

Research Article

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## Placebo effect: An implication in clinical practice

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### Abstract

While discussions of the ethics of the placebo have usually dealt with their use in a research context, the authors address here the question of the placebo in clinical practice. It is argued, firstly, that the placebo can be an effective treatment. Secondly, it is demonstrated that its use does not always entail deception. Finally guidelines are presented according to which the placebo may be used for clinical purposes. It is suggested that in select cases, use of the placebo may even be morally imperative.

Considerable progress has been made in our understanding of the neurobiological mechanisms of the placebo effect, and most of our knowledge originates from the field of pain and analgesia. Today, the placebo effect represents a promising model that could allow us to shed new light on mind-body interactions. The mental events induced by placebo administration can activate mechanisms that are similar to those activated by drugs, which indicates a similarity between psychosocial and pharmacodynamic effects. These new neurobiological advances are already changing our conception of how clinical trials and medical practice must be viewed and conducted.

### Keywords

mechanism,  
pain,  
social,  
psychological,  
analgesic,  
clinical.

### Introduction

Until this century, most medications prescribed by physicians were pharmacologically inert, if not harmful. That is, physicians were prescribing placebos or worse without knowing it. In a sense, then, the history of medical treatment until relatively recently is the history of the placebo effect.

While commonly used by physicians in the clinical setting prior to the 19th century, placebos fell out of favor with the emergence of modern medicine (1). Over the past decade, however, our knowledge of the neural correlates of placebo mechanisms has greatly increased, rekindling the placebo “flame” anew (2).

While bioethical issues shroud the use of placebos in evidence-based medicine (3), some clinicians, mostly academic physicians, appreciate the relative merits of placebos and capitalize on their mind-body therapeutics (4).

Although placebo effect is a common phenomenon in medicine and research, its mechanisms are not well understood. With the advent of modern medicine, placebo became a symbol for an outdated, morally questionable practice implying deceit and paternalism. However, in recent years, there has been an increasing amount of rigorous research into the mechanisms of

placebo response and placebo analgesia with most studies coming from the field of pain medicine. New theories on placebo mechanisms have shown that placebo represents the psychosocial aspect of every treatment and the study of placebo is essentially the study of psychosocial context that surrounds the patient. Therefore, its understanding is essential for researchers and all medical practitioners, particularly those dealing with patients suffering from pain, depression, and motor disorders. In this article, we review the theories on placebo mechanisms and discuss their implications for clinical practice.

### **Placebo- a new sight into old enigma: (5)**

Our understanding of the placebo effect has deepened through intensive research activity during recent years. It seems important to make a clear distinction between the placebo effect in clinical trials and the placebo effect in clinical practice. In the first scenario, our effects are directed towards minimizing its influence on the results whereas, in the second scenario, we might consider maximizing it for the benefit of the patient. It also seems important to differentiate between the 'true' and the 'perceived' placebo effect. The 'perceived' placebo effect equals the 'true' placebo effect plus a multitude of other factors. This article reviews new research on the mechanisms of placebo effects, discusses the role of placebos in clinical trials and explores the place of placebo in clinical practice. It concludes that a better understanding of this area will probably benefit basic research, clinical research and patient care.

### **What we learn from pain and placebo: (6)**

Despite the recent blossoming of rigorous research into placebo mechanisms and the long-standing use of placebos in clinical trials, there remains widespread and profound misunderstanding of the placebo response among both practicing physicians and clinical researchers. This review identifies and clarifies areas of current confusion about the placebo response (including whether it exists at all), describes its phenomenology, and outlines recent advances in our knowledge of its underlying psychological and neural mechanisms. The focus of the review is the placebo analgesic response rather than placebo responses in general, because much of the best established clinical and experimental work to date has been done on this type of placebo response. In addition, this subfield of placebo research offers a specific neural circuit hypothesis capable of being

integrated with equally rigorous experimental work on the psychological (including social psychological) and clinical levels. In this sense, placebo analgesia research bears all the marks of a genuine multilevel interdisciplinary research paradigm in the making, one that could serve as a model for research into other kinds of placebo responses, as well as into other kinds of mind-body responses.

