypnotizability, independent of

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group, that made a difference in total number of hours on Nipride - highs were on it almost twice as long. On cumulative stability (having need of medications or respirator) the mid-range people did better. Not statistically significant but nevertheless clinically important, the lows were in the hospital 5 days longer.

This was counter-intuitive though it supports Herbert Spiegel's theory. We, as experimenters, were independent of the treatment team. We didn't have DRGs then and now we may have hit a ceiling effect in the amount of time people stayed in the hospital, because they had excellent pre-surgery education. We had difficulty continuing the study because the intervention seemed to other staff to be so useful: after 6 months the surgeons began requesting hypnosis for their anxious patients; the chief anesthesiologist had started using it routinely. Sample size is problematic. They were patients who were actively recruited, not people who sought hypnosis.

**CONCLUSIONS.** High hypnotizables in the hospital intensive care unit (ICU) demonstrate sensitivity to external stimuli without critical ability to screen; we see this reversed in the postoperative period. Mid range hypnotizables can decide which external cues to pay attention to. Lows are less able to incorporate new suggestions. They are bound by pre-existing views and also vigilance. Hypnosis = Dissociation + Absorption + Suggestibility (Spiegel's theory) We must focus more on the state-trait phenomena, the context, and then select the treatment.

Kessler, Roger S. (1993, October). **Suggestion and hypnosis in anesthesiology and surgery: A simple and complicated analysis.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. **NOTES:** Cites three reviews: Blankenfield; Rogers & Reich; and Mumford. These reviews leave us with several questions: - What does the addition of hypnosis add? - What is importance of hypnotic ability? - What techniques are most effective? - How useful are standardized tailored interventions? - What are psychological, physiological, and biochemical markers?

We lack a general theoretical framework (see H. Bennett), and there are a broad variety of pre-surgical interventions, which may influence different aspects of functioning. Evans & Richardson found no differences between people with and without preparatory interventions. Bonke & colleagues found no differences in length of hospitalization for people with and without preparatory interventions (except for people 55 and over). Relaxation training for surgery finds mixed results. Blankenfield obtained negative findings in cardiac surgery. His recent IJCEH article reports those negative results.

What does presurgical intervention influence? - Psychological dimensions - Biochemical & physiological dimensions - Time/cost dimensions Correspondence across these dimensions has not been consistently demonstrated, e.g. there is a lack of correlation between cortisol (physiological dimension) and anxiety (psychological dimension).

### **Why are there conflicting findings?**

1. Possibly patient's coping style is responded to inappropriately, e.g. people who deny vs those who sensitize seem to require different interventions. Must assess the patient's idiosyncratic coping style.
2. Four studies suggest hypnotic ability may be a factor in recovery.
  - a. Disbrow, Bennett, & Owings (1993)
  - b. Rondi et al. (high hypnotizables use less morphine via Patient Controlled Analgesia)

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c. Greenleaf et al. (hypnotizability predicts recovery independently) d. Rapkin, Straubing, & Holroyd (high hypnotizables had less blood loss during surgery)

### 3. Is hypnosis per se necessary?

Comparative evaluation of strategies has been ignored. Enquist found hypnosis had a greater effect than non-hypnotic treatment in blood loss. Another study of bone marrow transplant patients found the hypnosis treatment superior. When it comes to clinical interventions, we need to assess the patient's historic and current beliefs, their experience with medical procedures, their coping style, and then form a brief tailored intervention. 1992 Adams, P. C.; Stenn, P. G. (1992). Liver biopsy under hypnosis. *Journal of Clinical Gastroenterology*, 15, 122-124. Two patients underwent outpatient percutaneous liver biopsy under hypnosis without complications. One patient had severe anxiety about the procedure because of a previous adverse experience with liver biopsy, and the other had a history of severe allergy to local anesthesia. Both patients had undergone a session of hypnosis at least once prior to the biopsy. One received no local anesthesia, and the other received 1% lidocaine as a local anesthetic. Both patients were completely cooperative during the procedure with the required respiratory maneuvers. Both patients stated that they were aware of the procedure under hypnosis but described no pain and would be most willing to have the procedure done under hypnosis in the future.

Alden, Phyllis (1992, October). **The use of hypnosis in the management of pain on a spinal injuries unit.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington, VA. **NOTES:** To have a spinal injury is one of the most devastating injuries that can happen, reducing you suddenly from a normal life to situation of loss of control, helplessness, etc.- -with nothing to say about what is being done in surgery or other aspects of treatment.

In UK patients come for acute care and rehabilitation all in one place. Over 2 1/2 yrs we had 46 referrals. 7 refused hypnosis ("witch doctoring"). 30 benefitted Anonymous (1992, May). Studies: Learning can occur while under anesthesia. Daily Breeze (South Bay, Los Angeles County). **NOTES** Surgical patients can absorb information while they're knocked out, and even learn tips that help with recovery, researchers reported Friday at a symposium on memory and anesthesia.

"Researchers at Papworth Hospital in Cambridge, England, studied 51 cardiac patients, one-third of whom heard a tape of positive 'therapeutic suggestions' during surgery. Another third heard batches of word associations; the rest heard a blank tape.

"Patients who were played the suggestion tape - which told them they were doing well, or wouldn't feel much pain - left the hospital 1 1/2 days earlier on average than other patients.

"Another study, from the University of Arizona College of Medicine, found that surgical patients who heard specific pain-relief suggestions recovered more easily than those hearing vague advice such as, 'Think of being well.' "These are still early days to invest in every operating suite buying a tape recorder to play for the patients,' said Dr. Sunit Ghosh, a researcher with the Papworth team. 'But this definitely does hold promise.'

"Scholars at the second annual Symposium on Memory and Awareness in Anesthesia said patients rarely wake up recalling - unprompted - something that happened during anesthesia.

"But several studies showed subconscious learning while the patients were out cold.

"Not everyone accepted the findings.

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"It shows an enormous sensitivity on the part of the brain, if it can be shown," said Eugene Winograd, an Emory University psychologist and organizer of the Emory-sponsored conference. "I'm not confident it has been shown yet." "Some researchers in other studies found no association between messages heard during anesthesia and learning.

"Dr. Alan Aitkenhead, professor of anesthesia at the University of Nottingham in England, found no significant difference between patients who heard recuperative suggestions and patients who were treated to a deliberately dull history of the hospital where they were.

"Aitkenhead said his study kept all patients quite deeply anesthetized, and that may be why they might not have learned as much as patients in other studies. "By far, most likely, it's a difference in levels of anesthesia," he said. "The Papworth researchers, in another study, found that some patients showed strong word associations after hearing tapes of groups of words during surgery; but other patients under a different anesthesia didn't.

"There needs to be standardization of our testing," Ghosh said. "I think it's partly related to the anesthesia technique and partly related to the way in which material is presented to the patient."

"Dr. Peter Sebel, an Emory anesthesiologist and conference organizer, said that if patients can retain information about a speedy recovery, they probably retain other information, too - for example, a surgeon's discouraging operating-room assessment of their prognosis." Blankfield, Robert; Scheurman, Kathleen; Bittel, Sue; Alemagno, Sonia; Flocke, Sue; Zyzanski, Stephen (1992, October). Taped therapeutic suggestions and taped music as adjuncts in the care of coronary artery bypass graft patients. [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington, VA. NOTES 18 studies have explored the issue with an experimental design; half used tapes, half didn't; majority of studies found benefits; 2 were of heart surgery patients.

This study used taped suggestions with coronary bypass patients. Used tape recorder rather than person delivering suggestions because it was more convenient; used tape intra-surgery and post-operatively for more impact. We hypothesized: shorter length of stay, less narcotic analgesia, less anxiety, faster recovery, more positive mental outlook, resume activities sooner, have less symptoms postoperatively, etc.

Used a prospective, randomized, single-blind trial in 2 community hospitals in Cleveland with coronary artery bypass graft surgery patients. Study was done between Dec 1989 - Feb 1992.

### **3 groups were involved:**

(1) Suggestion,

(2) music, and

(3) tape. Control subjects had a blank tape. Tapes were played continuously and repeatedly with headphones. Postoperatively, a different tape was played. Excluded: Patients with emergent surgery, hearing impairment, poor comprehension of English, patients who died in hospital, patients whose hospital stay lasted longer than 14 days (3 of them). 5% of sample were eliminated for last 2 reasons.

Music: Herb Ernst, Dreamflight II. Suggestions: Music background, permissive, based on Evans & Richardson's study.

Outcome Measures: Nurse assessment of anxiety and progress post operatively, Symptom scale, Depression scale.

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Mean age 62, 3/4 men, 92% white, 75% married. The groups were same on a variety of preoperative variables (status of heart and arteries). Length of stay was 6.5 in all 3 groups. No difference in narcotics use, in nurse assessment of anxiety or of progress; of depression scale, or activities of daily living. Recategorized data into patients who said the tapes were helpful (both music and suggestion) N = 33 vs the other patients N = 62. No difference in the variables evaluated.

Kostka, Marion (1992). **Personal experience with 'Use of Hypnosis Before and During Angioplasty'** [Letter]. American Journal of Clinical Hypnosis, 34, 281-282. **NOTES:** Author read the article referred to after his/her heart attack and before angioplasty. Goal was to control preprocedure anxiety and assist by being relaxed and cooperative; also to be able to tolerate inflations of the balloon for as long as needed. Used self-hypnosis "and by the time I entered the laboratory my anxiety was under control. ... None of the physiological responses that can occur (i.e., nausea, pain, etc.) did occur and, for the most part, my postprocedure recovery was uneventful. ... Had two procedures because the artery again occluded. ... My cardiologist commented later that the time of inflation was longer than he had even attempted with any of his patients and he attributed this to my lack of symptoms. I felt this was due in part to the use of self-hypnosis. .... my subjective feeling was that both my discomfort and anxiety were minimal" (Pp. 281-82). No blood was sampled to measure catecholamine levels.

Leviton, Alexander A.; Harbaugh, Thomas E. (1992). **Hypnotizability and hypnoanalgesia: Hypnotizability of patients using hypnoanalgesia during surgery.** American Journal of Clinical Hypnosis, 34, 223-226. Administered Stanford Hypnotic Suggestibility Scale (Form A) to 10 patients from a population of 20 who had undergone surgery in the previous 10 years using hypnoanalgesia as the sole or principal analgesic agent. Time since surgery ranged from 2 days to 10 years. Scores on the SHSS ranged from 5 (medium susceptibility) to 12 (high susceptibility) with a mean of 8.6, significantly higher than the SHSS:A normative group ( $p < .001$ ). The relationship between severity of surgery and the use of hypnoanalgesia as the sole or principal analgesia was significant for our patient population (N = 20) but not for our patient sample (N = 10). **NOTES** No referrals were rejected or dissuaded from the use of hypnoanalgesia.

#### **The medical reasons for referral included**

(1) the presence of anatomic abnormalities precluding use of inhalation anesthesia, (2) a history of cardiac arrest accompanying prior use of chemoanesthesia, and (3) excessive bleeding associated with previous attempted surgery. Self-referred patients had previous experience with meditation or self hypnosis and wished to avoid the potential complications associated with the use of chemoanesthesia" (pp. 223- 224). The second author, who was unknown to the patients, administered the SHSS:A. "Those four patients using hypnoanalgesia alone achieved a mean SHSS:A score of 8.25. Those [five patients] using a combination of hypnosis and chemoanesthesia achieved a mean SHSS:A score of 8.80" (p. 224). (One did it both ways, in two surgeries, and is not included in this analysis.) "Hypnoanalgesia alone was unlikely to be used for major surgery [as rated by independent rater, on major vs minor surgery] and, for whatever reasons, is most likely to be employed alone during minor surgery" (p. 224). 64% of the major surgical procedures (in their 10 patients) used

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combination of hypnoanalgesia and chemoanesthesia; 69% of procedures that used only hypnoanalgesia were minor surgeries.

This suggests that "the use of hypnoanalgesia as the sole analgesic agent during major surgical procedures is an option seldom taken in the presence of reliable chemoanesthetics.

Hypnoanalgesia as the sole analgesic agent may be a practical alternative for patients of moderate to high hypnotic susceptibility during minor surgical procedures. Hypnoanalgesia used as the principal or adjunctive analgesic may be useful to patients of moderate to high hypnotic susceptibility during major surgical procedures" (pp. 225-226).1991

Blankfield, Robert P. (1991). **Suggestion, relaxation, and hypnosis as adjuncts in the care of surgery patients: A review of the literature.** American Journal of Clinical Hypnosis, 33, 172-186. **NOTES:** He notes that the authors provide little information re complications, and length of stay (LOS) is one of the most sensitive response measures used in these studies. The mean difference in LOS for 5 studies that have randomized assignment is 1.3 days. The N's are 80-100 for 3 of the studies, 39 and 60 for others. For two well controlled studies that did not achieve significance, the N's were 40 and 45. Many studies mixed the diagnosis and types of surgeries, making it difficult to interpret the results. Block, Robert I.; Ghoneim, M. M.; Sum Ping, S. T.; Ali, M. A. (1991). Efficacy of therapeutic suggestions for improved postoperative recovery during general anesthesia. Anesthesiology, 75, 746-755. There have been claims that the postoperative course of patients may be improved by presentation during general anesthesia of therapeutic suggestions which predict a rapid and comfortable postoperative recovery. This study evaluated the effectiveness of such therapeutic suggestions under double-blind and randomized conditions. A tape recording predicting a smooth recovery during a short postoperative stay without pain, nausea, or vomiting was played during anesthesia to about half the patients (N = 109), while the remaining, control patients were played a blank tape instead (N = 100). The patients were primarily undergoing operations on the fallopian tubes, total abdominal hysterectomy, vertical banding gastropasty, cholecystectomy, and ovarian cystectomy or myomectomy. The anesthesia methods consisted of either isoflurane with 70% nitrous oxide in oxygen to produce end-tidal concentrations of 1.0, 1.3, or 1.5 MAC; or 70% nitrous oxide in oxygen combined with high or low doses of opioids. Assessments of the efficacy of the therapeutic suggestions in the recovery room and throughout the postoperative hospital stay included: the frequency of administration of analgesic and antiemetic drugs; opioid doses; the incidence of fever; nausea, retching, and vomiting; other gastrointestinal and urinary symptoms; ratings of pain; ratings of anxiety; global ratings of the patients' physical and psychological recoveries by the patients and their nurses; and length of postoperative hospital stay. There were no meaningful, significant differences in postoperative recovery of patients receiving therapeutic suggestions and controls. These negative results were not likely to be due to insensitivity of the assessments of recovery, as they showed meaningful interrelations among themselves and numerous differences in recovery following different types of surgery. Widespread utilization of therapeutic suggestions as a routine operating room procedure seems premature in the absence of adequate replication of previously published positive studies. **NOTES:** Patients ages 19-55 were accepted into the study and they were paid for participation. (Older patients were excluded to guard against memory or hearing problems.) Other criteria for exclusion were: ASA physical status 4 or 5 indicating significant systemic disease, visual or



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hearing problems, middle ear disease (because it increases probability of nausea and vomiting), if their condition might require heavy sedation, if they were currently taking medication that interferes with memory (e.g. benzodiazepines, if there were intolerance to opioids, or if there were a likelihood of using postoperative pain treatment other than opioids).

The Spielberger State-Trait Anxiety Inventory was administered before surgery. Either suggestions (lasting 6 minutes) or a blank tape were played through headphones, starting 5 minutes after the surgical incision. The tape was played once for the first 59 patients, continuously for the remaining 150 patients. The first 139 patients received additional verbal materials on the tape, for memory tests to test possibility of learning under anesthesia. Operating room sounds were recorded by a tape recorder near the patient's head, throughout period of unconsciousness (except when tape was being played).

After the first 25% of cases, the team decided that lack of effect on therapeutic suggestions attributable to type of anesthesia did not warrant restriction to a single anesthetic method; also, multiple presentations of the suggestions on tape did not show an effect different from a single presentation.

After the patient regained consciousness and was reoriented, pain, nausea, retching, and vomiting were assessed every 30 minutes. Pain was rated orally on a scale from 1 to 10 in the recovery room, then on visual analogue scales every 2 hours on the day of surgery and the second day, and every 4 hours on subsequent hospital days during waking hours. Variables that were rated by staff every 24 hours included: opioids, other analgesics, antiemetics, nausea, vomiting, retching, presence or absence of nasogastric tube, passage of flatus, bowel movement, fluid intake, solids intake, urination. Temperature was recorded every 4 hours for the first 2 days after surgery, and after that less often. The anxiety measures were repeated on Day 3 postsurgery, as well as self ratings and nurse ratings on physical and psychological recovery. Staff recorded length of postoperative hospital stay and reasons for any delay of discharge. Separate analyses were performed for patients receiving opioids via patient-controlled analgesia (52%) vs traditional administration (48%), but no differences were found for effects of therapeutic suggestions except on postoperative Day 8. "The inability to detect beneficial effects of therapeutic suggestions probably was not due to insensitivity of the measures of recovery. These measures were sensitive enough to show numerous significant differences in recovery after different types of surgery" (p. 751). The authors supported their contention that the measures were sufficiently sensitive by demonstrating meaningful correlations among the measures themselves; and by demonstrating adequate statistical power for detecting the effects of theoretical interest--at least 1 day in postoperative hospital stay or one half day in fever. Discussion: The authors note that a recent investigation that found positive results in a double-blind, randomized design with 39 hysterectomy patients (Evans & Richardson, 1988. Improved recovery and reduced postoperative stay after therapeutic suggestions during general anaesthesia. *Lancet*, 2:491-493) may not have controlled for variables such as presence of malignancy, physical status of patients before surgery, or ethnicity. Authors note that Evans and Richardson observed shorter periods of pyrexia despite there being no relevant suggestions, but no differences in pain intensity, nausea, vomiting, or urinary difficulties despite there being suggestions relating to those symptoms. There also were no differences in mood and anxiety test scores postoperatively for the experimental and control groups.

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The authors note that McIntock, Aitken, Downie, & Kenny (Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions. *Br M J* 301:788-790. 1990) reported a 23% reduction in opioids by patients receiving suggestions, but no reduction in pain, nausea, or vomiting. They contrast the present study with these earlier studies that had obtained positive results.

"We studied patients who had more than one type of surgery to obtain a large sample size and to assess the possibility that beneficial effects of therapeutic suggestions would be restricted to certain types of operations. Had this been the case, interactions of therapeutic suggestions with type of surgery would have been significant in the overall analyses, and follow-up analyses would have indicated that they were attributable to beneficial effects of therapeutic suggestions for certain surgeries. This did not occur. The two types of surgeries involving the largest numbers of patients seemed particularly promising for demonstrating beneficial effects. It has been reported that therapeutic suggestions presented during anesthesia are likely to be less successful with major and extensive surgery. Certainly, surgery on the fallopian tubes and gastric stapling did not involve a great deal of tissue trauma and blood loss. Patients were motivated to have the surgery and to recover quickly; particularly motivated were those having operations on the fallopian tubes, who were very eager to become pregnant, and those having vertical banding gastroplasties, who wanted desperately to lose weight" (pp. 753-754). "In practice, we observed no beneficial effects of therapeutic suggestions, and there was no hint that anesthesia methods influenced the efficacy of the therapeutic suggestions. Interestingly, anesthetic methods also did not influence learning under anesthesia in the implicit memory tests we have used previously. Patients anesthetized with nitrous oxide and opioids did not differ from those anesthetized only with inhalational agents. In general, implicit or unconscious memory occurs in patients regardless of anesthesia methods or dosages of drugs" (p. 754).

"The few significant effects of therapeutic suggestions in our study did not point toward a beneficial influence of these suggestions. We found, in fact, an increased frequency of retching (but not nausea or vomiting) in the experimental group. The multiple variables examined in this study increased the likelihood of significant differences arising by chance, such that the null hypothesis was rejected when it should have been accepted. This is the way we interpret the effect on retching---i.e., as a type I error. We used in our therapeutic suggestions one negative or exclusionary sentence, 'You won't feel nauseous or have to vomit', among several positive or affirmative statements, e.g., 'You will enjoy eating, drinking...You will swallow to clear your throat and everything will go one way, straight down. . . The food will taste good....Your stomach will feel fine.' We do not think that the negative sentence led to paradoxical results. Evans and Richardson (personal communication) used in their therapeutic suggestions a negative sentence ('You will not feel sick'), which they repeated, yet the reported incidence of nausea and vomiting did not differ between the experimental and control groups" (p. 754).

Brown, Peter (1991). **The hypnotic brain: Hypnotherapy and social communication.** New Haven, CT: Yale University Press. **NOTES:** Notes are taken from a review of this book: Diamond, Michael (1993). Book review. *Bulletin of the Menninger Clinic*, 57 (Winter), 120-121. Brown "posits that because the fundamental matrix of the human brain is metaphoric, hypnosis results from skillful matching of metaphorical communication with the brain's

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biological, rhythmic alterations. The most significant feature of trance experience is thereby located in the hypnotist-subject interaction" (p. 120).

"The middle section [of the book is comprised largely of] literature reviews in support of Rossi's (1986) ultradian rhythm theory of hypnosis and Lakoff and Johnson's (Johnson, 1987; Lakoff & Johnson, 1980) experientialist theory of conceptual thought" (p. 120). The final section includes "research evidence on medical uses of hypnosis, a theory of dissociation and multiple personality disorders, and an uncritical discussion of Milton Erickson's naturalistic hypnotherapeutic approach ... [and also] a brief discussion of the social-cultural functions of possession states among the Mayotte culture" (p. 120).

Cochrane, Gordon J. (1991). **Client-therapist collaboration in the preparation of hypnosis interventions: Case illustrations.** *American Journal of Clinical Hypnosis*, 33, 254-262. Therapists can use hypnosis in a variety of situations to help clients utilize their own resources effectively. In both heterohypnosis and tape-assisted self-hypnosis, the respectful collaboration of therapist and client in the development of specific intervention strategies can be effective. I have described four cases to illustrate the collaborative aspect of heterohypnosis in a surgical setting and tape-assisted self-hypnosis for anxiety, tinnitus, and situational depression. In each case the clients were willing and able participants. **NOTES:** Hypnotic interventions as adjunctive therapeutic modalities for a variety of surgical procedures have been well documented (Frankel, 1987; Gravitz, 1988; Nathan, Morris, Goebel, & Blass, 1987). The availability, relative safety, dependability, and ease of use have made chemical agents the anesthetic of choice in the majority of surgical situations, but hypnosis, either alone or in conjunction with chemical agents, can have a number of advantages for some patients (Udolf, 1987, p. 248). Some patients who have extreme preoperative pain and anxiety can learn to use self-hypnosis (Frankel, 1987); others may use hypnosis when experiencing postoperative nausea and other uncomfortable side effects of chemical anesthetics. Some may fear death under general anesthesia or react to a previous trauma arising from general anesthesia and the operating room procedures in general (Udolf, 1987, p. 250) and therefore choose hypnotic strategies. In the following case illustration the patient feared general anesthesia because of a previous negative postoperative experience" (p. 255). While collaboratively planned hypnosis often empowers the patient, contributing to a sense of personal control and well being, some patients are not able to participate in that manner. Cochrane cites patients who are severely depressed or "who struggle with narcissism and other severe pathologies" (p. 260). He notes that audiotapes are useful for supplementing in-session therapy, contributing to skill development, attitude change, and a sense of self-worth. He cites Eisen and Fromm (1983) as indicating that self hypnosis is also useful for clients "who struggle with issues of control and intimacy" (p. 260).

Kleinhauz, Moris (1991). **Prolonged hypnosis with individualized therapy.** *International Journal of Clinical and Experimental Hypnosis*, 39 (2), 82-92. A therapeutic approach is presented which involves the use of prolonged hypnosis for the treatment of diverse medical and/or psychological conditions, including intractable pain. This approach may be indicated either as a complementary tool used in conjunction with other treatment approaches or as the only method of intervention. The technique is based on achieving a prolonged hypnotic response, during which hypno-relaxation serves as the foundation for the delivery of an

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individualized therapeutic plan which includes self-hypnosis, suggestive procedures, metaphors, and constructive imagery techniques. In debilitated patients, medical supervision and nursing care are essential, and hospitalization is recommended if necessary. Theoretical assumptions underlying this approach are presented, and clinical implications are discussed. The method is illustrated through case presentations. **NOTES: The general procedure involves:**

1. A flexible plan concerning the duration of treatment: days, weeks, or longer.
2. Information is given to the patient, the family and the medical staff if in hospital. Emphasize that while the patient may be in a 'twilight-like' state, most of the time he/she is able to fulfill his or her basic physiological needs, (drinking, eating, taking care of personal cleanliness, etc.).
3. The method of hypnotic induction is individualized.
4. The patient is trained in self-hypnosis, and for using signals for induction and dehypnotization either for self hypnosis or for the hypnotist to use. Thus if there is a physiological or emotional need for self-hypnosis the patient can do it. Suggestions and training are given and reinforced concerning the patient's capability to fulfill his/her basic physiological needs.
5. The family and/or the medical staff are instructed and trained in induction and dehypnotization, until the patient responds to them satisfactorily.
6. At this stage, therapeutic suggestions aimed at ego-boosting and a change of attitudes and meanings towards the symptom and symptom removal/amelioration/substitution are added.
7. Metaphoric constructive imagery is introduced when indicated.
8. If required, other hypnotic phenomena are elicited and used (e.g. dissociation, time distortion, age regression, rehearsal, hypno/analgesia, change of muscular tonus, displacement of emotions, abreaction, etc.).
9. An audio cassette which contains the wording of the therapeutic intervention is used with some patients.
10. The family and/or the medical staff are instructed to supervise the patient properly and to avoid potential complications.
11. Termination of prolonged hypnosis with individualized therapy is gradual to permit appropriate re-orientation towards reality.
12. Treatment is evaluated and a posttreatment plan is outlined.

They provide case reports and discuss precautions. All the cases reported were treated while the patients were hospitalized for their physical condition (although in Case 3, prolonged hypnosis with individualized therapy was also continued at home after the patient's discharge from the hospital), and the patients were monitored by the medical staff. In very debilitated patients, special care should be taken to avoid potential complications arising from their passivity, mainly the development of decubitus ulcer and of aspiration/choking while drinking or eating. Although precaution is taken routinely with these patients, these measures should be emphasized while the patient is in a state of prolonged hypno-relaxation. Morse, Donald R.; Martin, John; Moshonov, Joshua (1991). Psychosomatically induced death: Relative to stress, hypnosis, mind control, and voodoo: Review and possible mechanisms. *Stress Medicine*, 7, 213-232. A common denominator in psychosomatically induced death is stress. Death can occur slowly, as from the preponderance of chronic stressor, or it can come on suddenly, as from an acute stressor. Sudden death is more likely in an individual with preexistent serious medical

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conditions, which were outlined. Seven types of individuals more prone to sudden death were outlined. Most cases of sudden death are related to the presence of a severely stressful situation in which there appears to be no means of control or escape. With mind control, hypnosis, and voodoo curses, circumstances can be manipulated to achieve severe stress and uncontrollability. 1990

Evans, Frederick J.; Stanley, R. O. (1990). Psychological interventions for coping with surgery: A review of hypnotic techniques. *Australian Journal of Clinical and Experimental Hypnosis*, 18, 97-105. Illness, hospitalization, and surgery pose many severe stresses for many patients, to the extent that their ability to understand and cope with what is happening may be significantly reduced. Many of these stresses result from the nature and significance of patients' surgical procedures and post-operative treatment. This paper reviews the range of psychological interventions aimed at helping patients cope with pre- and post-operative treatment regimens. The range and content of hypnotic interventions are examined in detail. It is concluded that more rigorous research studies are required to determine the relative effectiveness of different types of interventions and to evaluate the effects of patients' psychological characteristics on the effectiveness of these interventions. Gauld, Alan (1990). Mesmeric analgesia and surgery: A reply to Spanos and Chaves. *British Journal of Experimental and Clinical Hypnosis*, 7, 171-174. NOTES Spanos and Chaves' criticisms of the author's paper in this journal (vol. 5, 1988, pp 17-24) on mesmeric analgesia are considered. Spanos and Chaves are unnecessarily dismissive of nineteenth century reports of mesmeric analgesia and, in order to bring these cases within the compass of their theory, they make assumptions about them that are not supported by the facts.

Kaye, J. M.; Schindler, B. A. (1990). **Hypnosis on a consultation-liaison service.** *General Hospital Psychiatry*, 12, 379-383. Studied the use of hypnosis on a consultation-liaison service with a broad spectrum of medically hospitalized patients. Autohypnosis tapes were used for reinforcement. Twenty-nine women and eight men from 24-75 years of age were hypnotized for relief of depression, pain, anxiety, or side effects of chemotherapy. Results were excellent (total to almost total relief of symptoms) in 68%, fair in 22%, and poor in 11%, with no differences among the results with the various conditions. This demonstrates that hypnotherapy is an extremely useful tool in medical management of patients in consultation-liaison psychiatry. Kihlstrom, John F.; Schacter, Daniel L.; Cork, Randall C.; Hurt, Catherine A.; Behr, Steven E. (1990). Implicit and explicit memory following surgical anesthesia. *Psychological Science*, 1, 303-306. Paired associates were presented to 25 surgical patients following the induction of anesthesia by thiopental, vecuronium, and isoflurane. Postoperative testing (immediately or after two weeks) showed no free recall for the list; nor was there significant cued recall or recognition, compared to a matched control list. However, a free-association task showed a significant priming effect on both immediate and delayed trials. At least under some conditions, adequate surgical anesthesia appears to abolish explicit, but not implicit, memory for intraoperative events.

Kraft, Tom (1990). **Use of hypnotherapy in anxiety management in the terminally ill: A preliminary study.** *British Journal of Experimental and Clinical Hypnosis*, 7, 27-33. The aim of this project was to give some preliminary information about the possible value of hypnotherapy in the management of terminally ill patients suffering from widespread cancer. The five phases of the dying process are described, and the case illustrations would suggest

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that, apart from severely obsessional patients, the terminally ill seem to benefit quite considerably from hypnotherapy.

Matheson, G.; Drever, J. M. (1990). **Psychological preparation of the patient for breast reconstruction.** *Annals of Plastic Surgery*, 24, 238-247. **NOTES:** Reviews over 100 women who had undergone rectus abdominis musculocutaneous flap reconstruction, the psychological issues motivating the patient for surgery, and psychological problems to be considered by the surgeon. A method of psychological preparation that was used and a report on the evaluative study of the program is included, and a protocol and verbalization for hypnotic relaxation is included.

McLintock, T. T.; Aitken, H.; Downie, C. F.; Kenny, G. N. (1990). **Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions.** *British Medical Journal*, 301 (6755), 788-790. Sixty-three women undergoing elective abdominal hysterectomy were randomly assigned to a tape of positive suggestions or a blank tape during the operation. Anesthesia was standardized for all of the women. Postoperative analgesia was provided through a patient-controlled analgesia system for the first 24 hours. Pain scores were recorded every 6 hours. The outcome measures were morphine consumption in the first 24 hours and pain scores. Mean morphine requirements were 51.0 mg in women who were played positive suggestions, and 65.7 mg in those played a blank tape ( $p = 0.028$ ). Pain scores were similar in the two groups. It was concluded that intraoperative suggestions seem to have a positive effect in reducing patients' morphine requirements in the early postoperative period.

