

## The Placebo Effect in Alternative Medicine: Can the Performance of a Healing Ritual Have Clinical Significance?

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In alternative medicine, the main question regarding placebo has been whether a given therapy has more than a placebo effect. Just as mainstream medicine ignores the clinical significance of its own placebo effect, the placebo effect of unconventional medicine is disregarded except for polemics. This essay looks at the placebo effect of alternative medicine as a distinct entity. This is done by reviewing current knowledge about the placebo effect and how it may pertain to alternative medicine. The term *placebo effect* is taken to mean not only the narrow effect of a dummy intervention but also the broad array of nonspecific effects in the patient–physician relationship, including attention; compassionate care; and the modulation of expectations, anxiety, and self-awareness. Five components of the placebo effect—patient, practitioner, patient–practitioner interaction, nature of the illness, and treatment and setting—are examined.

Therapeutic patterns that heighten placebo effects are especially prominent in unconventional healing, and it seems possible that the unique drama of this realm may have “enhanced” placebo effects in particular conditions. Ultimately, only prospective trials directly comparing the placebo effects of unconventional and mainstream medicine can provide reliable evidence to support such claims. Nonetheless, the possibility of enhanced placebo effects raises complex conundrums. Can an alternative ritual with only nonspecific psychosocial effects have more positive health outcomes than a proven, specific conventional treatment? What makes therapy legitimate, positive clinical outcomes or culturally acceptable methods of attainment? Who decides?

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Efficacious therapy, in one biomedical definition, is therapy that has positive effects greater than those of an indistinguishable dummy treatment in a randomized, controlled trial (RCT) (1–3). Such specific efficacy is actually a comparative measure: intervention contrasted with placebo. This relative effectiveness, which is estimated by statistical testing, is taken to indicate “authenticity.” The clinical significance, that is, the outcome measured by using the patient’s original condition as a baseline, is usually a secondary consideration for determining “legitimate” medical interventions. Any clinical impact due to the placebo, which is deemed to lack “truthfulness,” is even less notable and is valued only as a comparison baseline for “genuine” effects (3). Specific effects are by definition superior to nonspecific effects. The clinical repercussions of the placebo are tolerated as necessary nuisance noise but are otherwise considered inconsequential or treated with contempt (4).

Given the privileged status of specific effects, it is not surprising that the clinical impact of alternative medicine’s placebo effects are routinely ignored (5). The only serious question has been whether alternative medicine has more than a placebo effect. Discarding all placebo effects in a single trash basket of “untruthfulness,” however, diminishes our knowledge of important dimensions of health care. This essay examines the neglected clinical significance of the placebo effect in alter-

native medicine and raises the possibility that some types of unconventional medicine may produce placebo outcomes that are dramatic and, from the patient’s perspective, especially compelling. The term *placebo effect* is taken to mean not only the narrow effect of an imitation intervention but also the broad amalgam of nonspecific effects present in any patient–practitioner relationship, including attention; communication of concern; intense monitoring; diagnostic procedures; labeling of complaint; and alterations produced in a patient’s expectancy, anxiety, and relationship to the illness. This essay asks whether alternative medicine can have an “enhanced” placebo effect. In some conditions, can any of alternative medicine’s particular rituals have a greater impact than the rituals of conventional medicine or than a proven physiologically active treatment? After all, as many of the examples in this essay will demonstrate, “two interventions may have different effects on patient outcome even though both [are] equivalent to placebo in clinical trials” (6). Dismissing a treatment as “just a placebo” may not be enough.

Alternative medicine may be an especially successful placebo-generating health care system. Rather than specific biological consequences, which epidemiologists designate as “fastidious efficacy” (7), alternative medicine may administer an especially large dose of what anthropologists call “performative efficacy” (8). Performative

efficacy relies on the power of belief, imagination, symbols, meaning, expectation, persuasion, and self-relationship. This essay takes five components of the placebo drama—patient, practitioner, patient–practitioner interaction, nature of the illness, and treatment and setting—and examines their “placebogenic” potentials in unconventional healing practices. Much of the evidence is derived from conventional research and is speculatively applied to alternative medicine. Also, it should be noted that most of the placebo research discussed in this essay does not represent an “artificial” placebo effect explainable by natural history or regression to the mean. Rather, it usually involves comparative experiments with two different types of placebo or the same placebo delivered under different cognitive or emotional circumstances where two distinct placebo outcomes would not support the idea of placebo effect as only natural history. Finally, this essay argues mostly in generalities. Obviously, the placebo effect is likely to be at least as heterogeneous in alternative medicine as in conventional medicine, but it is hoped that raising these questions will encourage further discussion and research.

