

SCIENTIFIC BREAKTHROUGHS IN HYPNOSIS FOR PAIN MANAGEMENT

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The value of hypnosis for pain management is well known and supported by a large body of research. For example, in a 2008 study by Montgomery and others, patients using hypnoanalgesia needed 1/3 the amount of anesthetic, had 1/2 the level of reported pain, experienced 1/4 the nausea and nearly 1/4 the level of emotional upset of the control group. The non-hypnotic control group also cost 10% more, mainly due to increased surgical time. Yet there is considerable resistance from the medical community to using hypnoanalgesia. There is a need for using trained hypnotherapists in medical and dental settings to reduce costs and free up the doctor's time.

The Science of Hypnosis

Until the 1980's there was no scientific theory of hypnosis. Helen J. Crawford of the Virginia Polytechnic Institute and others developed a four stage theory of how people enter hypnosis. The four stages are:

1. The **body relaxes**
2. The **left hemisphere** of the brain focuses on an idea or an object
3. The **prefrontal cortex** of the brain is inhibited
4. Dominance shifts from the **left hemisphere** to the **right hemisphere**

The **left hemisphere** is in charge of logic, mathematics, higher level language and direction of attention (working with prefrontal cortex). The left hemisphere is essentially analytic. The **right hemisphere** is in charge of bodily functions, emotions, basic language skills, music and seeing the "big picture." The right hemisphere is essentially holistic. The **prefrontal cortex** is in charge of planning, social relationships, evaluation of choices and judgment. It also produces worry and anxiety. The prefrontal cortex is the "critical faculty."

We finally have an answer to the question, What makes some subjects better at entering hypnosis than others? People who can easily shift thinking strategies from one hemisphere to the other enter hypnosis more easily than those who tend to rely on one hemisphere only.

High hypnotizables quickly shut out external stimuli during the induction phase and easily establish rapport with the hypnotist. Low hypnotizables begin to pay more attention to external stimuli, especially sounds, as they begin to relax during a hypnotic induction.

Low hypnotizables (LH's) generally need more training to produce reliable hypnoanalgesia. Distraction techniques work better for LH's along with metaphor, assigned exercises and indirect suggestion. Elman's waking hypnosis and waking suggestion approaches can be very effective with LH's. He used focusing the clients' minds on a given idea and their own motivation.

It is not surprising that Crawford concluded that the first stage in hypnosis is relaxation because the main research tool was the Stanford Hypnotic Susceptibility Scale, which begins with fixation of attention on a spot. It then goes on to use suggestions for eyelid fatigue and heaviness to produce eye closure.

In 1994 Crawford and others published an article in the journal *Brain* announcing that high hypnotizables (HH's) who were able to eliminate pain perception with hypnosis had a significantly larger front part of the corpus callosum (the rostrum) than LH's. The HH's had a

rostrum that was nearly 50% larger than for the LH's. This is the first physical difference ever associated with a specific hypnotic ability.

To understand rapid inductions it is valuable to learn about the orienting reflex, which is the characteristic behavioral and physiological response to a novel stimulus by a person or animal. It includes focusing attention on the source of the stimulus, turning the head and body toward it, and having the pupils dilate while the heart rate slows down. In his rapid induction Dr. Gil Boyne:

1. Took charge by having the client assume a particular posture.
2. Delivered the surprise command "sleep" while pulling on the arm.
3. The subject closes his eyes in response to the command "sleep."
4. He immediately had the client begin to relax.
5. He then had the client sit down and began a hand levitation.

This approach is effective because:

1. The hypnotist is established as an authority figure.
2. The surprise elicits the orienting reflex and interrupts the activity of prefrontal cortex.
3. Closing the eyes prevents external orienting, so client goes within.
4. The relaxation suggestions continue and deepen the hypnotic state.
5. Hand levitation completes shift from left to right hemisphere domination.

A major problem in using hypnosis for hypnoanalgesia is dealing with low hypnotizables.

The percentage breakdown for hypnotic susceptibility is:

High 26%
Medium 29%
Low 45%

Low hypnotizables (LHs) attend to external noises when they begin relaxing. Some ways of overcoming this problem are:

Shock induction
Waking hypnosis
Distraction technique
Use metaphor and indirect suggestion
Assigning an exercise

Gil Boyne's shock induction is often effective with LHs. Dave Elman's waking hypnosis is also effective with LHs. It begins by enhancing motivation. Then you focus the subject's mind on a single idea. Telling a story with indirect suggestions also can be effective as is training the subject in engaging in a mental activity, thinking about a favorite activity or even solving a puzzle. An exercise such as clenching a fist when inhaling and relaxing the fist while exhaling combined with imagining an activity can occupy the LHs awareness.

