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## Clinical Hypnosis and Surgery

*By Steven Gurgevich, PhD*

THE LATEST FIGURES FROM THE CENTER FOR HEALTH STATISTICS report nearly 72 million surgical procedures performed in the United States in 1996. No one needs to be reminded of the financial expense associated with surgery, but the cost in terms of anxiety and pain can be just as staggering to the patient. Mind-body methods, such as clinical hypnosis and guided imagery, hold great promise in reducing both the psychic costs of suffering as well as the financial expense of surgery.

Mind-body methods for medical and surgical applications date back to the Ebers papyrus in Egypt, Aesclepius' sleep-healing temples in ancient Greece, and the "cult of the magnet" represented by Franz Antoine Mesmer.<sup>1,2</sup> Although Mesmer's methods were discredited, British physicians Elliotson and Esdaile documented and published hundreds of cases of mesmerism applied successfully for anesthesia and analgesia in surgical procedures.<sup>3</sup>

Esdaile, a surgeon practicing in India in the 1840s, documented major surgery—from limb amputations to eye surgery—using hypnosis as the anesthetic. His use of hypnosis was particularly noteworthy because only 5% of his surgical patients died, when the standard surgical mortality rate was 40%. He felt that the "mesmeric" relief of pain accounted for the greater survival. His critics said that it was only out of deference to him as a white, British doctor that his patients did not complain. He responded that they must be surviving out of deference as well. Ultimately, Esdaile too was discredited and the Royal Medical Society banned the practice of mesmerism. Esdaile said that "... not many of this generation will live to benefit from mesmerism, if they wait till it is admitted into the Pharmacopoeia."

For the past two and a half centuries, however, mind-body methods have continued to be used despite resistance from some conventional medical institutions.<sup>4</sup> Various methods have been identified by many names, but it was the British physician James Braid who first used the label "hypnosis."<sup>5</sup> Finally, in 1955 and 1957, the British and American medical associations deemed hypnosis an acceptable medical procedure. Initial research studies sought to determine whether hypnosis was beneficial. That question has been addressed

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in numerous studies and meta-analyses of research findings.<sup>6-9</sup> Today, investigations have shifted from determining if hypnosis works to exploring how and in what ways may it be used to help surgical patients.

For example, Montgomery et al performed a meta-analysis of 20 published controlled studies using hypnosis in surgical applications.<sup>6</sup> They found that the surgical patients in hypnosis treatment groups experience better outcomes than 89% of those in control groups across six clinical outcome categories: negative affect, degree of pain, amount of pain medication used, physiological indicators, recovery time, and treatment time.

## What is Hypnosis?

There are many competing theories as to what exactly constitutes and defines hypnosis. Marmer describes hypnosis as a psychophysiological tetrad of altered consciousness consisting of narrowed awareness, restricted and focused attentiveness, selected wakefulness, and heightened suggestibility.<sup>10</sup> The Spiegels describe hypnosis as a psychophysiological state of arousal, attentive receptive focal concentration, with a corresponding diminution in peripheral awareness.<sup>11</sup> They give examples of naturally occurring trance, such as daydreaming, intense concentration, distraction, and motivation for

selective perception. Brown and Fromm call it, "A special state of consciousness in which certain human capabilities are heightened and others may fade into the background."<sup>12</sup>

Most will agree that hypnosis involves a system of skills and methods that allow the individual's mind and body to share information more effectively to achieve a therapeutic outcome. One of those methods is called trance, or a conscious state of awareness, in which an individual can be absorbed in his own thoughts and ideas so well that he may perceive and respond to those thoughts and ideas as if they were real.

And most will certainly agree that all hypnosis actually is self-hypnosis. The therapist or clinician provides instructions and guides the patient in shifting consciousness to become absorbed in pleasantly relaxing thoughts, ideas, images, and feelings, and to be distracted from aversive or noxious internal or external stimuli. This process is called hypnotic induction. It allows and empowers the patient to experience greater control over sensory and physiological experience, facilitating a greater openness and receptivity to therapeutic suggestions. The trance state, along with hypnotic suggestions, is called hypnotic utilization. Thus, there are two main aspects of the process of hypnosis: induction of trance and utilization of the trance state.