1989 Jirout, J. (1989). Reaction of the cerebral vertebrae in imagined changes in the shape of the cervical spine. *Ceskoslovenska Neurologie a Neurochirurgie*, 52, 75-77. Postural reaction of the cervical vertebrae on imagined, but actually not performed, changes in the shape of the cervical spine in the sagittal plane are described. The percentage of reacting vertebrae is relatively high. The findings seem to indicate that,

- (1) the described phenomena belong to the constant features of the spinal dynamics,
- (2) that there probably exist residual traces of preceding activities, and
- (3) that these changes are due to the activation of the polymetameric system of the intrasegmental muscles. Abstracted in *American Journal of Clinical Hypnosis*, 1990, v. 32, p. 213.

Peebles, M. J. (1989). **Through a glass darkly: The psychoanalytic use of hypnosis with post-traumatic stress disorder.** *International Journal of Clinical and Experimental Hypnosis*, 37, 192-206. A severe case of post-traumatic stress disorder stemming from consciousness (with auditory and pain perception) during surgery was treated with 8 sessions of hypnosis. Abreaction and revivification used alone initially retraumatized the patient, and her symptoms worsened. Ego-mastery techniques were then added; emphasis was placed on the role of the therapist as a new object presence to be internalized in restructuring the traumatic memory; memory consolidation and working-through techniques were instituted. The patient's symptoms abated and her condition remitted. The similarities between hypnotic and analytic work are highlighted. In addition, the case material provides a clinical example of the existence and potential traumatic effects of conscious awareness during surgery. 1988

Azuma, Nagato; Stevenson, Ian (1988). **'Psychic surgery' in the Philippines as a form of group hypnosis.** *American Journal of Clinical Hypnosis*, 31, 61-67. Psychic surgeons and

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their patients were observed in the Philippines during a variety of procedures of 'minor surgery.' In six cases, subcutaneous tissues (cysts and benign tumors) were removed. Histological examination confirmed the gross diagnoses and left no doubt that the skin had been penetrated. Although the psychic surgeons used no analgesics or anesthetics, the patients appeared to experience little or no pain and only slight bleeding. The authors believe that a supportive group 'atmosphere' enables the patients to enter a quasi-hypnotic state that reduces pain and facilitates healing.

Boeke, S.; Bonke, B.; Bouwhuis-Hoogerwerf, M. L.; Bovill, J. G.; Zwaveling, A. (1988). **Effects of sounds presented during general anaesthesia on postoperative course.** British Journal of Anaesthesia, 60, 697-702. In a double-blind, randomized study, patients undergoing cholecystectomy were administered one of four different sounds during general anaesthesia: positive suggestions, nonsense suggestions, seaside sounds or sounds from the operating theater. The effect of these sounds on the postoperative course was examined to assess intraoperative auditory registration. No differences were found between the four groups in postoperative variables. NOTES

Postoperative course was evaluated by 5 variables: pain, nausea and vomiting, evaluation by nursing staff, subjective well-being, and duration of postoperative hospital stay. From the chart they used amount of postoperative analgesia, volume of nasogastric suction or drainage and fluid lost through vomiting over 6 days post-operatively; duration of postoperative hospital stay was registered after discharge. See p. 699 for details, including wording of questions. They cite their own earlier study that got positive results, and explain the difference as possibly due to use of only male voices on tapes, lack of difference in the sounds on tapes in this study, insensitivity of outcome measures (patients stayed longer in first study than in this one), and sample too small in this study (106).

Boeke et al. (1988) report that this double-blind, randomized study of positive suggestions, noise or sounds from the operating theater presented to 3 groups of patients undergoing cholecystectomy during general anaesthesia had positive results for older patients. patients > 55 years who received positive suggestions had a significantly shorter postoperative hospital stay than the other patients in this age category.

Evans, C.; Richardson, P. H. (1988). **Improved recovery and reduced postoperative stay after therapeutic suggestions during general anesthesia.** Lancet, 2 (8609), 491-493. The clinical value of suggestions during general anesthesia was assessed in a double-blind randomized placebo-controlled study. 39 unselected patients were allocated to suggestion (N = 19) or control (N = 20) groups who were played either recorded suggestions or a blank tape, respectively, during hysterectomy. The patients in the suggestion group spent significantly less time in the hospital after surgery, suffered from a significantly shorter period of pyrexia, and were generally rated by nurses as having made a better-than-expected recovery. Patients in the suggestion group, unlike the control group, guessed accurately that they had been played an instruction tape.

Goldmann, Les; Ogg, T. W.; Levey, A. B. (1988). **Hypnosis and daycase anaesthesia. A study to reduce preoperative anxiety and intraoperative anesthesia requirements.** Anesthesia, 43, 466-469. 52 female patients having gynecological surgery as day cases received either a short preoperative hypnotic induction or a brief discussion of equal length. Hypnotized

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patients who underwent vaginal termination of pregnancy required significantly less methohexitone for induction of anesthesia and were significantly more relaxed as judged by their visual analogue scores for anxiety. Less than half the patients were satisfied with their knowledge about the operative procedure even after discussions with the surgeon and anesthetist. A significant correlation was found between anxiety and perceived knowledge of procedures. Results suggest that preoperative hypnosis can provide a quick and effective way to reduce preoperative patient anxiety and anesthetic requirements for gynecological daycase surgery.

Hawkins, Russell; Le Page, Keith (1988). **Hypnotic analgesia and reflex inhibition.** Australian Journal of Clinical and Experimental Hypnosis, 16, 133-139. The major change in thinking about models of analgesia over the last decade or so may be seen as a shift away from the earlier emphasis on a one-way afferent transmission sequence. Analgesia was effected, according to the older models, by a simple blocking of afferent impulses at some level (as achieved by local anaesthesia). Recent models suggest that there are at least two CNS analgesia control systems, each operating via an active mechanism for the inhibition of nociception which includes reciprocal \_efferent\_ impulses able to respond to input from lower centers by sending control signals which modify their output. One CNS analgesia system has now been quite well described. This "opiate" analgesia system has proved to be naloxone reversible and seems to be mediated by reciprocal pathways between brain stem structures and the dorsal horn and trigeminal caudalis. This is not likely to be the system responsible for all cases of hypnotic analgesia, since the common experience of continued awareness of some elements of a normally painful stimulus, in spite of a freedom from pain, implicates a higher level involvement such as input from the prefrontal cortex. **NOTES:** The authors present a surgery case (of a cystoscopy and urethrotomy performed under hypnotic analgesia, with a highly hypnotizable patient) as an illustration of their position. The patient grimaced when the urethrotome was inserted into the urethra and dilated, but she denied discomfort and did not exhibit a reflex adduction of the thighs that is often observed even under standard general anaesthesia. She had spontaneous amnesia for the entire surgery. Later, under hypnosis, the patient could remember "discomfort and a sharp pain" which lasted for "seconds, if that" (p. 134).

The authors refer to Melzack and Wall's (1965) gate control theory as well as Hilgard's (1973) neodissociation interpretation of pain reduction in hypnosis. They review research by Hardy and Leichnetz (1981) with monkeys, in which they "traced the projections of the periaqueductal gray (PAG) to determine the extent of any possible cortical involvement in the endogenous analgesic system. Their work showed that the prefrontal cortex was the principal source of projections to the PAG" (p. 136). They quote the latter as writing that, "Patients who have had prefrontal lobotomies for relief of chronic pain report that while they still feel the pain they are no longer bothered by it ... the prefrontal cortex by virtue of its projections to the PAG may play a role in modulating nociception at the spinal level" (Hardy & Leichnetz, 1981, p. 99). "Hardy and Leichnetz have also suggested that there may be more than one analgesic system within the CNS. The first system is a naloxone-reversible mechanism which can be activated by opiates (presumably both endogenous and exogenous) and by acupuncture. Since hypnotic analgesia has shown itself not to be naloxone-reversible (Goldstein & Hilgard, 1975) it may have little to do with the opiate reception analgesia system. Instead the mechanism of hypnotic



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analgesia may lie in Hardy and Leichnetz's second system which is sensitive to affective and cognitive influences" (pp. 136-137).

The authors include a review of the work by Mayer and Price (1976) which established the importance of brain stem structures in analgesia, especially for eliciting stimulation-produced analgesia. They cite Mayer and Price as drawing a distinction between "analgesia achieved by incapacitating a component in a pain transmission system or by activating a pain inhibition system" (p. 137). They also report that Mayer and Price conclude that stimulation-produced analgesia does not result from a "functional lesion" in the brain stem, but results from stimulation of a pain-inhibiting mechanism, suggesting the dorsal horn and trigeminal nucleus caudalis may be involved. This would be consistent with the inhibition of spinal reflexes (the adductor reflex) observed in their urethrotomy case, and the spinal reflex to nociception has also been reported by Finer (1974). "The concomitant inhibition of reflexes in humans during hypnotic analgesia can be interpreted as evidence that nociception is probably not ascending to the cerebral cortex and that therefore the source of analgesia can be localized to the brain stem areas. It may be the case, however, that the locus of effect of hypnotic analgesia is not uniform across cases and may be identified by the overall pattern of subjective reports and physiological responses. Hypnotic analgesia may be experienced in more than one way subjectively and these differences may be attributable to differing underlying physiological mechanisms. On some occasions the relevant body part may be experienced as totally anaesthetized and all sensation (not only painful sensation) may be lost. This experience matches well with a brain stem involvement, which presumably inhibits any further afferent action. On other occasions, however, and more commonly, patients are still aware of a variety of sensations, which might include pressure in the case of childbirth or even cutting in the case of surgery, but these sensations are not described as painful. This is reminiscent of the effect of frontal lobotomy and it is tempting to focus on the frontal lobe as the locus of hypnotic analgesia effects in such instances" (p. 138). Houge, Donald R.; Hunter, Robert E. (1988). The use of hypnosis in orthopaedic surgery. *Contemporary Orthopaedics*, 16, 65-68. Some patients postpone or refuse indicated orthopaedic surgery because of fear or a medical contraindication to anesthesia. Clinical hypnosis previously has been used mainly as an adjunct to chemical anesthesia. However, hypnosis was shown to be entirely effective when used as the sole anesthesia in three of four orthopaedic cases. These four procedures included a radical head resection, the removal of a sideplate and Richard's screw from the hip, and two cases of arthroscopic knee surgery. The preparation required for the surgery and the experiences of the patients during these procedures are described, and the kinds of patients most likely to benefit from the use of hypnosis in orthopaedic surgery are reviewed. 1987

Frankel, Fred H. (1987). **Significant developments in medical hypnosis during the past 25 years.** *International Journal of Clinical and Experimental Hypnosis*, 35, 231-247. Selected significant investigative studies on the use of hypnosis in the medical context over the past 25 years are discussed. The topics covered include anxiety and pain, asthma, migraine, skin disease, burns, nausea and vomiting, surgery, haemorrhagic disorders, and cancer and immunity. The importance of hypnotizability ratings in the methodology is emphasized.

Goldmann, Les; Shah, M. V.; Hebden, M. W. (1987). **Memory of cardiac anesthesia: Psychological sequelae in cardiac patients of intra-operative suggestion and operating room**

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**conversation.** Anesthesia, 42 (6), 596-603. Thirty elective cardiopulmonary by-pass surgery patients were interviewed pre- and postoperatively. A random selection of patients heard a prerecorded audio tape toward the end of surgery after they were rewarmed to 37 degrees C. The tape contained suggestions for patients to touch their chin during the postoperative interview, to remember three sentences, and to recover quickly. The interviewers were blind to the experimental conditions. The experimental group touched their chins significantly more often than the control group ( $p = .015$ ). Sentence recognition did not reach significance, perhaps due to the small numbers and low salience of the stimuli. Seven patients (23%) recalled intraoperative events, five with the aid of hypnosis. Three reports (10%) were corroborated. Preoperative medication ( $p < .01$ ) and postoperative anxiety ( $p < .05$ ) were significant predictors of those patients who reported recall. ‘

Jay, Susan M.; Elliott, Charles H.; Katz, Ernest; Siegel, Stuart E. (1987). **Cognitive-behavioral and pharmacologic interventions for children's' distress during painful medical procedures.** Journal of Consulting and Clinical Psychology, 55, 860-865. This study evaluated the efficacy of a cognitive-behavioral intervention package and a low-risk pharmacologic intervention (oral Valium), as compared with a minimal treatment-attention control condition, in reducing children's distress during bone marrow aspirations. The subjects were 56 leukemia patients who ranged in age from 3 years to 13 years. The three intervention conditions were delivered in a randomized sequence within a repeated-measures counterbalanced design. Dependent outcome measures included observed behavioral distress scores, self-reported pain scores, pulse rate, and blood pressure scores. Repeated-measures analyses of variance indicated that children in the cognitive-behavior therapy condition had significantly lower behavioral distress, lower pain ratings, and lower pulse rates than when they were in the attention-control condition. When children were in the Valium condition, they exhibited no significant differences from the attention control condition except that they had lower diastolic blood pressure scores. **NOTES:** Lonnie Zelzer, M.D., in a UCLA Hypnosis Seminar lecture in 1992, stated that in pre-treatment with Valium the patients did worse during the procedure, vs no pretreatment with Valium, because the medicated patients didn't have clarity of attention during the cognitive behavioral learning.

Katz, Ernest R.; Kellerman, Jonathan; Ellenberg, Leah (1987). **Hypnosis in the reduction of acute pain and distress in children with cancer.** Journal of Pediatric Psychology, 12, 379-394. Hypnosis has been used as a behavioral approach to help children tolerate aversive medical procedures more effectively, but empirical longitudinal research evaluating the outcome of such interventions has been limited. In the present study, 36 children with acute lymphoblastic leukemia between the ages of 6 and 12 years of age undergoing repeated bone marrow aspirations (BMAs) were randomized to hypnosis or play comparison groups. Subjects were selected on their behavioral performance on baseline procedures and received interventions prior to their next three BMA procedures. Major results indicated an improvement in self-reported distress over baseline with both interventions, with no differences between them. Girls exhibited more distress behavior than boys on three of four dependent measures used. Suggestions of an interaction effect between sex and treatment group were noted. The role of rapport between patient and therapist in therapeutic outcome was also

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evaluated. Results are discussed in terms of potential individual differences in responding to stress and intervention that warrant further research.

Minichiello, William E. (1987). **Treatment of hyperhidrosis of amputation site with hypnosis and suggestions involving classical conditioning.** International Journal of Psychosomatics, 7-8. Hyperhidrosis of an amputation site utilizing hypnosis and/or behavioral strategies has not been reported in the literature. This case report is on the successful use of hypnosis utilizing principles of classical conditioning in the treatment of a patient with hyperhidrosis of an amputated limb with two previous unsuccessful sympathectomies. The patient possessing moderate hypnotic ability as measured by the Stanford Hypnotic Clinical Scale (SHCS), reported a pre-treatment score of 10 on a 0-10 severity and intensity of sweating scale, and a post-treatment score of 0. All gains were maintained at the two-year follow-up.

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The patient was hypnotized while an electric fan was blowing on his stump and prosthesis. Direct suggestions were given according to procedures of thermal biofeedback. The suggestions were: 1. You will notice in days ahead that your stump feels increasingly cooler and drier. 2. You will feel throughout the day as if a cool breeze from a fan is blowing on your stump. 3. Whenever you pay attention to your leg during the day, particularly after the first few hours of the morning, you will associate that leg with a cool dry breeze from a fan blowing on it. 4. You will increasingly develop the power to cool and dry your stump.

The results were that 2 1/2 weeks later patient reported reduced frequency and intensity of sweating and significant healing of the stump ulcers; rating = 2. One month later, patient reported continued progress with almost normal skin color and stump condition; the patient discontinued disability, and returned to work. Patient returned one month later reporting, "It's cured and my physician can't believe it." Rating = 0. Author concludes that hypnosis should be tried prior to more invasive traditional procedures. In this case two previous sympathectomies failed to correct the condition and a third sympathectomy was being contemplated. 1986

DeBenedittis, Giuseppe; Sironi, Vittorio A. (1986). **Depth cerebral electrical activity in man during hypnosis: A brief communication.** International Journal of Clinical and Experimental Hypnosis, 34, 63-70. To the authors' knowledge, hypnosis has never been induced in epileptic patients during a depth EEG study. This neurosurgical diagnostic procedure has been routinely used in medically resistant epileptic patients for the preoperative exact delimitation of the epileptogenic lesion. It offers a unique opportunity to obtain fundamental information on the possible neurophysiological mechanisms implicated in hypnosis. Observations were carried out on 1 patient affected by medically resistant partial seizures with complex symptomatology. A chronic deep electrode study explored rhinencephalic structures as well as specific target areas of the cerebral cortex. Background electrical activity during hypnosis showed a significant decrease of slow waves and an increase of alpha and beta rhythms, with constant increase of amplitude, when compared to activity in the pre- and posthypnosis states. Focal interictal abnormalities were dramatically reduced during hypnosis. **NOTES:** Hypnotizability was assessed with the Barber Suggestibility Scale in order to test for suggestibility without a prior induction of hypnosis. The patient's score was 7 out of 8 possible. Patient was hypnotized with a standard induction procedure (Barber & Calverley, 1963).

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Experimental Protocol: 15 minutes resting baseline; 15 minute test of mental imagery (waking suggestions with imagination instructions); hypnosis with progressive relaxation; suggestions for dissociation; suggestions for amnesia; arousal from hypnosis (the patient was successful with positive hallucinations, catalepsy, total amnesia, and spontaneous analgesia); and posthypnosis awake and alert (5 minutes eyes open, 5 minutes eyes closed, then 15-minute recording of post-treatment waking baseline).

EEG background activity was scored for the number of sec/minute of delta (0-4), theta (4-7), alpha (8-12), and beta (13-30) rhythms, for each 5-min period. Score = percent as related to the 1-minute epoch. Number, amplitude, and diffusion of interictal spikes also were measured but ictal activity was not recorded during the periods considered. Experimenters also measured heart rate, respiratory rate, and mean blood pressure.

ANOVA for 4 conditions (resting, waking suggestion, hypnosis, and posthypnosis) was computed for background and for focal interictal activities, and the t-test used to evaluate significant differences. ANOVA indicated a significant effect across the four experimental conditions for theta and alpha in the temporal anterior cortex, temporal posterior cortex, and frontal convexity cortex. The effect was attributable only to changes in theta and alpha between baseline and hypnosis (theta decreasing, alpha increasing as the patient went into hypnosis). No other significant difference was found. Following arousal from hypnosis, EEG activity was similar to the EEG activity before the induction. Interictal focal abnormalities were reduced during hypnosis, compared with before hypnosis. The effect was due to changes in the area of Ammon's horn, the amygdala, the posterior temporal cortex, the mesial temporal cortex, and the inferior temporal cortex.

In their Discussion, the authors note that their data supports earlier work indicating that the limbic system is implicated in hypnosis. They cite the publications of Arnold (1959, *International Journal of Clinical and Experimental Hypnosis*) and Crasilneck, McCranie, and Jenkins (1956). The latter authors observed EEG records taken during brain surgery on one patient. Hypnosis terminated every time the hippocampus was stimulated, leading them to suggest that the hippocampus is part of the neural circuit involved in hypnosis. "If it is assumed that a convulsion can be considered a result of both pathophysiological and emotional events operating in the individual, emotions being the most common precipitating factor in epilepsy, then any amelioration of one will raise the convulsive threshold or lower the seizure level (Goldie, 1979; MacCabe & Habovick, 1963). Although 'voluntary control of the alpha rhythm' was achieved over 40 years ago (Jasper & Shagass, 1941), only since 1969 has such control been used for clinical purposes (Kamiya, 1969). One striking characteristic of the EEG pattern of many epileptics is the absence of a 12 to 14 c/s rhythm normally recorded from the anterior portions of the brain (sensorimotor rhythm) and the presence of a 4 to 7 c/s rhythm at the same location (Olton & Noonberg, 1980). Biofeedback may enable the individual to increase the amount of sensorimotor rhythm and to decrease the amount of 4 to 7 c/s activity. As a consequence, clinically significant decreases in seizure activity have been found after biofeedback training (Serman, 1973, 1977). "The present data demonstrate that in this female patient hypnosis induced a highly significant reduction of the interictal activity, concomitant with an increase of alpha and sensorimotor rhythm and a decrease of slow activity, similar to biofeedback but without prior training.

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" In conclusion, a depth EEG study in one epileptic patient comparing EEG activity during hypnosis and pre- and posthypnosis suggests the following conclusions: (a) hypnosis may be associated with significant decrease of slow activity and an increase of alpha and relatively high frequency, beta activity; (b) electrophysiological correlates of hypnotic behavior support the possible role of the limbic system in mediating the trance experience; and (c) hypnosis is effective in reducing focal interictal abnormalities in this patient and so it can be considered a promising technique to prevent and/or reduce emotional precipitating factors and the tendency to develop seizure activity" (p. 69). The article referenced regarding biofeedback training to reduce ictal activity is: Sterman, M. B. (1973). Neurophysiologic and clinical studies of sensorimotor EEG biofeedback training: some effects on epilepsy.

In L. Birk (Ed.), **\_Biofeedback: Behavioral medicine.\_** New York: Grune & Stratton, Pp. 147-165. Sterman, M. B. (1977). Effects of sensorimotor EEG feedback training on sleep and clinical manifestations of epilepsy. In J. Beatty & H. Legewie (Eds.), **\_Biofeedback: Behavioral medicine.\_** New York: Plenum, 1977, Pp. 167-200. Omer, Haim; Friedlander, Dov; Palti, Zvi (1986). Hypnotic relaxation in the treatment of premature labor. *Psychosomatic Medicine*, 48, 351-361. Hypnotic relaxation was used as an adjunct to pharmacologic treatment with 39 women hospitalized for premature contractions in pregnancy. The control group received medication alone and consisted of 70 women. Treatment was started at the time of hospitalization and lasted for 3 hr on the average. patients were also given cassettes with a hypnotic - relaxation exercise for daily practice. The rate of pregnancy prolongation was significantly higher for the hypnotic - relaxation than for the medication- alone group. Infant weight also showed the advantage of the hypnotic - relaxation treatment. Background variables of the two groups were compared and it was shown that they could not have explained the treatment effect obtained.1985

Bennett, Henry L.; Davis, H. S.; Giannini, Jeffrey A. (1985). **Non-verbal response to intraoperative conversation.** *British Journal of Anesthesiology*, 57, 174-179. In a double-blind study, 33 patients (herniorraphy, cholecystectomy and orthopedic) were randomly assigned to either suggestion or control groups. Under known clinical levels of nitrous oxide and enflurane or halothane anesthesia, suggestion patients were exposed to statements of the importance of touching their ear during a postoperative interview. Compared with controls, suggestion patients did touch their ear (tetrachoric correlation 0.61,  $P < 0.02$ ). test, U (Mann-Whitney frequently more so did they and LaRiccia, P. J.; Katz, R. H.; Peters, J. W.; Atkinson, G. W.; Weiss, T. (1985). Biofeedback and hypnosis in weaning from mechanical ventilators. *Chest*, 87, 267-269. Weaning patients from mechanical ventilation can be hindered by both physical and psychologic factors. Biofeedback has been used successfully as an adjunct in difficult weaning problems. We have used a combination of hypnosis and biofeedback to wean a patient with neurologic disease who previously failed weaning by standard procedures. A 30-year-old woman with respiratory failure secondary to multiple sclerosis with transverse myelitis was given eight sessions of biofeedback over 12 days in which the movements of her chest wall, as monitored by magnetometers, were displayed on an oscilloscope. The patient was praised for targeted respiratory rate, amplitude, and rhythm. These sessions included hypnosis in which the patient was given suggestions of well-being and that she could breathe as she had five years

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earlier. In this manner the patient was successfully weaned. Respiratory biofeedback and hypnosis appear to be useful adjuncts in weaning patients from ventilators.

Morris, Don M.; Nathan, Ronald G.; Goebel, Ronald A.; Blass, Norman H. (1985). **Hypnoanesthesia in the morbidly obese.** Journal of the American Medical Association, 253 (22), 3292-3294. The advent of chemical anesthesia relegated hypnosis to an adjunctive role in patients requiring major operations. Anesthesia can be utilized with acceptable risk in the great majority of patients encountered in modern practice. But an occasional patient will present--such as one with morbid obesity--who needs a surgical procedure and who cannot be safely managed by conventional anesthetic techniques. This report describes our experience with such a patient and illustrates some of the advantages and disadvantages of hypnoanesthesia. The greatest disadvantage is that it is unpredictable. Close cooperation between the patient, hypnotist, anesthesiologist, and surgeon is critical. However, the technique may be utilized to remove very large lesions in selected patients. Hypnoanesthesia is an important alternative for some patients who cannot and should not be managed with conventional anesthetic techniques. 1984

Bishay, Emil; Stevens, Grant; Lee, Chingmuh (1984). **Hypnotic control of upper gastrointestinal hemorrhage: A case report.** American Journal of Clinical Hypnosis, 27, 22-25. The use of hypnosis for control of bleeding during and after surgical procedures is common practice. It has also been a useful tool for control of bleeding in hemophiliac children, especially during dental procedures, and in traffic accidents. This paper presents the successful treatment with hypnosis of a patient with upper gastrointestinal tract bleeding. After treatment, the patient was discharged from the hospital without the need for surgical intervention. **NOTES:** The physician explained to the patient that nothing would hurt her and that nobody would do anything against her will, that if she could "relax," then her unconscious mind would help her control her bleeding. [Gives script used in the hypnosis.] Trance terminated after 20 minutes. "One hour later, endoscopy performed under local anesthesia revealed 'non-bleeding gastritis, no ulcers seen.' She had no bleeding following the hypnotherapy" (p. 23).

Katcher, Aaron; Segal, Herman; Beck, Alan (1984). **Comparison of contemplation and hypnosis for the reduction of anxiety and discomfort during dental surgery.** American Journal of Clinical Hypnosis, 27, 14-21. Complex moving visual stimuli are used to induce states of relaxation, hypnosis and reverie. To test the efficacy of using aquarium contemplation to induce relaxation, 42 patients were randomly assigned to one of five treatments prior to elective oral surgery: 1) contemplation of an aquarium, 2) contemplation of a poster, 3) poster contemplation with hypnotic induction, 4) aquarium contemplation with hypnosis, and 5) a non intervention control. Blood pressure, heart rate, and subjective and objective measures of anxiety were used as dependent measures. Pretreatment with aquarium contemplation and hypnosis, either alone or in combination, produced significantly greater degrees of relaxation during surgery than poster contemplation or the control procedure. Two-way ANOVA demonstrated that a formal hypnotic induction did not augment the relaxation produced by aquarium contemplation. **NOTES:** The consent form was designed to reduce anxiety about hypnosis by stating that if hypnosis was used, it would be used only to induce relaxation. Patients were then randomly assigned to one of the 5 pretreatment groups, with 8 in each of the four contemplation groups and 10 in the nonintervention control.

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1. Aquarium contemplation. Ss contemplated it for 40 minutes; during the 1st 25 min, 5 tests of suggestibility were administered (from the Stanford) which eliminated all tests the authors considered anxiety-provoking such as suggested hallucination. Also, the terms hypnotically relaxed or hypnotic relaxation replaced the term hypnosis throughout the protocol.
2. Poster contemplation was the same, using a color photo of a mountain waterfall.
3. Poster contemplation with hypnosis used a protocol derived from Stanford, with visual fixation on poster, then the 5 tests, then Ss contemplated the poster for 10 minutes under hypnosis and were given post hypnotic suggestion that they could reenter hypnosis during the dental procedure by closing their eyes and visualizing the poster
4. Aquarium contemplation with hypnosis was like #3 except that Ss were asked to look at "either one fish or a portion of the aquarium" during induction and were told to reenter hypnosis during treatment by closing their eyes and visualizing the aquarium
5. Nonintervention control Ss were given no tests of suggestibility; they were seated in a chair and told to "relax."

During surgery, an observer recorded overt signs of anxiety or agitation on a check list, making entries at five-minute intervals.

The surgeries took variable lengths of time (5-90 minutes) and variable kinds of procedures (multiple injections, removal of bone, etc.) Surgeons varied in management-- gentleness, etc. Blood pressure fell significantly during all 5 pretreatments without any significant differences between groups. Analysis of interaction effects, significant at the 0.1 level for all 3 dependent variables, indicated that hypnosis had a major effect on relaxation only when the S was contemplating a poster. Hypnosis had no significant influence on the levels of relaxation obtained by contemplation of the aquarium. There were no significant differences between groups in the number of suggestions accepted.1982

Hilgard, Josephine R.; LeBaron, Samuel (1982). **Relief of anxiety and pain in children and adolescents with cancer: Quantitative measures and clinical observations.** International Journal of Clinical and Experimental Hypnosis, 30, 417-442. Children and adolescents with cancer, chiefly forms of leukemia, aged 6 to 19 years, underwent medical treatments which required repeated bone marrow aspirations, normally a painful and anxiety-provoking experience. Data were obtained in baseline bone marrow observations on 63 patients, who were then offered the opportunity to volunteer for hypnotic help in pain control. Of the 24 patients who accepted hypnosis, 9 were highly hypnotizable. 10 of the 19 reduced self-reported pain substantially by the first hypnotic treatment (the prompt pain reducers) and 5 more reduced self-reported pain by the second treatment (the delayed pain reducers) while none of the 5 less hypnotizable patients accomplished this. The latter benefitted by reducing anxiety. Short case reports illustrate the variety of experiences.