Hypnosis for Pain

Dr. James Esdaile (1808-1860) used hypnoanesthesia for surgery at a hospital in Calcutta in the 1840's. His assistants used magnetic passes to produce hypnosis. Sometimes it took many sessions over a period of days to produce the needed deep trance

Traditional Chinese medicine uses electrostimulation of LI 4 to produce anesthesia. Mayer and others (1977) used the cold pressor test combined with naloxone and found that electroacupuncture produced endorphins. Goldstein and Hilgard (1975) used the same approach

to study hypnoanalgesia and discovered that naloxone did not block the hypnoanalgesia. They concluded that higher order brain processes were blocking awareness of pain.

In 1993 Crawford and others found specific changes in blood flow in the brain during hypnoanalgesia. There were also increases in theta wave production in particular areas of the brain. Theta waves on the cortex indicate inhibition. Three areas are inhibited: the thalamus where pain impulses are transmitted to the brain, the somatosensory cortex where the pain is felt consciously and located, the prefrontal cortex which evaluates the incoming sensations.

The classic suggestions use these three different parts of the brain:

“You feel numbness in your hand.” (Somatosensory)

“The sensations seem far away.” (Thalamus)

“If you feel anything, it might be a feeling of pressure or tingling.” (Prefrontal Cortex)

We can add to this another nervous system response that can be used for pain relief, altering the emotional experience:

“You and your body are safe and you feel comfortable.” (Anterior Cingulate Cortex)

Hofbauer and others worked with suggestions for reducing pain and found that brain scans indicated that the primary somatosensory area of the cortex was working harder. In a follow up study, Rainville and others learned that the anterior cingulate cortex responded to suggestions for change in the emotional aspect of pain while the somatosensory area did not show increased activity.

Feedforward is the priming or inhibiting of sensory cells by the central nervous system. Anticipating and fearing pain can prime or facilitate nerve endings. There is some evidence that they can also be inhibited or dulled.

Chronic Pain

Before beginning hypnosis for chronic pain, you need to determine how the client experiences the pain so you have characteristics to modify. Some terms that can apply are: Aching, beating, binding, biting, burning, caustic, cool, corroding, cramping, crushing, cutting, drilling, dull, flashing, flickering, gnawing, grabbing, grinding, gripping, heavy, hot, itching, lacerating, nagging, nauseating, numb, penetrating, piercing, pinching, pounding, pulsing, rasping, searing, sharp, shooting, smarting, spasming, splitting, squeezing, stabbing, stinging, tearing, throbbing, tingling, twisting.

In using a hypnotic state it is a good idea to test for bypassing the critical faculty. There are three types of challenge tests for this:

Ideomotor, heavy hand

Challenge, can't bend arm

Cognitive, sour taste, smell

Most of the more sophisticated hypnoanalgesia techniques are designed for chronic pain, such as caused by cancer and other chronic conditions. When suppressing awareness of chronic pain, it can be valuable to retain awareness of new symptoms which may signal a change or a new problem. You can give suggestions such as, “Now that your mind has eliminated or dealt with that old discomfort, your unconscious mind can make you aware of any new feelings that you need to report to your doctor.”

Erickson's 11 Pain Management Techniques

1. Direct hypnotic suggestion for total abolition of pain
2. Indirect hypnotic abolition of pain (See example of Joe below)
3. Amnesia
 - Partial, selective or complete of selected subjective qualities
 - Forgetting there was a pain
4. Hypnotic analgesia
5. Hypnotic anesthesia
6. Hypnotic replacement or substitution of sensations
 - Symptom substitution. Pain into itch
7. Hypnotic displacement of pain and pain attributes
8. Hypnotic dissociation
 - Go in time to before the pain was bad or didn't exist
 - Go to another place
 - Separate from body, "It is interesting to look at a muscle twitch. You probably have had the experience of feeling a muscle twitch on its own and it's like it isn't really a part of you."
 - Go to the future when you have healed and feel better, future pacing
 - Keeping part of the body in hypnosis
9. Hypnotic reinterpretation of pain experience
 - Example, Dragging, gnawing, heavy pain to weakness and profound inertia to relaxation with warmth and comfort
 - Stabbing into startle reflex, upsetting but brief
 - Throbbing, nagging, grinding pain into unpleasant rocking in a boat or throbbing paper cut
10. Hypnotic time distortion
 - Example, Stabbing pain for 5 min. with 20 min in between with dread into amnesia for all past attacks, pain lasting only 10 to 20 seconds
11. Hypnotic diminution of pain
 - Find a dial inside from 0 to 10 that you can turn up and down
 - Pain will diminish imperceptibly hour after hour without awareness for several days