As with most phenomena, there is a normal distribution of ability and receptiveness, which is called hypnotizability. Most research studies employ one of the many scales designed to measure hypnotizability in children and adults.<sup>10,13-18</sup> Although one would think that greater hypnotizability would correlate with greater therapeutic response, some have discovered that hypnotizability does not necessarily correlate with therapeutic benefit in surgical applications. This is due to the many co-mediating factors that also influence the responsiveness to hypnosis, such as personality, motivation, belief and faith, positive or negative expectancy, and therapeutic rapport.<sup>19</sup>

## Hypnosis in the Operating Room: Pain

A recent research study by Lang et al garnered high visibility in the popular media.<sup>20</sup> The authors randomly assigned 241 patients undergoing percutaneous vascular and renal procedures to three groups: standard care (n = 79), structured attention (n = 80), and self-hypnotic relaxation (n = 82). All patients had access to patient-controlled analgesia with fentanyl and midazolam. The patients rated their pain and anxiety on a visual analogue scale (VAS) every 15 minutes during and after the procedure. The investigators found that the standard care group used significantly greater amounts of analgesic

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medication: 1.9 units vs. 0.8 and 0.9 for the structured attention and hypnosis groups, respectively. Only one patient in the hypnosis group became hemodynamically unstable, compared to 10 structured attention patients ( $P = 0.004$ ) and 12 standard care patients ( $P = 0.0009$ ). The procedure times were significantly shorter ( $P = 0.0016$ ) in the hypnotic group (61 minutes) than the standard care group (78 minutes) and the structured attention group (67 minutes). Overall, the study demonstrated benefits of hypnotic relaxation in reducing pain, lessening need for medication, decreasing anxiety, and achieving greater hemodynamic stability. These results were consistent with the findings of their previous study, which examined self-hypnotic relaxation during interventional radiological procedures.<sup>21</sup> In this previous study, an extra person was available in the operating room to guide the patients into visualizations of places the patients found pleasant.

Mauer et al examined the use of medical hypnosis for orthopedic hand surgery, which commonly results in severe postoperative pain, as well as for the painful therapy exercises and wound care required shortly after surgery.<sup>22</sup> In a quasi-experimental research design with 60 hand surgery patients receiving either usual treatment or usual treatment plus hypnosis, the hypnosis group exhibited significantly lower measures of perceived pain intensity, perceived pain affect, and state anxiety. The physical ratings of progress were significantly higher for the hypnosis subjects than the controls, and the hypnosis group had significantly fewer postoperative complications.

Defechereux et al used hypnoanesthesia for 197 thyroidectomies and 21 surgical explorations for hyperparathyroidism between 1994 and 1997.<sup>23</sup> The operative data and postoperative course were compared to 119 patients who had declined hypnosis or were judged unsuitable for it and underwent general anesthesia. The patients using hypnoanesthesia experienced less postoperative pain, less analgesic medication usage, shorter hospital stay, and improved postoperative convalescence.

### **Hypnosis in the Operating Room: Nausea and Vomiting**

Up to 70% of surgical patients receiving general anesthesia experience postoperative nausea and vomiting (PONV). Eberhart et al conducted a double-blind randomized study of 100 patients undergoing thyroidectomy.<sup>24</sup> Patients were randomly assigned to a suggestion group that had an audiotope playing throughout the entire operation, or to a control group that had a blank tape playing throughout surgery. A classic droperidol-

fentanyl- $N_2O$  anesthesia technique was used to preserve the neuropsychological functions required to process the therapeutic suggestions offered on the audiotope during the operation. The suggestion group had significantly less PONV: 47.2% vs. 85.7% for the control group. The suggestion group also required less anti-emetic treatment: 30.6% vs. 68.6% for the control group. Williams et al reported similar findings for a double-blind randomized study of 60 women receiving peri-operative suggestions during gynecological surgery.<sup>25</sup>