Analysis of baseline observations before any therapeutic intervention revealed age and sex differences. The difference between self-reported and observed pain was not statistically significant for patients under age 10 but was significant for the patients age 10 and older ( $p < .001$ ). There were minor but significant sex differences both in observed pain ( $p < .01$ ) and in self-reported pain ( $p < .05$ ), with the females reporting more pain.1980

Hart, R. (1980). **The influence of a taped hypnotic induction treatment procedure on the recovery of surgery patients.** International Journal of Clinical and Experimental Hypnosis,

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28, 324-331. A study of 40 open heart surgery patients assigned to 1 of 2 equal size treatment groups sought to evaluate the efficacy and utility of a tape-recorded hypnotic induction procedure that preoperatively prepared patients for surgery. The dependent variables included daily blood pressure measurements and postsurgical outcome data pertaining to postoperative units of blood required, state/trait anxiety, and locus of control dimensions. Results of the study tended to provide some support for the tape-recorded hypnotic induction procedure in lessening state anxiety and in promoting a more self-directed attitude toward surgical recovery. 1977

Chertok, Leon; Michaux, D.; Droin, M. C. (1977). **Dynamics of hypnotic analgesia: Some new data.** *Journal of Nervous and Mental Disease*, 164, 88-96. Following two surgical operations under hypnotic anesthesia, it was possible, during subsequent recall under hypnosis, to elicit a representation of the past operative experience. It would seem that under hypnosis there is a persistence of the perception of nociceptive information and of its recognition as such by the subject. From an analysis of these two experiments in recall, it is possible to formulate several hypotheses concerning the psychological processes involved in hypnotic analgesia. In consequence of an affective relationship, in which the hypnotist's word assumes a special importance for the subject, the latter has recourse to two kinds of mechanism: a) internal (assimilation to an analogous sensation, not, however, registered as dangerous--rationalization); and b) external (total compliance with the interpretations proposed by the hypnotist), which lead to a qualitative transformation of nociceptive information, as also the inhibition of the behavioral manifestations normally associated with a painful stimulus. 1995

Ashton RC Jr. Whitworth GC. Seldomridge JA. Shapiro PA. Michler RE. Smith CR. Rose EA. Fisher S. Oz MC. **The effects of self-hypnosis on quality of life following coronary artery bypass surgery: preliminary results of a prospective, randomized trial.** *Journal of Alternative & Complementary Medicine* 1995;1(3):285-90 The effects of complementary techniques and alternative medicine on allopathic therapies is generating much interest and research. To properly evaluate these techniques, well controlled studies are needed to corroborate the findings espoused by individuals practicing complementary medicine therapies. To this end, we evaluated the role of one of these therapies, self-hypnosis relaxation techniques, in a prospective, randomized trial to study its effects on quality of life after coronary artery bypass surgery. Subjects were randomized to a control group or a study group. Study group patients were taught self-hypnosis relaxation techniques the night prior to surgery. The control group received no such treatment. Patients then underwent routine cardiac management and care. The main endpoint of our study was quality of life, assessed by the Profile of Moods Scale. Results demonstrated that patients undergoing self-hypnosis the night prior to coronary artery bypass surgery were significantly more relaxed than the control group ( $p = 0.0317$ ). Trends toward improvement were also noted in depression, anger, and fatigue. This study demonstrates the beneficial effects of self-hypnosis relaxation techniques on coronary surgery. This study also identifies endpoints and a study design that can be used to assess complementary medicine therapies. Results of this preliminary investigation are encouraging and demonstrate a need for further well-controlled studies. 1997

Cruise CJ. Chung F. Yogendran S. Little D. **Music increases satisfaction in elderly outpatients undergoing cataract surgery.** *Canadian Journal of Anaesthesia* 1997;44(1):43-8  
PURPOSE: Music has long been known to reduce anxiety, minimize the need for sedatives, and



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make patients feel more at ease. The purpose of the study was to evaluate the effect of music in elderly outpatients undergoing elective cataract surgery with retrobulbar block and monitored anaesthetic care using fentanyl or alfentanil and midazolam. **METHODS:** One hundred and twenty one patients were prospectively and randomly assigned to hear: relaxing suggestions, white noise, operating room noise or relaxing music via audio-cassette headphones. Vital signs were documented before and after retrobulbar block and every 15 min thereafter. Anxiety was assessed using the State-Trait Anxiety Inventory (STAI) before and after surgery. Visual analogue scales (VAS) were used to assess anxiety and patient satisfaction postoperatively with a standardized questionnaire. Between group comparisons were made using Chi-Square, or ANOVA, where appropriate. **RESULTS:** There were no differences between groups in STAI or anxiety VAS scores at any time. Differences were noted in systolic blood pressure, but not in other vital signs. Patients' ratings of the whole operative experience, satisfaction with the tape played, general level of relaxation and preference for the chosen tape for subsequent surgery were different (music > relaxing suggestions > white noise and OR noise,  $P < 0.05$ ). **CONCLUSIONS:** Elderly patients undergoing cataract surgery under retrobulbar block were more satisfied with their experience if they heard relaxing music, rather than relaxing suggestions or white noise or OR noise. The type of auditory stimuli to which the patients were exposed did not influence the level of anxiety. 1993

Disbrow EA. Bennett HL. Owings JT. **Effect of preoperative suggestion on postoperative gastrointestinal motility** *Western Journal of Medicine*. 1993;158(5):488-92 Autonomic behavior is subject to direct suggestion. We found that patients undergoing major operations benefit more from instruction than from information and reassurance. We compared the return of intestinal function after intra-abdominal operations in 2 groups of patients: the suggestion group received specific instructions for the early return of gastrointestinal motility, and the control group received an equal-length interview offering reassurance and nonspecific instructions. The suggestion group had a significantly shorter average time to the return of intestinal motility, 2.6 versus 4.1 days. Time to discharge was 6.5 versus 8.1 days. Covariates including duration of operation, amount of intraoperative bowel manipulation, and amount of postoperative narcotics were also examined using the statistical model analysis of covariance. An average savings of \$1,200 per patient resulted from this simple 5-minute intervention. In summary, the use of specific physiologically active suggestions given preoperatively in a believable manner can reduce the morbidity associated with an intra-abdominal operation by reducing the duration of ileus.

Enqvist B. Fischer K. **Preoperative hypnotic techniques reduce consumption of analgesics after surgical removal of third mandibular molars: a brief communication.** *International Journal of Clinical & Experimental Hypnosis* 1997;45(2):102-8 The effects of hypnosis in connection with surgery have been described in many clinical publications, but few controlled studies have been published. The aim of the present study was to evaluate the effects of preoperative hypnotic techniques used by patients planned for surgical removal of third mandibular molars. The patients were randomly assigned to an experimental (hypnotic techniques) or a control (no hypnotic techniques) group. During the week before the surgery, the experimental group listened to an audiotape containing a hypnotic relaxation induction. Posthypnotic suggestions of healing and recovery were given on the tape together with advice

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regarding ways to achieve control over stress and pain. The control group received no hypnotic intervention. Only one surgeon who was not aware of patient group assignments performed all the operations. Thirty-six patients in the control group were compared to 33 patients in the experimental group. Anxiety before the operation increased significantly in the control group but remained at baseline level in the experimental group. Postoperative consumption of analgesics was significantly reduced in the experimental group compared to the control group. Evans C, Richardson PH Therapeutic suggestions during general anesthesia *Advances* 1988;5(4):6-11 Tested the hypothesis that the quality and duration of recovery from surgery would be improved by therapeutic suggestions made while patients were under general anesthesia, in a double-blind randomized controlled study of 39 adult hospital patients who were admitted for an abdominal hysterectomy. Results support the hypothesis.

Greenleaf M, Fisher S, Miaskowski C, DuHamel K. **Hypnotizability and recovery from cardiac surgery.** *American Journal of Clinical Hypnosis* 1992;35(2):119-28 We studied 32 coronary bypass patients to examine the effect of hypnosis on recovery from surgery. The patients were assessed for hypnotizability with the Hypnotic Induction Profile (HIP) and assigned to experimental groups with a random stratification procedure to equate for differences in hypnotizability, age, and severity of illness. We taught patients in groups one and two formal hypnosis with different treatment strategies; patients in group three were not taught formal hypnosis or a treatment strategy. Scores on the HIP were significant predictors of recovery, independent of experimental treatment with formal hypnosis. Patients who scored "Midrange" stabilized more quickly in the intensive care unit (ICU) than those who scored "High" or "Low" ( $p < .05$ ). Patients who scored "High" had more labile blood pressure in the ICU compared to the "Midrange" and "Lows" ( $p < .05$ ). Measured hypnotizability was associated with the recovery sequence from surgery.

Johnston M, Voge C **Benefits of psychological preparation for surgery: A meta analysis** *Ann Behav Med.* 1993;15(4):245-256 There is now substantial agreement that psychological preparation for surgery is beneficial to patients. It is important, however, to establish which benefits can be achieved by psychological preparation and if all forms of preparation are equally effective. The results of randomized controlled trials of psychological methods of preparing adult patients for surgery were analyzed in terms of eight outputs (negative affect, pain, pain medication, length of stay, behavioral and clinical indices of recovery, physiological indices, and satisfaction). In order to reduce publication bias, published as well as unpublished studies were included in the meta analysis. It was concluded that significant benefits can be obtained on all of the major outcome variables that have been explored. Procedural information and behavioral instructions show the most ubiquitous effects in improving measures of post-operative recovery. The results have implications for the improvement of patient care in surgical units.

Lambert SA. **The effects of hypnosis/guided imagery on the postoperative course of children.** *Journal of Developmental & Behavioral Pediatrics.* 1996;17(5):307-10 Hypnosis, guided imagery, and relaxation have been shown to improve the postoperative course of adult surgical patients. Children have successfully used hypnosis/guided imagery to significantly reduce the pain associated with invasive procedures and to improve selected medical conditions. The purpose of this study was to examine the effect of hypnosis/guided imagery on the

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postoperative course of pediatric surgical patients. Fifty-two children (matched for sex, age, and diagnosis) were randomly assigned to an experimental or control group. The experimental group was taught guided imagery by the investigator. Practice of the imagery technique included suggestions for a favorable postoperative course. Significantly lower postoperative pain ratings and shorter hospital stays occurred for children in the experimental group. State anxiety was decreased for the guided imagery group and increased postoperatively for the control group. This study demonstrates the positive effects of hypnosis/guided imagery for the pediatric surgical patient. McIntock TT. Aitken H. Downie CF. Kenny GN. Postoperative analgesic requirements in patients exposed to positive intraoperative suggestions. *BMJ* 1990;301(6755):788-90

**OBJECTIVE**--To establish whether positive suggestions given to a patient under general anaesthesia reduce postoperative pain and analgesic requirements.

**DESIGN**--Prospective double blind randomized study.

**SETTING**--Operating theater and gynecology ward of a teaching hospital.

**PATIENTS**--63 Woman undergoing elective abdominal hysterectomy were randomized to be played either a tape of positive suggestions or a blank tape during the operation through a personal stereo system.

**INTERVENTIONS**--Three women were withdrawn from the study. Anaesthesia was standardized for all of the women. Postoperative analgesia was provided through a patient controlled analgesia system for the first 24 hours. Pain scores were recorded every six hours.

**MAIN OUTCOME MEASURES**--Morphine consumption over the first 24 hours after the operation; pain scores.

**RESULTS**--Mean morphine requirements were 51.0 mg (95% confidence interval 42.1 to 60.0 mg) in the women played positive suggestions; and 65.7 mg (55.6 to 75.7 mg) in those played a blank tape. The point estimate (95% confidence interval) for the difference of means was 14.6 mg (22.4%) (1.9 (2.9%) to 27.3 mg (41.6%]) ( $p = 0.028$ ). Pain scores were similar in the two groups. **CONCLUSION**--Positive intraoperative suggestions seem to have a significant effect in reducing patients' morphine requirements in the early postoperative period.

## 60. TREATMENT WITH HYPNOSIS: JAY LYNN

Psychologists Steven Jay Lynn (Ohio University), Irving Kirsch (University of Connecticut), Jonathan Neufeld (doctoral candidate, Ohio University), and Judith W. Rhue (Ohio University College of Osteopathic Medicine) (1996) indicate the widespread acceptance of hypnosis and hypnotherapy today. "Hypnosis is enjoying a wave of popularity (see Lynn & Rhue, 1991a). Not only do substantial numbers of mental health professionals use hypnosis regularly to treat a wide range of problems (Kraft & Rudolfa, 1982; Rhue, Lynn, & Kirsch, 1993), but also hypnosis has moved into the orbit of mainstream psychology. This latter observation is evidenced by the sharp increase in the number of hypnosis articles, spanning a wide range of disciplines, that has been published in recent years (Nash, Minton, & Baldrige, 1988). The cross-fertilization of the clinical and research domains can be seen in recent compendiums of hypnosis research (Fromm & Nash, 1992), hypnotherapeutic approaches (Rhue et al., 1993), and theories of hypnosis (Lynn & Rhue, 1991a), which all contain discussions of clinical work (see Lynn, 1994).

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Clinicians have responded to the lure of seemingly powerful experiential techniques with a boom of interest in incorporating hypnosis into the treatment of an array of clinical problems, ranging from anxiety disorders to personality and schizophrenic disorders (Kraft & Rudolfa, 1982). Fortunately, clinical research indicates that hypnosis is more than a faddish addition to the clinician's grab bag of psychotherapeutic tools. Meta-analyses (Kirsch, Montgomery, & Sapirstein, 1995; Smith, Glass, & Miller, 1980) have demonstrated that the addition of hypnosis to cognitive-behavioral and psychodynamic treatments substantially enhances their efficacy, and researchers have made important contributions to understanding hypnosis, assuring that clinical hypnosis can be more firmly grounded in scientific findings (see Lynn, 1994; Nash et al., 1988). As the field of clinical hypnosis has matured, evidence exists that there is increasing agreement about what hypnosis is, what hypnosis is not, and how hypnosis can be used to modify experience and behavior (see Kirsch & Lynn, 1995). Perhaps the fundamental point on which there is virtual consensus is that hypnosis is not a treatment in itself. As Dowd (chapter 14, this volume) observes, hypnosis is a specialized technique that can be used as an adjunctive intervention integrated into a more encompassing psychological and perhaps medical treatment package.

Clinical hypnosis refers to a very wide variety of nonstandardized and changeable methods that can serve as a catalyst to an equally wide variety of psychotherapies (Barber, 1985). Thus, one can speak of psychoanalytic hypnotherapy, rational-emotive hypnotherapy, Ericksonian hypnotherapy, or multimodal hypnotherapy, as evidenced by the section of this book that discusses a single case from multiple therapeutic orientations. However, in many instances, the therapeutic use of hypnosis involves a blending of ideas and techniques from different theoretical perspectives, reflecting the tendency toward technical eclecticism that characterizes much of the field of contemporary psychotherapy (see Lynn & Garske, 1985). As it is practiced today, clinical hypnosis can be defined as the addition of hypnosis to accepted psychological or medical treatment. As such, it should be practiced only by professionals who have the appropriate training and credentials to provide the treatment that is being augmented by hypnosis." Lynn, S. J., Kirsch, I., Neufeld, J., and Rhue, J. W. (1996).

### **Citation of Selected Relevant Research:**

Gould, R. C., Krynicki, V. E., "**Comparative effectiveness of hypnotherapy on different psychological symptoms,**" *Am J Clin Hypn*, vol. 32, pp. 110-7, 1989. **Abstract:** In this study we measured a comprehensive set of symptoms before and after hypnotherapy to evaluate which symptom areas respond most and which respond least. The participants were 20 adults who sought hypnotherapy for such problems as stress, anxiety, and depression. There were two pretreatment measurements and one posttreatment measurement. Statistical analyses revealed significantly less symptomatology posttreatment in all measured dimensions. The greatest percentage decrease occurred in the anxiety dimensions; less of a decrease occurred in affective symptoms, and the least decrease appeared in ideational symptoms. The results are discussed in terms of the similarity of hypnosis to states of deep relaxation and its difference from the state of intense arousal which is a component of the fight-flight response. It is suggested that the symptoms most related to the fight-flight reaction respond most readily to hypnosis.

Kline, M. V., "**Hypnosis with specific relation to biofeedback and behavior therapy.** Theoretical and clinical considerations," *Psychother Psychosom*, vol. 31, pp. 294-300, 1979.

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**Abstract:** Hypnosis as an intrapsychological and interpersonal experience is used as an integrative and amplifying procedure in relation to biofeedback mechanism and behavior therapy. The hypnotic capacity for linking cognitive to affective reactions within a feedback loop of sensory and motor imagery is presented as a dynamic approach to behavior modification during psychotherapy.

Kirsch, I., Montgomery, G., Sapirstein, G., "**Hypnosis as an adjunct to cognitive-behavioral psychotherapy: a meta-analysis [see comments]**," J Consult Clin Psychol, vol. 63, pp. 214-20, 1995. **Abstract:** A meta-analysis was performed on 18 studies in which a cognitive-behavioral therapy was compared with the same therapy supplemented by hypnosis. The results indicated that the addition of hypnosis substantially enhanced treatment outcome, so that the average client receiving cognitive-behavioral hypnotherapy showed greater improvement than at least 70% of clients receiving nonhypnotic treatment. Effects seemed particularly pronounced for treatments of obesity, especially at long-term follow-up, indicating that unlike those in nonhypnotic treatment, clients to whom hypnotic inductions had been administered continued to lose weight after treatment ended. These results were particularly striking because of the few procedural differences between the hypnotic and nonhypnotic treatments.

Phillips, M., "**Our bodies, our selves: treating the somatic expressions of trauma with ego-state therapy,**" Am J Clin Hypn, vol. 38, pp. 109-21, 1995. **Abstract:** Trauma activates primitive defenses which often involve somatic processes. In this paper, the author explores the use of somatic approaches to ego-state therapy, developed by John and Helen Watkins (1979), which has been shown in the literature to be an effective method of treating the internal fragmentation and dissociated response patterns related to early childhood trauma. Through the use of hypnotic techniques such as the somatic bridge, ideosensory signaling, and sensory awareness training, ego-state therapy can be directed to those parts of the self which are more connected to somatic expressions of traumatic experiences. Several clinical case examples are presented to illustrate the potential of this approach in the treatment of trauma. Specific benefits for patients who complain of psychosomatic symptoms are discussed, as well as for those with compromised body image and perception, and its usefulness as a hypnoanalytic tool for uncovering memories that may be more somatically based.

Steckler, J. T., "**The utilization of hypnosis in psychotherapy: metaphor and transformation,**" Psychiatr Med, vol. 10, pp. 41-50, 1992. **Abstract:** Hypnotic methods using suggestion and metaphor provide an economic and rapid means of facilitating rapid therapeutic change by the psychotherapist. Such methods circumvent normal conscious resistance to change by allowing the client to access his own inner resources in a therapeutically collaborative way. Metaphoric communications can serve numerous purposes, ultimately resulting in the transformation of conflict into new resource states for the client.

Winsor, R. M., "**Hypnosis--a neglected tool for client empowerment,**" Soc Work, vol. 38, pp. 603-8, 1993. **Abstract:** Clinical hypnosis is a valuable treatment modality that deserves to be more widely known and used by social workers. The author presents an overview of this growing clinical specialty, distinguishing between directive, Ericksonian, and permissive hypnosis. The latter, which is the most common style in use today, is based on a clear contract in

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which a hypnotherapist helps a client develop and use his or her own hypnotic abilities toward therapeutic goals. Characteristics of a hypnotic trance and the differing capacities of individuals in trance are presented. The article describes how permissive hypnosis is used in practice and identifies the types of clients for whom it is suitable. The author stresses the consistency of modern clinical hypnosis with social work aims and values.

Frischholz, E. J., Lipman, L. S., Braun, B. G., Sachs, R. G., "**Psychopathology, hypnotizability, and dissociation [see comments]**," *Am J Psychiatry*, vol. 149, pp. 1521-5, 1992.

**Abstract:** The purpose of the study was to replicate and extend previous findings regarding the hypnotizability of different clinical groups.

**METHOD:** The authors compared the differential hypnotizability of four psychiatric groups--patients with dissociative disorders (N = 17), schizophrenia (N = 13), mood disorders (N = 13), and anxiety disorders (N = 14)--and one normal group of college students (N = 63).

Hypnotizability was assessed by four different measures: the eye roll sign and the induction score of the Hypnotic Induction Profile, the Stanford Hypnotic Susceptibility Scale, Form C, and two self-ratings of hypnotizability.

**RESULTS:** As predicted, dissociative disorder patients had significantly higher hypnotizability scores on all measures than all other groups. Schizophrenic patients, on the other hand, had significantly lower scores than normal subjects on the eye roll sign and induction score but not on the other measures of hypnotizability. Some other unpredicted between-group differences were also found. Nevertheless, despite the between-group differences, the intercorrelations between the various hypnotizability measures within the normal group were very similar to those observed in the combined patient groups.

**CONCLUSIONS:** The findings suggest that routine hypnotizability assessment may be useful in the differential diagnosis of patients with dissociative disorders.

Page, R. A., Handley, G. W., "**Effects of deepening techniques on hypnotic depth and responding**," *Int J Clin Exp Hypn*, vol. 40, pp. 157-68, 1992. **Abstract:** The present study attempted to assess the effectiveness of commonly used deepening techniques and of surreptitiously provided stimulation on hypnotizability scores, in-hypnosis depth reports, retrospective realness ratings, and the Field Inventory of Hypnotic Depth (Field, 1965). High, medium, and low hypnotizables were assigned in equal numbers to 1 of 3 groups, each containing 54 Ss. Controls were compared to Ss receiving 2 deepening techniques or 2 suggestions for positive and negative hallucinations that were surreptitiously enhanced. Of the 4 dependent measures employed, the only significant difference between groups related to a change in depth reports for the manipulation items themselves, leading to the conclusion that the effect of the techniques was at best minimal and transient. Some methodological and conceptual issues are also discussed.

Putnam, F. W., "**Using hypnosis for therapeutic abreaactions**," *Psychiatr Med*, vol. 10, pp. 51-65, 1992. **Abstract:** Abreaction, the dramatic reliving of traumatic events under hypnosis, is a powerful therapeutic intervention useful in the treatment of victims of trauma. First systematically applied in World War I, abreaction coupled with psychotherapeutic processing of the recovered material is increasingly being used with victims of child abuse and chronic PTSD. Abreactions are helpful in recovering dissociated or repressed traumatic material,

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reconnecting missing affect with recalled material and for transforming traumatic memories. Although abreactions can be induced with medications, hypnosis is the method of choice except in acute situations where it is not possible to establish rapport. A variety of hypnotic techniques for the induction and management of abreaction are discussed, together with the indications and contraindications for their use.

Phillips, M., Frederick, C., **"The use of hypnotic age progressions as prognostic, ego-strengthening, and integrating techniques,"** Am J Clin Hypn, vol. 35, pp. 99-108, 1992.

**Abstract:** Age progression as a hypnotherapeutic technique is mentioned infrequently in the literature when compared with its counterpart, age regression. In this paper we explore the use of progressions, or views of the future, as prognostic indicators of therapeutic progress and as valuable tools for ego strengthening and for the integration of clinical material. Age progressions vary in the types of suggestions given and can be used to promote growth on multiple levels, facilitating treatment goals and deepening the working-through process. We present six cases in which we used different types of age progressions, and we discuss the significance of the progressions used in each case, within the context of relevant clinical material. We conclude from our observations that the use of hypnotic progressions can be a sustaining, valuable aspect of hypnotherapy, particularly in providing an index of the current direction and progression of the therapy process itself.

**Children:** Valente, S. M., **"Clinical hypnosis with school-age children,"** Arch Psychiatr Nurs, vol. 4, pp. 131-6, 1990. **Abstract:** Despite the fact that nurses are in key positions to learn and use hypnosis to bolster a child's symptom management, ability to solve problems, or self-esteem, they lack knowledge about the clinical effectiveness of hypnosis. Substantial clinical literature demonstrates that hypnosis effectively reduces anxiety, enhances coping, and has been used successfully to treat behavior disorders, school phobias, and sleep disorders. Hypnosis can effectively reduce a child's anxiety and symptoms and has few side effects when used competently. With education and supervision, nurses can effectively use hypnosis to improve a child's mastery and self-esteem and to reduce severe levels of anxiety.

## 61. CANCER IMAGERY RESEARCH AND REFERENCES: CANCER IMAGERY PROGRAM

1. Dr. Alan Watkins states that every idea, thought and belief has a neurochemical consequence, which is what makes imagery such a significant mind-body bridge. He writes that the flow of neuropeptides from the CNS, which enhances or inhibits one's immunology through two major neuro immuno modulatory pathways; neuroendocrine and autonomic, are critically important in maintaining health and fighting disease [Watkins A 1997 Mind-body medicine. Churchill Livingstone, NY].
2. D. L. Tusek and R. E. Cwynar of Ohio acknowledged that patients often describe the experience in a hospital as overwhelming, evoking fear, anger, helplessness, and isolation. Tusek and Cwynar view guided imagery as one of the most well-studied complementary therapies being used that can improve the patient experience and outcome by providing a significant source of strength, support, and courage as they prepare for a procedure or manage the stresses of a hospital stay [AACN Clin Issues 2000 Feb; 11(1): 68-76].

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3. V. W. Donaldson in NC at the Center for Stress Management examined the effects of mental imagery on the immune system response, and specifically, on depressed white blood cell (WBC) counts. Results indicated significant increases in WBC count for all patients over a 90-day period, even when possessing disease and illnesses that would have predicted a decrease in WBC count [Appl Psychophysiol Biofeedback 2000 Jun; 25(2): 117-28].
  4. L. M. Troesch et al. of the Arthur G. James Cancer Hospital and Research Institute at Ohio State University in Columbus found that those patients using a chemotherapy-specific guided-imagery audiotape expressed a significantly more positive experience with chemotherapy, finding guided imagery to be an effective intervention to promote patient involvement in self-care practices and to increase patient coping abilities during symptom occurrence [Oncol Nurs Forum 1993 Sep; 20(8): 1179-85].
  5. D. S. Burns at the Group/Walther Cancer Institute found that individuals who participated in guided imagery sessions scored better on both mood scores and quality of life scores than those who did not. Interestingly, these scores continued to improve in the experimental group, even after sessions were complete, indicating that guided imagery is effective in improving mood and quality of life in cancer patients [J. Music Ther. 2001 spring; 38(1) :51-65].
  6. Gaston-Johansson et al. of Johns Hopkins University School of Nursing in Baltimore, Maryland showed significant benefits from the use of information, cognitive restructuring, and relaxation with guided imagery in those patients with breast cancer who underwent autologous bone marrow/peripheral blood stem cell transplantation. This strategy was found to be effective in significantly reducing anxiety, nausea, and nausea combined with fatigue 7 days after surgery when the side effects of treatment are usually the most severe [Cancer Nurs 2000 Aug; 23(4):277-85].
  8. Researchers at Ohio State University in Columbus, Ohio found that people with cancer who used imagery while receiving chemotherapy felt more relaxed, better prepared for their treatment and more positive about care than those who didn't use the technique. They also found it can help chemotherapy patients cope with one of the most severe side effects of their treatment. Howard Hall, measuring the effects of healthy people imagining their White blood cells as strong as powerful sharks, found a number of subjects could demonstrate an increase in the number of lymphocytes as well as an increased responsiveness of the immune system after the session as compared to before [Hall H R 1983 Hypnosis and the immune system. American Journal of Clinical Hypnosis, 25:92-103].
  9. C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the "stress hormone" strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance.) The study also [Health Psychol 1997 Jul; 16(4): 390-400].
- FEAR**
10. L. Baider, et al. examined the long-term effects of relaxation and guided imagery on patients recently diagnosed with cancer at Hadassah University Hospital. Results showed a decrease in psychological distress and an increase in the patient's sense of internal control [Gen Hosp Psychiatry 2001 Sep-Oct; 23(5): 272-7].



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11. A study by J. A. Royle, et al. of Ontario, found that guided imagery was the intervention best used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

**DEPRESSION**

12. Fawzy et al. found that information on the cancer and training in stress management and coping skills, showed participants exhibiting less fatigue, depression, mood disturbances, as well as increased vigor [Fawzy F I, Kemeny M E, Fawzy N W et al. 1990 A structured psychiatric intervention for cancer patients: II. Changes over time in immunological measures. *Archive of General Psychiatry* 47:729-35].

13. B. L. Rees reported that patients receiving 4 weeks of relaxation and guided imagery scored significantly lower on trait anxiety, state anxiety, and depression, while scoring significantly higher on measurements of self-esteem [J. of Holistic Nursing. 13(3): 255-267. Sept. 1995].

14. C.L. Norred at the University of Colorado Health Sciences Center Department of Anesthesiology in Denver found that guided imagery may be an integrative therapy that can minimize preoperative anxiety [AORN J 2000 Nov; 72(5): 838-40, 842-3].

15. S.A. Lambert found that guided imagery and relaxation therapy significantly lowered postoperative pain ratings and shortened the hospital stays, as well as decreased the postoperative anxiety [J Dev Behav Pediatr 1996 Oct; 17(5): 307-10].

**ANXIETY-QUALITY OF LIFE**

16. C. H. McKinney et al. from the University of Miami found that 13 weeks of guided imagery and music showed significant decreases in cortisol level (the “stress hormone” strongly correlated with mood disturbances, as well as demonstrating a significant reduction in depression, fatigue, and total mood disturbance. The study also [Health Psychol 1997 Jul; 16(4): 390-400].

17. B. L. Rees reported that patients receiving 4 weeks of relaxation and guided imagery scored significantly lower on trait anxiety, state anxiety, and depression, while scoring significantly higher on measurements of self-esteem [J. of Holistic Nursing. 13(3): 255-267. Sept. 1995].

18. L. G. Walker et al. of the University of Aberdeen Medical School found that cancer patients receiving standard care plus relaxation training and imagery were more relaxed and easy going during the study, experiencing a higher quality of life overall during primary chemotherapy [Br J Cancer 1999 Apr; 80(1-2): 262-8].

19. A study by J. A. Royle, et al. of Ontario, found that guided imagery was the best intervention used by nurses to decrease patient anxiety [Can Oncol Nurs J 1996 Feb; 6(1): 20-5].

**SIDE EFFECTS-PAIN**

20. K.L. Syrjala et al. of the Fred Hutchinson Cancer Research Center in Seattle, WA concluded in their study that stand-alone relaxation and imagery training reduces cancer treatment-related pain [Pain 1995 Nov; 63(2): 189-98].

21. R.Sloman from the University of Sydney in Australia observed that progressive muscle relaxation combined with guided imagery has the potential to promote relief of cancer pain. The techniques appear to produce a relaxation response that may break the pain-muscle-tension-anxiety cycle and facilitate pain relief through a calming effect. This technique seems to provide a self-care strategy that, to a limited extent, shifts the locus of control from clinician to patient [Nurs Clin North Am 1995 Dec; 30(4): 697-709].

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22. R. J. Moore and D. Spiegel from the Anderson Cancer Center in Houston, TX observed a desire for and a benefit from patients being able to attach meaning to the disease and its treatment. They felt that this is why many are drawn to guided imagery as a tool in the management of cancer-related anxiety and pain by using it to reconnect to the self, to make sense of their experiences with breast cancer, and for managing cancer pain in a manner that increases one's sense of control, thereby alleviating the suffering of the survivor [1096-2190 2000 Mar 21; 2(2): 115-126].
23. D.L. Tusek, R. Cwynar, and D.M. Cosgrove studied the effect of listening to taped guided imagery for patients undergoing cardiovascular surgeries and concluded that guided imagery can decrease length of stay, pain, and anxiety [J of Cardiovascular Management. 22-28. March-April 1999].
24. C Renzi et al. found that listening to guided imagery tapes before, during, and after surgery showed results in which there was a trend for reduction in pain following surgery and a significant improvement in the quality of sleep [Int J Colorectal Dis 2000 Nov; 15(5-6): 313-6].
25. Omlor et al. found that preoperative relaxation techniques significantly reduced the number of postoperative hematomas as well as the amount of pain medication being required after surgery [Zentralbl Chir 2000; 125(4): 380-5; discussion 385-6].
26. Journal of Consulting and Clinical Psychology: 1991 Aug; 59(4): 518-25 concluded that relaxation therapy is effective in reducing adverse consequences of chemotherapy, for a study involving 81 cancer patients showed relaxation therapy to decrease nausea and anxiety during chemotherapy.
27. K. L. Kaufman et al. at Ohio State University tried a self-hypnotic, cue-controlled relaxation, and guided imagery intervention that showed a marked and clinically significant reduction in nausea and vomiting as well as a concurrent increase in sleep duration [J Adolesc Health Care 1989 Jul; 10(4): 323-7].