Exercises

1. Producing Hand Numbness (Possible feedforward inhibition of peripheral nerve endings)
 - Begin by asking if there is any problem with your pinching the test spot on the web of the thumb such as a tendency to bruise easily or a condition or medication that increases bleeding, eg. Coumadin. Then set up a scale for pain from 1 to 10 where 1 is completely comfortable and 10 is the worst pain imaginable. Next, with the subject's permission, begin pressing on the test spot with increasing pressure until the subject indicates, "That's enough." Ask for the number.
 - Do a brief relaxation induction. Produce a hand catalepsy and have the subject produce hand numbness through suggestions. Use ideomotor signaling to communicate with subject. Test with the adductor pollicis point. After ask if the subject was more or less aware of outer sounds.

Possible script:

Now that your hand is suspended, floating in the air, you can begin to notice some changes in how your hand feels. I don't know what the changes will be but you can find out. Sometimes when your hand is floating like in a hot tub you just lose track of it or it may be like when you're sleeping and you've been sleeping on your arm and when you wake up your hand is asleep and has no feeling. Or it may be that you start to have the sensation of wearing a glove, a glove with very soft lining so that there is almost no feeling in your hand. And it may even be that you can remember sometime when you had a shot of Novocain and you felt that numbness and that numbness can travel to your hand. And as you begin to experience that change in your hand, that the loss of feeling while it floats there you can lift a finger on your other hand to indicate that you are beginning to feel numbness. [When you get the signal continue with suggestions for increasing numbness, for all the feeling draining from the hand. At some point ask, Does your hand feel thoroughly numb now? If it does raise your finger. With a positive indication announce that you are going to cast the numbness. Reach over and pinch the test spot. Ask the subject, Is that comfortable? If the answer is negative ask, "On a scale of one to 10, how uncomfortable is it? Do some deepening with more suggestions and test again. Again ask for the result on a scale of one to 10. Complement the subject on doing a good job and conclude the hypnosis session. Then ask the subject about awareness of external sounds during the session.]

2. The Three Changes

Do an induction and produce hand catalepsy. Give suggestions for numbness and wait for the subject to indicate the hand is numb. Test by pinching the adductor pollicis. Then have the hand move over to some part of the body and transfer the numbness while the hand continues to feel numb. (Somatosensory)

Have the numb hand float away. "Your arm is getting longer and longer. Stretching like rubber or elastic until your hand is so far away that you can barely feel it or you can't feel it at all. Lift the finger on your other hand when your hand disappears or is very far away. (Thalamic)

Now give suggestions for a change in feeling in the other hand. "There may be a glowing in the hand, especially on the back of the hand, and a strange, warm feeling. Your hand feels very unusual. You will notice how you feel trailing, tingling feelings as I gently drag my fingernails along the back of your hand. You may even see light trails left behind. The sensations in your hand are very different." (Prefrontal cortex)

3. Changing Emotional Associations

"I want you to think about getting a shot or having blood drawn. How do you feel about that? [Repeat the emotional content of the subject's answer.] Now would you like to go to a place where you are completely comfortable and feel safe? You can feel safe in every part of your body. Your toes are safe. Your hands are safe. Your elbows and shoulders are safe. You are safe and strong. You are comfortable and safe. When you feel some pressure, if you feel any pressure, you will continue to feel safe and you can trust me just as you can trust a doctor or a nurse. When you feel very safe you can nod your head. [Continue with suggestions until subject nods head.] And you can have this same feeling of safety when you get a shot or you have blood drawn. [Press against shoulder or on crook of elbow with the dull end of a pen or pencil.] It's a small thing and you feel safe."

Advanced Applications

4. Using Pain to Heal

“Remember a time when you had a cut. You can remember the stinging feelings and was it a sharp pain? And that feeling was calling all the healing cells and beginning the healing process. And you can remember that strange feeling of healing, a sort of gentle aching or humming warmth. And we all experience healing in a way that is special to each one of us. You can put those sensations to work anywhere you need healing in your body at any time that you need to.”