### **Placebo and painkiller: is mind as real as matter? (7)**

Considerable progress has been made in our understanding of the neurobiological mechanisms of the placebo effect, and most of our knowledge originates from the field of pain and analgesia. Today, the placebo effect represents a promising model that could allow us to shed new light on mind-body interactions. The mental events induced by placebo administration can activate mechanisms that are similar to those activated by drugs, which indicates a similarity between psychosocial and pharmacodynamic effects. These new neurobiological advances are already changing our conception of how clinical trials and medical practice must be viewed and conducted.

### **Objective**

To examine whether reduction of negative emotions and associated autonomic activity could explain placebo analgesia, and to test the effect of experimenter gender on the placebo analgesic response.

### **Methods**

Seventy (35 females & 35 males) students participated in a within-subjects design where subjects were tested on two separate days, one day for the experimental condition (placebo) and one day for the natural history condition. In the experimental condition, the participants received capsules containing lactose with information that the capsules were a high dose of a potent painkiller. In the natural history condition, the procedures were identical except that the placebo capsules were not administered. The experimenters were blinded to the fact that all participants received placebo. Pain was induced by a thermode holding +46 degrees C with duration of 240 seconds to the forearm. Subjective measurements consisted of pain intensity, pain unpleasantness, stress, arousal, and mood.

## Results

The results showed a placebo effect on pain intensity and a concomitant reduction in subjective stress. Stepwise regressions revealed that reduced subjective stress was the only predictor for the placebo analgesic response.

## Discussion

Sometimes, when clinical trials demonstrate that an experimental treatment is comparable to a placebo; clinicians conclude that the treatment is unsuitable for prescription. Such a conclusion, however, is incongruous with the notion that receiving nothing is appropriate or preferable. For example, in several randomized double-blind trials, non-prescription cough suppressants and expectorants have failed to show increased effectiveness over placebo (8). Many pediatricians refuse to recommend over-the-counter cough therapy because they think it is ineffective and potentially harmful (9).

Studies, including recent research efforts, provide evidence for the use of placebos in clinical contexts. A survey of head nurses in a Connecticut health district evaluated the status of placebos within the hospital setting and found that 44% of respondents reported that placebos were currently being used in their unit or that placebos had been used within the past six months (10).

At the risk of reducing one ambiguity to another, it might help to think of the placebo as anything causing a therapeutic reaction, or “placebo effect”, by psychological means, such as providing reassurance, assuaging anxiety, eliciting conditioned responses or arousing positive expectancy. (Some may object that I have here consigned psychotherapy to the status of a placebo; but I do not think that is a problem for one who appreciates the potential of placebo effects and the many ways of usefully producing them (11). Ultimately, psychological effects are as real as any other.

Thought of in this way, it becomes apparent that the placebo effect is part of every intervention. The inscrutable scrawl on the prescription pad, the reassuring smile, the limp stethoscope hung from the nape of the neck—these all contribute to the placebo effect. So, apparently, do the color of the pill (12), and even the number of pills swallowed by the patient (13,14). You just can't avoid the placebo effect

(although, admittedly, comatose patients may be an exception). If you doubt this, just consider what happens if you artificially nullify the placebo effect. This has been tried, by concealing from the patient that he was receiving medication. The result was that morphine calmed pain less, diazepam did not calm anxiety at all, atropine only slightly increased heart rate, while propranolol only slightly decreased it (15, 16). On the other hand, revealing that the pill to be provided is a placebo may not necessarily abolish its benefit (17, 18); apparently our reaction to treatment and all that it entails is too deeply conditioned to be reversed by mere full disclosure.

The placebo is at last being appreciated for its subversive potential. To ponder the placebo leads one to reconsider many of our presumptions about the gap between mind and body, about the untapped subtleties of medical treatment, and about what really heals when we administer our therapies.

People are often concerned about the ethics of the placebo. Certainly, giving a placebo where a more effective therapeutic alternative is available would be unethical. Similarly, providing a placebo in the futile hope of distinguishing “organic” from “supratentorial” maladies, or simply for the purpose of being done with an irksome patient, cannot be defended. Yet under certain circumstances, as I have described elsewhere (19), the placebo—whether an inert pill, a superfluous vitamin, or a miniscule, sub-therapeutic dose of medication—can be legitimately and ethically offered as treatment. If standard treatments have failed or caused intolerable side effects, a placebo may sometimes provide comfort.