**IMMUNE RESPONSE**

28. K. Glaser and R. Glaser, studying a group of elderly people, found that over a month of relaxation training three times per week significantly increased their natural killer lymphocytes and T cell activity [Cousins N 1989 Head first. Dutton, NY]. J. Pennebaker found that "confessional writing," of the type that occurs when journaling, led to salubrious changes in the immune system and better health in general. He felt that there is structuring and resolving of the harmful effects of those "hidden" feelings and images going on through the process of writing. [Pennebaker J W 1990 Opening up: the healing power of confidence in others. Avon, NY].
29. Danish researchers found increased natural killer cell activity among ten college students who imagined that their immune systems were becoming very effective. Natural killer cells are an important part of the immune system because they can recognize and destroy virus-infected cells, tumor cells and other invaders. A group of metastatic cancer patients using daily imagery for a year achieved significant improvements in NK cell activity and several other measures of immune functioning.
30. C. Holden-Lund found that the use of an audiotape series employing relaxation with guided imagery demonstrated significantly less state anxiety, lower cortisol levels one day following surgery, and less surgical wound erythema than the control group. Thus, the guided imagery

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tapes demonstrated stress-relieving outcomes closely associated with healing [Res Nurs Health 1988 Aug; 11(4):235-44].

**GUIDED IMAGERY RESEARCH**

31. D.A. Rapkin, M. Straubing, and J.C. Holroyd from the University of California, Los Angeles explored the value of imagery-hypnosis on recovery from head and neck cancer surgery and found there were fewer surgical complications and less blood loss during surgery [Int J Clin Exp Hypn 1991 Oct; 39(4): 215-26].

31. L. LeShan found that psychological conditions had an enormous influence not only on the production of cancer, but also on the disease's evolution and even on the person's response to a particular treatment (LeShan L, Worthington R 1956 Personality as a factor in the pathogenesis of cancer: a review of the literature. British Journal of Medical Psychology 29:49-56).

32. K. Kolcaba and C. Fox measured the effectiveness of customized guided imagery for increasing comfort in early stage cancer. They found that listening to a guided imagery audiotape once a day for the duration of the study indicated a significant overall increase in comfort over time, and was especially salient in the first three weeks of therapy. [Oncol Nurs Forum 1999 Jan-Feb; 26(1): 67-72].

33. M. Jasnoski of George Washington University, Washington, D.C., is examining the effects of imagery on the immune system, with potential implications for use in cancer and AIDS.

34. Blair Justice of the University of Texas Health Sciences Center in Houston was funded to conduct a controlled study examining the effects of a group imagery/ relaxation process on immune function and quality of life in breast cancer patients

**62. PERSONALITY DOCUMENT RESEARCH**

Council, James R.; Grant, Debora L. (1993, October). **Context effects: They're not just for hypnosis anymore.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. Context effects in Absorption research are found in correlations, not in mean differences. Original paper has been replicated and yet results are not always significant. Now we are trying to generalize the effect to other areas: an individually administered measure will influence other measures made in the same session. Other tests that correlate with hypnosis are studied with 2 x 2 design, enabling order effects and same vs separate contexts to be studied. Or two tests are administered at two points in time, with "bridges" between the two sessions (e.g. same experimenter, same consent forms, etc.) As one adds more and more bridging cues, the correlation of Absorption with other Tellegen MPQ subscales increases. Same context assessment increases correlation between hypnotizability and 6-8 other scales; with childhood trauma scale when trauma scale is administered first; with beliefs in paranormal phenomena when the measure is related to an adjustment scale. The same inflation of correlations was found in Beck Depression scale research. These results are of concern because we may have to re-do a lot of personality research that suggested correlation between personality test variables, as the correlations may be inflated by the effects of testing in the same context.

Glisky, Martha L.; Kihlstrom, John F. (1993). **Hypnotizability and facets of openness.** International Journal of Clinical and Experimental Hypnosis, 41 (2), 112-123. Absorption, a

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correlate of hypnotizability, is related to a broader dimension of openness to experience, one construal of the "Big Five" structure of personality. But openness itself is very heterogeneous, and some of its facets may be unrelated to hypnotizability. A total of 651 subjects completed a questionnaire measuring three different aspects of openness -- absorption, intellectance, and liberalism -- before receiving the Harvard Group Scale of Hypnotic Susceptibility, Form A. The three dimensions were only modestly related to each other, and only absorption was significantly related to hypnotizability. Adding intellectance and liberalism to absorption did not enhance the prediction of hypnotizability. The results indicate that the various facets of openness are rather different from each other and that the "Big Five" structure may need to be expanded. Absorption and hypnosis share a kind of imaginative involvement that is not necessarily part of other kinds of openness, such as intellectance and liberalism.

Barrett, Deidre (1992). **Fantasizers and dissociaters: Data on two distinct subgroups of deep trance subjects.** *Psychological Reports*, 71, 1011-1014. The study delineated two subgroups of highly hypnotizable subjects. The first subgroup (fantasizers) entered trance rapidly, scored high on absorption (mean of 34 on the 37-item Absorption Scale), and described hypnosis as much like their rich, vivid, and very realistic waking fantasy life. None of the fantasizers experienced unsuggested amnesia, and 5/19 failed to produce suggested amnesia. Only 2/19 fantasizers described hypnosis as very different from their other experiences. The earliest memories of fantasizers were all identified as occurring before age 3, and before age 2 for 11 of 19. The second subgroup (dissociaters) took time to achieve a deep trance (unlike Wilson and Barber's fantasy-prone subjects, but they did achieve as deep a trance as fantasizers), experienced hypnosis as different from any prior experiences, and were more likely to exhibit amnesia for both hypnotic experience and waking fantasies. None of the dissociaters described their waking imagery as entirely realistic, and the earliest memories in this group were all over the age of 3 (mean age - 5). Of the 15 dissociaters, 7 scored below the norm on the Absorption Scale (Mean - 26).

Lynn, Steven Jay; Sivec, Harry (1992). **The hypnotizable subject as creative problem-solving agent.** In Fromm, Erika; Nash, Michael R. (Ed.), *Contemporary hypnosis research* (pp. 292-333). Guilford Press. These notes are taken only from the section of this chapter that deals with Hypnotic Responding, Imaginative Activity, and Expectancies, and they treat of the concept of nonvoluntary responding (pp 315-316). Other topics covered in the chapter include: Imagination, Fantasy, and Hypnosis Theories; The Hypnotizable Subject as Creative Problem-Solving Agent; Hypnosis and Subjects' Capability for Imaginative Activity; Goal-Directed Fantasy: Patterns of Imaginative Activity during Hypnosis; Hypnosis and Creativity; and a Conclusion. Several studies manipulated expectancies re the relationship between imagination and involuntariness. When Ss were told that "good" hypnotic subjects could (or could not) resist suggestions, "this information affected their ability to resist the hypnotist and tended to affect subjects' report of suggestion-related involuntariness ... [Lynn, Nash, Rhue, Frauman, & Sweeney, 1984]. Furthermore, subjects who successfully resisted suggestions and subjects who failed to do so reported comparable levels of hypnotic depth and imaginative involvement in suggestions.

"Spanos, Cobb, and Gorassini (1985) conducted a similar experiment in which they found that hypnotizable subjects who were instructed that they could become deeply involved in

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suggestions and yet resist them successfully resisted 95% of the suggestions and rated themselves as maintaining voluntary control over their behavior. Thus, subjects are able to resist nearly all of the suggestions when resistance is facilitated by situational demands. It is worth noting that subjects in this research who resisted hypnotic suggestions rated themselves as just as deeply involved in the suggestions as Ss who failed to resist suggestions after being informed that deeply hypnotized subjects were incapable of resisting suggestions" (pp. 315-316).

Lynn, Snodgrass, et al. (1987). showed that hypnotizable Ss who were just "imagining" along with suggestions but instructed to resist responding to motoric suggestions acted the way hypnotized Ss did in their earlier countersuggestion research: imagining subjects tended to move in response to suggestion (that "good" Ss responded in certain ways), despite being instructed to resist. In this study, with instructions designed to increase the use of goal directed fantasies (GDFs), low and high hypnotizable subjects reported equivalent GDF absorption and frequency of GDFs. However, highs responded more and reported greater involuntariness than lows, even when their GDFs were equivalent. "A number of other studies have examined the effects of expectancies on imaginings and hypnotic behavior. Spanos, Weekes, and de Groh (1984) informed subjects that deeply hypnotized individuals could imagine an arm movement in one direction while their unconscious caused the arm to move in the opposite direction. Even though subjects so informed moved in the opposite direction, they imagined suggested effects and described their countersuggestion behavior as involuntary" (p. 317).

Avants, S. Kelly; Margolin, Arthur; Salovey, Peter (1990-91). **Stress management techniques: Anxiety reduction, appeal, and individual differences.** Imagination, Cognition and Personality, 10, 3-23. Four stress management techniques were evaluated for their general appeal, their immediate benefits, and the subjective experiences they evoke. One hundred undergraduates were randomly assigned to one of five treatment groups: (1) progressive muscle relaxation (PMR); (2) distraction imagery; (3) focused imagery; (4) listening to music; (5) sitting quietly (control). Distraction imagery and listening to music were the only techniques found to reduce anxiety to a greater extent than simply sitting quietly. The techniques differed in the way they made subjects feel, but not in their general appeal. Individuals with a 'blunting' coping style were more likely to find all five techniques appealing.

Tests used included the Miller Behavioral Style Scale, Cognitive-Somatic Anxiety Questionnaire of Schwartz, Davidson & Golman, Life Orientation Test of Scheier & Carver, Somatic Perception Questionnaire of Landy and Stern, Body Consciousness Questionnaire of L. C. Miller, Murphy, & Buss, Betts' Questionnaire Upon Mental Imagery, Shortened Form, State-Trait Anxiety Inventory, and Technique Evaluation Questionnaire of the authors. Progressive muscle relaxation was according to Bernstein & Borkovec. Distraction imagery involved successively imagining a walk along a beach, a stroll across a flower filled meadow, sitting by a stream, a walk into the woods, sitting in a cabin in the woods listening to the rain against the windowpane, all including images in a variety of sense modalities. Focused imagery involved creating an image of a stressor, then through symbolic imagery experiences Ss were guided through a typical day's events that might lead up to the stressor, reinterpreting cues associated with the stressor as signals that they are in control, visualizing encountering the stressor feeling strong and determined, and any physical sensations reinterpreted as 'energy' that would help them to cope, visualizing enjoying their success (from Crits-Cristoph & Singer. Music was a 20-

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min tape (10 min of music used in the distraction imagery tape--Natural Light by Steve Halpern & David Smith) and 10 min of music used in background of the focused imagery tape (Structures of Silence by Michael Lanz). A 5th group, Control, was instructed to sit quietly with eyes closed. This data can be used in support of imagery-suggestion types of hypnosis (as in surgery study) reducing anxiety. It shows particularly strong effects for people high in cognitive anxiety or low in optimism, pre-treatment. Discussion: "... we feel confident that our distraction techniques were more effective for the immediate relief of anxiety than was PMR. This conclusion is consistent with the Suls and Fletcher meta-analysis (29) that suggested that 'avoidance' is an effective short-term coping strategy. That distraction (positive) imagery may be a more useful clinical technique than focused (active involvement) imagery was concluded in a study comparing these two techniques in the treatment of phobias (24)" (p. 19. [Ref #24 is Crits-Cristoph & Singer (1983) in *Imagination, Cognition, and Personality*.] "Pessimism and cognitive anxiety emerged as the only individual difference variables to influence anxiety reduction. Pessimism as measured by the LOT is cognitive in nature, with most of the items relating to expectations of negative outcomes; similarly, cognitive anxiety is characterized by worry and an inability to control negative thoughts and images. That individuals who perceive their world somewhat negatively should have entered the study more anxious than individuals who do not is hardly surprising. What is surprising is that despite an inverse relation between cognitive anxiety and the ability to relax, these individuals were able to benefit from whatever technique they performed to a greater extent than were individuals with a more positive outlook. In fact, after performing the technique, pessimists had reduced their anxiety to the level of optimists" (p. 19). "The stress management techniques used in the current study did not differ in their appeal" (p. 20). "Our finding that PMR produced more somatic effects than did focused imagery and less cognitive effects than did distraction imagery, listening to music, or sitting quietly is consistent with the model of anxiety proposed by Davidson and Schwartz (17). Our findings are also generally consistent with a conclusion reached by Woolfolk and Lehrer (4): that although various techniques are generally stress reducing, they seem to have highly specific effects. However, we found no support for the hypothesis that individuals who express anxiety cognitively (or somatically) prefer and benefit most from techniques that produce cognitive (or somatic) effects. In fact, the extremely high correlation found between the cognitive and somatic anxiety subscales of the Schwartz et al. measure (5) casts some doubt on the usefulness of a cognitive-somatic distinction, as does the corr between the experience of physical symptoms under stress (the Somatic Perception Questionnaire) with the cognitive, as well as the somatic, anxiety subscale.

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main effect as particularly illuminating" (p. 20). "However, our finding that blunders experienced all techniques as appealing is consistent with the results of Martelli et al. (1) who found that individuals with low information-preference benefitted from what the authors labeled an 'emotion-focused' intervention, but which, in fact, included many of the quite diverse stress management techniques that we compared in the current study. That 'avoiders' failed to benefit from any intervention in the Scott and Clum study (11) may be due to the nature of the stressor [postsurgical pain]. Our undergraduates may have been more like the Martelli dental patients in terms of their level of distress than were the Scott and Clum subjects who were patients undergoing major surgery (hysterectomy or cholecystectomy). Future research needs to examine possible three-way, technique by patient by stressor-type, interactions (cf. 19)" pp 20-21.

Biasutti, M. (1990). **Music ability and altered states of consciousness: An experimental study.** *International Journal of Psychosomatics*, 37, 82-85. The relationship between music and altered states of consciousness was studied with 30 subjects divided into hypnosis and control groups. The "Test di abilita musicale" was applied. The hypnosis group did the retest after posthypnotic suggestions and the second in waking conditions. The hypnosis group had better results than the control group, especially in the rhythm test ( $p < 0.0001$ ).

Council, James R.; Huff, Kenneth D. (1990). **Hypnosis, fantasy activity, and reports of paranormal experiences in high, medium and low fantasizers.** *British Journal of Experimental and Clinical Hypnosis*, 7 (3), 9-15. The personality construct "fantasy-proneness" (Wilson and Barber, 1983a) has important implications for theories of hypnosis, imagination, and paranormal phenomena. The present study compared characteristics of persons who received high, medium or low scores on a self-report measure of fantasy-proneness. Results revealed that the three groups differed significantly on measures of absorption, daydreaming styles, and reports of paranormal experiences. However, although high fantasizers were significantly more hypnotizable than low fantasizers, they did not differ from the middle group. These results are used to further characterize fantasy-prone persons, and implications of extremely low fantasy-proneness are discussed.

Lombard, Lisa S.; Kahn, Stephen P.; Fromm, Erika (1990). **The role of imagery in self-hypnosis: Its relationship to personality characteristics and gender.** *International Journal of Clinical and Experimental Hypnosis*, 38 (1), 25-38.

30 volunteer Ss practiced self-hypnosis for approximately 4 weeks and wrote a record of their experiences in a diary following each session. Imagery produced during self-hypnosis was coded in 2 ways: the imagery was either reality oriented or it was fantastic and had primary process qualities. Levels of imagery production remained virtually the same over a 4-week period. Self-hypnotic imagery was significantly greater for the female Ss than for the male Ss, particularly primary process imagery. Verbal expressivity (measured as the average number of words per page of each S diary) was calculated to control for the effects of verbal production on Ss' imagery scores. When imagery scores were standardized based on verbal expressivity, female Ss still produced significantly more primary process imagery than male Ss. Personality characteristics (assessed by standardized personality inventories) were examined in relation to self-hypnotic imagery. "Impulse Expression" was positively related to primary process imagery for the female Ss. "Outgoingness" was positively related to primary process imagery for the entire sample, but especially for the female Ss.

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Friswell, Rena; McConkey, Kevin M. (1989). **Hypnotically induced mood.** *Cognition and Emotion*, 3 (1), 1-26 This article addresses theoretical and methodological issues that are central to an understanding of hypnotically induced mood. Initially, the hypnotic procedures that are typically used to induce moods are examined. Then the empirical research that has employed hypnotic moods is reviewed; specifically, the impact of hypnotic moods on physiological responses, behavioural performance, perceptual and cognitive responses, and personality, and clinical processes is examined. Finally, major theoretical and methodological issues are highlighted, and the research directions that will lead to a greater understanding of hypnotic mood are specified.

Hoyt, Irene P.; Nadon, Robert; Register, Patricia A.; Chorny, Joseph; Fleeson, William; Grigorian, Ellen M.; Otto, Laura; Kihlstrom, John F. (1989). **Daydreaming, absorption and hypnotizability.** *International Journal of Clinical and Experimental Hypnosis*, 37, 332-342. It appears that the consistent correlation between hypnotizability and positive-constructive daydreaming is carried largely by three subscales--Acceptance of Daydreaming, Positive Reactions to Daydreaming, and Problem-Solving. Number other subscales consistently correlated with hypnotizability. When absorption was taken into account, daydreaming activity made no independent contribution to the prediction of hypnotizability. "The present results differ from Crawford's (1982) somewhat, however, in terms of the specific aspects of daydreaming activity that are associated with hypnosis. Crawford found that hypnotizability correlated consistently (i.e., in both men and women) with three subscales tapping imagery variables: the presence of visual and auditory imagery in daydreams and the hallucinatory vividness of daydream imagery. In the present study, the imagery subscale, including both visual and auditory items, did not correlate significantly with hypnotizability; unfortunately, the hallucinatory vividness subscale is not represented on the short form (SIPI) of the daydreaming questionnaire used in this study. Crawford (1982) did not find consistent correlations between hypnotizability and scales measuring acceptance, positive reactions, and problem solving--the subscales that consistently yielded significant correlations in the present study. Not too much interpretive weight should be given to any of the correlations between hypnotizability and daydreaming subscales, until a full replication with reliable subscale measurements (such as those provided by the long, original IPI) has been completed. The important point made by Crawford (1982), and confirmed in the present study, is that hypnotizability is related to positive-constructive rather than guilty-dysphoric daydreaming" (p. 338). The two studies agree that absorption and hypnosis are not correlated with daydreaming scales reflecting poor attentional control. Given the theoretical emphasis in both domains on the narrowing of attention and exclusion of potentially distracting input, negative correlations with this aspect of daydreaming might have been expected.

Kahn, Stephen P.; Fromm, Erika; Lombard, Lisa S.; Sossi, Michael (1989). **The relation of self-reports of hypnotic depth in self-hypnosis to hypnotizability and imagery production.** *International Journal of Clinical and Experimental Hypnosis*, 37, 290-304. Studied multidimensional nature of self-hypnotic depth in 22 high hypnotizables who volunteered for self hypnosis research. On personality scales, they were distinguished from the population at large by: strong theoretical orientation, high level of curiosity, disregard for opinions of others, and high Mf scale on the MMPI. Used the Stanford Profile Scale, SHSS:C and HGSHS:A,



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which measure the entire range of phenomena ordinarily used in experimental studies of hypnosis, including ideomotor phenomena, hypnotic fantasy and dreams, hypermnasias and age regressions, analgesias, negative and positive hallucinations, amnesias, posthypnotic phenomena, and cognitive and affective distortions. They asked Subjects to experience self hypnosis for 60 minutes/day for 4 weeks. Journals were coded for imagery production by scoring for both reality-oriented and primary process imagery. Subject had been taught to monitor their hypnotic depth using a slightly revised version of the Extended North Carolina Scale (ENCS) of Tart (1979). Previously, ENCS has been used only with hetero-hypnotic Subjects. The self-reports of depth using ENCS correlated highly with hypnotizability as measured by the Revised Stanford Profile Scale of Hypnotic Susceptibility... and with imagery production. Results demonstrate that ENCS scores are also a valid indicator of self-hypnotic depth among highly hypnotizable Subjects. Furthermore, they indicate that both hetero-hypnotizability and imagery production are related to self-hypnotic depth, but that the association between imagery and hypnotizability is due to their individual relationships to self-hypnotic depth and hypnotizability is due to their individual relationships to self-hypnotic depth.

Malott, James M.; Bourg, Audrey L.; Crawford, Helen J. (1989). **The effects of hypnosis upon cognitive responses to persuasive communication.** International Journal of Clinical and Experimental Hypnosis, 37, 31-40. Several writers have suggested that hypnotic responsiveness is directly related to the content of S's covert self-statements. To test this notion, low and high hypnotizable subjects in either hypnosis or waking conditions were exposed to a recorded message advocating that college seniors be required to pass a comprehensive exam in order to graduate. Following message presentation, subjects listed all of the thoughts which occurred to them while listening to the message; these thoughts were later coded as counterarguments, favorable thoughts, or neutral thoughts. Hypnotized subjects generated significantly fewer counterarguments and agreed more with the message than waking subjects. In addition, high hypnotizable subjects (in both waking and hypnosis conditions) produced significantly more favorable thoughts and agreed more with the message than low hypnotizability subjects. Results, therefore, provided a demonstration of the differential impact of context (induction) and trait (hypnotizability level) upon different cognitive phenomena. Implications for the occurrence of hypersuggestible behavior are discussed.

N = 48 (24 highs, 24 lows, blocked on sex and hypnotizability level, then randomly assigned to one of two conditions). Hypnosis subjects generated significantly fewer counterarguments than waking subjects (12% vs 45%). Main effect for hypnotizability level was nonsignificant, as was the condition x hypnotizability interaction. High hypnotizable subjects generated significantly more favorable thoughts than low hypnotizable subjects (28% vs 12%). The main effect for condition was nonsignificant, as was the condition x hypnotizability interaction. Unexpectedly, hypnosis subjects produced a significantly greater number of neutral thoughts. The main effect for hypnotizability level did not reach significance, nor did the condition x hypnotizability interaction. "Thus, as suggested by McConkey (1984), it may be the hypnotic \_context\_, rather than a hypnotic "state" which is responsible for reduced levels of counterarguing. ... the data indicate that an induction decreases counterarguing among high and low hypnotizable subjects alike; on the other hand, the incidence of favorable thoughts is related only to hypnotizability level and not to the hypnosis context. ... the present findings

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suggest that *\_both\_* context and trait play a role in the occurrence of hypnotic behavior, although each may do so by impacting upon *\_different\_* cognitive responses. There appears to be a relationship between counterarguing and acceptance of the persuasive communication in the present study. First, there was a significant negative correlation between those two measures (collapsing across conditions), indicating that higher levels of counterarguing were associated with *\_lower\_* levels of communication acceptance. Second, subjects in the hypnosis condition who counterargued less than waking subjects, also indicated significantly higher levels of communication acceptance than waking subjects.

In a similar fashion, there appears to be a relationship between favorable thought production and communication acceptance. There was a significant positive correlation between the two measures, and high hypnotizable subjects who generated significantly more favorable thoughts than low hypnotizables, also produced higher scores on the attitude measure. Measures, and high hypnotizable subjects who generated significantly more favorable thoughts than low hypnotizables, also produced higher scores on the attitude measure. They attribute the greater number of neutral thoughts for hypnosis subjects to minor differences in the instructions (p. 38). 1988

Council, James R.; Greyson, Bruce; Huff, Kenneth D. (1988, November). **Reports of paranormal experiences as a function of imaginative and hypnotic ability.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Wilson and Barber (1983) have suggested that some excellent hypnotic subjects ("fantasy prone" persons) may be more likely to report paranormal experiences than the rest of the population. Council and Greyson (1985), studying a sample of subjects who had reported near-death experiences (NDEs), found a significant relationship between fantasy-proneness and NDEs, and a much stronger relationship between fantasy-proneness and reports of paranormal experiences in general. This paper presents new data from the study of NDE reporters and a replication and extension of those findings with a sample not selected for NDEs. These data indicate a strong association between fantasy-proneness and reports of paranormal experiences. Hypnotic susceptibility bears a weaker relationship with such reports that appears dependent upon variance shared with measures of fantasy-proneness. Other data from these studies suggests that both imaginative ability and reports of paranormal experiences may be related to a history of stressful or traumatic childhood experiences.

Gudjonsson, Gisli (1988). **Interrogative suggestibility: Its relationship with assertiveness, social-evaluative anxiety, state anxiety and method of coping.** British Journal of Clinical Psychology, 27 (2), 159-166. Investigated in 30 adults some of the theoretical components related to individual differences thought by the present author and R. Clark (1986) to mediate interrogative suggestibility as measured by a scale developed by the present author (1984). The variables studied were assertiveness, social-evaluative anxiety, state anxiety, and the coping methods generated and implemented during interrogation. Low assertiveness and high evaluative anxiety correlated moderately with suggestibility, but no significant correlations emerged for social avoidance and distress. State anxiety correlated significantly with suggestibility, particularly after negative feedback had been administered. Coping methods (active-cognitive/behavioral vs. avoidance) significantly predicted suggestibility scores. The findings give strong support to the present author's theoretical model.

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Hines, Larry; Handler, Leonard (1988, November). **Hypnotizability and ego functions.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Researchers employed Bellak's Ego Functions Test (based on the clinical interview). Ss were 47 students and 1 non-student, some of whom had previously experienced hypnosis. They were all volunteers. Studied 12 ego functions. Used plateau hypnotizability which was defined as no improvement in Stanford Hypnotic Susceptibility Scale Form C after two hypnotic inductions; if they did not reach a plateau by Session 4, the highest score was used. Stanford Hypnotic Susceptibility Scale scores ranged 4-12. High 10-12, Medium 6-9, Low 4-5.  $x=9.04$ ,  $SD=2.21$ . On the Bellak Test, High 12-13, Medium 10-11 (average functioning.), Low 1-9. Range 5-13; widest range was in Adaptive Regression in Service of Ego Highest Mean = reality testing Lowest Mean = ARISE Majority fell into the medium range on all 12 ego functions measured. A significant difference was found between High and Low hypnotizables on the following ego functions. [N.B. There may be transcription errors in the figures that follow.] 1. ARISE  $p<.02$   $r = .31$  Highs have greater ability to experience pleasure in regression. 2. Stimulus Barrier  $p<.003$  Highs are more flexible in their ability to separate from stimuli in their environment, Lows experienced stimulus overload. 3. Autonomous Functioning  $p<.01$  Primary acct./ in attention, learning, memory, motor function. 4. Objective Relativity  $p<.07$  5. Regulating control of drive  $p<.06$  Multiple regression accounted for 33% of variance in 12 ego functions. Stimulus Barrier alone accounted for 14% ( $p<.005$ ); ARISE accounted for 5% ( $p<.01$ ). 47% of Ss were High hypnotizables, 42% were in the Medium range.

LeBaron, Samuel; Zeltzer, Lonnie K. (1988). **Imaginative involvement and hypnotizability in childhood.** International Journal of Clinical and Experimental Hypnosis, 36, 284-295. 2 pilot studies assessed the relationship between hypnotizability in children and extent of involvement in fantasy-related activities during early childhood. The Stanford Hypnotic Clinical Scale for Children and a structured interview questionnaire regarding fantasy activities based on previous work by Singer (1973) were given to 30 medical patients aged 6-18 years in the first study and to 37 healthy children aged 6-12 years from a school population in the second study. In both studies, hypnotizability correlated moderately (.42 and .39, respectively) with extent of involvement in fantasy-related activities. Results support Hilgard's (1979) findings that hypnotizability is related in part to the development of imaginative involvement in childhood.

Lynn, Steven Jay; Rhue, Judith W. (1988). **Fantasy proneness: Hypnosis, developmental antecedents, and psychopathology.** American Psychologist, 43 (1), 35-44. This article presents a summary of the findings of our ongoing research program on the fantasy-prone person. In seven studies, nearly 6,000 college students were screened in order to obtain five samples of 156 fantasy-prone subjects. Fantasy-prone subjects (fantasizers) were selected from the upper 2%-4% of the college population on a measure of imaginative involvement and contrasted with nonfantasizers (lower 2%-4%), and medium fantasy-prone subjects (middle range). General support was secured for Wilson and Barber's construct of fantasy proneness: Fantasizers were found to differ from nonfantasizers, and in many cases also from medium-range subjects, on measures of hypnotizability, imagination, waking suggestibility, hallucinatory ability, creativity, psychopathology, and childhood experiences. Differences in hypnotizability

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were most reliable when subjects participated in a multisession study and were screened not only with the screening inventory, but also with an interview that substantiated their fantasy-prone status. However, our findings indicated that less correspondence between fantasy-proneness and hypnotizability exists than Wilson and Barber suggested. Hypnotic responsiveness is possible even in the absence of well-developed imaginative abilities, and not all fantasizers were highly hypnotizable. Fantasizers recollected being physically abused and punished to a greater degree than other subjects did and reported experiencing greater loneliness and isolation as children. Many fantasizers appeared to be relatively well-adjusted; however, a subset of fantasizers were clearly maladjusted based on self-report, Minnesota Multiphasic Personality Inventory (MMPI), and Rorschach test data. Because of the diversity inherent in the fantasy-prone population, it is misleading to think of individuals at the extreme end of the fantasy-proneness continuum as conforming to a unitary personality type who were highly hypnotizable. Fantasizers recollected being physically abused and punished to a greater degree than other subjects did and reported experiencing greater loneliness and isolation as children. Many fantasizers appeared to be relatively well-adjusted; however, a subset of fantasizers were clearly maladjusted based on self-report, Minnesota Multiphasic Personality Inventory (MMPI), and Rorschach test data. Because of the diversity inherent in the fantasy-prone population, it is misleading to think of individuals at the extreme end of the fantasy-proneness continuum as conforming to a unitary personality type.

Lytle, Richard A.; Lundy, Richard M. (1988). **Hypnosis and the recall of visually presented material: A failure to replicate Stager and Lundy.** *International Journal of Clinical and Experimental Hypnosis*, 36, 327-335. Stager and Lundy (1985) found hypnotic hypermnesia without increased memory errors. The present study, an attempted partial replication of Stager and Lundy (1985), presented Ss with free recall and multiple choice questions about a short movie they had seen a week earlier. The experimental Ss, who were hypnotized, given hypermnesia suggestions, and retested, did not generally increase their accurate memory scores on posttest; the Stager and Lundy (1985) findings were thus not confirmed. An increase in memory scores did occur, however, but only with high hypnotizable Ss, whether they were hypnotized or not, and only with multiple choice questions. The high hypnotizable Ss had the greatest increase in inaccurate memory scores on the free recall questions.

