
Alternative Medicine: Expanding Medical Horizons

A Report to the National Institutes of Health
on Alternative Medical Systems and Practices
in the United States

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designed to enhance medical treatment, the relationship between imagery and outcome of disease, types of patients who respond to imagery, and so on.

2. Replication and expansion of earlier intriguing—but small or poorly controlled—studies that indicated a direct effect of imagery on biologic function.

Hypnosis

Hypnosis, derived from the Greek word *hypnos* (sleep), and hypnotic suggestion have been a part of healing since ancient times. The induction of trance states and the use of therapeutic suggestion were a central feature of the early Greek healing temples, and variations of these techniques were practiced throughout the ancient world.

Modern hypnosis began in the 18th century with Franz Anton Mesmer, who used what he called "magnetic healing" to treat a variety of psychological and psychophysiological disorders, such as hysterical blindness, paralysis, headaches, and joint pains. Since then, the fortunes of hypnosis have ebbed and flowed. The famous Austrian neurologist Sigmund Freud at first found hypnosis extremely effective in treating hysteria and then, troubled by the sudden emergence of powerful emotions in his patients and his own difficulty with its use, abandoned it.

In the past 50 years, however, hypnosis has experienced a resurgence, first with physicians and dentists and more recently with psychologists and other mental health professionals. Today it is widely used for addictions, such as smoking and drug use, for pain control, and for phobias, such as the fear of flying.

Hypnosis is a state of attentive and focused concentration in which people can be relatively unaware of, but not completely blind to, their surroundings. If something demands attention—such as a fire in the wastebasket—hypnotized people easily rouse themselves to react to the situation. In this state of concentration, people are highly responsive to suggestion. But, contrary to popular folklore, people cannot be hypnotized involuntarily or follow suggestions against their wishes. They must be *willing* to concentrate their thoughts and to follow the suggestions offered. In the end, all hypnotherapy is self-hypnosis. Some people—usually those with

a vivid fantasy life—are better hypnotic subjects than others.

Hypnosis has three major components: absorption (in the words or images presented by the hypnotherapist); dissociation (from one's ordinary critical faculties); and responsiveness. A hypnotherapist either leads a client through relaxation, mental images, and suggestions or teaches clients to do this for themselves. Many hypnotherapists provide guided audiotapes for their clients so they can practice the therapy at home. The images presented are specifically tailored to the particular client's problems and may employ one or all of the senses.

Physiologically, hypnosis resembles other forms of deep relaxation: a generalized decrease in sympathetic nervous system activity, a decrease in oxygen consumption and carbon dioxide eliminations, a lowering of blood pressure and heart rate, and an increase in certain kinds of brain wave activity (Spiegel et al., 1989).

The most prominent organization of clinical professionals in the field is the American Society for Clinical Hypnosis, which numbers approximately 3,000 members (M.D.s and Ph.D.s). In addition, there are probably thousands of others who use hypnotherapy as part of their practice (e.g., R.N.s, M.S.W.s, marriage and family counselors, and lay therapists).

Clinical applications. One of the most dramatic uses of hypnosis is the treatment of congenital ichthyosis (fish skin disease), a genetic skin disorder that covers the surface of the skin with grotesque hard, wartlike, layered crust. Dermatologists thought ichthyosis was incurable until an anesthesiologist, Arthur Mason, in the mid-1950s used hypnosis by chance to effectively treat a patient he thought had warts. After Mason used hypnosis on the patient (a 16-year-old boy), the boy's scales fell off, and within 10 days, normal pink skin replaced it. Since that time, hypnosis has been used to treat ichthyosis—not always resulting in complete cure but often resulting in dramatic improvement (Goldberg, 1985).

Hypnosis is, however, most frequently used in more common ailments, either independently or in concert with other treatment. The following are a few examples:

- **Pain management.** Pain increases with heightened fear and anxiety. Because hypnotherapy

helps a person gain control over fear and anxiety, pain is also reduced. Hypnotic suggestion (one may suggest that a part of the body become numb) can be used instead of or together with an anesthetic. Twelve controlled studies have demonstrated that hypnosis is a superior way to reduce migraine attacks in children and teenagers. In one experiment, schoolchildren were randomly assigned a placebo or propranolol, a blood-pressure lowering agent, or taught self-hypnosis; only the children using self-hypnosis had a significant drop in severity and frequency of headaches (Olness et al., 1989). Another pain study of patients who were chronically ill reports a 113-percent increase in pain tolerance among highly hypnotizable subjects versus a control group who did not receive hypnosis (Debeneditis et al., 1989).

- *Dentistry.* Some people have learned how to tolerate dental work with hypnotherapy as the only anesthetic. Even when an anesthetic is used, hypnotherapy can also be employed to reduce fear and anxiety, control bleeding and salivation, and reduce postoperative discomfort.
- *Pregnancy and delivery.* Women who have hypnosis prior to delivery have shorter labors and more comfortable deliveries. Women have also used self-hypnosis to control pain during delivery (Rossi, 1986).
- *Anxiety.* Hypnosis can be used to establish a new reaction to specific anxiety-causing activities such as stage fright, plane flights, and other phobias.
- *Immune system function.* Hypnotherapy can have a positive effect on the immune system. One study has shown that hypnosis can raise immunoglobulin levels of healthy children (Olness et al., 1989). Another study reported that self-hypnosis led to an increase in white blood cell activity (Hall, 1982-83).