### PATIENT CHARACTERISTICS

Although the patient is the protagonist in the placebo drama, research has failed to find consistent placebo responders or to identify personality traits or other qualities of persons who frequently react to placebo (9–11). However, evidence shows that patient expectations influence outcomes of both placebo and active treatment. Asthmatic patients who believe that an inert substance is a bronchodilator or a bronchoconstrictor respond accordingly (12–14). In a small but classic crossover experiment, healthy volunteers received a placebo pill in which a magnet was embedded. In random order, at different times, they were told that they were receiving a relaxant, a stimulant, or a placebo. Subsequent gastric motility was significantly consistent with patients’ expectations (15). Patient expectancies also significantly change or even reverse the actions of many potent pharmaceutical agents (16–19).

Adherence to placebo may also be a surrogate marker for a patient’s own contribution to the activation of the placebo response (20, 21). In RCTs, such “placebo adherence effects”—the post hoc differences observed in the placebo arm between those who comply

with taking placebo and those who do not—are associated not only with symptom relief but also with concrete end points, including survival (22–24). Indeed, differences in adherence are associated with differences in outcomes that exceed the effects of many pharmaceutical agents (25). Patient preferences for one type of intervention, especially in participative interventions (for example, exercise or diet programs), may contribute significantly to outcomes, including increased placebo responses (26–28).

In contrast to conventional medicine, with its measured objectivity, alternative medicine offers a charged constellation of expectations. Alternative medicine’s romantic vision is inhabited by benevolent and intentional forces (for example, the innate intelligence of chiropractic or the *qi* of acupuncture) that are unrestrained by the laws of normative physics (29). An exaggerated notion of the possible readily elicits patients’ magical anticipation. These unconventional concepts do not require absolute belief “in the sense that their truth value is certified by logic or argument” but rather requires moderate openness “in the sense that they are taken into the imagination and lived with, if only for a time” (30).

Alternative medicine emphasizes personal responsibility, which can facilitate adherence. Indeed, the act of switching to another medical system and exhibiting preference by action demonstrates an openness to active participation and adherence and possibly enhances it. Paying out-of-pocket and other signs of commitment, such as following daily lifestyle regimens, undoubtedly marshal adherence effects. The reasons that patients choose alternative medicine may also potentiate a placebo response. Patients with chronic diseases often turn to unconventional healing after long-term negative conditioning with mainstream medicine (31). In this situation, patients’ hope (based on no previous experience with alternative medicine) may provide an opportunity for “deconditioning” from previous unsuccessful medical experiences.

### PRACTITIONER CHARACTERISTICS

The practitioner-healer must expertly play the role of heroic rescuer to facilitate a placebo effect (32). Numerous RCTs have compared optimistic or enthusiastic physician attitudes toward drug or placebo with neutral or doubtful physician attitudes. Practitioners have had

significant impact on such clinical conditions as pain (33–36), psychiatric illness (37–41), hypertension (42, 43), obesity (44), and perimenopause symptoms (45). Although some studies have shown no effect of physicians' expectations on clinical end points (46–48), a systematic review of 85 studies found that although more research is needed, provider-induced "expectancies are a mechanism for placebo effects, [which have] received support across a range of clinical areas in a variety of studies" (49). A second review, which used more stringent entry criteria, found 25 RCTs that examined the impact of randomly assigning patients with physical illnesses to different levels of expectancy and emotional support. Although researchers found inconsistent effects and determined that further research was needed, they also found that "enhancing patients' expectations through positive information about the treatment or illness, while providing support or reassurance, [seemed to] significantly influence health outcomes" (50).