This study provides data on response tendencies by using two forms of question: recall (as in Stager & Lundy (1985) and recognition, from a 4-choice multiple choice format. 120 Ss were screened with Harvard Scale to yield 24 high (10-12) and 24 low (0-4) hypnotizable Ss. They were randomly assigned to four groups (two recall conditions and two test form conditions). Ss saw a 15-minute movie, "Posters," and a week later were tested: oral presentation of questions (on audiotape), alternating multiple-choice and recall formats, ABBA for 50% and BAAB for 50% of Ss. After 40 pretest questions they were hypnotized (or given attention-focusing awake instructions to count randomly occurring clicks barely audible over white noise for 15 minutes--described as a very important task). Then all Ss were told they would again hear 40 questions about the movie, that they would find the answers "coming more easily" than before, and that they should give the best answers that they could. They received the same test form as before (post-test). RESULTS. Total Scores were analyzed with a 4-way ANOVA (hypnotizability; recall condition = hypnosis or attention control; question format =

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multiple choice or free recall; and pretest-posttest). The ANOVA yielded 3 main effects: 1. Posttest scores were greater than pretest scores. 2. Multiple choice scores were greater than free recall scores. 3. High hypnotizable scores were greater than low hypnotizable scores. Also they found a 2-way interaction between hypnotizability and pre- vs. postadministration. There was an increase from pretest to posttest for the high hypnotizable Ss and the highs had greater scores relative to the lows in the posttest administration. Correct Scores analysis showed two main effects: 1. Posttest scores were greater than pretest scores. 2. Multiple choice scores were greater than free recall scores. Also there was a two-way interaction between hypnotizability and pre-postadministration, such that the scores of highs relative to the scores of lows increased more from pre- to posttest. Also there was a three-way interaction for hypnotizability, question format, and pre-postadministration was significant. There was an increase from pre- to posttest in the scores of the high hypnotizable Ss on the multiple choice format, with no increase for the low hypnotizables or on the free recall format. That the scores of highs relative to the scores of lows increased more from pre- to posttest. Also there was a three-way interaction for hypnotizability, question format, and pre-postadministration was significant. There was an increase from pre- to posttest in the scores of the high hypnotizable Ss on the multiple choice format, with no increase for the low hypnotizables or on the free recall format. Incorrect Scores showed three main effects: 1. Posttest scores were greater than pretest scores. 2. Free recall scores were greater than multiple choice scores. 3. High hypnotizable scores were greater than low hypnotizable scores. A three-way interaction also was found: the pretest to posttest increase was only for the free recall questions with high hypnotizable Ss, and free recall posttest scores for highs was greater than those same scores for lows. Pretest differences between hypnotizability groups and pre-postdifferences for the low hypnotizable Ss were not found. In the Discussion, the authors note that this study did not confirm Stager and Lundy. "Although the high hypnotizable Ss in the hypnosis condition did increase their free recall correct scores, this increase was not significant or different from the general increase made by all Ss. Further, the increase of the incorrect scores in free recall ...[was] greater, though not significantly, for the high hypnotizable Ss in the hypnosis condition than for any other group" (p. 331). The differences in results may be due to different question format. On the other hand, reviews such as those by Shields and Knox (1986) usually find little, or at best modest, improvement of memory with hypnosis. In the present study, as with Stager and Lundy (1985) the memory increase observed was with the highly hypnotizable Ss. But those Ss are also the ones who increase their incorrect scores. "When the correct response is available to Ss (the multiple choice format), the high hypnotizables increase their correct scores. When the correct response, or any other alternative, is unavailable to Ss (the free recall format), the high hypnotizables increase their incorrect scores" (p. 332). "The high hypnotizable Ss gave more incorrect responses than the low hypnotizables on both pre- and posttest and in both test formats. Although this tendency to respond incorrectly is most apparent in the posttest free recall condition, Table 3 also shows that even in the multiple choice form, the high hypnotizable Ss appear to be responding more incorrectly. Thus, the high hypnotizables not only incorporate more incorrect information presented to them, as found by Sheehan (1985, 1988), but they also make more errors in test situations which supply them with no information and which supply them with the correct information. Also, high hypnotizable Ss have been found by Laurence, Nadon, Nogrady, and

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Perry (1986) to believe that hypnotically suggested pseudomemories are in fact veridical" (pp. 332-333). The authors suggest that the increase in both correct and incorrect scores (for both question formats) may be due to a decrease in the 'don't know' or no response category. This suggests that high hypnotizable Ss may be more willing to guess in the posttest. Perhaps it is a criterion shift. If so, the shift occurs whether or not they are hypnotized, and it leads to increased accuracy sometimes but also decreased accuracy sometimes. "When the correct answer is available, as in the multiple choice format, the high hypnotizable Ss can increase their correct responses significantly, but when the correct response is not available, as in free recall, they increase their incorrect responses significantly" (p. 333).

The authors present a cautionary note. "Although the statistical analysis confirms hypnotizability as a significant effect, it must be remembered that this study, and the others reported above, took place in a hypnotic context. ... The results suggest, however, that the personality characteristics underlying measured hypnotizability may be important factors in memory enhancement and memory distortion and that studies directed toward tapping those characteristics will be fruitful in future research efforts" (pp. 333-334). Re forensic application, "changes in memory that occur in the hypnotic context probably occur as a result of witnesses' decreased reticence, that is, as a result of their belief that they can now answer questions that they previously could not answer" (p. 334).

Lynn, Steven Jay; Rhue, Judith W. (1987). **Hypnosis, imagination, and fantasy.** Journal of Mental Imagery, 11, 101-112. Considers three questions pertaining to the relationship between hypnotic responsiveness and imaginative processes: Are subjects' nonhypnotic imaginative involvements related to hypnotic susceptibility? Do some fantasy prone subjects share a unique constellation of personality attributes and experiences, including an ability to respond to hypnotic suggestions? What are the childhood developmental antecedents of persons who score at the extremes of hypnotic ability and measures of fantasy and imagination? Reviews literature.

Monteiro, Kenneth P.; Zimbardo, Philip G. (1987). **The path from classroom seating to hypnotizability--a dead end: A brief communication.** International Journal of Clinical and Experimental Hypnosis, 35, 83-86. It has been proposed that classroom seating behavior predicts brain functioning involved in hypnotizability and in other cognitive processes. The present authors attempted to test this hypothesis and to replicate some earlier findings. The relationships between classroom seating preference, actual seating location, and hypnotizability in male and female students were investigated. No relationship was found between any of the seating measures and hypnotizability. These findings lend no support for the hypothesis that classroom seating predicts hypnotizability. This failure to replicate is discussed in relationship to the lack of theoretical grounding for the seating-hypnosis connection.

The authors review the literature, then present and test specific hypotheses that right-side seating preferences would be correlated with hypnotizability for males, while actual seating on the right side of the class would be associated with higher hypnotizability scores for females. This pattern should be more robust for right-handed than for left-handed students. They found no support for these hypotheses. They suggest that other measures of cognitive processing may correlate with a social behavior such as classroom seating. Monteiro & Zimbardo (unpublished

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ms.) found that the variables of field independence and field sensitivity predicted actual seating behavior in males and seating preference in females.

Belicki, Kathryn; Belicki, Denis (1986). **Predisposition for nightmares: A study of hypnotic ability, vividness of imagery, and absorption.** *Journal of Clinical Psychology*, 42 (5), 714-718. The relationships of nightmare frequency to hypnotic ability, vividness of visual imagery, and the tendency to become absorbed in fantasy-like experiences were examined. Subjects were 841 undergraduate university students who participated in group tests of hypnotic ability, after which they estimated the number of nightmares that they had experienced in the prior year. In addition, 406 of the subjects completed Marks' Vividness of Visual Imagery Questionnaire, and Rotenberg and Bowers' Absorption scale. Of the subjects, 76% reported experiencing at least one nightmare in the prior year; 8.3% indicated one or more per month. Individuals with frequent nightmares scored higher on hypnotizability, vividness of visual imagery, and absorption.

Belicki & Bowers, 1982 ABSTRACT: Investigated the role of demand characteristics in dream change by comparing dream report change following pre- and postsleep administrations of instructions to pay attention to specific dream content. This design was based on the assumption that if presleep instructions merely distort dream reports rather than influence actual dreams, report change should be observable following a postsleep instruction. 42 undergraduates were prescreened with the Harvard Group Scale of Hypnotic Susceptibility (Form A), which allowed experimenters to examine the role of hypnotizability in dream change. Significant differences were observed only following the presleep instructions. It is concluded that report distortion as a result of paying attention to a dimension of dream content was insufficient to account for dream report change following presleep instructions. Hypnotic ability correlated significantly with the amount of dream change.

Lynn, Steven Jay; Rhue, Judith W. (1986). **The fantasy-prone person: Hypnosis, imagination, and creativity.** *Journal of Personality and Social Psychology*, 51, 404-408. Experimenters selected subjects who ranged along the continuum of fantasy proneness and assessed hypnotizability, absorption, vividness of mental imagery (QMI; Sheehan, 1967), response to waking suggestion (Creative Imagination Scale), creativity, and social desirability (Crowne & Marlowe). Fantasy-proneness was evaluated with the Inventory of Childhood Memories and Imaginings (Wilson & Barber, 1981). Strong support was secured for J. R. Hilgard's construct of imaginative involvement and Wilson and Barber's contention that fantasy prone persons can be distinguished from others in terms of fantasy and related cognitive processes. Fantasizers were found to outscore subjects in both comparison groups on all of the measures of fantasy, imagination, and creativity, with social desirability used as a covariate. Low fantasy-prone subjects were no less creative or less responsive to hypnosis than their medium fantasy-prone counterparts.

Mitchell, George P.; Lundy, Richard M. (1986). **The effects of relaxation and imagery inductions on responses to suggestions.** *International Journal of Clinical and Experimental Hypnosis*, 34, 98-109. Theoretical attempts to understand the meaning and importance of induction procedures in producing hypnotic phenomena suggest that 2 critical components, relaxation and imagery, should be isolated and their relative effect on hypnotic responding studied. Objectively and subjectively scored responses to 12 hypnotic suggestions, which had

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followed relaxation, imaginal, or combined inductions, were obtained from 59 Ss, divided into 3 levels of hypnotizability. Regardless of hypnotizability level, the combined induction led to a greater subjective report of hypnotic response than hypnotic response than did either the relaxation or the imagery inductions; and the relaxation led to a greater subjective report than the imagery induction. It may follow that the subjective experience of hypnosis is facilitated by inductions which include relaxation. The inductions were equally effective in producing objectively measured behavioral responses. There were no significant interactions found between induction type and hypnotizability level.

(From the Discussion Section). As suggested by Sacerdote (1970), the combination procedure was the most generally effective in producing hypnotic responses. The difference between combined and imagery inductions reached statistical significance on four dependent variables, and the difference between combined and relaxation reached significance on three. It may also be of interest that Ss receiving the combined procedure scored consistently higher on all nine dependent variables. A somewhat unexpected finding was that the relaxation induction produced scores on four of the dependent variables that were statistically higher than the imagery induction scores. Considering the difficulty of isolating relaxation and imagery components, it is quite noteworthy that these differences between inductions were found. The four variables in which the combination and relaxation conditions produced significantly higher scores than the imagery condition were subjective reports--subjective score, degree hypnotized, response volition, and Field Inventory. In contrast to Ss in the imagery induction, Ss in the other two induction conditions believed that they were responding more, felt that their responses were more nonvolitional, and felt that they were more deeply hypnotized. The fact that relaxation instructions were present in both conditions that were superior to the imagery condition would appear to support Edmonston's (1981) position which posits relaxation as essential for the production of the state of neutral hypnosis. For Edmonston the condition of neutral hypnosis is defined as the relaxed state and precedes other phenomena, such as dissociation and increased suggestibility, which other theoreticians may include in the definition of hypnosis. However, the statistically significant superior effect of the combined over the relaxation induction on three measures casts doubt on Edmonston's position. The S believes that he or she is more deeply hypnotized and is responding less volitionally when an imagery component is combined with relaxation. The Ss also responded more to the Field Inventory when the combined induction was used. Another explanation for imagery's relatively poor showing may lie in Ss' differential expectations. The Ss, especially those with previous experience with a traditional hypnotic induction, as was the case in the present study, may not expect to be hypnotized when presented with an imagery alone induction. Such expectations, of course, might reduce responses. On the other hand, there is no reason to believe that the reduced expectation in the imagery condition would not affect the behavioral responses as well, and such was not the case. Thus, we may be left with the explanation that relaxation adds to the subjective experience of hypnosis. This is in keeping with Edmonston's (1981) position as well as with previous research, such as that by Hilgard and Tart (1966), which finds traditional inductions, with their relaxation components, superior to nontraditional inductions, such as fantasy or task-motivational. If future research should find that bodily involvements such as the physical exertion or repetitive motor behavior (Banyai and Hilgard, 1976) lead to the same level of subjective experience as relaxation did,



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then we may need to broaden the concept of the somatic component beyond relaxation alone. In terms of the behavioral compliance of Ss, the results of the present study are in accord with some previous studies in finding all procedures equally effective. Neither imagery, relaxation, nor the combined procedure was superior for the behavioral measure. Personality factors (social desirability, internality/externality, and absorption) did not affect the basic findings. To the degree that the Tellegen scales measure the ability to engage in imagery there seems to be little basis for believing that imagery ability is related to the general findings. Sarbin (1983) would call the inductions studied here 'entrance rituals,' and he has recently asked in his review of Edmonston's book, "Which ritual is more suitable... [p. 58]" for preparing S to respond in various hypnotic ways? One answer from the present results is that an entrance ritual should include muscular relaxation if one wants a better subjective response from S. From Sarbin's point of view, the relaxation component may be more ego-involving, producing more subjective experience and meaning for S. If one wants to produce only a behavioral response, either a relaxation or imagery ritual.

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Kerry Buhk; Rhue, Judith; Henry, Stephanie; Lynn, Steven Jay (1985, November).

**Fantasy proneness: Are their word associations richer?.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Experimenters screened 7000 students to get 6 samples of fantasy prone Ss (top 2.4% on Wilson and Barber's ICMI). They found less association between fantasy proneness and hypnotizability than did Wilson and Barber. They had fantasizers hallucinate a second cup next to a first styrofoam cup. Results were that 87% of High fantasizers, < 50% Medium fantasizers, < 25% Low fantasizers could do it, but they didn't describe seeing the hallucinated cup "as real as real" as Wilson and Barber said they did. Experimenters were concerned about context effects (expectancy) because the Creativity and Fantasy Proneness tests were run proximal in time, so they separated in time the administration of Fantasy Prone and Creativity tests and also looked at word associations. 23 High and 20 Low fantasy prone students selected by ICMI, which was administered to Subjects 18 mos before the creativity study. At the time of the creativity study, Ss were informed they were randomly picked. There were two 90' sessions, counterbalanced. Sessions: 1. Hallucinate image of R.A. and of styrofoam cup. Other tests were administered for intelligence and personality: Shipley-Hartford, MMPI, Crowne-Marlowe, etc. 2. Creativity tests (Revised Art

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Scale, Hilgard's Alternate Uses; story production which was scored on detail, imagery and fantasy and on imagery nouns.) Results of this study which was independent of context (i.e. the tests being correlated were administered independently of each other, separated by time). 1. Fantasizers were more creative than low fantasizers on both Creativity Scales. 2. Fantasizers show more divergent thinking on Hilgard Alternate Uses test, but relationship between fantasy proneness and creativity were not strong,  $r = .30$ . 3. Fantasizers and non fantasizers did not differ on the story measures! This diverges from Wilson and Barber's results. Fantasizers may have more vivid images, but storytelling does not capture that.

Kunzendorf, Robert G.; Benoit, Michelle (1985-86). **Spontaneous post-hypnotic amnesia and spontaneous rehypnotic recovery in repressors.** *Imagination, Cognition and Personality*, 5 (4), 303-310. The Salpetriere school of hypnosis posited that \_true\_ hypnotic effects occur spontaneously in people with repressive tendencies. Consistent with this early position, the current study indicates that both spontaneous amnesia after hypnosis and spontaneous recovery during rehypnosis are statistically associated with repression (but not with hypnotic suggestibility). In contrast, both suggested forgetting and suggested recovery are statistically associated with hypnotic suggestibility (but not with repression). Whereas the latter effects of suggestibility are attributable to the demand characteristics of hypnotic suggestions, the spontaneous effects of hypnosis on repressors' memories are not reducible to social psychological principles.

Hilgard, Josephine R.; LeBaron, Samuel (1982). **Relief of anxiety and pain in children and adolescents with cancer: Quantitative measures and clinical observations.** *International Journal of Clinical and Experimental Hypnosis*, 30, 417-442. Children and adolescents with cancer, chiefly forms of leukemia, aged 6 to 19 years, underwent medical treatments which required repeated bone marrow aspirations, normally a painful and anxiety-provoking experience. Data were obtained in baseline bone marrow observations on 63 patients, who were then offered the opportunity to volunteer for hypnotic help in pain control. Of the 24 patients who accepted hypnosis, 9 were highly hypnotizable. 10 of the 19 reduced self-reported pain substantially by the first hypnotic treatment (the prompt pain reducers) and 5 more reduced self-reported pain by the second treatment (the delayed pain reducers) while none of the 5 less hypnotizable patients accomplished this. The latter benefitted by reducing anxiety. Short case reports illustrate the variety of experiences. Analysis of baseline observations before any therapeutic intervention revealed age and sex differences. The difference between self-reported and observed pain was not statistically significant for patients under age 10 but was significant for the patients age 10 and older ( $p < .001$ ). There were minor but significant sex differences both in observed pain ( $p < .01$ ) and in self-reported pain ( $p < .05$ ), with the females reporting more pain.

Fromm, Erika; Brown, Daniel P.; Hurt, Stephen W.; Oberlander, Joab Z; Boxer, Andrew M.; Pfeifer, Gary (1981). **The phenomena and characteristics of self-hypnosis.** *International Journal of Clinical and Experimental Hypnosis*, 29 (3), 189-247. Self-hypnosis and hetero-hypnosis were compared, and self-hypnosis was studied longitudinally. Results indicated that absorption and the fading of the general reality orientation are characteristics of both hetero-hypnosis and self-hypnosis. The differentiating characteristics lie in the areas of attention and ego receptivity. Expansive, free-floating attention and ego receptivity to stimuli coming from

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within are state-specific for self-hypnosis, while concentrative attention and receptivity to stimuli coming from one outside source--the hypnotist on whom the subject concentrates his attention--are state-specific for laboratory defined hetero-hypnosis.

Attempts to produce age regression and positive or negative hallucinations are markedly more successful in hetero-hypnosis. Imagery is much richer in self-hypnosis than in hetero-hypnosis. Self-hypnosis requires adaptation to the state: in the beginning of self-hypnosis there is a good deal of anxiety and self-doubt. As the subject feels more comfortable in the self-hypnotic state, he spends less time worrying about failures in self-suggestion, his ability to enter trance quickly and easily increases, as does the fading of the general reality orientation, trance depth, and absorption. An attempt was also made in the present study to find personality characteristics related to the ability to experience self-hypnosis.

Hiscock, Merrill (1978). **Imagery assessment through self-report: What do imagery questionnaires measure?**. *Journal of Consulting and Clinical Psychology*, 46, 223-229. Four studies examined imagery questionnaires and addressed issues of reliability, agreement among different questionnaires, social desirability, and construct validity. The Betts, Paivio, and Gordon scales were examined. In two studies the Betts and Paivio correlated .45-.50, but correlations involving the Gordon were inconsistent from one study to the next. Imagery measures generally were not influenced by social desirability. Factor analysis indicated that subjective and objective measures of visualization are independent. Concludes that imagery is not a unitary construct and that criteria other than visuospatial tests may be appropriate for validating imagery questionnaires.

Grant, Guy (1977). **The psychophysiology and hypnotherapeutic management of cancer**. *Australian Journal of Clinical Hypnosis*, 5, 35-49. Reviews research on psychophysiology of cancer, effect of stress on host resistance, cancer prediction from personality traits, psychological theories of cancer aetiology, and psychological characteristics of patients with different types of neoplasms. The hypnotherapy of cancer patients is outlined in terms of its effect upon the malignancy, relief of discomfort, and psyche of the cancer patient. Recommends direction of hypnotherapeutic treatment of cancer patients.

Cooper, Leslie M.; London, Perry (1976). **Children's hypnotic susceptibility, personality, and EEG patterns**. *International Journal of Clinical and Experimental Hypnosis*, 24, 140-148. 19 boys and 16 girls, aged 7 to 16, were given the EEG and then the Children's Hypnotic Susceptibility Scale, while a parent watched. About 1 week later, after some separate tests and interviews, each child was given a puzzle to solve in the parent's presence, while Es recorded offers and requests for help. Hypnotic susceptibility was positively correlated with the alpha duration with eyes open, but not with eyes closed. Both susceptibility and alpha duration tended to be negatively correlated with age. Highly susceptible children tended to wait longer than low susceptibles before asking parents for help with the puzzle, and their parents tended to be more strict, anxious, and impatient than did the parents of low susceptible children.

King, Dennis R.; McDonald, Roy D. (1976). **Hypnotic susceptibility and verbal conditioning**. *International Journal of Clinical and Experimental Hypnosis*, 24, 29-37. 18 Subjects highly susceptible to hypnosis and 18 Subjects refractory to hypnosis were studied in a verbal conditioning task modeled after the one used by Taffel (1955). Results indicated that the highly susceptible group showed significantly greater conditioning than the low group.

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Awareness of the reinforcement contingency by S was not related to the learning task nor to hypnotic susceptibility. A measure of S's attitude toward the reinforcement cue during learning showed that the highly susceptible group had a more positive set toward the cue, whereas the low group tended to respond to it in a neutral or negative manner. Results were interpreted in terms of the theoretical nature of hypnotic susceptibility

They review literature on attempts to correlate hypnotizability with verbal conditioning ability. Volunteer students participated; screened by HGSHS:A: highs 10-12, lows 0-4. Verbal conditioning procedure: S viewed 100 3x5 cards on which were a two-syllable, past tense verb, below which typed in upper case letters on one line were the pronouns I, WE, HE, SHE, THEY, and YOU (randomly assigned to different orders). E was blind to hypnotizability. E instructed S to make up a sentence using the verb and a pronoun; gave no response for first 20 trials; said "good" to usage of I or WE during conditioning. Afterwards, S filled in an Awareness Questionnaire (What was purpose? If E gave cues, what were they? If you noticed cues, what do you think they indicated?) and attitude toward the reinforcement cue (Did you notice that I did anything special? What? Did I say "good" for a special reason? What was the reason for my saying "good"? How did hearing the word "good" affect you during the experiment? IN a positive, negative, or neutral way? Results. Groups did not differ at baseline but did differ at Blocks 2 (highs 9.7 vs lows 6.3;  $p < .05$ ) and 3 (highs 10.4 vs lows 6.3;  $p < .05$ ). Although the High group continued to maintain a somewhat higher level of responding than the Low group during extinction (9.8 vs 7.6), this difference did not reach statistical significance. (The graph shows an increase for Lows during extinction!) Using a liberal definition of awareness and a learning index computed for each S by subtracting his operant level of response from the mean number of correct responses shown during the 3 blocks of acquisition trials, Subjects were ordered and a median test applied; contingency coefficient of .28 not significant ( $p < .10$ ). Attitude significantly differentiated High and Low hypnotizability groups (see Table 2) with Highs more often responding in positive manner to reinforcement cue and Lows giving a neutral rating. Awareness of reinforcement contingency was equally represented in High and Low groups. The Aware High Positive groups learning index differed significantly from Aware Low Neutral group ( $p < .01$ ); the Unaware Low Positive group ( $p < .05$ ); and the Unaware Low Neutral group ( $p < .001$ ). Thus, the Aware High Positive group's learning index score was significantly higher than that of the 3 Low groups. Also, the Unaware High Positive group differed significantly from the Unaware Low Neutral group ( $p < .05$ ). No other High groups differed from the Low groups and none of the High groups differed among themselves. Among the Low groups, only the Unaware Low Positive group differed significantly from the Unaware Low Neutral group ( $p < .05$ ). Discussion. Data show that hypnotizability is important in response to verbal conditioning, extending findings of Das (1958) by showing that primary suggestibility is associated with operant as well as classical conditioning but also those of Weiss et al. (1960) in illustrating that higher hypnotic susceptibility leads to enhanced verbal conditioning, using an improved measure of hypnotic susceptibility. Awareness of reinforcement contingencies is not sufficient to account for subject differences in verbal conditioning; the characteristics tapped by HGSHS:A produce conditioning which cannot be accounted for by awareness alone.

Extending findings of Das (1958) by showing that primary suggestibility is associated with operant as well as classical conditioning but also those of Weiss et al. (1960) in illustrating

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that higher hypnotic susceptibility leads to enhanced verbal conditioning, using an improved measure of hypnotic susceptibility. Awareness of reinforcement contingencies is not sufficient to account for subject differences in verbal conditioning; the characteristics tapped by HGSHS:A produce conditioning which cannot be accounted for by awareness alone. The fact that high susceptible Subjects here rated E's cue more positively than low susceptible Subjects is further consistent with some of the personological descriptions associated with hypnotic susceptibility which have been offered by Hilgard (1968). In addition, Cairns and Lewis (1962) and Spielberger et al. (1962) found that persons who assigned more positive value to the kind of reinforcement present in verbal conditioning experiments produced greater conditioning than Subjects whose attitudes were less favorable or non-committal toward the reinforcement. This relationship is not clear-cut in the present data in that although the High groups had an overall more positive attitude regarding reinforcement, only the Aware High Positive group learned better than all the Low groups, while the only other High group learning better than a Low group was the Unaware High Positive which had a significantly better learning index score than the Unaware Low Neutral group. Moreover, positive attitude did not differentiate learning within the High groups or the Low groups. Thus, the present data are unclear regarding the role attitude plays in the acquisition of verbally conditioned responses. The roles of awareness and attitude could probably be better defined in future research using larger experimental groups. The attitude measure employed here was a gross one and a more sophisticated assessment of the valence characteristics of reinforcement cues could reveal more complex relationships in subsequent research. In addition, a more careful assessment than was done here of the role of cooperation and demand characteristics would contribute substantially to understanding more completely the effect of awareness on these phenomena. The general indications regarding attitude may in part account for the increased interest in production of conditioned responses in Figure 1 shown by the Low group (graph) during the extinction phase of this experiment. Although highly susceptible Subjects show a decrease in the correct response with nonreinforcement, low susceptible Subjects begin to evidence an increase in the correct response. The attitude measure indicates that Subjects in the Low group did not respond positively to the reinforcement cue, and one of these Subjects reported in the interview that he did not like being told what to do by the E. It can be speculated that these Subjects were aware of the reinforcement contingency but did not "cooperate" until the reinforcement was absent. This follows the interpretation of Farber (1963) who found that aware Subjects who conformed to the demand characteristics of the experimental situation showed greater verbal conditioning than those who were aware and nonconforming. It thus appears that a willingness to go along with E's expectations and a positive, cooperative attitude are common features in individuals who make good hypnotic Subjects and who evidence an enhanced propensity for verbal conditioning.

Lenox, J. R.; Bonny, H. (1976). **The hypnotizability of chronic alcoholics.** International Journal of Clinical and Experimental Hypnosis, 24, 419-425. Research on the hypnotizability of alcoholics is rare, contradictory, and fails to consider the age of alcoholic samples, who are much older than college norm groups. 36 male chronic alcoholics were given the Harvard Group Scale of Hypnotic Susceptibility, Forms A and B of Shor and E. Orne (1962, 1963a), administered individually and then averaged. Alcoholics scored lower, but not significantly so,

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than controls matched for age and sex. An expected negative correlation of age with hypnotizability was not found. The implications of these results for past studies are discussed.

Miller, Lawrence J. (1976). **A comparison of hypnotic susceptibility for internal and external locus of control subjects in hetero- and self-hypnotic treatments (Dissertation)**. Dissertation Abstracts International, 37, 978-979. "This study investigated the use of self- and hetero-hypnosis with internal and external locus of control subjects. Fifty-eight subjects, matched on hypnotic susceptibility and internal-external locus of control, were randomly assigned to the self- or hetero-hypnotic treatments. Self reports of their hypnotic behavioral scores and hypnotic subjective responses were obtained for each subject. "The statistical analyses showed there were no significant differences between the internal and external locus of control groups or within groups in regard to self- and hetero-hypnosis total behavioral scores, "challenge" or "non-challenge" items, .... their reported subjective experiences. The results supported the similarity of hetero- and self- hypnosis. Various findings from past research in regard to I-E subjects were also challenged in terms of their generalizability to hypnotic settings" (pp. 978-979).

Fromm, Erika; Oberlander, Mark I.; Gruenewald, Doris (1970). **Perceptual and cognitive processes in different states of consciousness: The waking state and hypnosis**. Journal of Projective Techniques and Personality Assessment, 34, 375-387. Hypnosis was assumed to influence perceptual and cognitive functioning in the direction of increased primary process ideation and adaptive regression. The Rorschach test was administered to 32 Ss in the waking state and under hypnosis in counterbalanced order. Hypnosis was induced by a standardized procedure. Ss received identical instructions for the Rorschach in both conditions. Protocols were scored according to Holt's system for manifestations and control of primary process. Hypnotic Rorschachs showed an increase in primary process manifestations, but no changes in defensive and coping functioning, and no overall changes in the Adaptive Regression Score. However, the nature of the data was found to be influenced by Ss' sex and level of adjustment.

1968

Chambers, Helen (1968). **Oral eroticism revealed by hypnosis**. International Journal of Clinical and Experimental Hypnosis, 16, 151-157. A CASE STUDY OF THE OUTPATIENT treatment of a severely depressed woman. The case was complicated by the s's refusing usual antidepressant treatments. Communication was difficult but was finally achieved by the use of ether at

Achieved by the use of ether at alternate interviews. Withdrawal of ether was then used to create a situation of deprivation to arouse in the transference attitude the feelings produced by the early trauma. The s's compulsion to eat raw potatoes was studied while she was deeply hypnotized. Psychoanalytic theories that place the origin of depression at the time when the oral phase is primary were confirmed. The s refused any other antidepressant treatment.

Faw, Volney; Sellers, David J.; Wilcox, Warren W. (1968). **Psychopathological effects of hypnosis**. International Journal of Clinical and Experimental Hypnosis, 16, 26-37. The probability that hypnotic induction produces psychopathological effects has not been experimentally determined. The present study hypothesizes various negative effects following hypnosis such as increased signs of personality disturbances, increased need for medical

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attention, greater tendencies toward suicide, and negative effects among the more maladjusted persons of the population sample. 107 college students were assigned at random to experimental and control groups. The experimental group was hypnotized 3 times in successive weeks. A comparison between control and experimental groups in respect to pre- and post-MMPI score differences plus a follow-up with the college counseling center and infirmary for a 90-day period following induction led to the rejection of the hypotheses. A comparison of measures yielded some significant differences in favor of the experimental group. It is concluded that there are nondetrimental effects when hypnosis is used with a normal college population.

Cooper, Leslie M.; Pedersen, Darhl M. (1965). **A note on the failure to find personality differences between volunteers and nonvolunteers for hypnotic research.** *International Journal of Clinical and Experimental Hypnosis*, 13 (4), 274-278. Personality measures were administered to 136 students in an introductory psychology class at Brigham Young University. 30 Ss subsequently volunteered to have their hypnotic susceptibility assessed. There were no significant differences found between the means of the resulting 23 variables for the 30 volunteers and 106 nonvolunteers. 2 variables (age and ego strength) showed significantly different variances for the 2 groups, but these may be attributed to chance because of the number of significance tests made.