## Conclusion

The results indicate that reduced negative emotional activation could be a mechanism in placebo analgesia. Considerable progress has been made in our understanding of the neurobiological mechanisms of the placebo effect, and most of our knowledge originates from the field of pain and analgesia. Today, the placebo effect represents a promising model that could allow us to shed new light on mind-body interactions. The mental events induced by placebo administration can activate mechanisms that are similar to those activated by drugs, which indicates a similarity between psychosocial and pharmacodynamic effects. These new neurobiological advances are already changing our conception of how clinical trials and medical practice must be viewed and conducted.

## References

1. Moerman DE. Meaning, medicine, and the “placebo effect”. Cambridge, U.K. ; New York: Cambridge University Press; 2002.
2. Price DD, Finniss DG, Benedetti F. A Comprehensive Review of the Placebo Effect: Recent Advances and Current Thought. *Annu Rev Psychol.* 2007 Jun 5; [PubMed]
4. Sherman R, Hickner J. Academic physicians use placebos in clinical practice and believe in the mind-body connection. *J Gen Intern Med.* 2008 Jan;23(1):7–10. [PMC free article] [PubMed]
3. Shapiro AK, Shapiro E. The Powerful Placebo: From Ancient Priest to Modern Physician. Baltimore, MD: Johns Hopkins University Press; 1997.
5. Complementary Medicine, Peninsula Medical School, Universities of Exeter and Plymouth, 25 Victoria Park Road, Exeter, EX2 4NT, UK. Edzard.Ernst@pms.ac.uk *Drug Discov Today.* 2007 May;12(9-10):413-8. Epub 2007 Apr 2.
6. Hoffman GA<sup>1</sup>, Harrington A, Fields HL. Pain and the placebo: what we have learned. *Perspect Biol Med.* 2005 Spring;48(2):248-65.
7. Colloca L<sup>1</sup>, Benedetti F. Placebos and painkillers: is mind as real as matter? *Nat Rev Neurosci.* 2005 Jul;6(7):545-52.
8. Smith SM, Schroeder K, Fahey T. Over-the-counter medications for acute cough in children and adults in ambulatory settings. *Cochrane Database Syst Rev.* 2008;(1):CD001831. [PubMed]
9. Wingert WE, Mundy LA, Collins GL, Chmara ES. Possible role of pseudoephedrine and other over-the-counter cold medications in the deaths of very young children. *J Forensic Sci.* 2007;52(2):487–90. [PubMed]
10. Goldberg RJ, Leigh H, Quinlan D. The current status of placebo in hospital practice. *General Hospital Psychiatry.* 1979;1(3):196–201. [PubMed]
11. Frank JD, Frank JB. Persuasion and healing: A comparative study of psychotherapy. 3rd ed. Baltimore, MD: Johns Hopkins University; 1996.
12. de Craen AJ, Roos PJ, Leonard de Vries A, Kleijnen J. Effect of colour of drugs: systematic review of perceived effect of drugs and of their effectiveness. *BMJ.* 1996; 313(7072):1624–6. [PMC free article] [PubMed]
13. Horwitz RI, Horwitz SM. Adherence to treatment and health outcomes. *Arch Intern Med.* 1993; 153(16): 1863–8. [PubMed]
14. de Craen AJ, Moerman DE, Heisterkamp SH, Tytgat GN, Tijssen JG, Kleijnen J. Placebo effect in the treatment of duodenal ulcer. *Br J Clin Pharmacol.* 1999;48(6):853–60. [PMC free article] [PubMed]
15. Benedetti F, Maggi G, Lopiano L, Lanotte M, Rainero I, Vighetti S, Pollo A. Open versus hidden medical treatments: The patient’s knowledge about a therapy affects the therapy outcome. *Prevention & Treatment.* 2003;6(1)
16. Colloca L, Lopiano L, Lanotte M, Benedetti F. Overt versus covert treatment for pain, anxiety, and Parkinson’s disease. *Lancet Neurol.* 2004; 3(11): 679–84. [PubMed]
17. Park LC, Covi L. Nonblind placebo trial: an exploration of neurotic patients’ responses to placebo when its inert content is disclosed. *Arch Gen Psychiatry.* 1965;12:36–45. [PubMed]
18. Vogel AV, Goodwin JS, Goodwin JM. The therapeutics of placebo. *Am Fam Physician.* 1980;22(1):105–9. [PubMed]
19. Lichtenberg P, Heresco-Levy U, Nitzan U. The ethics of the placebo in clinical practice. *J Med Ethics.* 2004 Dec;30(6):551–4. [PMC free article] [PubMed]

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