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## Placebo and the Two Faces of Neurotherapy

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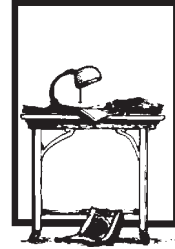


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## *EDITORIAL*



# Placebo and the Two Faces of Neurotherapy

In this issue of the *Journal of Neurotherapy*, there are two papers that focus on the use of neurofeedback to increase self-control and decrease stress through the use of alpha amplitude and/or synchrony feedback. Both papers are case studies designed to demonstrate therapeutic efficacy and clinical feasibility of methods. Mason and Brownback present a case of substantial improvement in quality of life in a participant with chronic and therapy resistant psychiatric problems. In this study, theta amplitude inhibit, alpha amplitude reward and alpha phase synchrony/coherence reward training are associated with marked clinical improvement. The study suggests that this subject's dramatic life enhancements and improved self-control was related to improved brain function. This is supported by documented improvement in QEEG abnormality and improved attentional performance. McKnight and Fehmi present a case series that includes 132 participants receiving neurofeedback rewarding alpha phase synchrony. These people experienced clinical improvement of refractory psychophysiological and medical symptoms. Both of

these studies employed focused suggestions as an essential part of the neurofeedback therapy.

In a third paper, Boynton explores the relationships between alpha/theta training, visualizations, and creativity and self-enhancement. Boynton's study employs controls, and controlled conditions. While this paper focuses on increases in alpha and theta amplitudes, rather than on alpha symmetry training, it does explore important issues related to the possible mechanisms whereby neurofeedback might alter suggestibility in important, therapeutic ways.

All three of these papers focus on the use of neurofeedback to improve creativity, volition, peak-performance, attentional focus, and self-control, as objectives of therapy. And all three papers combine neurotherapy with some form of suggestion or auto-hypnotic procedure. Does neurotherapy of the relaxation type (for instance, alpha enhancement or alpha/theta training) in some way also effectively enhance suggestibility, in addition to whatever effect it has on brain function? This is an important issue. Writing off therapeutic effect as due to "placebo effect" defeats the strategy of any intervention designed to increase suggestibility in a therapeutic way. Placebo effects can be positive and sought after components of any therapeutic program. They are "catalysts for intricate and fascinating processes—involving the mind, body, social environments, treatment environments, and other factors that can help people heal or stay well," according to Stephen Straus, MD, Director of the National Center for Alternative and Complementary Medicine. The positive aspect of the placebo effect is its lack of drug interaction, lack of side effects, and inherent acceptance for those in whom it is effective. Clinically it is desirable. How does one design a clinical placebo controlled study to evaluate a method that is used to enhance suggestibility or hypnotizability? Is it important to do so?

If the neurotherapist has an impressive array of twenty-first century talismans such as computers, electrodes and databases to effect shamanistic transformations appropriate to our time and culture, and if this is part of the "white coat" effect of neurotherapy, is this desirable? I do not mean to imply that neurotherapy is only suggestive, but certainly some types of neurotherapy are highly suggestive, and, according to the papers appearing in this issue cited above, rather good at facilitating therapeutic suggestion. The winter 2001 issue of *Complementary and Alternative Medicine at the NIH* summarizes a national conference, "The Science of the Placebo: Toward an Interdisciplinary Research Agenda," held at NIH on November 19-21, 2000. The discussion of the placebo effect notes that practice settings in Complementary and Alter-

native Medicine (CAM) offices are often warmer and more inviting than those of conventional practitioners. More time is spent interacting with each patient. “Studies of self healing practices such as hypnosis and meditation . . . may provide an ideal opportunity to better understand the placebo effect.” In this issue’s “Current Concepts in Neurotherapy,” T. La Vaque discusses the applicability of randomized placebo controlled studies to neurofeedback. Control for the placebo effect has become a gold standard for drug studies, comparing an indistinguishable inert substance to the pharmacologic agent under study. When process procedures such as neurotherapy are studied, sham treatment is nowhere near the “sugar pill” of drug studies in terms of suggestive neutrality. The pill placebo effect itself is a complex phenomenon. Issues such as color, size, taste, social setting, and therapeutic setting can have substantial influence on pill placebo efficacy. The ethical issues related to the Declaration of Helsinki—which states that placebos should be used only when no proven treatment exists—are discussed extensively by La Vaque and also were a major focus of the CAM conference cited above. Can believers in a treatment method ethically offer sham treatment?

Not all neurotherapy is based on achieving meditational or hypnagogic or diffuse attention states that augment suggestibility. Protocols for alertness and improved attention function are employed largely in disorders of attention processing such as ADHD and post concussive syndrome. Protocols for seizure control have been studied since the early days of neurotherapy. (See Sterman and Lantz in this issue.) Studies of these methods are much more amenable to control conditions and randomization that may control more effectively for “placebo effect.” Just such a study by Ingo Keller, PhD, appears also in this issue. By way of contrast, this study employs crisp outcome indicators of objectively measured EEG and attentional function. It proves its point in the same manner in which a drug trial would. To go a step further in the realm of control conditions, Sterman and Lantz explore seizure reduction and memory improvement in participants who had one normal temporal lobe and one abnormal temporal lobe with an epileptogenic focus. These authors include a control condition of non-contingent feedback as a “placebo,” and in addition they analyze their results in terms of the differences within subjects in terms of the normal and affected temporal lobe. In essence, the lesioned hemisphere serves as the control for the non-lesioned and therapy responsive hemisphere.

Now I will risk a broad generalization, which like all broad generalizations, is at best a half-truth. Classic neurotherapy research has two

faces—one reflects the objective and strict approach characterizing studies that measure cognition and QEEG as an outcome of higher frequency (> 12 Hz) EEG activation. The other describes the subjective approach characterizing studies that measure or estimate personal transformation as an outcome of lower frequency (< 12 Hz) EEG activation. It has been my perception since the foundation of the Society for the Study of Neuronal Regulation (now the Society for Neuronal Regulation) that this dualism has prevailed, and I hope it will prevail. It is important for us as students of neurotherapy to recognize the dualities, research limitations and opportunities that exist in our field. Imagery, relaxation, and suggestion are goals of one type of neurotherapy. Seizure control, attention improvement, impulse control and cognitive enhancement are goals of another type of neurotherapy. It is much easier to objectify performance on a test or changes in EEG than it is to objectify psychodynamic events. However, fuzzy indicators of improved quality of life, enhanced performance or patient/therapist perception of wellness and comfort are still worthy treatment goals. Exploration of the mechanisms of suggestibility and a continued search for objective and reliable outcome indicators for neurotherapy for personal transformation is needed.

*David L. Trudeau, MD*  
*Editor*