Enqvist et al studied the pre-operative use of hypnosis to reduce postoperative vomiting in 50 female patients undergoing breast surgery.<sup>26</sup> They randomly assigned the women to control or hypnosis groups. The hypnosis group listened to an audiotope daily for 4-6 days prior to surgery. Hypnotic induction with suggestions for relaxation and sensations of thirst and hunger (positive suggestions incompatible with nausea) were provided. The patients in the hypnosis group had significantly less vomiting: 39% vs. 68% in the control group. They also reported less nausea and less need for analgesic medication postoperatively. This study may not fit perfectly under our heading—as the intervention came prior to surgery, not in the operating room—but it is a compelling example of how easy it can be to prepare patients with both self-hypnosis and post-hypnotic suggestions for positive therapeutic effects.

### **Hypnosis in the Operating Room: Blood Loss**

Enqvist et al examined the effects of pre-operative and intra-operative suggestion on blood loss and recovery from maxillofacial surgery.<sup>27</sup> Sixty patients were assigned to three groups. Eighteen patients listened to a hypnosis audiotope containing pre-operative therapeutic suggestions (group A), 18 patients listened to a hypnosis audiotope containing pre- and intra-operative suggestions (group B), and 24 patients listened to a hypnosis audiotope with only intra-operative suggestions (group C). Each of these groups was compared to a group of matched control patients. Groups A and B listened to the audiotope 1-2 times daily for the two weeks before surgery. The audiotapes provided therapeutic suggestions for improved healing, less bleeding, lower blood pressure, and faster recovery. The audiotope was 17 minutes in length. During surgery, Group B also heard an audiotope, which contained similar positive therapeutic suggestions. No differences in somatic response were found for patients in groups A and B assessed with the Stanford Hypnotic Susceptibility Scale. Group A, which received pre-operative therapeutic suggestions, had 30% less blood loss ( $P = 0.008$ ) than its matched control. Group B, receiving pre- and intra-operative therapeutic

suggestions, had 26% ( $P = 0.09$ ) less blood loss than its controls. And group C, only receiving intra-operative therapeutic suggestions, experienced 9% less blood loss than its control group.

### **Hypnosis in the Operating Room: Wound Healing**

Ginandes et al published the results of a clinical trial that examined the effect of hypnosis on postsurgical wound healing in 18 women undergoing reduction mammoplasty.<sup>28,29</sup> All the women received the same surgical protocol and postoperative care, and were randomly assigned to usual care, adjunctive supportive attention, or adjunctive hypnosis. The hypnosis group was seen weekly for eight weeks (two weeks prior to surgery until six weeks after) for administration of a scripted hypnotic induction. The induction was recorded on audiotape at each session and provided to the patient. The hypnosis group received therapeutic suggestions for decreased inflammation, visible soft-tissue restoration, and accelerated tissue remodeling via direct, indirect, structured, and open-ended suggestion. During the eight sessions they also were provided with positive expectancy for comfort and rapid wound healing, diminished bleeding, healing imagery, and hypnotic skills for positive time distortion.

The supportive attention group paralleled the hypnosis group, receiving weekly 30-minute sessions that emphasized focused attention about feelings toward the surgery and surgical experience. Digital photographs of the incision were assessed at one and seven weeks with a wound assessment inventory (WAI) measuring edema, erythema, and exudates (which was substituted for open wound size). Subjective ratings of pain and perceived healing at one and six weeks were obtained along with an objective functional recovery assessment, which was determined using an SF-36 health survey completed at enrollment and seven weeks postoperative.

Nurse ratings on the WAI were significant for accelerated healing in the hypnosis group ( $P < 0.001$ ). The hypnosis group had the most rapid healing over time, followed by the supportive attention group; the usual care control group had the slowest rate of healing. Physicians' ratings from digitized photographs did not achieve statistical significance, but trends were consistent with the pattern observed from nurses' WAI ratings. Similarly, patients also noted a trend toward greater wound healing in the predicted pattern, but the finding also did not achieve statistical significance.