Cooper, G. W.; Dana, R. H. (1964). **Hypnotizability and the Maudsley Personality Inventory.** *International Journal of Clinical and Experimental Hypnosis*, 12, 28-33. The Maudsley Personality Inventory was administered to 349 male college students. 9 male Ss were chosen to represent each of the 4 possible combinations (total N = 36) of extreme high and low extraversion and introversion scores. An attempt was made to hypnotize each S by means of the Stanford Hypnotic Susceptibility Scale, Form C. Analysis of variance indicated no significant relationship between either extraversion or neuroticism and hypnotizability, although the relationship between extraversion and hypnotizability approached significance. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Deckert, G. H.; West, L. J. (1963). **The problem of hypnotizability: A review.** *International Journal of Clinical and Experimental Hypnosis*, 11, 205-235. This paper summarizes the relatively unsuccessful effort to relate hypnotizability to sex, age, psychiatric diagnoses, suggestibility, and various personality traits. The problems of measurement, subject selection, controls, and experimenter bias are reviewed. Comparison of data is difficult and replication of studies infrequent. This might be attributed to incomplete reporting of methodology, defects in experimental design, and various conceptual problems. Concepts which view hypnotizability as "something" universal, "something" unique, or "nothing" are briefly appraised. Finally, hypnotizability is seen as a "term" describing a relationship between a "route" and a "state"--each identifiable by measurable criteria. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Evans, Frederick J. (1963). **The Maudsley Personality Inventory, suggestibility and hypnosis.** *International Journal of Clinical and Experimental Hypnosis*, 11, 187-200. An attempt to replicate the claim of Furneaux and Gibson (1961) that stable extraverts and neurotic introverts were more susceptible to hypnotic suggestion than neurotic extraverts and stable introverts, using the MPI dimensions, was unsuccessful. Some "trends" are discussed.

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Furneaux, W. D. (1963). **Neuroticism, Extraversion, answer suggestibility: A comment.** *International Journal of Clinical and Experimental Hypnosis*, 11, 201-202. Author develops hypotheses about the relationships between scores on the Maudsley Personality Inventory (MPI) and suggestibility. "(a) The effective-drive experienced by a S in a suggestibility test, or hypnosis situation, is positively correlated with both neuroticism and with extraversion, as measured by the MPI. (b) Effective-drive is also a function of the "press" of the test situation, and of the S's previous experience. (c) Within the range of values of effective-drive lower than the Yerkes-Dodson optimum for the test being studied, the magnitude of response to a suggestibility test (or hypnosis) is a positive function of drive. (d) For values of effective-drive greater than the Yerkes-Dodson optimum, response is a negative function of drive" (p. 201).

Levitt, Eugene E.; Lubin, B. (1963). **TAT card '12MF' and hypnosis themes in females.** *International Journal of Clinical and Experimental Hypnosis*, 11, 241-244. Modification of TAT Card 12M, so that the supine figure was a female, did not increase the frequency of hypnosis themes among sophomore student nurses. The hypothesis that difficulty in identifying with a male figure accounted for the card's inability to predict attitudes towards hypnosis in females was, therefore, not supported. The modified card did elicit significantly more identifications of the standing figure as a professional person. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Levitt, Eugene E.; Brady, J. P.; Lubin, B. (1963). **Correlates of hypnotizability in young women: Anxiety and dependency.** *Journal of Personality*, 31, 52-57. "2 measures of anxiety and 1 of dependency distinguished between groups of hypnotizable and refractory student nurses, according to the hypothesis that low anxiety and high dependency are associated with hypnotizability . . . Sign analyses of all 6 possible combinations of anxiety and dependency variables were carried out. For all combinations, the frequency of Ss whose reactions to hypnosis were predictable according to the hypothesis significantly exceeded chance expectation."

Arvid; Lauer, Lillian W. (1962). **A factor analytic study of hypnotizability and related personal experiences.** *International Journal of Clinical and Experimental Hypnosis*, 10 (3), 169-181. To throw further light on the exclusivity of "primary suggestibility" as reported by other investigators, a factor analysis was performed in a sample of 102 female college students on the basis of the intercorrelations of 23 items of personal experiences earlier shown to be related to hypnotizability, and 19 items from 2 hypnosis scales. No simple factor structure emerged. 2 factors were interpreted: the 1st as a hypnotic factor with special emphasis on the capability to sustain the effect of suggestion over time, and the 2nd as a combination of psychological changeableness and social influencibility. A brief discussion was given of the composite picture of hypnotic susceptibility emerging from the fact that many hypnotic items loaded on both factors.

Gibson, H. B. (1962). **Furneaux's discussion of extroversion and neuroticism with regard to suggestibility.** *International Journal of Clinical and Experimental Hypnosis*, 10, 281-287. (Abstracted in *Index Medicus*, 63, March, S-676) Hypotheses suggested by Furneaux (see 36: 4II95F) are criticized on the grounds that his basic assumption that extraverts attend more closely in the interpersonal situation is unwarranted. It is maintained on the contrary that



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introverts are the less distractible and it is shown that the data published earlier by Furneaux and Gibson (see 36: 3II67F) accord with a theoretical model derived from Spence. The results are also discussed in terms of an alternative interpretation. It is further contended that Furneaux's treatment of the data leads to other inconsistencies.

Kuhner, Arthur (1962). **Hypnosis without hypnosis.** International Journal of Clinical and Experimental Hypnosis, 10 (2), 93-99. The traditional concept of hypnosis that seeks a "sleep" state through employment of formal induction techniques seriously limits its general clinical applicability. It fails to fit the special needs of the patient. An approach designed to counteract this shortcoming manipulates the interpersonal relationship factor. Case illustrations from dental practice support the viewpoint that the proper relationship is akin to the hypnotic one and comparable results obtain without resort to ritualistic induction methods.\

Levitt, Eugene E.; Lubin, Bernard; Brady, J. P. (1962). **On the use of TAT Card 12M as an indicator of attitude toward hypnosis.** International Journal of Clinical and Experimental Hypnosis, 10 (3), 145-150. (Abstracted in Psychological Abstracts, 63: 5233) This investigation indicates that responses to TAT Card 12M do not predict attitude toward hypnosis in female Ss, though such predictiveness has been reported for male respondents. The basis for this differential predictiveness may be that the latter give a significantly greater proportion of themes involving hypnosis. An explanatory hypothesis, based on perceptual theory and the stimulus properties of the card, is advanced.

London, Perry; Cooper, Leslie M.; Johnson, Harold J. (1962). **Subject characteristics in hypnosis research.** International Journal of Clinical and Experimental Hypnosis, 13-21. Items of experiences, interests, and attitudes, in London's Survey, tended to cluster among themselves, suggesting a separate factor for each. The items were compared to several objective tests, but correlations were low. The Survey and Shor's Personal Experiences Questionnaire combined, correlated .64 with Stanford Scale A, suggesting the possible development of a paper-and-pencil predictor of hypnotic suggestibility.

Furneaux, W. D.; Gibson, H. B. (1961). **The Maudsley Personality Inventory as a predictor of susceptibility to hypnosis.** International Journal of Clinical and Experimental Hypnosis, 9, 167-177. 99 Ss were tested on the MPI, Body-Sway, and reaction to hypnotic induction. The Extraversion and Neuroticism scales when used in conjunction were efficient predictors of susceptibility, though the relationships were not simple linear and additive. The most susceptible Ss were the Stable Extraverts, while those scoring high on the Lie scale tended to be insusceptible to hypnosis. From Psyc Abstracts 36:01:3II67F.

Furneaux, W. D. (1961). **Neuroticism, extroversion, drive, and suggestibility.** International Journal of Clinical and Experimental Hypnosis, 9, 195-214. (Abstracted in Psychological Abstracts, 62: 4 II 95F) In the group studied, the body-sway scores of stable extraverts and neurotic introverts tended to be large, whereas they were smaller for stable introverts and neurotic extraverts. This result was explained in terms of a theoretical model in which the effective drive produced in a S by a test-situation is a function of both his neuroticism and his extraversion. The author believes that the theoretical model generates a number of predictions and suggestions which can serve to guide future experimental work in this field. From Psyc Abstracts 36:04:4II95F. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

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Hilgard, Josephine R.; Hilgard, Ernest R.; Newman, Martha (1961). **Sequelae to hypnotic induction with special reference to earlier chemical anesthesia.** *Journal of Nervous and Mental Disease*, 133, 461-478. Although a review of relevant literature turned up little in the way of statistical studies, some case studies were located in which unintended or unexpected results of hypnosis were observed. The authors located 15 cases in which the symptoms that developed subsequent to symptom removal using hypnosis were more disturbing than the original symptom. This type of response occurred in patients with extensive psychiatric history, prior to the hypnosis experience. However, it could not be determined whether the undesired response was due to hypnosis or to the psychotherapy that was provided to these patients. In order to avoid the complications introduced by studying undesired sequelae in psychiatric patients receiving posthypnotic suggestions for therapeutic purposes, this investigation used a sample of non-patient university students (114 male and 106 female) who volunteered for research. Subjects were asked about "aftereffects" in followup interviews. Aftereffects that might be considered sequelae are exemplified by statements such as, "I was 'in a fog' for one hour" and "Things were hazy and vague for four hours." Of the 220 Subjects, 17 (7.7%) reported sequelae, many of them "minor and fleeting." None of the sequelae was of psychotic proportions. Only 2.3% of the sample experienced sequelae that lasted as long as a few hours. Although the relationship of sequelae to hypnotizability was slight, there seemed to be a relationship to having had a difficult experience with chemical anesthesia in early childhood. They present six case studies, three who had difficulty with chemical anesthesia and three for whom the sequelae appeared to relate to a different kind of childhood experience. The investigators concluded that "a routine experience of hypnosis is generally harmless in a student population, but E (or therapist) should be alert for possible aftereffects, and provisions should be at hand for occasional brief psychotherapy, even though the experiments themselves are not oriented toward therapy" (p. 477). The authors present a psychodynamic explanation for the sequelae observed. "It is conjectured that the conflicts within the induction phase of hypnosis that produce either immediate or delayed symptoms are primarily those having to do with the exercise of power and the reaction to authority, hence, conflicts between the conscious willingness to be hypnotized and the unconscious resistance to or fear of the submissive role required. The individual forms that such conflicts take are highly varied. "The conflicts within the established state differ, in that the state is not reached unless the conflicts of the induction are at least temporarily resolved. The new state, which has regressive characteristics, makes S vulnerable to conflicts based on reality distortions (as in suggested hallucinations) or ethical-social issues (as in suggested behavior violating his moral code or superego demands). Sometimes specific suggestions revive early experiences that were traumatic or provocative of fear.

Sometimes specific suggestions revive early experiences that were traumatic or provocative of fear. "While the language of psychodynamics is appropriate in the discussion of these cases, the many redintegrative factors also suggest that learning theory can have much to say in explanation of them. Because learning theory has ways of dealing with conflict and conflict resolution, it can also encompass some of the problems discussed as conflicts over authority, commonly treated in psychodynamics as transference problems. "The many

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reflections of earlier childhood experiences in the sequelae, including some of the dreams, suggest the promise of a developmental theory of hypnosis" (p. 477).

London, Perry (1961). **Subject characteristics in hypnosis research: Part I. A survey of experience, interest, and opinion.** International Journal of Clinical and Experimental Hypnosis, 151-161. Questionnaire measuring (a) direct and observational experience with hypnosis, and (b) stereotyped attitudes towards hypnosis was administered to 645 undergraduate students of psychology. Results indicate hypnosis considered in generally favorable light. Girls were less willing than boys to be hypnotic Ss. Items regarding the nature of hypnosis reflected a rather sophisticated attitude. From Psyc Abstracts 36:01:3II51L.

Faw, Volney; Wilcox, Warren W. (1958). **Personality characteristics of susceptible and unsusceptible hypnotic subjects.** Journal of Clinical and Experimental Hypnosis, 6 (2), 83-94. "1. The Ss for this study of hypnosis were a cross section of a college population, 44 women and 36 men. A group or mass induction technique was used; the Ss were divided into three sections for ease in administering the hypnotic suggestions which were read.

1. A susceptibility scale was developed on which trained Os rated the Ss and Ss rated themselves. 2. The susceptible were defined as those above the median and the unsusceptible as those below the median. The  $r$  between the self and O ratings was .68 which indicates a substantial though not high relationship.

3. When the susceptible are compared with the unsusceptible, the susceptible had better over-all adjustment scores on the MMPI, the group Rorschach and the clinical assessment of diaries, which indicates that susceptibility is a characteristic possessed in greater degree by the better adjusted.

4. However, there were among the more poorly adjusted of the susceptible, a small group with high Hy scores indicating that they had responses similar to clinic patients who had developed conversion hysteria. Their susceptibility was attributed to two factors: first, on the psychic items of the Hy scale their responses indicate rather optimistic cooperative attitudes which would make their initial responses to hypnotic suggestions favorable; second, their tendencies to translate psychological stress into bodily symptoms which have a great similarity to the criteria of hypnotic behavior would indicate a common response mechanism for the expression of symptomatology and hypnotic behavior.

5. The unsusceptible tended to have poorer over-all adjustment scores on the MMPI, the Rorschach and the clinical evaluation of diaries. They had significantly poorer scores on the D, Mf and Sc scales indicating a greater tendency toward depression, less security in regard to sex status and more distraction in the form of bizarre thoughts and feelings than do the susceptible.

6. Neither the profiles of the susceptible nor those of the unsusceptible correspond to the three generalized patterns of the MMPI: the neurotic, the behavior problem or the psychotic.

7. Our general conclusion is that while susceptibility is associated predominately with the well adjusted personality save for those with high Hy scores on the MMPI, the unsusceptible belong to a deviant group not easily classified by a term in general use in abnormal or clinical psychology" (pp. 93-94).

Barber, Theodore Xenophon (1956). **A note on 'hypnotizability' and personality traits.** Journal of Clinical and Experimental Hypnosis, 4, 109-114. (Abstracted in Psychological Abstracts 58: 3288)

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1. Eighteen 'typical students' were ranked on a scale of hypnotizability and on the ten traits measured by the Guilford-Zimmerman Temperament Survey. The ranks on the hypnotizability scale were determined by the subjects' responses -- after twenty minutes of standard hypnotic induction -- on five standard tests of suggestibility.
2. The coefficients of correlation between hypnotizability and 'ascendancy,' 'sociability,' 'emotional stability,' and 'objectivity' ranged between +0.47 and +0.70. There was a negative coefficient of -0.45 between hypnotizability and 'restrain' [sic].
3. This investigation tends to confirm the studies that find a relationship between hypnotizability and 'desirable character traits' and the studies that find no relationship between hypnotizability and maladjustment.
4. If these results are confirmed on a larger and more representative sample we may be able to accept a 'good guy' theory of hypnotizability -- at least for college students. The more hypnotizable students tend to confirm [sic] to our cultural definition of a 'good guy' -- sociable, emotionally stable, non-submissive, non-hypersensitive, happy-go-lucky, and interested in overt activity" (p. 113).

Kupfer, David (1954). **Hypnotherapy in a case of functional heart disorder.** *Journal of Clinical and Experimental Hypnosis*, 2 (3), 186-190. "Summary. A young soldier with functional cardiac complaints was treated with hypnosis in a total of 4 interviews. The dynamics were bypassed and the therapeutic suggestions attached to 2 significant events in the patient's childhood, dealing intimately with the oedipal conflict and castration fears. Follow-up studies of 3 weeks duration revealed that significant changes had been produced in the patient's attitudes towards himself and towards his role in the military service" (p. 190).

Kline, Milton V.; Haggerty, Arthur D. (1953). **An hypnotic experimental approach to the genesis of occupational interests and choice.** III. Hypnotic age regression and the Thematic Apperception Test -- a clinical case study in occupational identification. *Journal of Clinical and Experimental Hypnosis*, 3, 18-31.

- "1. Hypnotic age regression responses to TAT cards in reference to occupational identifications appear quantitatively and qualitatively different from waking simulation responses.
2. A quantitative analysis of the hypnotic age regression protocols points strongly in the direction of further confirmation of the neuropsychological validity of hypnotic age regression.
3. TAT cards suitable for children are significantly more productive as psychological stimuli in the hypnotic regression state than in waking simulation.
4. Adult TAT cards fail to elicit the ratio of productivity in hypnotic age regression that they do in waking simulation.
5. Hypnotic age regression appears to involve perceptual alterations of ego functions and related neuropsychological activity.
6. Simulation behavior appears to be primarily projective behavior with recall and role-playing characteristics interspersed within a behavior pattern which retains its adult perceptual orientation.
7. The utilization of a language usage quotient technique adds to the holistic validity of neuropsychological age regression and sharply differentiates hypnotic behavior from role-playing simulation.

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8. The technique of hypnotic age regression described in this paper would appear to be a valid and useful method for the systematic study of occupational interests and choice within the framework of ego functions and developmental psychology.

9. Hypnosis would appear to produce empathizing and identifying processes more productively than the waking state" (pp. 30-31). Author's Summary - "This paper is a further report on the use of varied hypnotic methods and techniques for the investigation of the origins of occupational interests and vocational choices. As an experimental means for studying the development of such interests and attitudes, hypnotic age regression would appear to have considerable validity and value. As a clinical technique in certain cases of vocational maladjustment it would seem to have considerable value" (p. 31).

Council, James R.; Grant, Debora L. (1993, October). **Context effects: They're not just for hypnosis anymore.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Arlington Heights, IL. Context effects in Absorption research are found in correlations, not in mean differences. Original paper has been replicated and yet results are not always significant. Now we are trying to generalize the effect to other areas: an individually administered measure will influence other measures made in the same session. Other tests that correlate with hypnosis are studied with 2 x 2 design, enabling order effects and same vs separate contexts to be studied. Or two tests are administered at two points in time, with "bridges" between the two sessions (e.g. same experimenter, same consent forms, etc.) As one adds more and more bridging cues, the correlation of Absorption with other Tellegen MPQ subscales increases. Same context assessment increases correlation between hypnotizability and 6-8 other scales; with childhood trauma scale when trauma scale is administered first; with beliefs in paranormal phenomena when the measure is related to an adjustment scale. The same inflation of correlations was found in Beck Depression scale research. These results are of concern because we may have to re-do a lot of personality research that suggested correlation between personality test variables, as the correlations may be inflated by the effects of testing in the same context.

Glisky, Martha L.; Kihlstrom, John F. (1993). **Hypnotizability and facets of openness.** International Journal of Clinical and Experimental Hypnosis, 41 (2), 112-123. Absorption, a correlate of hypnotizability, is related to a broader dimension of openness to experience, one construal of the "Big Five" structure of personality. But openness itself is very heterogeneous, and some of its facets may be unrelated to hypnotizability. A total of 651 subjects completed a questionnaire measuring three different aspects of openness -- absorption, intellectance, and liberalism -- before receiving the Harvard Group Scale of Hypnotic Susceptibility, Form A. The three dimensions were only modestly related to each other, and only absorption was significantly related to hypnotizability. Adding intellectance and liberalism to absorption did not enhance the prediction of hypnotizability. The results indicate that the various facets of openness are rather different from each other and that the "Big Five" structure may need to be expanded. Absorption and hypnosis share a kind of imaginative involvement that is not necessarily part of other kinds of openness, such as intellectance and liberalism.

Barrett, Deidre (1992). **Fantasizers and dissociaters: Data on two distinct subgroups of deep trance subjects.** Psychological Reports, 71, 1011-1014. The study delineated two subgroups of highly hypnotizable subjects. The first subgroup (fantasizers) entered trance

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rapidly, scored high on absorption (mean of 34 on the 37-item Absorption Scale), and described hypnosis as much like their rich, vivid, and very realistic waking fantasy life. None of the fantasizers experienced unsuggested amnesia, and 5/19 failed to produce suggested amnesia. Only 2/19 fantasizers described hypnosis as very different from their other experiences. The earliest memories of fantasizers were all identified as occurring before age 3, and before age 2 for 11 of 19. The second subgroup (dissociaters) took time to achieve a deep trance (unlike Wilson and Barber's fantasy-prone subjects, but they did achieve as deep a trance as fantasizers), experienced hypnosis as different from any prior experiences, and were more likely to exhibit amnesia for both hypnotic experience and waking fantasies. None of the dissociaters described their waking imagery as entirely realistic, and the earliest memories in this group were all over the age of 3 (mean age - 5). Of the 15 dissociaters, 7 scored below the norm on the Absorption Scale (Mean - 26).

Lynn, Steven Jay; Sivec, Harry (1992). **The hypnotizable subject as creative problem-solving agent.** In Fromm, Erika; Nash, Michael R. (Ed.), *Contemporary hypnosis research* (pp. 292-333). Guilford Press. These notes are taken only from the section of this chapter that deals with Hypnotic Responding, Imaginative Activity, and Expectancies, and they treat of the concept of nonvoluntary responding (pp 315-316). Other topics covered in the chapter include: Imagination, Fantasy, and Hypnosis Theories; The Hypnotizable Subject as Creative Problem-Solving Agent; Hypnosis and Subjects' Capability for Imaginative Activity; Goal-Directed Fantasy: Patterns of Imaginative Activity during Hypnosis; Hypnosis and Creativity; and a Conclusion.

Several studies manipulated expectancies re the relationship between imagination and involuntariness. When Ss were told that "good" hypnotic subjects could (or could not) resist suggestions, "this information affected their ability to resist the hypnotist and tended to affect subjects' report of suggestion-related involuntariness ... [Lynn, Nash, Rhue, Frauman, & Sweeney, 1984]. Furthermore, subjects who successfully resisted suggestions and subjects who failed to do so reported comparable levels of hypnotic depth and imaginative involvement in suggestions.

"Spanos, Cobb, and Gorassini (1985) conducted a similar experiment in which they found that hypnotizable subjects who were instructed that they could become deeply involved in suggestions and yet resist them successfully resisted 95% of the suggestions and rated themselves as maintaining voluntary control over their behavior. Thus, subjects are able to resist nearly all of the suggestions when resistance is facilitated by situational demands. It is worth noting that subjects in this research who resisted hypnotic suggestions rated themselves as just as deeply involved in the suggestions as Ss who failed to resist suggestions after being informed that deeply hypnotized subjects were incapable of resisting suggestions" (pp. 315-316). Lynn, Snodgrass, et al. (1987). showed that hypnotizable Ss who were just "imagining" along with suggestions but instructed to resist responding to motoric suggestions acted the way hypnotized Ss did in their earlier countersuggestion research: imagining subjects tended to move in response to suggestion (that "good" Ss responded in certain ways), despite being instructed to resist. In this study, with instructions designed to increase the use of goal directed fantasies (GDFs), low and high hypnotizable subjects reported equivalent GDF absorption and frequency of GDFs. However, highs responded more and reported greater involuntariness than lows, even when

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their GDFs were equivalent. "A number of other studies have examined the effects of expectancies on imaginings and hypnotic behavior. Spanos, Weekes, and de Groh (1984) informed subjects that deeply hypnotized individuals could imagine an arm movement in one direction while their unconscious caused the arm to move in the opposite direction. Even though subjects so informed moved in the opposite direction, they imagined suggested effects and described their countersuggestion behavior as involuntary" (p. 317).

Avants, S. Kelly; Margolin, Arthur; Salovey, Peter (1990-91). **Stress management techniques: Anxiety reduction, appeal, and individual differences.** *Imagination, Cognition and Personality*, 10, 3-23. Four stress management techniques were evaluated for their general appeal, their immediate benefits, and the subjective experiences they evoke. One hundred undergraduates were randomly assigned to one of five treatment groups:

- (1) progressive muscle relaxation (PMR);
- (2) distraction imagery;
- (3) focused imagery;
- (4) listening to music; (
- 5) sitting quietly (control). Distraction imagery and listening to music were the only techniques found to reduce anxiety to a greater extent than simply sitting quietly. The techniques differed in the way they made subjects feel, but not in their general appeal. Individuals with a 'blunting' coping style were more likely to find all five techniques appealing.

Tests used included the Miller Behavioral Style Scale, Cognitive-Somatic Anxiety Questionnaire of Schwartz, Davidson & Golman, Life Orientation Test of Scheier & Carver, Somatic Perception Questionnaire of Landy and Stern, Body Consciousness Questionnaire of L. C. Miller, Murphy, & Buss, Betts' Questionnaire Upon Mental Imagery, Shortened Form, State-Trait Anxiety Inventory, and Technique Evaluation Questionnaire of the authors. Progressive muscle relaxation was according to Bernstein & Borkovec. Distraction imagery involved successively imagining a walk along a beach, a stroll across a flower filled meadow, sitting by a stream, a walk into the woods, sitting in a cabin in the woods listening to the rain against the windowpane, all including images in a variety of sense modalities. Focused imagery involved creating an image of a stressor, then through symbolic imagery experiences Ss were guided through a typical day's events that might lead up to the stressor, reinterpreting cues associated with the stressor as signals that they are in control, visualizing encountering the stressor feeling strong and determined, and any physical sensations reinterpreted as 'energy' that would help them to cope, visualizing enjoying their success (from Crits-Cristoph & Singer. Music was a 20-min tape (10 min of music used in the distraction imagery tape--Natural Light by Steve Halpern & David Smith) and 10 min of music used in background of the focused imagery tape (Structures of Silence by Michael Lanz). A 5th group, Control, was instructed to sit quietly with eyes closed. This data can be used in support of imagery-suggestion types of hypnosis (as in surgery study) reducing anxiety. It shows particularly strong effects for people high in cognitive anxiety or low in optimism, pre-treatment. Discussion: "... we feel confident that our distraction techniques were more effective for the immediate relief of anxiety than was PMR. This conclusion is consistent with the Suls and Fletcher meta-analysis (29) that suggested that 'avoidance' is an effective short-term coping strategy. That distraction (positive) imagery may be a more useful clinical technique than focused (active involvement) imagery was concluded in a

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study comparing these two techniques in the treatment of phobias (24)" (p. 19. [Ref #24 is Crits-Cristoph & Singer (1983) in *Imagination, Cognition, and Personality*.] "Pessimism and cognitive anxiety emerged as the only individual difference variables to influence anxiety reduction. Pessimism as measured by the LOT is cognitive in nature, with most of the items relating to expectations of negative outcomes; similarly, cognitive anxiety is characterized by worry and an inability to control negative thoughts and images. That individuals who perceive their world somewhat negatively should have entered the study more anxious than individuals who do not is hardly surprising. What is surprising is that despite an inverse relation between cognitive anxiety and the ability to relax, these individuals were able to benefit from whatever technique they performed to a greater extent than were individuals with a more positive outlook. In fact, after performing the technique, pessimists had reduced their anxiety to the level of optimists" (p. 19). "The stress management techniques used in the current study did not differ in their appeal" (p. 20). "Our finding that PMR produced more somatic effects than did focused imagery and less cognitive effects than did distraction imagery, listening to music, or sitting quietly is consistent with the model of anxiety proposed by Davidson and Schwartz (17). Our findings are also generally consistent with a conclusion reached by Woolfolk and Lehrer (4): that although various techniques are generally stress reducing, they seem to have highly specific effects. However, we found no support for the hypothesis that individuals who express anxiety cognitively (or somatically) prefer and benefit most from techniques that produce cognitive (or somatic) effects. In fact, the extremely high correlation found between the cognitive and somatic anxiety subscales of the Schwartz et al. measure (5) casts some doubt on the usefulness of a cognitive-somatic distinction, as does the corr between the experience of physical symptoms under stress (the Somatic Perception Questionnaire) with the cognitive, as well as the somatic, anxiety subscale. In fact, the extremely high correlation found between the cognitive and somatic anxiety subscales of the Schwartz et al. measure (5) casts some doubt on the usefulness of a cognitive-somatic distinction, as does the corr between the experience of physical symptoms under stress (the Somatic Perception Questionnaire) with the cognitive, as well as the somatic, anxiety subscale. "The finding that blunters experiences more 'somatic effects' regardless of the technique they were assigned may have been the result of a single response--'how much did mind-wandering interfere with performing the technique'--which was the only Factor 2 item that was highly inversely related to blunting. Since blunters are more likely to perceive mind wandering as the essence of stress management rather than as 'interference,' we do not view this main effect as particularly illuminating" (p. 20). "However, our finding that blunters experienced all techniques as appealing is consistent with the results of Martelli et al. (1) who found that individuals with low information-preference benefitted from what the authors labeled an 'emotion-focused' intervention, but which, in fact, included many of the quite diverse stress management techniques that we compared in the current study. That 'avoiders' failed to benefit from any intervention in the Scott and Clum study (11) may be due to the nature of the stressor [postsurgical pain]. Our undergraduates may have been more like the Martelli dental patients in terms of their level of distress than were the Scott and Clum subjects who were patients undergoing major surgery (hysterectomy or cholecystectomy). Future research needs to examine possible three-way, technique by patient by stressor-type, interactions (cf. 19)" pp 20-21.



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Biasutti, M. (1990). **Music ability and altered states of consciousness: An experimental study.** *International Journal of Psychosomatics*, 37, 82-85. The relationship between music and altered states of consciousness was studied with 30 subjects divided into hypnosis and control groups. The "Test di abilita musicale" was applied. The hypnosis group did the retest after posthypnotic suggestions and the second in waking conditions. The hypnosis group had better results than the control group, especially in the rhythm test ( $p < 0.0001$ ).

Council, James R.; Huff, Kenneth D. (1990). **Hypnosis, fantasy activity, and reports of paranormal experiences in high, medium and low fantasizers.** *British Journal of Experimental and Clinical Hypnosis*, 7 (3), 9-15

The personality construct "fantasy-proneness" (Wilson and Barber, 1983a) has important implications for theories of hypnosis, imagination, and paranormal phenomena. The present study compared characteristics of persons who received high, medium or low scores on a self-report measure of fantasy-proneness. Results revealed that the three groups differed significantly on measures of absorption, daydreaming styles, and reports of paranormal experiences. However, although high fantasizers were significantly more hypnotizable than low fantasizers, they did not differ from the middle group. These results are used to further characterize fantasy-prone persons, and implications of extremely low fantasy-proneness are discussed.

Lombard, Lisa S.; Kahn, Stephen P.; Fromm, Erika (1990). **The role of imagery in self-hypnosis: Its relationship to personality characteristics and gender.** *International Journal of Clinical and Experimental Hypnosis*, 38 (1), 25-38. 30 volunteer Ss practiced self-hypnosis for approximately 4 weeks and wrote a record of their experiences in a diary following each session. Imagery produced during self-hypnosis was coded in 2 ways: the imagery was either reality oriented or it was fantastic and had primary process qualities. Levels of imagery production remained virtually the same over a 4-week period. Self-hypnotic imagery was significantly greater for the female Ss than for the male Ss, particularly primary process imagery. Verbal expressivity (measured as the average number of words per page of each S diary) was calculated to control for the effects of verbal production on Ss' imagery scores. When imagery scores were standardized based on verbal expressivity, female Ss still produced significantly more primary process imagery than male Ss. Personality characteristics (assessed by standardized personality inventories) were examined in relation to self-hypnotic imagery. "Impulse Expression" was positively related to primary process imagery for the female Ss. "Outgoingness" was positively related to primary process imagery for the entire sample, but especially for the female Ss.

Friswell, Rena; McConkey, Kevin M. (1989). **Hypnotically induced mood.** *Cognition and Emotion*, 3 (1), 1-26 This article addresses theoretical and methodological issues that are central to an understanding of hypnotically induced mood. Initially, the hypnotic procedures that are typically used to induce moods are examined. Then the empirical research that has employed hypnotic moods is reviewed; specifically, the impact of hypnotic moods on physiological responses, behavioral performance, perceptual and cognitive responses, and personality, and clinical processes is examined. Finally, major theoretical and methodological issues are highlighted, and the research directions that will lead to a greater understanding of hypnotic mood are specified.

