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## Clinical Reviews

### AN HYPNOTIC SUGGESTION: REVIEW OF HYPNOSIS FOR CLINICAL EMERGENCY CARE

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**Abstract—Background:** Hypnosis has been used in medicine for nearly 250 years. Yet, emergency clinicians rarely use it in emergency departments or prehospital settings. **Objective:** This review describes hypnosis, its historical use in medicine, several neurophysiologic studies of the procedure, its uses and potential uses in emergency care, and a simple technique for inducing hypnosis. It also discusses reasons why the technique has not been widely adopted, and suggests methods of increasing its use in emergency care, including some potential research areas. **Discussion:** A limited number of clinical studies and case reports suggest that hypnosis may be effective in a wide variety of conditions applicable to emergency medical care. These include providing analgesia for existing pain (e.g., fractures, burns, and lacerations), providing analgesia and sedation for painful procedures (e.g., needle sticks, laceration repair, and fracture and joint reductions), reducing acute anxiety, increasing children's cooperation for procedures, facilitating the diagnosis and treatment of acute psychiatric conditions, and providing analgesia and anxiolysis for obstetric/gynecologic problems. **Conclusions:** Although it is safe, fast, and cost-effective, emergency clinicians rarely use hypnosis. This is due, in part, to the myths surrounding hypnosis and its association with alternative-complementary medicine. Genuine barriers to its increased clinical use include a lack of assured effectiveness and a lack of training and training requirements. Based on the results of further research, hypnosis could become a powerful and safe non-pharmacologic addition to the emergency clinician's arma-

mentarium, with the potential to enhance patient care in emergency medicine, prehospital care, and remote medical settings. © 2014 Elsevier Inc.

**Keywords—hypnosis; emergency medicine; prehospital care; pain relief; nonpharmacological therapy**

#### INTRODUCTION

Although hypnosis has been used in medicine for nearly 250 years, emergency clinicians rarely use it in emergency departments (EDs) or prehospital settings. This review describes hypnosis, its historical use in medicine, several neurophysiologic studies of the procedure, its uses and potential uses in emergency care, and a simple technique for inducing hypnosis. It also discusses some reasons why the technique has not been widely adopted and suggests some methods to increase the use of hypnosis in emergency care, including potential areas for emergency medicine–related research.

#### WHAT IS HYPNOSIS?

Although its etymology derives from the Greek *hypnos*, meaning sleep, hypnosis is actually a state of highly focused awareness. Hypnosis, familiar to most people as a staple of stage shows, film noir, and psychiatric practice, often appears under other guises, such as meditation,

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religious ecstasy, guided imagery, therapeutic imagery, suggestive therapeutics, guided meditation, and biofeedback. Hypnotic trance states can also occur naturally, as when reading an absorbing book, watching an engrossing movie, performing a monotonous activity (e.g., “highway hypnosis”), daydreaming, or meditating (1).

Medical hypnosis enhances patients’ acceptance of clinicians’ positive suggestions to change their perceptions, sensations, thought, and behavior (Table 1) (2–4). Defined best by what it does, clinician-induced hypnosis helps patients focus their awareness to lessen pain, anxiety, and troublesome symptoms. Hypnosis works as well as premedication before surgery, even for patients that use a hypnosis recording. Preoperative effects, which would benefit emergency patients, include decreased anxiety, decreased blood pressure, reduced blood loss, enhanced postoperative well-being, improved intestinal motility, shorter hospital stays, reduced postoperative nausea and vomiting, and a reduced need for analgesics (5,6).

Research on hypnosis shows that it has demonstrable effects on both the brain and the so-called “involuntary” internal physiologic processes (7–9). It alters cerebral blood flow and incoming stimuli at the cortical level (10,11). While complex hypotheses have been proposed to explain these physiological effects, and functional brain imaging is increasing our knowledge of hypnotic effects on the brain, it remains unclear exactly how hypnotic effects occur (12,13).

### BRIEF HISTORY OF HYPNOSIS

Medical and religious practitioners have used hypnosis for millennia under various names. Calling it “sacred sleep,” Egyptian priests used hypnosis for religious and medical purposes at least 4000 years ago; the ancient Greeks were treated with hypnosis in “sleep temples of the sick.”

Medical hypnotism’s modern era began in 1778, when the Austrian physician Franz Anton Mesmer introduced it in France under the unfortunate name “animal magnetism.” In the 19<sup>th</sup> century, surgeons John Elliotson and James Esdaile performed hundreds of procedures using

**Table 1. Characteristics of Clinical Hypnosis (5,6)**

Hypnosis is a state of mind characterized by:
Compliance with acceptable instructions
Attention focused on hypnotist or suggested images/ideas
Heightened receptivity for suggestions
Absence of normal critical thinking
A hypnosis session consists of
Explaining the process and obtaining consent
Inducing the trance-like state
Deepening the hypnotic state
Delivering acceptable suggestions
Emerging from the hypnotic state

hypnosis as the sole anesthetic, with a relatively low mortality for the time, resulting in the 1831 publication, *Numerous Cases of Surgical Operations Without Pain in the Mesmeric State* (14,15). In the early 20<sup>th</sup> century, and of particular relevance to emergency medicine (EM), the physician and psychotherapist P. P. Podiapolsky found that nearly all wounded soldiers responded “with exceptional facility” to hypnosis, although he did not use it for major operations (16).

Other physicians began using the technique, but the concurrent success of ether and chloroform quickly displaced the use of hypnosis for surgical anesthesia. Medical hypnosis then faded into the background (14,17).

Although 20<sup>th</sup> century medical hypnosis became primarily identified with psychiatry, United States and British medical groups endorsed it for general medical use. In 1958, the American Medical Association reported that there can be “definite and proper uses of hypnosis in medical and dental practice” and recommended the establishment of “necessary training facilities” (18). The British Medical Association had already published a similar statement (1,18). The American Psychiatric Association wrote in 1961 that “hypnosis has definite application in the various fields of medicine,” and in 1996 a National Institutes of Health panel published a statement saying that there was “strong evidence for the use of hypnosis in alleviating pain associated with cancer” (19,20).

### DISCUSSION

#### IS HYPNOSIS REAL?

Neurophysiologic studies demonstrate that hypnosis differs from simple imagination, placebos, and sleep (21). Research using positron emission tomography (PET) shows that hypnosis involves the anterior cingulate cortex and that actual changes occur in the brain’s perception that do not occur when a suggestible person simply follows instructions (22,23). PET also shows that hypnosis, through the midcingulate cortex modulating a large cortical network, actively decreases a person’s subjective and objective perception of and emotional response to pain (24–26). Scans show that pain under hypnosis is not perceived, rather than simply being experienced with greater tolerance (27). Further illuminating how powerful hypnosis can be, PET shows that the right anterior cingulate cortex activates both when individuals hear sounds and when hearing sounds is suggested under hypnosis—but not when they simply imagine that they hear sounds (8,28).

Functional magnetic resonance imaging studies show significant activity and connectivity involving the brain’s default mode network (DMN), as well as other areas, in hypnotized subjects (29–31). The DMN, thought to generate spontaneous thoughts and to be essential for

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