Even in blinded RCTs, practitioner certitude seems to influence the magnitude of the placebo effect. In one RCT that simultaneously compared two double-blind RCTs, dental patients in one trial received placebo, narcotic analgesics, or narcotic antagonists and those in the other trial received only a placebo or a narcotic antagonist. Dentists knew the possible interventions in both trials but remained blinded to administration of medication. Pain in placebo recipients was significantly worse in the second trial, in which narcotic drugs were not an option, than in the first trial (51). An earlier RCT of the effect of physician expectations on hypertension drugs also found that practitioner belief can transform outcomes (52).

Practitioners of unconventional medicine are less restrained by scientific objectivity than practitioners of conventional medicine. The sensibilities of alternative practitioners are therefore often more optimistic and positive than those of their mainstream counterparts (53). The characteristics thought to enhance the placebo effect (and any active intervention) seem to be fully operational in the offices of alternative medicine.

#### PATIENT–PRACTITIONER INTERACTION

The placebo drama is probably more successful if the patient and practitioner find each other's beliefs and actions mutually credible or at least intriguing. Recipro-

cal expectations need to be negotiated and joined in the patient–physician duet. Many studies indicate that the patient–practitioner encounter is a potent factor in health outcomes (54–56) and that for many non-life-threatening illnesses, clear diagnosis, assurance of recovery, opportunity for dialogue, and physician–patient agreement about the nature of the problem hasten recovery or relief (57, 58). One study examined 200 patients who presented to general practitioners with symptoms but no abnormal physical signs and in whom no definite diagnosis could be made. Patients were randomly assigned in a 2 × 2 design to treatment or no treatment and to a positive consultation, in which they received "a firm diagnosis and [were] told confidently that [they] would be better in a few days," or a negative consultation, in which they were told that their condition was uncertain. Although provision of treatment made no difference, positive interaction produced significantly faster recovery (59). A similar experiment in 100 patients with acute tonsillitis had analogous results (60).

Consultation in unconventional medicine is more likely than its mainstream counterpart to produce a precise diagnosis that matches patients' perceptions. In unconventional medicine, patient experience is never devalued or brushed aside as unreliable (61). Inevitably, since the alternative world is not as constrained by the dichotomy of objectivity and subjectivity, the chiropractor will find the subluxation, the acupuncturist will detect the yin–yang disharmony, and the health food advocate will identify the transgression that makes sense of the patient's life-world. In addition, if a patient is new to alternative medicine, an opportunity for exchange is invariably offered, providing the patient with "theoretical explanations designed to take the mystery out of process and problems" (62). When it is considered that 40% to 60% of patients may never receive a firm diagnosis in conventional medicine (63, 64), an alternative diagnosis may be a potent form of nonspecific healing that changes the circumstances under which the patient exists (65–67), including reducing the "dysphoria of uncertainty" (68).

Besides diagnosis, the healing encounter also establishes therapeutic goals. Paradoxically, while the alternative diagnosis tends to be precise, treatment aims can be diverse. Because of such notions as "holistic medicine" and "body, mind, spirit," alternative medicine can have extremely broad, indeterminate therapeutic targets and

therefore, at least from a cultural view, “in some sense cannot fail” (69). Such amorphous goals can provide additional maneuvering room for positive progress, or at least incremental change (70). If the patient’s symptoms do not directly improve, it is likely that something positive will happen and be attributed to the intervention (even if the change pertains only to alternative constructs, such as the homeopathic spiritual force or the acupuncture *qi*). Taken together, the alternative diagnosis, prognosis, and treatment aims serve “to regulate symptom intensity and distress” and “create enough certainty to diminish the threat of the inchoate while preserving enough ambiguity to allow for fresh improvisation” (71).

### THE NATURE OF THE ILLNESS

The placebo effect may benefit from the types of illnesses that alternative medicine commonly treats. Data indicate that the overwhelming majority of medical conditions treated by unconventional medicine fall into the following categories: highly subjective symptoms lacking identifiable physiologic correlates, chronic conditions with a fluctuating course often influenced by selective attention, and affective disorders (2, 72). Not surprisingly, these conditions are precisely those that researchers believe are especially susceptible to inordinately strong placebo responses: back and chronic pain (73–75), fatigue (76, 77), arthritis (78, 79) headache (80, 81), allergies (82, 83), hypertension (in some situations) (84, 85), insomnia (86, 87), asthma (13, 88), chronic digestive disorders (89, 90) depression (91, 92), and anxiety (93). Even researchers who question the existence or significance of a placebo effect—at least in the narrow sense of the outcome produced by a dummy intervention—concede its impact when outcomes are continuous and subjective (94). Also, persons with self-limiting diseases, such as the common cold and sprains and strains, also frequently use alternative medicine. In these cases, the natural course of the disease undoubtedly creates the appearance of treatment response and enhances the perception of unconventional medicine’s effectiveness.