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Hoyt, Irene P.; Nadon, Robert; Register, Patricia A.; Chorny, Joseph; Fleeson, William; Grigorian, Ellen M.; Otto, Laura; Kihlstrom, John F. (1989). **Daydreaming, absorption and hypnotizability.** *International Journal of Clinical and Experimental Hypnosis*, 37, 332-342. It appears that the consistent correlation between hypnotizability and positive-constructive daydreaming is carried largely by three subscales--Acceptance of Daydreaming, Positive Reactions to Daydreaming, and Problem-Solving. Number other subscales consistently correlated with hypnotizability. When absorption was taken into account, daydreaming activity made no independent contribution to the prediction of hypnotizability. "The present results differ from Crawford's (1982) somewhat, however, in terms of the specific aspects of daydreaming activity that are associated with hypnosis. Crawford found that hypnotizability correlated consistently (i.e., in both men and women) with three subscales tapping imagery variables: the presence of visual and auditory imagery in daydreams and the hallucinatory vividness of daydream imagery. In the present study, the imagery subscale, including both visual and auditory items, did not correlate significantly with hypnotizability; unfortunately, the hallucinatory vividness subscale is not represented on the short form (SIPI) of the daydreaming questionnaire used in this study. Crawford (1982) did not find consistent correlations between hypnotizability and scales measuring acceptance, positive reactions, and problem solving--the subscales that consistently yielded significant correlations in the present study. Not too much interpretive weight should be given to any of the correlations between hypnotizability and daydreaming subscales, until a full replication with reliable subscale measurements (such as those provided by the long, original IPI) has been completed. The important point made by Crawford (1982), and confirmed in the present study, is that hypnotizability is related to positive-constructive rather than guilty-dysphoric daydreaming" (p. 338). The two studies agree that absorption and hypnosis are not correlated with daydreaming scales reflecting poor attentional control. Given the theoretical emphasis in both domains on the narrowing of attention and exclusion of potentially distracting input, negative correlations with this aspect of daydreaming might have been expected.

Kahn, Stephen P.; Fromm, Erika; Lombard, Lisa S.; Sossi, Michael (1989). **The relation of self-reports of hypnotic depth in self-hypnosis to hypnotizability and imagery production.** *International Journal of Clinical and Experimental Hypnosis*, 37, 290-304. Studied multidimensional nature of self-hypnotic depth in 22 high hypnotizables who volunteered for self hypnosis research. On personality scales, they were distinguished from the population at large by: strong theoretical orientation, high level of curiosity, disregard for opinions of others, and high Mf scale on the MMPI. Used the Stanford Profile Scale, SHSS:C and HGSHS:A, which measure the entire range of phenomena ordinarily used in experimental studies of hypnosis, including ideomotor phenomena, hypnotic fantasy and dreams, hypermnasias and age regressions, analgesias, negative and positive hallucinations, amnesias, posthypnotic phenomena, and cognitive and affective distortions. They asked Subjects to experience self hypnosis for 60 minutes/day for 4 weeks. Journals were coded for imagery production by scoring for both reality-oriented and primary process imagery. Subject had been taught to monitor their hypnotic depth using a slightly revised version of the Extended North Carolina Scale (ENCS) of Tart (1979). Previously, ENCS has been used only with hetero-hypnotic Subjects. The self-reports of depth using ENCS correlated highly with hypnotizability as

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measured by the Revised Stanford Profile Scale of Hypnotic Susceptibility... and with imagery production. Results demonstrate that ENCS scores are also a valid indicator of self-hypnotic depth among highly hypnotizable Subjects. Furthermore, they indicate that both hetero-hypnotizability and imagery production are related to self-hypnotic depth, but that the association between imagery and hypnotizability is due to their individual relationships to self-hypnotic depth.

Malott, James M.; Bourg, Audrey L.; Crawford, Helen J. (1989). **The effects of hypnosis upon cognitive responses to persuasive communication.** International Journal of Clinical and Experimental Hypnosis, 37, 31-40. Several writers have suggested that hypnotic responsiveness is directly related to the content of S's covert self-statements. To test this notion, low and high hypnotizable subjects in either hypnosis or waking conditions were exposed to a recorded message advocating that college seniors be required to pass a comprehensive exam in order to graduate. Following message presentation, subjects listed all of the thoughts which occurred to them while listening to the message; these thoughts were later coded as counterarguments, favorable thoughts, or neutral thoughts. Hypnotized subjects generated significantly fewer counterarguments and agreed more with the message than waking subjects. In addition, high hypnotizable subjects (in both waking and hypnosis conditions) produced significantly more favorable thoughts and agreed more with the message than low hypnotizability subjects. Results, therefore, provided a demonstration of the differential impact of context (induction) and trait (hypnotizability level) upon different cognitive phenomena. Implications for the occurrence of hypersuggestible behavior are discussed.

N = 48 (24 highs, 24 lows, blocked on sex and hypnotizability level, then randomly assigned to one of two conditions). Hypnosis subjects generated significantly fewer counterarguments than waking subjects (12% vs 45%). Main effect for hypnotizability level was nonsignificant, as was the condition x hypnotizability interaction. High hypnotizable subjects generated significantly more favorable thoughts than low hypnotizable subjects (28% vs 12%). The main effect for condition was nonsignificant, as was the condition x hypnotizability interaction. Unexpectedly, hypnosis subjects produced a significantly greater number of neutral thoughts. The main effect for hypnotizability level did not reach significance, nor did the condition x hypnotizability interaction. "Thus, as suggested by McConkey (1984), it may be the hypnotic \_context\_, rather than a hypnotic "state" which is responsible for reduced levels of counterarguing. ... the data indicate that an induction decreases counterarguing among high and low hypnotizable subjects alike; on the other hand, the incidence of favorable thoughts is related only to hypnotizability level and not to the hypnosis context. ... the present findings suggest that \_both\_ context and trait play a role in the occurrence of hypnotic behavior, although each may do so by impacting upon \_different\_ cognitive responses. There appears to be a relationship between counterarguing and acceptance of the persuasive communication in the present study. First, there was a significant negative correlation between those two measures (collapsing across conditions), indicating that higher levels of counterarguing were associated with \_lower\_ levels of communication acceptance. Second, subjects in the hypnosis condition who counterargued less than waking subjects, also indicated significantly higher levels of communication acceptance than waking subjects.

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In a similar fashion, there appears to be a relationship between favorable thought production and communication acceptance. There was a significant positive correlation between the two measures, and high hypnotizable subjects who generated significantly more favorable thoughts than low hypnotizables, also produced higher scores on the attitude measure.

Council, James R.; Greyson, Bruce; Huff, Kenneth D. (1988, November). **Reports of paranormal experiences as a function of imaginative and hypnotic ability.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Wilson and Barber (1983) have suggested that some excellent hypnotic subjects ("fantasy prone" persons) may be more likely to report paranormal experiences than the rest of the population. Council and Greyson (1985), studying a sample of subjects who had reported near-death experiences (NDEs), found a significant relationship between fantasy-proneness and NDEs, and a much stronger relationship between fantasy-proneness and reports of paranormal experiences in general. This paper presents new data from the study of NDE reporters and a replication and extension of those findings with a sample not selected for NDEs. These data indicate a strong association between fantasy-proneness and reports of paranormal experiences. Hypnotic susceptibility bears a weaker relationship with such reports that appears dependent upon variance shared with measures of fantasy-proneness. Other data from these studies suggests that both imaginative ability and reports of paranormal experiences may be related to a history of stressful or traumatic childhood experiences.

Gudjonsson, Gisli (1988). **Interrogative suggestibility: Its relationship with assertiveness, social-evaluative anxiety, state anxiety and method of coping.** British Journal of Clinical Psychology, 27 (2), 159-166. Investigated in 30 adults some of the theoretical components related to individual differences thought by the present author and R. Clark (1986) to mediate interrogative suggestibility as measured by a scale developed by the present author (1984). The variables studied were assertiveness, social-evaluative anxiety, state anxiety, and the coping methods generated and implemented during interrogation. Low assertiveness and high evaluative anxiety correlated moderately with suggestibility, but no significant correlations emerged for social avoidance and distress. State anxiety correlated significantly with suggestibility, particularly after negative feedback had been administered. Coping methods (active-cognitive/behavioral vs. avoidance) significantly predicted suggestibility scores. The findings give strong support to the present author's theoretical model.

Hines, Larry; Handler, Leonard (1988, November). **Hypnotizability and ego functions.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Researchers employed Bellak's Ego Functions Test (based on the clinical interview). Ss were 47 students and 1 non-student, some of whom had previously experienced hypnosis. They were all volunteers. Studied 12 ego functions. Used plateau hypnotizability which was defined as no improvement in Stanford Hypnotic Susceptibility Scale Form C after two hypnotic inductions; if they did not reach a plateau by Session 4, the highest score was used. Stanford Hypnotic Susceptibility Scale scores ranged 4-12. High 10-12, Medium 6-9, Low 4-5.  $\bar{x}=9.04$ ,  $SD=2.21$ . On the Bellak Test, High 12-13, Medium 10-11 (average functioning.), Low 1-9. Range 5-13; widest range was in Adaptive Regression in Service of Ego Highest Mean = reality testing Lowest Mean = ARISE Majority fell into the medium range on all 12 ego functions measured. A

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significant difference was found between High and Low hypnotizables on the following ego functions. [N.B. There may be transcription errors in the figures that follow.] 1. ARISE  $p < .02$   $r = .31$  Highs have greater ability to experience pleasure in regression. 2. Stimulus Barrier  $p < .003$  Highs are more flexible in their ability to separate from stimuli in their environment, Lows experienced stimulus overload. 3. Autonomous Functioning  $p < .01$  Primary acct./ in attention, learning, memory, motor function. 4. Objective Relativity  $p < .07$  5. Regulating control of drive  $p < .06$  Multiple regression accounted for 33% of variance in 12 ego functions. Stimulus Barrier alone accounted for 14% ( $p < .005$ ); ARISE accounted for 5% ( $p < .01$ ). 47% of Ss were High hypnotizables, 42% were in the Medium range.

LeBaron, Samuel; Zeltzer, Lonnie K. (1988). **Imaginative involvement and hypnotizability in childhood.** International Journal of Clinical and Experimental Hypnosis, 36, 284-295. 2 pilot studies assessed the relationship between hypnotizability in children and extent of involvement in fantasy-related activities during early childhood. The Stanford Hypnotic Clinical Scale for Children and a structured interview questionnaire regarding fantasy activities based on previous work by Singer (1973) were given to 30 medical patients aged 6-18 years in the first study and to 37 healthy children aged 6-12 years from a school population in the second study. In both studies, hypnotizability correlated moderately (.42 and .39, respectively) with extent of involvement in fantasy-related activities. Results support Hilgard's (1979) findings that hypnotizability is related in part to the development of imaginative involvement in childhood.

Lynn, Steven Jay; Rhue, Judith W. (1988). **Fantasy proneness: Hypnosis, developmental antecedents, and psychopathology.** American Psychologist, 43 (1), 35-44. This article presents a summary of the findings of our ongoing research program on the fantasy-prone person. In seven studies, nearly 6,000 college students were screened in order to obtain five samples of 156 fantasy-prone subjects. Fantasy-prone subjects (fantasizers) were selected from the upper 2%-4% of the college population on a measure of imaginative involvement and contrasted with nonfantasizers (lower 2%-4%), and medium fantasy-prone subjects (middle range). General support was secured for Wilson and Barber's construct of fantasy proneness: Fantasizers were found to differ from nonfantasizers, and in many cases also from medium-range subjects, on measures of hypnotizability, imagination, waking suggestibility, hallucinatory ability, creativity, psychopathology, and childhood experiences. Differences in hypnotizability were most reliable when subjects participated in a multisession study and were screened not only with the screening inventory, but also with an interview that substantiated their fantasy-prone status. However, our findings indicated that less correspondence between fantasy proneness and hypnotizability exists than Wilson and Barber suggested. Hypnotic responsiveness is possible even in the absence of well-developed imaginative abilities, and not all fantasizers were highly hypnotizable. Fantasizers recollected being physically abused and punished to a greater degree than other subjects did and reported experiencing greater loneliness and isolation as children. Many fantasizers appeared to be relatively well-adjusted; however, a subset of fantasizers were clearly maladjusted based on self-report, Minnesota Multiphasic Personality Inventory (MMPI), and Rorschach test data. Because of the diversity inherent in the fantasy-prone population, it is misleading to think of individuals at the extreme end of the fantasy-proneness continuum as conforming to a unitary personality type. sizers were highly

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hypnotizable. Fantasizers recollected being physically abused and punished to a greater degree than other subjects did and reported experiencing greater loneliness and isolation as children. Many fantasizers appeared to be relatively well-adjusted; however, a subset of fantasizers were clearly maladjusted based on self-report, Minnesota Multiphasic Personality Inventory (MMPI), and Rorschach test data. Because of the diversity inherent in the fantasy-prone population, it is misleading to think of individuals at the extreme end of the fantasy-proneness continuum as conforming to a unitary personality type.

Lytle, Richard A.; Lundy, Richard M. (1988). **Hypnosis and the recall of visually presented material: A failure to replicate Stager and Lundy.** *International Journal of Clinical and Experimental Hypnosis*, 36, 327-335. Stager and Lundy (1985) found hypnotic hypermnnesia without increased memory errors. The present study, an attempted partial replication of Stager and Lundy (1985), presented Ss with free recall and multiple choice questions about a short movie they had seen a week earlier. The experimental Ss, who were hypnotized, given hypermnnesia suggestions, and retested, did not generally increase their accurate memory scores on posttest; the Stager and Lundy (1985) findings were thus not confirmed. An increase in memory scores did occur, however, but only with high hypnotizable Ss, whether they were hypnotized or not, and only with multiple choice questions. The high hypnotizable Ss had the greatest increase in inaccurate memory scores on the free recall questions.

This study provides data on response tendencies by using two forms of question: recall (as in Stager & Lundy (1985) and recognition, from a 4-choice multiple choice format. 120 Ss were screened with Harvard Scale to yield 24 high (10-12) and 24 low (0-4) hypnotizable Ss. They were randomly assigned to four groups (two recall conditions and two test form conditions). Ss saw a 15-minute movie, "Posters," and a week later were tested: oral presentation of questions (on audiotape), alternating multiple-choice and recall formats, ABBA for 50% and BAAB for 50% of Ss. After 40 pretest questions they were hypnotized (or given attention-focusing awake instructions to count randomly occurring clicks barely audible over white noise for 15 minutes--described as a very important task). Then all Ss were told they would again hear 40 questions about the movie, that they would find the answers "coming more easily" than before, and that they should give the best answers that they could. They received the same test form as before (post-test). RESULTS. Total Scores were analyzed with a 4-way ANOVA (hypnotizability; recall condition = hypnosis or attention control; question format = multiple choice or free recall; and pretest-posttest). The ANOVA yielded 3 main effects: 1. Posttest scores were greater than pretest scores. 2. Multiple choice scores were greater than free recall scores. 3. High hypnotizable scores were greater than low hypnotizable scores. Also they found a 2-way interaction between hypnotizability and pre- vs. postadministration. There was an increase from pretest to posttest for the high hypnotizable Ss and the highs had greater scores relative to the lows in the posttest administration. Correct Scores analysis showed two main effects: 1. Posttest scores were greater than pretest scores. 2. Multiple choice scores were greater than free recall scores. Also there was a two-way interaction between hypnotizability and pre-postadministration, such that the scores of highs relative to the scores of lows increased more from pre- to posttest. Also there was a three-way interaction for hypnotizability, question format, and pre-postadministration was significant. There was an increase from pre- to posttest

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in the scores of the high hypnotizable Ss on the multiple choice format, with no increase for the low hypnotizables or on the free recall format.

That the scores of highs relative to the scores of lows increased more from pre- to posttest. Also there was a three-way interaction for hypnotizability, question format, and pre-postadministration was significant. There was an increase from pre- to posttest in the scores of the high hypnotizable Ss on the multiple choice format, with no increase for the low hypnotizables or on the free recall format. Incorrect Scores showed three main effects: 1. Posttest scores were greater than pretest scores. 2. Free recall scores were greater than multiple choice scores. 3. High hypnotizable scores were greater than low hypnotizable scores. A three-way interaction also was found: the pretest to posttest increase was only for the free recall questions with high hypnotizable Ss, and free recall posttest scores for highs was greater than those same scores for lows. Pretest differences between hypnotizability groups and pre-post differences for the low hypnotizable Ss were not found. In the Discussion, the authors note that this study did not confirm Stager and Lundy. "Although the high hypnotizable Ss in the hypnosis condition did increase their free recall correct scores, this increase was not significant or different from the general increase made by all Ss. Further, the increase of the incorrect scores in free recall ...[was] greater, though not significantly, for the high hypnotizable Ss in the hypnosis condition than for any other group" (p. 331). The differences in results may be due to different question format. On the other hand, reviews such as those by Shields and Knox (1986) usually find little, or at best modest, improvement of memory with hypnosis. In the present study, as with Stager and Lundy (1985) the memory increase observed was with the highly hypnotizable Ss. But those Ss are also the ones who increase their incorrect scores. "When the correct response is available to Ss (the multiple choice format), the high hypnotizables increase their correct scores. When the correct response, or any other alternative, is unavailable to Ss (the free recall format), the high hypnotizables increase their incorrect scores" (p. 332). "The high hypnotizable Ss gave more incorrect responses than the low hypnotizables on both pre- and posttest and in both test formats. Although this tendency to respond incorrectly is most apparent in the posttest free recall condition, Table 3 also shows that even in the multiple choice form, the high hypnotizable Ss appear to be responding more incorrectly. Thus, the high hypnotizables not only incorporate more incorrect information presented to them, as found by Sheehan (1985, 1988), but they also make more errors in test situations which supply them with no information and which supply them with the correct information. Also, high hypnotizable Ss have been found by Laurence, Nadon, Nogrady, and Perry (1986) to believe that hypnotically suggested pseudomemories are in fact veridical" (pp. 332-333). The authors suggest that the increase in both correct and incorrect scores (for both question formats) may be due to a decrease in the 'don't know' or no response category. This suggests that high hypnotizable Ss may be more willing to guess in the posttest. Perhaps it is a criterion shift. If so, the shift occurs whether or not they are hypnotized, and it leads to increased accuracy sometimes but also decreased accuracy sometimes. "When the correct answer is available, as in the multiple choice format, the high hypnotizable Ss can increase their correct responses significantly, but when the correct response is not available, as in free recall, they increase their incorrect responses significantly" (p. 333).

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The authors present a cautionary note. "Although the statistical analysis confirms hypnotizability as a significant effect, it must be remembered that this study, and the others reported above, took place in a hypnotic context. ... The results suggest, however, that the personality characteristics underlying measured hypnotizability may be important factors in memory enhancement and memory distortion and that studies directed toward tapping those characteristics will be fruitful in future research efforts" (pp. 333-334). Re forensic application, "changes in memory that occur in the hypnotic context probably occur as a result of witnesses' decreased reticence, that is, as a result of their belief that they can now answer questions that they previously could not answer" (p. 334).

Lynn, Steven Jay; Rhue, Judith W. (1987). **Hypnosis, imagination, and fantasy.** *Journal of Mental Imagery*, 11, 101-112. Considers three questions pertaining to the relationship between hypnotic responsiveness and imaginative processes: Are subjects' nonhypnotic imaginative involvements related to hypnotic susceptibility? Do some fantasy prone subjects share a unique constellation of personality attributes and experiences, including an ability to respond to hypnotic suggestions? What are the childhood developmental antecedents of persons who score at the extremes of hypnotic ability and measures of fantasy and imagination? Reviews literature.

Monteiro, Kenneth P.; Zimbardo, Philip G. (1987). **The path from classroom seating to hypnotizability--a dead end: A brief communication.** *International Journal of Clinical and Experimental Hypnosis*, 35, 83-86. It has been proposed that classroom seating behavior predicts brain functioning involved in hypnotizability and in other cognitive processes. The present authors attempted to test this hypothesis and to replicate some earlier findings. The relationships between classroom seating preference, actual seating location, and hypnotizability in male and female students were investigated. No relationship was found between any of the seating measures and hypnotizability. These findings lend no support for the hypothesis that classroom seating predicts hypnotizability. This failure to replicate is discussed in relationship to the lack of theoretical grounding for the seating-hypnosis connection.

The authors review the literature, then present and test specific hypotheses that right-side seating preferences would be correlated with hypnotizability for males, while actual seating on the right side of the class would be associated with higher hypnotizability scores for females. This pattern should be more robust for right-handed than for left-handed students. They found no support for these hypotheses. They suggest that other measures of cognitive processing may correlate with a social behavior such as classroom seating. Monteiro & Zimbardo (unpublished ms.) found that the variables of field independence and field sensitivity predicted actual seating behavior in males and seating preference in females.

Belicki, Kathryn; Belicki, Denis (1986). **Predisposition for nightmares: A study of hypnotic ability, vividness of imagery, and absorption.** *Journal of Clinical Psychology*, 42 (5), 714-718. The relationships of nightmare frequency to hypnotic ability, vividness of visual imagery, and the tendency to become absorbed in fantasy-like experiences were examined. Subjects were 841 undergraduate university students who participated in group tests of hypnotic ability, after which they estimated the number of nightmares that they had experienced in the prior year. In addition, 406 of the subjects completed Marks' Vividness of Visual Imagery Questionnaire, and Rotenberg and Bowers' Absorption scale. Of the subjects, 76% reported



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experiencing at least one nightmare in the prior year; 8.3% indicated one or more per month. Individuals with frequent nightmares scored higher on hypnotizability, vividness of visual imagery, and absorption.

Belicki & Bowers, 1982 ABSTRACT: Investigated the role of demand characteristics in dream change by comparing dream report change following pre- and postsleep administrations of instructions to pay attention to specific dream content. This design was based on the assumption that if presleep instructions merely distort dream reports rather than influence actual dreams, report change should be observable following a postsleep instruction. 42 undergraduates were prescreened with the Harvard Group Scale of Hypnotic Susceptibility (Form A), which allowed experimenters to examine the role of hypnotizability in dream change. Significant differences were observed only following the presleep instructions. It is concluded that report distortion as a result of paying attention to a dimension of dream content was insufficient to account for dream report change following presleep instructions. Hypnotic ability correlated significantly with the amount of dream change.

Lynn, Steven Jay; Rhue, Judith W. (1986). **The fantasy-prone person: Hypnosis, imagination, and creativity.** *Journal of Personality and Social Psychology*, 51, 404-408. Experimenters selected subjects who ranged along the continuum of fantasy proneness and assessed hypnotizability, absorption, vividness of mental imagery (QMI; Sheehan, 1967), response to waking suggestion (Creative Imagination Scale), creativity, and social desirability (Crowne & Marlowe). Fantasy-proneness was evaluated with the Inventory of Childhood Memories and Imaginings (Wilson & Barber, 1981). Strong support was secured for J. R. Hilgard's construct of imaginative involvement and Wilson and Barber's contention that fantasy prone persons can be distinguished from others in terms of fantasy and related cognitive processes. Fantasizers were found to outscore subjects in both comparison groups on all of the measures of fantasy, imagination, and creativity, with social desirability used as a covariate. Low fantasy-prone subjects were no less creative or less responsive to hypnosis than their medium fantasy-prone counterparts.

Mitchell, George P.; Lundy, Richard M. (1986). **The effects of relaxation and imagery inductions on responses to suggestions.** *International Journal of Clinical and Experimental Hypnosis*, 34, 98-109. Theoretical attempts to understand the meaning and importance of induction procedures in producing hypnotic phenomena suggest that 2 critical components, relaxation and imagery, should be isolated and their relative effect on hypnotic responding studied. Objectively and subjectively scored responses to 12 hypnotic suggestions, which had followed relaxation, imaginal, or combined inductions, were obtained from 59 Ss, divided into 3 levels of hypnotizability. Regardless of hypnotizability level, the combined induction led to a greater subjective report of hypnotic response than hypnotic response than did either the relaxation or the imagery inductions; and the relaxation led to a greater subjective report than the imagery induction. It may follow that the subjective experience of hypnosis is facilitated by inductions which include relaxation. The inductions were equally effective in producing objectively measured behavioral responses. There were no significant interactions found between induction type and hypnotizability level.

(From the Discussion Section). As suggested by Sacerdote (1970), the combination procedure was the most generally effective in producing hypnotic responses. The difference

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between combined and imagery inductions reached statistical significance on four dependent variables, and the difference between combined and relaxation reached significance on three. It may also be of interest that Ss receiving the combined procedure scored consistently higher on all nine dependent variables. A somewhat unexpected finding was that the relaxation induction produced scores on four of the dependent variables that were statistically higher than the imagery induction scores. Considering the difficulty of isolating relaxation and imagery components, it is quite noteworthy that these differences between inductions were found. The four variables in which the combination and relaxation conditions produced significantly higher scores than the imagery condition were subjective reports--subjective score, degree hypnotized, response volition, and Field Inventory. In contrast to Ss in the imagery induction, Ss in the other two induction conditions believed that they were responding more, felt that their responses were more nonvolitional, and felt that they were more deeply hypnotized. The fact that relaxation instructions were present in both conditions that were superior to the imagery condition would appear to support Edmonston's (1981) position which posits relaxation as essential for the production of the state of neutral hypnosis. For Edmonston the condition of neutral hypnosis is defined as the relaxed state and precedes other phenomena, such as dissociation and increased suggestibility, which other theoreticians may include in the definition of hypnosis. However, the statistically significant superior effect of the combined over the relaxation induction on three measures casts doubt on Edmonston's position. The S believes that he or she is more deeply hypnotized and is responding less volitionally when an imagery component is combined with relaxation. The Ss also responded more to the Field Inventory when the combined induction was used. Another explanation for imagery's relatively poor showing may lie in Ss' differential expectations. The Ss, especially those with previous experience with a traditional hypnotic induction, as was the case in the present study, may not expect to be hypnotized when presented with an imagery alone induction. Such expectations, of course, might reduce responses. On the other hand, there is no reason to believe that the reduced expectation in the imagery condition would not affect the behavioral responses as well, and such was not the case. Thus, we may be left with the explanation that relaxation adds to the subjective experience of hypnosis. This is in keeping with Edmonston's (1981) position as well as with previous research, such as that by Hilgard and Tart (1966), which finds traditional inductions, with their relaxation components, superior to nontraditional inductions, such as fantasy or task-motivational. If future research should find that bodily involvements such as the physical exertion or repetitive motor behavior (Banyai and Hilgard, 1976) lead to the same level of subjective experience as relaxation did, then we may need to broaden the concept of the somatic component beyond relaxation alone. In terms of the behavioral compliance of Ss, the results of the present study are in accord with some previous studies in finding all procedures equally effective. Neither imagery, relaxation, nor the combined procedure was superior for the behavioral measure. Personality factors (social desirability, internality/externality, and absorption) did not affect the basic findings. To the degree that the Tellegen scales measure the ability to engage in imagery there seems to be little basis for believing that imagery ability is related to the general findings. Sarbin (1983) would call the inductions studied here 'entrance rituals,' and he has recently asked in his review of Edmonston's book, "Which ritual is more suitable... [p. 58]" for preparing S to respond in various hypnotic ways? One answer from the present results is that an entrance ritual should include

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muscular relaxation if one wants a better subjective response from S. From Sarbin's point of view, the relaxation component may be more ego-involving, producing more subjective experience and meaning for S. If one wants to produce only a behavioral response, either a relaxation or imagery ritual

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Kerry Buhk; Rhue, Judith; Henry, Stephanie; Lynn, Steven Jay (1985, November).

**Fantasy proneness: Are their word associations richer?.** [Paper] Presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Asheville, NC. Experimenters screened 7000 students to get 6 samples of fantasy prone Ss (top 2.4% on Wilson and Barber's ICMI). They found less association between fantasy proneness and hypnotizability than did Wilson and Barber. They had fantasizers hallucinate a second cup next to a first styrofoam cup. Results were that 87% of High fantasizers, < 50% Medium fantasizers, < 25% Low fantasizers could do it, but they didn't describe seeing the hallucinated cup "as real as real" as Wilson and Barber said they did. Experimenters were concerned about context effects (expectancy) because the Creativity and Fantasy Proneness tests were run proximal in time, so they separated in time the administration of Fantasy Prone and Creativity tests and also looked at word associations. 23 High and 20 Low fantasy prone students selected by ICMI, which was administered to Subjects 18 mos before the creativity study. At the time of the creativity study, Ss were informed they were randomly picked. There were two 90' sessions, counterbalanced. Sessions: 1. Hallucinate image of R.A. and of styrofoam cup. Other tests were administered for intelligence and personality: Shipley-Hartford, MMPI, Crowne-Marlowe, etc. 2. Creativity tests (Revised Art Scale, Hilgard's Alternate Uses; story production which was scored on detail, imagery and fantasy and on imagery nouns.) Results of this study which was independent of context (i.e. the tests being correlated were administered independently of each other, separated by time). 1. Fantasizers were more creative than low fantasizers on both Creativity Scales. 2. Fantasizers show more divergent thinking on Hilgard Alternate Uses test, but relationship between fantasy proneness and creativity were not strong,  $r = .30$ . 3. Fantasizers and non fantasizers did not differ on the story measures! This diverges from Wilson and Barber's results. Fantasizers may have more vivid images, but storytelling does not capture that.

Kunzendorf, Robert G.; Benoit, Michelle (1985-86). **Spontaneous post-hypnotic amnesia and spontaneous rehypnotic recovery in repressors.** Imagination, Cognition and

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Personality, 5 (4), 303-310. The Salpetriere school of hypnosis posited that \_true\_ hypnotic effects occur spontaneously in people with repressive tendencies. Consistent with this early position, the current study indicates that both spontaneous amnesia after hypnosis and spontaneous recovery during rehypnosis are statistically associated with repression (but not with hypnotic suggestibility). In contrast, both suggested forgetting and suggested recovery are statistically associated with hypnotic suggestibility (but not with repression). Whereas the latter effects of suggestibility are attributable to the demand characteristics of hypnotic suggestions, the spontaneous effects of hypnosis on repressors' memories are not reducible to social psychological principles.

Hilgard, Josephine R.; LeBaron, Samuel (1982). **Relief of anxiety and pain in children and adolescents with cancer: Quantitative measures and clinical observations.** International Journal of Clinical and Experimental Hypnosis, 30, 417-442. Children and adolescents with cancer, chiefly forms of leukemia, aged 6 to 19 years, underwent medical treatments which required repeated bone marrow aspirations, normally a painful and anxiety-provoking experience. Data were obtained in baseline bone marrow observations on 63 patients, who were then offered the opportunity to volunteer for hypnotic help in pain control. Of the 24 patients who accepted hypnosis, 9 were highly hypnotizable. 10 of the 19 reduced self-reported pain substantially by the first hypnotic treatment (the prompt pain reducers) and 5 more reduced self-reported pain by the second treatment (the delayed pain reducers) while none of the 5 less hypnotizable patients accomplished this. The latter benefitted by reducing anxiety. Short case reports illustrate the variety of experiences. Analysis of baseline observations before any therapeutic intervention revealed age and sex differences. The difference between self-reported and observed pain was not statistically significant for patients under age 10 but was significant for the patients age 10 and older ( $p < .001$ ). There were minor but significant sex differences both in observed pain ( $p < .01$ ) and in self-reported pain ( $p < .05$ ), with the females reporting more pain.

