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# The value of expectation

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## OPINIONS

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### **The better we understand placebo and nocebo phenomena, the more we can make use of this insight in therapeutic relationships.**

The view of the placebo effect has changed in recent years. Previously regarded as an annoying element that disturbs clinical trials, the placebo effect is now seen as an expression of normal, fundamental biological and psychological processes [\(1\)](#). There is also a growing recognition that placebo phenomena have a bearing on almost all medical activities. It is my impression, however, that neither medical study programmes nor day-to-day clinical work pay much attention to these phenomena.

The placebo effect is defined as a psychobiological phenomenon that occurs following administration of an inert substance or a mock physical treatment, such as a sham surgery along with verbal suggestions of clinical improvement [\(2\)](#). The nocebo effect is the opposite of placebo, and can be induced by administering an inert substance while simultaneously suggesting that clinical exacerbation could occur, e.g. increased pain [\(3\)](#). There is widespread consensus that expectation is one of the most important factors contributing to the placebo effect. 'Expectation' is defined as the belief that something will happen [\(4\)](#).

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### **Learning and expectation**

Learning is important for establishing expectations. Several studies have shown that placebo treatment is more effective if the patient has already had a positive experience with the same type of treatment that is being given. This is an

example of conditioned learning (3). A placebo given for the first time is less effective than a placebo given after two previous administrations of an effective analgesic pill (5).

*«This does not entail fantasy or superstition, but the fundamental mechanisms we use to cope with our lives»*

Nevertheless, expectation effects involve more than conditioned learning. Expectation in this context includes conditioned effects, instructed learning and other types of learning. Social learning – in which individuals in a society learn from each other through observation and imitation – has been shown in some studies to be just as effective as conditioned responses in establishing expectation effects (6). Nocebo effects can spread quickly to other people through negative information and communication. This can produce biological changes that negatively impact health and modify baseline values for many physiological parameters in clinical trials (7).

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## Meaning and pain

The fear of increased pain plays a key role in the level of pain a patient experiences. One interpretation of this is that fear in itself induces more pain. However, Eric Cassell writes in his book *The Nature of Healing* (8), p. 210: 'anxiety and its physiologic correlates do not cause the increase in pain; the increased or altered pain is part of the meaning of which the anxiety is also a part'. He also asserts that meaning is just as much a part of the pain as the nociceptive mechanism is ((8), p. 135). Information about increased pain intensity exacerbates fear of the consequences of the pain, e.g. when a patient learns that the pain is caused by cancer and not by a benign condition. The meaning of the pain shifts towards something uncontrollable that threatens the person's physical and mental integrity. Moerman ((9) even recommends replacing the term 'placebo response' with 'meaning response'. The reason for this, he explains, is that people do not respond to placebo treatment as such, but to the *meaning* given to the treatment. Consequently, it is essential to identify what patients are thinking about their symptoms and what kinds of meanings they are ascribing to their pain. It is important that doctors help their patients with persistent pain to change the negative meanings they attribute to the pain. This first involves reaching a common understanding of the causes and potential mechanisms of the pain, and then helping patients to gain better control over their own lives. Fear of the pain and its consequences often impedes the patient's personal progression more than the underlying illness.

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## The value of knowledge about expectation effects

Treating patients with persistent pain is undeniably challenging (10), but understanding the connection between expectations and pain perception is crucial for the ability to provide help. Unfortunately, expectations are often established unintentionally in a therapeutic relationship – the doctor is not aware of how her words are perceived by the patient. Further work to increase understanding about how expectations are maintained and changed can lead to the development of more effective interventions that can change expectations (1). In this lies the potential to improve patients' quality of life and not simply alleviate isolated symptoms. It is important to acknowledge that the expectation effects are real and have a known neurobiological basis and physiological correlates (1–3). This does not entail fantasy or superstition, but the fundamental mechanisms we use to cope with our lives.

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