### TREATMENT AND SETTING

Treatment paraphernalia and setting affect the impact of a placebo performance. For placebo pills, a regimen of four times per day seems more effective than a regimen of twice per day (95). A “brand-name” therapy that includes

either active or inert ingredients may often yield better results than an identical treatment that is not as well known (96), and devices or elaborate procedures can have greater placebo effects than pills (97, 98). Active placebos (placebos containing medications, such as atropine, that are ineffective for the condition being studied but produce recognizable drug-related side effects) seem to provide genuine treatment recognition that leads to heightened placebo effects (99, 100). With good showmanship, a well-designed, totally inert stage prop can offer this kind of “feedback loop” and can produce exaggerated placebo effects.

Two RCTs—one of transcutaneous electrical nerve stimulation and one of “placebo electronic machines”—demonstrated that, with good staging, blank machines can provide feedback sensations. In the first study, all patients reported an electrical sensation after adjustment of the dummy apparatus, which was equipped with visual and sound feedback (101). In the second trial (which used only dummy machines under two different sets of expectations), a significant number of participants “felt” the nonexistent current, and some even volunteered that the sensation was “just amazing” (102).

Biomedicine and alternative medicine each have a special allure of mystery and exotic power; it would be hard to argue that one backdrop consistently provides a superior placebo effect. However, alternative medicine has the advantage of always having an intervention scenario. Therapeutic passivity is rarely an option, and practitioners can, at a minimum, offer something that is likely to have a placebo effect. In some situations, and at least for continuous subjective outcomes, an intervention presumably has a greater effect than no treatment (94, 103). Also, to demonstrate “active” intervention, alternative medicine treatments have unique feedback loops that are likely to facilitate, if not heighten, substantial placebo responses. For example, chiropractic adjustment often triggers an audible “pop” so that the patient can hear the subluxation being fixed (104), acupuncturists propagate a sensation of vital energy coursing through invisible meridians (105), and psychic healers summon tingling vibrations (106).

### DOES ALTERNATIVE MEDICINE HAVE ENHANCED PLACEBO EFFECTS?

Despite the arguments and speculations already presented, there is scant empirical evidence that any partic-

ular type of alternative medicine used for any particular condition has an augmented placebo effect. Even concerning the placebo effect in general, the evidence cited earlier is often methodologically weak and limited by small numbers and short follow-up periods. Some social scientists argue that “for the believer in science, medical care that appears to be scientific would provide a superior placebo; for the believer . . . of whatever other cultural system of meaning and values,” alternative medicine may “provide a superior placebo” (107). Perhaps biomedicine’s effort to eliminate ritual or placebo interventions itself produces an improved placebo effect.

Two examples from RCTs may help readers concretely envision an enhanced placebo effect. In a four-arm crossover RCT involving 44 patients with chronic cervical osteoarthritis of more than 6 months’ duration, acupuncture, sham acupuncture, and diazepam were all equivalent and were superior to a placebo pill (108). In this study, the outcome of the ritual of acupuncture (real and sham acupuncture were not different) equaled the outcome of an effective drug. In a second RCT, which studied spinal manipulation, 256 patients with nonspecific back and neck disorders were randomly assigned to receive manual therapy (the Dutch equivalent of chiropractic), physical therapy, placebo-device therapy with a “detuned” ultrasonography machine and “detuned” short-wave diathermy that emitted sounds and lights, or treatment from a general practitioner (109). Six weeks of manual therapy and physical therapy were equally and significantly better than the sham machine, which significantly outperformed the general practitioner. It cannot be determined whether the manual and physical therapies had specific treatment effects or simply yielded better placebo effects than the inanimate gadget. Nonetheless, in this experiment, treatment with a sham machine surpassed treatment from a competent physician for relief of low back pain.