Fromm, Erika; Brown, Daniel P.; Hurt, Stephen W.; Oberlander, Joab Z; Boxer, Andrew M.; Pfeifer, Gary (1981). **The phenomena and characteristics of self-hypnosis.** International Journal of Clinical and Experimental Hypnosis, 29 (3), 189-247. Self-hypnosis and hetero-hypnosis were compared, and self-hypnosis was studied longitudinally. Results indicated that absorption and the fading of the general reality orientation are characteristics of both hetero-hypnosis and self-hypnosis. The differentiating characteristics lie in the areas of attention and ego receptivity. Expansive, free-floating attention and ego receptivity to stimuli coming from within are state-specific for self-hypnosis, while concentrative attention and receptivity to stimuli coming from one outside source--the hypnotist on whom the subject concentrates his attention--are state-specific for laboratory defined hetero-hypnosis.

Attempts to produce age regression and positive or negative hallucinations are markedly more successful in hetero-hypnosis. Imagery is much richer in self-hypnosis than in hetero-hypnosis. Self-hypnosis requires adaptation to the state: in the beginning of self-hypnosis there is a good deal of anxiety and self-doubt. As the subject feels more comfortable in the self-hypnotic state, he spends less time worrying about failures in self-suggestion, his ability to enter trance quickly and easily increases, as does the fading of the general reality orientation, trance

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depth, and absorption. An attempt was also made in the present study to find personality characteristics related to the ability to experience self-hypnosis.

Hiscock, Merrill (1978). **Imagery assessment through self-report: What do imagery questionnaires measure?**. Journal of Consulting and Clinical Psychology, 46, 223-229. Four studies examined imagery questionnaires and addressed issues of reliability, agreement among different questionnaires, social desirability, and construct validity. The Betts, Paivio, and Gordon scales were examined. In two studies the Betts and Paivio correlated .45-.50, but correlations involving the Gordon were inconsistent from one study to the next. Imagery measures generally were not influenced by social desirability. Factor analysis indicated that subjective and objective measures of visualization are independent. Concludes that imagery is not a unitary construct and that criteria other than visuospatial tests may be appropriate for validating imagery questionnaires.

Grant, Guy (1977). **The psychophysiology and hypnotherapeutic management of cancer**. Australian Journal of Clinical Hypnosis, 5, 35-49. Reviews research on psychophysiology of cancer, effect of stress on host resistance, cancer prediction from personality traits, psychological theories of cancer aetiology, and psychological characteristics of patients with different types of neoplasms. The hypnotherapy of cancer patients is outlined in terms of its effect upon the malignancy, relief of discomfort, and psyche of the cancer patient. Recommends direction of hypnotherapeutic treatment of cancer patients.

Cooper, Leslie M.; London, Perry (1976). **Children's hypnotic susceptibility, personality, and EEG patterns**. International Journal of Clinical and Experimental Hypnosis, 24, 140-148. 19 boys and 16 girls, aged 7 to 16, were given the EEG and then the Children's Hypnotic Susceptibility Scale, while a parent watched. About 1 week later, after some separate tests and interviews, each child was given a puzzle to solve in the parent's presence, while Es recorded offers and requests for help. Hypnotic susceptibility was positively correlated with the alpha duration with eyes open, but not with eyes closed. Both susceptibility and alpha duration tended to be negatively correlated with age. Highly susceptible children tended to wait longer than low susceptibles before asking parents for help with the puzzle, and their parents tended to be more strict, anxious, and impatient than did the parents of low susceptible children.

King, Dennis R.; McDonald, Roy D. (1976). **Hypnotic susceptibility and verbal conditioning**. International Journal of Clinical and Experimental Hypnosis, 24, 29-37. 18 Subjects highly susceptible to hypnosis and 18 Subjects refractory to hypnosis were studied in a verbal conditioning task modeled after the one used by Taffel (1955). Results indicated that the highly susceptible group showed significantly greater conditioning than the low group. Awareness of the reinforcement contingency by S was not related to the learning task nor to hypnotic susceptibility. A measure of S's attitude toward the reinforcement cue during learning showed that the highly susceptible group had a more positive set toward the cue, whereas the low group tended to respond to it in a neutral or negative manner. Results were interpreted in terms of the theoretical nature of hypnotic susceptibility.

They review literature on attempts to correlate hypnotizability with verbal conditioning ability. Volunteer students participated; screened by HGSHS:A: highs 10-12, lows 0-4. Verbal conditioning procedure: S viewed 100 3x5 cards on which were a two-syllable, past tense verb, below which typed in upper case letters on one line were the pronouns I, WE, HE, SHE, THEY,

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and YOU (randomly assigned to different orders). E was blind to hypnotizability. E instructed S to make up a sentence using the verb and a pronoun; gave no response for first 20 trials; said "good" to usage of I or WE during conditioning. Afterwards, S filled in an Awareness Questionnaire (What was purpose? If E gave cues, what were they? If you noticed cues, what do you think they indicated?) and attitude toward the reinforcement cue (Did you notice that I did anything special? What? Did I say "good" for a special reason? What was the reason for my saying "good"? How did hearing the word "good" affect you during the experiment? IN a positive, negative, or neutral way? Results. Groups did not differ at baseline but did differ at Blocks 2 (highs 9.7 vs lows 6.3;  $p < .05$ ) and 3 (highs 10.4 vs lows 6.3;  $p < .05$ ). Although the High group continued to maintain a somewhat higher level of responding than the Low group during extinction (9.8 vs 7.6), this difference did not reach statistical significance. (The graph shows an increase for Lows during extinction!) Using a liberal definition of awareness and a learning index computed for each S by subtracting his operant level of response from the mean number of correct responses shown during the 3 blocks of acquisition trials, Subjects were ordered and a median test applied; contingency coefficient of .28 not significant ( $p < .10$ ). Attitude significantly differentiated High and Low hypnotizability groups (see Table 2) with Highs more often responding in positive manner to reinforcement cue and Lows giving a neutral rating. Awareness of reinforcement contingency was equally represented in High and Low groups. The Aware High Positive groups learning index differed significantly from Aware Low Neutral group ( $p < .01$ ); the Unaware Low Positive group ( $p < .05$ ); and the Unaware Low Neutral group ( $p < .001$ ). Thus, the Aware High Positive group's learning index score was significantly higher than that of the 3 Low groups. Also, the Unaware High Positive group differed significantly from the Unaware Low Neutral group ( $p < .05$ ). No other High groups differed from the Low groups and none of the High groups differed among themselves. Among the Low groups, only the Unaware Low Positive group differed significantly from the Unaware Low Neutral group ( $p < .05$ ). Discussion. Data show that hypnotizability is important in response to verbal conditioning, extending findings of Das (1958) by showing that primary suggestibility is associated with operant as well as classical conditioning but also those of Weiss et al. (1960) in illustrating that higher hypnotic susceptibility leads to enhanced verbal conditioning, using an improved measure of hypnotic susceptibility. Awareness of reinforcement contingencies is not sufficient to account for subject differences in verbal conditioning; the characteristics tapped by HGSHS:A produce conditioning which cannot be accounted for by awareness alone.

Extending findings of Das (1958) by showing that primary suggestibility is associated with operant as well as classical conditioning but also those of Weiss et al. (1960) in illustrating that higher hypnotic susceptibility leads to enhanced verbal conditioning, using an improved measure of hypnotic susceptibility. Awareness of reinforcement contingencies is not sufficient to account for subject differences in verbal conditioning; the characteristics tapped by HGSHS:A produce conditioning which cannot be accounted for by awareness alone. The fact that high susceptible Subjects here rated E's cue more positively than low susceptible Subjects is further consistent with some of the personological descriptions associated with hypnotic susceptibility which have been offered by Hilgard (1968). In addition, Cairns and Lewis (1962) and Spielberger et al. (1962) found that persons who assigned more positive value to the kind of reinforcement present in verbal conditioning experiments produced greater conditioning than

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Subjects whose attitudes were less favorable or non-committal toward the reinforcement. This relationship is not clear-cut in the present data in that although the High groups had an overall more positive attitude regarding reinforcement, only the Aware High Positive group learned better than all the Low groups, while the only other High group learning better than a Low group was the Unaware High Positive which had a significantly better learning index score than the Unaware Low Neutral group. Moreover, positive attitude did not differentiate learning within the High groups or the Low groups. Thus, the present data are unclear regarding the role attitude plays in the acquisition of verbally conditioned responses. The roles of awareness and attitude could probably be better defined in future research using larger experimental groups. The attitude measure employed here was a gross one and a more sophisticated assessment of the valence characteristics of reinforcement cues could reveal more complex relationships in subsequent research. In addition, a more careful assessment than was done here of the role of cooperation and demand characteristics would contribute substantially to understanding more completely the effect of awareness on these phenomena. The general indications regarding attitude may in part account for the increased interest in production of conditioned responses in Figure 1 shown by the Low group (graph) during the extinction phase of this experiment. Although highly susceptible Subjects show a decrease in the correct response with nonreinforcement, low susceptible Subjects begin to evidence an increase in the correct response. The attitude measure indicates that Subjects in the Low group did not respond positively to the reinforcement cue, and one of these Subjects reported in the interview that he did not like being told what to do by the E. It can be speculated that these Subjects were aware of the reinforcement contingency but did not "cooperate" until the reinforcement was absent. This follows the interpretation of Farber (1963) who found that aware Subjects who conformed to the demand characteristics of the experimental situation showed greater verbal conditioning than those who were aware and nonconforming. It thus appears that a willingness to go along with E's expectations and a positive, cooperative attitude are common features in individuals who make good hypnotic Subjects and who evidence an enhanced propensity for verbal conditioning.

Lenox, J. R.; Bonny, H. (1976). **The hypnotizability of chronic alcoholics.** *International Journal of Clinical and Experimental Hypnosis*, 24, 419-425. Research on the hypnotizability of alcoholics is rare, contradictory, and fails to consider the age of alcoholic samples, who are much older than college norm groups. 36 male chronic alcoholics were given the Harvard Group Scale of Hypnotic Susceptibility, Forms A and B of Shor and E. Orne (1962, 1963a), administered individually and then averaged. Alcoholics scored lower, but not significantly so, than controls matched for age and sex. An expected negative correlation of age with hypnotizability was not found. The implications of these results for past studies are discussed.

Miller, Lawrence J. (1976). **A comparison of hypnotic susceptibility for internal and external locus of control subjects in hetero- and self-hypnotic treatments** (Dissertation). *Dissertation Abstracts International*, 37, 978-979. "This study investigated the use of self- and hetero-hypnosis with internal and external locus of control subjects. Fifty-eight subjects, matched on hypnotic susceptibility and internal-external locus of control, were randomly assigned to the self- or hetero-hypnotic treatments. Self reports of their hypnotic behavioral

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scores and hypnotic subjective responses were obtained for each subject. "The statistical analyses showed there were no significant differences between the internal and external locus of control groups or within groups in regard to self- and hetero-hypnosis total behavioral scores, "challenge" or "non-challenge" items, .... their reported subjective experiences. The results supported the similarity of hetero- and self- hypnosis. Various findings from past research in regard to I-E subjects were also challenged in terms of their generalizability to hypnotic settings" (pp. 978-979).

Fromm, Erika; Oberlander, Mark I.; Gruenewald, Doris (1970). **Perceptual and cognitive processes in different states of consciousness: The waking state and hypnosis.** *Journal of Projective Techniques and Personality Assessment*, 34, 375-387. Hypnosis was assumed to influence perceptual and cognitive functioning in the direction of increased primary process ideation and adaptive regression. The Rorschach test was administered to 32 Ss in the waking state and under hypnosis in counterbalanced order. Hypnosis was induced by a standardized procedure. Ss received identical instructions for the Rorschach in both conditions. Protocols were scored according to Holt's system for manifestations and control of primary process. Hypnotic Rorschachs showed an increase in primary process manifestations, but no changes in defensive and coping functioning, and no overall changes in the Adaptive Regression Score. However, the nature of the data was found to be influenced by Ss' sex and level of adjustment.

Chambers, Helen (1968). **Oral eroticism revealed by hypnosis.** *International Journal of Clinical and Experimental Hypnosis*, 16, 151-157.

A case study of the outpatient treatment of a severely depressed woman. The case was complicated by the s's refusing usual antidepressant treatments. Communication was difficult but was finally achieved by the use of ether at Achieved by the use of ether at alternate interviews. Withdrawal of ether was then used to create a situation of deprivation to arouse in the transference attitude the feelings produced by the early trauma. The s's compulsion to eat raw potatoes was studied while she was deeply hypnotized. Psychoanalytic theories that place the origin of depression at the time when the oral phase is primary were confirmed. The s refused any other antidepressant treatment.

Faw, Volney; Sellers, David J.; Wilcox, Warren W. (1968). **Psychopathological effects of hypnosis.** *International Journal of Clinical and Experimental Hypnosis*, 16, 26-37. The probability that hypnotic induction produces psychopathological effects has not been experimentally determined. The present study hypothesizes various negative effects following hypnosis such as increased signs of personality disturbances, increased need for medical attention, greater tendencies toward suicide, and negative effects among the more maladjusted persons of the population sample. 107 college students were assigned at random to experimental and control groups. The experimental group was hypnotized 3 times in successive weeks. A comparison between control and experimental groups in respect to pre- and post-MMPI score differences plus a follow-up with the college counseling center and infirmary for a 90-day period following induction led to the rejection of the hypotheses. A comparison of measures yielded some significant differences in favor of the experimental group. It is concluded that there are nondetrimental effects when hypnosis is used with a normal college population.



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Cooper, Leslie M.; Pedersen, Darhl M. (1965). **A note on the failure to find personality differences between volunteers and nonvolunteers for hypnotic research.** International Journal of Clinical and Experimental Hypnosis, 13 (4), 274-278. Personality measures were administered to 136 students in an introductory psychology class at Brigham Young University. 30 Ss subsequently volunteered to have their hypnotic susceptibility assessed. There were no significant differences found between the means of the resulting 23 variables for the 30 volunteers and 106 nonvolunteers. 2 variables (age and ego strength) showed significantly different variances for the 2 groups, but these may be attributed to chance because of the number of significance tests made. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Cooper, G. W.; Dana, R. H. (1964). **Hypnotizability and the Maudsley Personality Inventory.** International Journal of Clinical and Experimental Hypnosis, 12, 28-33. The Maudsley Personality Inventory was administered to 349 male college students. 9 male Ss were chosen to represent each of the 4 possible combinations (total N = 36) of extreme high and low extraversion and introversion scores. An attempt was made to hypnotize each S by means of the Stanford Hypnotic Susceptibility Scale, Form C. Analysis of variance indicated no significant relationship between either extraversion or neuroticism and hypnotizability, although the relationship between extraversion and hypnotizability approached significance. (PsycINFO Database Record (c) 2002 APA, all rights reserved)the relationship between extraversion and hypnotizability approached significance. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Deckert, G. H.; West, L. J. (1963). **The problem of hypnotizability: A review.** International Journal of Clinical and Experimental Hypnosis, 11, 205-235. This paper summarizes the relatively unsuccessful effort to relate hypnotizability to sex, age, psychiatric diagnoses, suggestibility, and various personality traits. The problems of measurement, subject selection, controls, and experimenter bias are reviewed. Comparison of data is difficult and replication of studies infrequent. This might be attributed to incomplete reporting of methodology, defects in experimental design, and various conceptual problems. Concepts which view hypnotizability as "something" universal, "something" unique, or "nothing" are briefly appraised. Finally, hypnotizability is seen as a "term" describing a relationship between a "route" and a "state"--each identifiable by measurable criteria. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Evans, Frederick J. (1963). **The Maudsley Personality Inventory, suggestibility and hypnosis.** International Journal of Clinical and Experimental Hypnosis, 11, 187-200. An attempt to replicate the claim of Furneaux and Gibson (1961) that stable extraverts and neurotic introverts were more susceptible to hypnotic suggestion than neurotic extraverts and stable introverts, using the MPI dimensions, was unsuccessful. Some "trends" are discussed.

Furneaux, W. D. (1963). **Neuroticism, Extraversion, answer suggestibility: A comment.** International Journal of Clinical and Experimental Hypnosis, 11, 201-202. Author develops hypotheses about the relationships between scores on the Maudsley Personality Inventory (MPI) and suggestibility. "(a) The effective-drive experienced by a S in a suggestibility test, or hypnosis situation, is positively correlated with both neuroticism and with extraversion, as measured by the MPI. (b) Effective-drive is also a function of the "press" of the

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test situation, and of the S's previous experience. (c) Within the range of values of effective-drive lower than the Yerkes-Dodson optimum for the test being studied, the magnitude of response to a suggestibility test (or hypnosis) is a positive function of drive. (d) For values of effective-drive greater than the Yerkes-Dodson optimum, response is a negative function of drive" (p. 201).

Levitt, Eugene E.; Lubin, B. (1963). **TAT card '12MF' and hypnosis themes in females.** *International Journal of Clinical and Experimental Hypnosis*, 11, 241-244.

Modification of TAT Card 12M, so that the supine figure was a female, did not increase the frequency of hypnosis themes among sophomore student nurses. The hypothesis that difficulty in identifying with a male figure accounted for the card's inability to predict attitudes towards hypnosis in females was, therefore, not supported. The modified card did elicit significantly more identifications of the standing figure as a professional person. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Levitt, Eugene E.; Brady, J. P.; Lubin, B. (1963). **Correlates of hypnotizability in young women: Anxiety and dependency.** *Journal of Personality*, 31, 52-57. "2 measures of anxiety and 1 of dependency distinguished between groups of hypnotizable and refractory student nurses, according to the hypothesis that low anxiety and high dependency are associated with hypnotizability . . . . Sign analyses of all 6 possible combinations of anxiety and dependency variables were carried out. For all combinations, the frequency of Ss whose reactions to hypnosis were predictable according to the hypothesis significantly exceeded chance expectation."

Arvid; Lauer, Lillian W. (1962). **A factor analytic study of hypnotizability and related personal experiences.** *International Journal of Clinical and Experimental Hypnosis*, 10 (3), 169-181. To throw further light on the exclusivity of "primary suggestibility" as reported by other investigators, a factor analysis was performed in a sample of 102 female college students on the basis of the intercorrelations of 23 items of personal experiences earlier shown to be related to hypnotizability, and 19 items from 2 hypnosis scales. No simple factor structure emerged. 2 factors were interpreted: the 1st as a hypnotic factor with special emphasis on the capability to sustain the effect of suggestion over time, and the 2nd as a combination of psychological changeableness and social influencibility. A brief discussion was given of the composite picture of hypnotic susceptibility emerging from the fact that many hypnotic items loaded on both factors. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Gibson, H. B. (1962). **Furieux's discussion of extroversion and neuroticism with regard to suggestibility.** *International Journal of Clinical and Experimental Hypnosis*, 10, 281-287. (Abstracted in *Index Medicus*, 63, March, S-676) Hypotheses suggested by Furieux (see 36: 4II95F) are criticized on the grounds that his basic assumption that extraverts attend more closely in the interpersonal situation is unwarranted. It is maintained on the contrary that introverts are the less distractible and it is shown that the data published earlier by Furieux and Gibson (see 36: 3II67F) accord with a theoretical model derived from Spence. The results are also discussed in terms of an alternative interpretation. It is further contended that Furieux's treatment of the data leads to other inconsistencies. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

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Kuhner, Arthur (1962). **Hypnosis without hypnosis.** International Journal of Clinical and Experimental Hypnosis, 10 (2), 93-99. The traditional concept of hypnosis that seeks a "sleep" state through employment of formal induction techniques seriously limits its general clinical applicability. It fails to fit the special needs of the patient. An approach designed to counteract this shortcoming manipulates the interpersonal relationship factor. Case illustrations from dental practice support the viewpoint that the proper relationship is akin to the hypnotic one and comparable results obtain without resort to ritualistic induction methods. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Levitt, Eugene E.; Lubin, Bernard; Brady, J. P. (1962). **On the use of TAT Card 12M as an indicator of attitude toward hypnosis.** International Journal of Clinical and Experimental Hypnosis, 10 (3), 145-150. (Abstracted in Psychological Abstracts, 63: 5233) This investigation indicates that responses to TAT Card 12M do not predict attitude toward hypnosis in female Ss, though such predictiveness has been reported for male respondents. The basis for this differential predictiveness may be that the latter give a significantly greater proportion of themes involving hypnosis. An explanatory hypothesis, based on perceptual theory and the stimulus properties of the card, is advanced. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

London, Perry; Cooper, Leslie M.; Johnson, Harold J. (1962). **Subject characteristics in hypnosis research.** International Journal of Clinical and Experimental Hypnosis, 13-21. Items of experiences, interests, and attitudes, in London's Survey, tended to cluster among themselves, suggesting a separate factor for each. The items were compared to several objective tests, but correlations were low. The Survey and Shor's Personal Experiences Questionnaire combined, correlated .64 with Stanford Scale A, suggesting the possible development of a paper-and-pencil predictor of hypnotic suggestibility. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Furneaux, W. D.; Gibson, H. B. (1961). **The Maudsley Personality Inventory as a predictor of susceptibility to hypnosis.** International Journal of Clinical and Experimental Hypnosis, 9, 167-177. 99 Ss were tested on the MPI, Body-Sway, and reaction to hypnotic induction. The Extraversion and Neuroticism scales when used in conjunction were efficient predictors of susceptibility, though the relationships were not simple linear and additive. The most susceptible Ss were the Stable Extraverts, while those scoring high on the Lie scale tended to be insusceptible to hypnosis. From Psyc Abstracts 36:01:3II67F. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Furneaux, W. D. (1961). **Neuroticism, extroversion, drive, and suggestibility.** International Journal of Clinical and Experimental Hypnosis, 9, 195-214. (Abstracted in Psychological Abstracts, 62: 4 II 95F) In the group studied, the body-sway scores of stable extraverts and neurotic introverts tended to be large, whereas they were smaller for stable introverts and neurotic extraverts. This result was explained in terms of a theoretical model in which the effective drive produced in a S by a test-situation is a function of both his neuroticism and his extraversion. The author believes that the theoretical model generates a number of predictions and suggestions which can serve to guide future experimental work in this field. From Psyc Abstracts 36:04:4II95F.

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Hilgard, Josephine R.; Hilgard, Ernest R.; Newman, Martha (1961). **Sequelae to hypnotic induction with special reference to earlier chemical anesthesia.** *Journal of Nervous and Mental Disease*, 133, 461-478. Although a review of relevant literature turned up little in the way of statistical studies, some case studies were located in which unintended or unexpected results of hypnosis were observed. The authors located 15 cases in which the symptoms that developed subsequent to symptom removal using hypnosis were more disturbing than the original symptom. This type of response occurred in patients with extensive psychiatric history, prior to the hypnosis experience. However, it could not be determined whether the undesired response was due to hypnosis or to the psychotherapy that was provided to these patients. In order to avoid the complications introduced by studying undesired sequelae in psychiatric patients receiving posthypnotic suggestions for therapeutic purposes, this investigation used a sample of non-patient university students (114 male and 106 female) who volunteered for research. Subjects were asked about "aftereffects" in followup interviews. Aftereffects that might be considered sequelae are exemplified by statements such as, "I was 'in a fog' for one hour" and "Things were hazy and vague for four hours." Of the 220 Subjects, 17 (7.7%) reported sequelae, many of them "minor and fleeting." None of the sequelae was of psychotic proportions. Only 2.3% of the sample experienced sequelae that lasted as long as a few hours. Although the relationship of sequelae to hypnotizability was slight, there seemed to be a relationship to having had a difficult experience with chemical anesthesia in early childhood. They present six case studies, three who had difficulty with chemical anesthesia and three for whom the sequelae appeared to relate to a different kind of childhood experience. The investigators concluded that "a routine experience of hypnosis is generally harmless in a student population, but E (or therapist) should be alert for possible aftereffects, and provisions should be at hand for occasional brief psychotherapy, even though the experiments themselves are not oriented toward therapy" (p. 477). The authors present a psychodynamic explanation for the sequelae observed. "It is conjectured that the conflicts within the induction phase of hypnosis that produce either immediate or delayed symptoms are primarily those having to do with the exercise of power and the reaction to authority, hence, conflicts between the conscious willingness to be hypnotized and the unconscious resistance to or fear of the submissive role required. The individual forms that such conflicts take are highly varied. "The conflicts within the established state differ, in that the state is not reached unless the conflicts of the induction are at least temporarily resolved. The new state, which has regressive characteristics, makes S vulnerable to conflicts based on reality distortions (as in suggested hallucinations) or ethical-social issues (as in suggested behavior violating his moral code or superego demands). Sometimes specific suggestions revive early experiences that were traumatic or provocative of fear.

Sometimes specific suggestions revive early experiences that were traumatic or provocative of fear. "While the language of psychodynamics is appropriate in the discussion of these cases, the many redintegrative factors also suggest that learning theory can have much to say in explanation of them. Because learning theory has ways of dealing with conflict and conflict resolution, it can also encompass some of the problems discussed as conflicts over authority, commonly treated in psychodynamics as transference problems. "The many

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reflections of earlier childhood experiences in the sequelae, including some of the dreams, suggest the promise of a developmental theory of hypnosis" (p. 477).

London, Perry (1961). **Subject characteristics in hypnosis research: Part I. A survey of experience, interest, and opinion.** International Journal of Clinical and Experimental Hypnosis, 151-161. Questionnaire measuring (a) direct and observational experience with hypnosis, and (b) stereotyped attitudes towards hypnosis was administered to 645 undergraduate students of psychology. Results indicate hypnosis considered in generally favorable light. Girls were less willing than boys to be hypnotic Ss. Items regarding the nature of hypnosis reflected a rather sophisticated attitude. From Psyc Abstracts 36:01:3II51L. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Faw, Volney; Wilcox, Warren W. (1958). **Personality characteristics of susceptible and unsusceptible hypnotic subjects.** Journal of Clinical and Experimental Hypnosis, 6 (2), 83-94. "1. The Ss for this study of hypnosis were a cross section of a college population, 44 women and 36 men. A group or mass induction technique was used; the Ss were divided into three sections for ease in administering the hypnotic suggestions which were read. 1. A susceptibility scale was developed on which trained Os rated the Ss and Ss rated themselves. The susceptible were defined as those above the median and the unsusceptible as those below the median. The r between the self and O ratings was .68 which indicates a substantial though not high relationship. 3. When the susceptible are compared with the unsusceptible, the susceptible had better over-all adjustment scores on the MMPI, the group Rorschach and the clinical assessment of diaries, which indicates that susceptibility is a characteristic possessed in greater degree by the better adjusted. 4. However, there were among the more poorly adjusted of the susceptible, a small group with high Hy scores indicating that they had responses similar to clinic patients who had developed conversion hysteria. Their susceptibility was attributed to two factors: first, on the psychic items of the Hy scale their responses indicate rather optimistic cooperative attitudes which would make their initial responses to hypnotic suggestions favorable; second, their tendencies to translate psychological stress into bodily symptoms which have a great similarity to the criteria of hypnotic behavior would indicate a common response mechanism for the expression of symptomatology and hypnotic behavior. 5. The unsusceptible tended to have poorer over-all adjustment scores on the MMPI, the Rorschach and the clinical evaluation of diaries. They had significantly poorer scores on the D, Mf and Sc scales indicating a greater tendency toward depression, less security in regard to sex status and more distraction in the form of bizarre thoughts and feelings than do the susceptible. 6. Neither the profiles of the susceptible nor those of the unsusceptible correspond to the three generalized patterns of the MMPI: the neurotic, the behavior problem or the psychotic. 7. Our general conclusion is that while susceptibility is associated predominately with the well adjusted personality save for those with high Hy scores on the MMPI, the unsusceptible belong to a deviant group not easily classified by a term in general use in abnormal or clinical psychology" (pp. 93-94).

Barber, Theodore Xenophon (1956). **A note on 'hypnotizability' and personality traits.** Journal of Clinical and Experimental Hypnosis, 4, 109-114. (Abstracted in Psychological Abstracts 58: 3288)

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1. Eighteen 'typical students' were ranked on a scale of hypnotizability and on the ten traits measured by the Guilford-Zimmerman Temperament Survey. The ranks on the hypnotizability scale were determined by the subjects' responses -- after twenty minutes of standard hypnotic induction -- on five standard tests of suggestibility.
2. The coefficients of correlation between hypnotizability and 'ascendancy,' 'sociability,' 'emotional stability,' and 'objectivity' ranged between +0.47 and +0.70. There was a negative coefficient of -0.45 between hypnotizability and 'restrain' [sic].
3. This investigation tends to confirm the studies that find a relationship between hypnotizability and 'desirable character traits' and the studies that find no relationship between hypnotizability and maladjustment.
4. If these results are confirmed on a larger and more representative sample we may be able to accept a 'good guy' theory of hypnotizability -- at least for college students. The more hypnotizable students tend to confirm [sic] to our cultural definition of a 'good guy' -- sociable, emotionally stable, non-submissive, non-hypersensitive, happy-go-lucky, and interested in overt activity" (p. 113).

Kupfer, David (1954). **Hypnotherapy in a case of functional heart disorder.** Journal of Clinical and Experimental Hypnosis, 2 (3), 186-190. "Summary. A young soldier with functional cardiac complaints was treated with hypnosis in a total of 4 interviews. The dynamics were bypassed and the therapeutic suggestions attached to 2 significant events in the patient's childhood, dealing intimately with the oedipal conflict and castration fears. Follow-up studies of 3 weeks duration revealed that significant changes had been produced in the patient's attitudes towards himself and towards his role in the military service" (p. 190).

Kline, Milton V.; Haggerty, Arthur D. (1953). **An hypnotic experimental approach to the genesis of occupational interests and choice.** III. Hypnotic age regression and the Thematic Apperception Test -- a clinical case study in occupational identification. Journal of Clinical and Experimental Hypnosis, 3, 18-31.

1. Hypnotic age regression responses to TAT cards in reference to occupational identifications appear quantitatively and qualitatively different from waking simulation responses.
2. A quantitative analysis of the hypnotic age regression protocols points strongly in the direction of further confirmation of the neuropsychological validity of hypnotic age regression.
3. TAT cards suitable for children are significantly more productive as psychological stimuli in the hypnotic regression state than in waking simulation.
4. Adult TAT cards fail to elicit the ratio of productivity in hypnotic age regression that they do in waking simulation.
5. Hypnotic age regression appears to involve perceptual alterations of ego functions and related neuropsychological activity.
6. Simulation behavior appears to be primarily projective behavior with recall and role-playing characteristics interspersed within a behavior pattern which retains its adult perceptual orientation.
7. The utilization of a language usage quotient technique adds to the holistic validity of neuropsychological age regression and sharply differentiates hypnotic behavior from role-playing simulation.
8. The technique of hypnotic age regression described in this paper would appear to be a valid

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and useful method for the systematic study of occupational interests and choice within the framework of ego functions and developmental psychology. 9. Hypnosis would appear to produce empathizing and identifying processes more productively than the waking state" (pp. 30-31). Author's Summary - "This paper is a further report on the use of varied hypnotic methods and techniques for the investigation of the origins of occupational interests and vocational choices. As an experimental means for studying the development of such interests and attitudes, hypnotic age regression would appear to have considerable validity and value. As a clinical technique in certain cases of vocational maladjustment it would seem to have considerable value" (p. 31).