Other studies in the past 40 years have shown that hypnosis can affect a wide variety of physical responses, including reduction of bleeding in hemophiliacs (Lucas, 1965), reduction in severity of attacks of hay fever and asthma (Mason and Black, 1958), increased breast size (Honiotest, 1977; LeCron, 1969; Staib and Logan, 1977; Willard, 1977; Williams, 1973), the cure of warts (Ahser, 1956; Sinclair-Geiben and Chalmers, 1959; Surman et al., 1973; Ullman and Dudek,

1960), the production of skin blisters and bruises (Bellis, 1966; Johnson and Barber, 1976), and control of reaction to allergens such as poison ivy and certain foods (Ikemi, 1967; Ikemi and Nakagawa, 1962; Platonov, 1959).

No one knows exactly how such bodily changes are brought about by hypnosis, but they clearly occur because of the connections between mind and body. It is also clear that suggestions have the capacity to affect all systems and organs of the body in a variety of ways.

To flow naturally in and out of hypnotic states is common; it happens to people watching television, for instance. We are also likely to move into a trance state in situations of extreme stress. When a person in a position of power yells, the yelling may have effects that become as strong as posthypnotic suggestions. When physicians or other health care providers make predictions about an illness, they may have a similar effect. It is particularly important that physicians understand this state and the potential power of the positive and negative suggestions they use with their patients.

Research needs and opportunities. The following needs exist in the area of hypnosis:

- Because of the profound influence of hypnosis, an understanding of how to apply it in all therapeutic settings is needed. Future study must be directed toward influencing and maximizing the beneficial capacity of trance states occurring in doctors' offices and on operating tables as well as minimizing the destructive effects of negative or offhand remarks made in these places. And of course, further research is needed on explicit, hypnotic treatment for specific illnesses.
- The cases in which hypnosis has resulted in dramatic improvements of severely disfiguring genetic diseases such as ichthyosis deserves further scientific attention. They raise fundamental questions about the extent and limits of the mind's powers and suggest that such limits may be very wide indeed.
- Hypnosis is often reserved as a "backup" therapy to be used when conventional treatments fail. However, the examples above show the broad spectrum of its usefulness and suggest that in some conditions hypnosis may be ap-

meaning, make possible "direct interconnections between spatially separated objects." Josephson suggests that these interconnections permit the operation of "psi functioning" between humans, currently held by biomedical science as impossible (Josephson and Pallikara-Viras, 1991). In any case, the fact that nonlocal events are now studied by physicists in the microworld suggests a greater permissiveness and freedom to examine phenomena in the biological and mental domains—such as mental healing—that may possibly be analogous.

Research accomplishments and major reviews.

Anecdotal accounts of the power of prayer in "mental," "spiritual," "psychic," "distant," or "absent" healing are both legendary and legion. Countless books on these subjects are available, but this literature contains little scientific value.

Scientific attempts to assess the effects of prayer and spiritual practices on health began in the 19th century with Sir Francis Galton's treatise entitled "Statistical Inquiries into the Efficacy of Prayer" (Galton, 1872). Galton assessed the longevity of people frequently prayed for, such as clergy, monarchs, and heads of state. He concluded that there was no demonstrable effect of prayer on longevity. Judged by modern research standards, Galton's study contains many flaws, but he succeeded in advancing the idea that healing methods involving prayer and similar spiritual practices could be subjected to empirical scrutiny.

Since Galton's time, a sizable body of scientific evidence has accumulated in the field of spiritual healing showing positive results. This information is little known to the scientific community. Psychologist William G. Braud, a leading researcher in this field, summarizes this research in a recent review:

There exist many published reports of experiments in which persons were able to influence a variety of cellular and other biological systems through mental means. The target systems for these investigations have included bacteria, yeast, fungi, mobile algae, plants, protozoa, larvae, insects, chicks, mice, rats, gerbils, cats, and dogs, as well as cellular preparations (blood cells, neurons, cancer cells) and enzyme activities. In human "target persons," eye movements, muscular movements, electrodermal activity, plethysmographic activity, respiration, and brain rhythms have been affected through

direct mental influence (Braud, 1992; Braud and Schlitz, 1991).

These studies in general assess the ability of humans to affect physiological functions of a variety of living systems at a distance, including studies in which the "receiver" or "target" is unaware that such an effort is being made. The fact that these studies commonly involve nonhuman targets is important; lower organisms are presumably not subject to suggestion and placebo effects, a frequent criticism when human subjects are involved.

Many of these studies do not describe the psychological strategy of the influencer as actual "prayer," in which one directs entreaties to a Supreme Being, a Universal Power, or God. But almost all of them involve a state of prayerfulness—a feeling of genuine caring, compassion, love, or empathy with the target system, or a feeling that the influencer is one with the target.

In addition to the review by Braud, two other major reviews of this field have been published in the past decade by researchers Jerry Solfvin and Daniel J. Benor (Benor, 1990, 1993; Solfvin, 1984). These reviews examine the results of more than 130 controlled studies of distant mental effects, approximately half of which show statistically significant results. *The Future of the Body: Explorations Into the Further Evolution of Human Nature*, a scholarly, encyclopedic work by Michael Murphy, cofounder of the Esalen Institute, reviews the major research accomplishments in the field of mental healing and related fields and is a valuable guide (Murphy, 1992). The potential relevance of this area for medical practice has been examined by Larry Dossey (1993).

Experiments in distant hypnosis deserve intense scientific scrutiny. In such studies a subject is hypnotized remotely, is unaware when the hypnosis is taking place, and has no sensory contact with the hypnotist. Several such experiments were performed in France in the late 1800s by Janet and Gilbert and were repeated with greater refinement in 260 laboratory experiments in 1933 and 1934 by Vasiliev and colleagues in Leningrad (Vasiliev, 1976). These studies offer tantalizing suggestions that the human mind may display nonlocal characteristics (see the next section). For reasons to be discussed there, exploring this possibility scientifically should be given high priority.

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