5. Elman’s “Magic Spot” Waking Suggestion.

“I want you to open your eyes wide. Now, I’m going to pull your eyes shut. Now, I’d like you to pretend that you can’t open your eyes and you can continue to pretend that you can’t open them. Pretend to so strongly that when you try to open your eyes they just won’t open. Now try to open them while you’re pretending. That’s fine. You can keep right on pretending you can’t open your eyes and something amazing is going to happen. You’re going to have a magic spot placed on your arm. Once you have this spot on your arm you will never have to feel an injection. In the future you can be aware that the doctor or nurse is doing something there but it won’t bother you. Your arm will feel completely comfortable before during and after the injection. Now watch as I paint a magic spot on this area, like this. [Rub some water on the selected spot.] Now whenever you get an injection in this area you will know something is being done and it will be completely comfortable or you may not feel anything at all. Now let me test it. [Pinch over the area.] From now on you can have injections on this spot easily. Just point out your magic spot to the doctor or nurse because you know exactly where it is and it won’t bother you a bit. And now you can open your eyes.”

6. Elman’s Esdaile State.

Use an induction such as the eye closure technique and then test for somnambulism. Now tell the subject, “You can make a fist with your hand and make it very tight. Then you can relax that fast and you can relax it more and more until you can’t relax it any more than that. We can call that the basement of relaxation and now it’s time to go there.

To get to the basement you go down three floors. To get to floor A you have to relax twice as much as you already are. To get to the next floor B you need to relax twice as much as you did at floor A and to get down to floor C you have to relax twice as much as you did at floor B. And floor C. is the basement of relaxation.

Begin by imagining an elevator with open doors. You step into the elevator and the doors close. When I snap my fingers the elevator will start to go down. As it goes down you can feel yourself relaxing twice as much as you already are and when you feel twice as relaxed as you are right now you will be down at floor A. Tell me when you are at floor A by saying the letter A out loud.

Wait for the subject to say A. Use a similar procedure to go down to floor B. And when the subject says B or tries to, continue down to floor C. Now apply the three tests:

1. Test for hypnotic analgesia.
2. Tell the subject to lift one leg. The subject should be unable to lift the leg.
3. Tell the subject to open the eyes. The eyes should stay shut. You are looking for an absence of movement. Now take the arm, lift it and put it in a position. If the subject is in the Esdaile State, the arm will remain in that position. Allow the subject to enjoy this state of deep hypnosis for a while and then say,

“In a moment I’m going to lead you up the three levels from C to A and you can imagine that you are in the elevator rising up and returning to this room, to your normal state of awareness. It is important that you return because that will make it much easier to enter this state at any time in the future that you want to or you need to. By returning, when I utter the letter A, you will gain power over the ability to return to this very pleasant, very comforting state. And now imagine that you are entering the elevator at level C.” Bring the subject up through the three levels to full awareness.

Three Erickson Techniques For Chronic Pain

I can't take away all of your pain. That is asking too much of me; it is asking too much of your body. And if you lose 1 percent of that pain you would still have 99 percent of it left; you wouldn't notice the loss of 1 percent, but it would still be a loss of 1 percent. You could lose 5 percent of that pain. You wouldn't notice the loss of 5 percent, because you would still have 95 percent of the pain; but you would still have a loss of 5 percent. Now you could lose 10 percent of the pain, but that really wouldn't be noticeable because you would still have 90 percent of it; but you nevertheless would have a loss of 10 percent of your pain. [You continue to diminish the pain - down to 85 percent, 80 percent, 75, 70, 65, 60, and so on. Then you say:] You might even lose 80 percent of your pain, but I don't think that is quite reasonable, yet. I would be willing to settle for a loss of 75 percent. [And the patient is going to agree with you, regretfully.] What is the difference between 75 and 80 percent, and sooner or later you can lose 80 percent, and maybe 85 percent; but first, let us settle for 80. (Somatosensory) (Milton Erickson, MD, in Hammond, p. 56.)

Amnesia for Pain

There is a tremendous amount of learning you have acquired during your lifetime of experience in developing anesthesia throughout your entire body. For example, as you sit and listen to me now, you've forgotten the shoes on your feet ... and now you can feel them. You've forgotten the glasses on your nose ... and now you can feel them. You've forgotten the collar around your neck ... and now you can feel it ... You listen to an entertaining lecture, and you forget about the hardness of the chairs. But if it happens to be a very boring lecture, your chair feels so utterly uncomfortable. You sense those things. We've all had tremendous experience in developing anesthetics in all parts of our bodies. So how did you get that anesthesia for the shoes on your feet? Not because there is a drug put into the nerve; not because you were told to have the anesthesia; but because in your lifelong learning you have acquired the automatic ability to turn off sensations and to turn them on again. (Milton Erickson, MD, in Hammond, p. 54.)