To more rigorously test these possible relative nonspecific effects, my colleagues and I are performing a National Institutes of Health–funded RCT that randomly assigns patients with chronic pain to one of two parallel run-in phases. Before entering two subsequent RCTs, one run-in group receives a conventional-appearing placebo pill and the other receives an alternative medicine sham procedure; the main goal of the run-in phases is to detect differing placebo effects (97). Any confident assertion about a placebo effect enhanced by

alternative medicine would probably require many such experiments.

Some may dismiss these types of investigation as useless. After all, a placebo is just a placebo. Others would argue that such avoidance impoverishes and narrows the understanding of what patients receive from alternative medicine (and, by extension, conventional medicine). Even those who doubt the existence or significance of a “narrow” placebo effect seem open to the possibility of “broad” placebo effects embedded in the psychosocial context of the patient–practitioner relationship (110, 111).

### WHAT IS LEGITIMATE HEALING?

Besides clinical and scientific value, the question of enhanced placebo effects raises complex ethical questions concerning what is “legitimate” healing. What should determine appropriate healing, a patient’s improvement from his or her own baseline (clinical significance) or relative improvement compared with a placebo (fastidious efficacy)? As one philosopher of medicine has asked, are results less important than method (3)? Both performative and fastidious efficacy can be measured. Which measurement represents universal science? Which measurement embodies cultural judgment on what is “correct” healing? Are the concerns of the physician identical to those of the patient? Is denying patients with nonspecific back pain treatment with a sham machine an ethical judgment or a scientific judgment? Should a patient with chronic neck pain who cannot take diazepam because of unacceptable side effects be denied acupuncture that may have an “enhanced placebo effect” because such an effect is “bogus”? Who should decide?

Patients’ attitudes toward placebo interventions (especially enhanced interventions) probably differ from physicians’ attitudes (112). This distinction is probably most evident in surgery, another field in which a heightened placebo effect is possible (97, 113), as illustrated by two RCTs that tested implantation of fetal dopaminergic cells for Parkinson disease. Patients with Parkinson disease seem to have a robust placebo response (114, 115); the biochemical substrate of this response in relation to the release of dopamine in the striatum has recently been shown on positron emission tomography (116). At the conclusion of one of the two RCTs,

patients were unblinded, and half were told they had received sham surgery that had performed the same as real surgery. In the early reports from this study, both groups experienced significant clinical improvement. (The subsequent full report, which included long-term data, reported a less durable placebo effect [117].) When patients who had received the sham surgery were told that they could not receive the real but now “discredited” surgery, as they had been promised in the informed consent form, 70% were disappointed or “outraged” because of the dramatic benefits they had already received from sham surgery (118–120). They wanted the “real” procedure even if it was equivalent to the sham. Of interest, the second RCT, which also found no difference between active and imitation surgery, demonstrated a stable and significant placebo effect after 18 months (121). For many patients, performative efficacy may be more critical than fastidious efficacy. Obviously, this illustration is not meant to advocate ritualistic surgery. Rather, it is meant to highlight the complex relationship among clinical, scientific, and ethical judgments.

## CONCLUSION

Alternative medicine may be composed of healing rituals that have especially potent performative efficacy. Therapeutic characteristics that may enhance placebo effects seem especially prominent in unconventional healing. Although more research into this question is necessary before any such assertion can be made with confidence, an enhanced placebo effect raises complex questions about what is legitimate therapy, and who decides.

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Sometimes we no longer know what is true for us, in which direction our own integrity lies . . . Reclaiming ourselves usually means coming to recognize and accept that we have in us both sides of everything. We are capable of fear and courage, generosity and selfishness, vulnerability and strength. These things do not cancel each other out but offer us a full range of power and response to life. Life is as complex as we are.

One of the blessings of growing older is the discovery that many of the things I once believed to be my shortcomings have turned out in the long run to be my strengths, and other things of which I was unduly proud have revealed themselves in the end to be among my shortcomings . . . What a blessing it is to outlive your self-judgments and harvest your failures.

Rachel Naomi Remen, MD  
*Kitchen Table Wisdom: Stories That Heal*  
New York: Riverhead Books; 1996:35-8

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