### **Pediatric Surgical Applications**

Children are excellent hypnotic subjects and also experience significant benefits from the application of

clinical hypnosis for surgical procedures.<sup>30,31</sup> Lambert randomly assigned 52 children, matched by age, sex, and diagnosis, to hypnosis and control groups.<sup>32</sup> The hypnosis group was taught imagery and received suggestions for a positive postoperative experience. The hypnosis group showed significantly lower postoperative pain ratings, shorter hospital stays, and less anxiety compared with the control group.

### **Cost Effectiveness of Hypnosis for Surgery**

Lang and Rosen examined the cost data for the patients involved in their 2000 study referenced earlier.<sup>33</sup> They found that the average cost associated with standard sedation was \$638 per case, whereas the cost for patients receiving both sedation and hypnosis was only \$300 per case. This represents an average of more than 50% (or \$338) cost savings per procedure.

### **Side Effects of Hypnosis and Cautions**

Clinical application of hypnosis, when administered by qualified practitioners, typically is benign and effective. Perhaps the greatest danger would be in using hypnosis to remove pain before it has been adequately evaluated. However, there can be complications arising out of heightened transference, such as unexpected feelings of disorientation or hostility toward the clinician.<sup>34</sup> There also have been reports of unexpected amnesia, disorientation, paralysis, and unexpected catharsis. These are not direct and predictable side effects of hypnosis per se, and are attributable to the psychodynamics involved, and to the personal characteristics of the patient.

A frequent caution about hypnosis involves its use by untrained or unqualified people. A simple rule of thumb is that a clinician should not be using clinical hypnosis to treat a condition unless he or she also is qualified to treat the condition without hypnosis.

### **Finding Qualified Professionals**

The majority of states have not legislated or established guidelines for the certification and practice of hypnosis. However, the American Society of Clinical Hypnosis (ASCH, [www.asch.net](http://www.asch.net)) has established a process for certifying professionals who have completed accredited training and approved hours of individual supervision. Both ASCH and the Society for Clinical and Experimental Hypnosis offer training workshops and scientific programs for physicians, psychologists, dentists, and social workers. Another professional association is the American Psychotherapy and Medical Hypnosis Association ([www.apmha.com](http://www.apmha.com)).

## Conclusion

The public's well-recognized interest in using alternative and complementary therapies that can be safe, effective adjuncts to conventional care<sup>35</sup> also extends into the operating suite. Prior to the availability of chemical anesthesia, hypnosis was the standard form of anesthesia. It has been shown repeatedly that hypnosis is a benign and effective adjunct for the surgical patient. Results of experimental studies have demonstrated that hypnosis is beneficial in reducing anxiety, lowering pain perception, lessening postoperative nausea and vomiting, reducing blood loss, achieving greater hemodynamic control, accelerating wound healing, lowering complication rates, shortening hospital stays, creating greater compliance with postoperative treatment, and enhancing both patient and clinician satisfaction. And in those cases where chemical anesthesia is not advisable or safe, clinical hypnosis is an effective option.<sup>36</sup>

One of the frequently mentioned deterrents of using hypnosis in surgical procedures is that it may be too time-consuming. However, many of the studies cited in this article have relied upon standard scripted hypnotic inductions that can be administered in as little as 10 minutes. Montgomery et al used a 10-minute standardized hypnotic induction prior to surgery for women undergoing excisional breast biopsy.<sup>8</sup> The results demonstrated significantly less postoperative pain ( $P = 0.001$ ) and distress ( $P = 0.025$ ).

It also has been found that audiotape recordings may be an effective and efficient way of administering hypnosis.<sup>37</sup> The benefits of hypnosis in surgical applications, along with cost savings and efficiency of administration, make hypnosis both feasible and accessible to the rising number of individuals who want to use alternative and complementary methods to enhance their healing experience.

## Recommendation

Questions about the usefulness of hypnosis for surgery have been answered both clinically and empirically. The list of benefits of hypnosis for surgical patients, clinicians, and health care organizations are expanding and becoming more rigorously documented. The next greatest question for research on this subject may well be, "Why isn't hypnosis offered to every patient undergoing surgical procedures?" [Editor's note: The author would like to thank Dr. D. Corydon Hammond for his assistance in the literature review for this paper.] ❖

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