Changing the Site of the Pain

You can be aware of that pain in your abdomen and it is upsetting. But you've said that sometimes it's worse and sometimes it's better. And you've also noticed that it moves from one place to another in your abdomen. And right now as you pay attention to it you can notice that it's moving a bit and you can feel it moving to another place. When it's moved at least an inch you can lift your finger. That's fine. And now notice that it's moving even more. Feel it moving and let it move up somewhere into your chest. When you feel that in your chest, lift your finger. Fine. But that pain can keep right on moving, moving all the way up to your shoulder and just nod your head when you feel it in your shoulder. Fine. And now the pain can move down your arm all the way down past your elbow down to your little finger and when you feel that pain lodging in your little finger you can lift your finger. That's fine. Now that pain in your little

finger is much easier to tolerate. You can do things that you like and you can enjoy what you're doing and just leave that discomfort in your little finger because you can tolerate it there.

Use of a Metaphor

You've talked about that pain as feeling cold and sharp. Now I wonder if you've ever taken butter right out of the freezer? When it's in the freezer it becomes very hard and you could even cut a stick of butter so that it has a sharp point and put it in the freezer. And you can imagine that butter getting very, very cold and hard. But it's a warm day today and you can take that butter out of the freezer and place it on a plate on the table in such a way that the sun is shining through the window on to the plate and the butter. See the light shining on the butter and the hard piece of butter has a very sharp point. But soon it warms up and you can watch the edges of the butter begin to get round. Soon it is no longer sharp at all. And as the warm light continues to soften the butter it begins to lose a little bit of its shape. Now it might take a little while but that butter will begin to slump down a bit as it gets warmer and warmer. And now all the sharp edges are rounded and there is a little pool of butter beginning to form on the plate. But you have time and you can continue to sit there and watch the butter get softer and softer. Soon there is a larger pool of melted water forming on the plate. The stick of butter is getting smaller and the pool is getting larger. And eventually there will be just a little speck of butter floating in the middle of a large pool of melted butter and soon enough you can watch that last little speck of butter melt into the pool. And you can smell the butter and you can dip your finger in the pool of melted butter and taste it and it tastes good.

Dave Elman's Self-Hypnosis Procedure

One way to bypass your own critical faculty is to close your eyes and pretend you can't open them. Then test to make sure that you can't open them. Don't go any further until the eye-closure is firmly established. Then give yourself the suggestion. It might be a suggestion for anesthesia or analgesia, to have more energy, to be able to concentrate on your work, to relieve aches and pains of any kind, etc. You can establish autosuggestion with a cue word. Elman used the word "green" because he thought of it as God's color. But any word or phrase will do, solid, so be it, strong, etc.

You can follow this routine: Say the cue word and close your eyes. Test for eye-closure. When you are sure you have eye-closure, use the cue word again, knowing that the instant you say it your suggestion will take full and complete effect. Then test to make sure that the suggestion has taken full effect. To release the eye muscles, say the cue word again, and your eyes will open. It takes about four seconds to anesthetize yourself. But you must practice.

Hypnosis for Hemorrhoid Removal

You are now in a relaxed state. An individual who is as relaxed as you are does not feel pain as acutely as a person who is tense. In fact, sometimes, he feels no pain at all. [Then one of the patient's hands is elevated. It usually remains in that position.] Please open your eyes and look at your elevated hand and note how perfectly motionless it remains, just as if you were a statue. Now close your eyes again. Your extremity remains motionless because you relax so well that your muscles are in equal tone and are not pulling against each other. [I then request the patient to look again at his motionless uplifted hand to convince him thoroughly that he is in a trance.] You relax wonderfully well. You are an excellent subject. Therefore, there is no need for you to feel pain following surgery. I want you to remember that there is *no need* for you to feel pain. You may feel pressure.

[Dr. Werbel then demonstrated glove anesthesia, after which he continued:] This shows that you

need have no pain following surgery. Remember you need have no pain following surgery. If you have any pain at all it should be minimal. ... When you have your first bowel movement be relaxed just as you are now and you need feel no pain. Remember, when you move your bowels following surgery, be relaxed as you are now and your bowels may move just as easily and comfortably as they did prior to surgery. (Ernest Werbel, MD, in Hammond, p. 78)

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