



BASICS

How the Placebo Effect Works in Psychology

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The mind can have a powerful influence on the body, and in some cases can even help the body heal.

[BACK TO TOP](#) The mind can even sometimes trick you into believing that a fake treatment has real therapeutic results, a phenomenon that is known as the placebo effect. In some cases, placebos can exert an influence powerful enough to mimic the effects of real medical treatments.



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placebo effect is much more than just [positive thinking](#). When this response occurs, many have no idea they are responding to what is essentially a "sugar pill." Placebos are often utilized in medical research to help doctors and scientists discover and better understand the physiological and psychological effects of new medications.



In order to understand why the placebo effect is important, it is essential to understand a bit more about how and why it works.

What Is the Placebo Effect?

The placebo effect is defined as a phenomenon in which some people experience a benefit after the administration of an inactive "look-alike" substance or treatment. This substance, or placebo, has no known medical effect. Sometimes the placebo is in the form of a pill (sugar pill), but it can also be an injection (saline solution).

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Why do people experience real changes as a result of fake treatments? The expectations of the patient can play a significant role in the placebo effect. The more a person expects the treatment to work, the more likely they are to exhibit a placebo response.

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In most cases, the person does not know that the treatment they are receiving is actually a placebo. Instead, they believe that they are the recipient of the real treatment. The placebo is designed to seem exactly like the real treatment, whether it is a pill, injection, or consumable liquid, yet the substance has no actual effect on the condition it purports to treat.

It is important to note that a "placebo" and the "placebo effect" are different things. The term placebo refers to the inactive substance itself, while the term placebo effect refers to any effects of taking a medicine that cannot be attributed to the treatment itself.

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How Placebos Are Used in Medical Research

In medical research, some people in a study may be given a placebo, while others get the new treatment being tested. The purpose of doing this is to determine the effectiveness of the new treatment. If participants taking the actual drug demonstrate a significant improvement over those taking the placebo, the study can help support the claim for the drug's effectiveness.

While a placebo has no effect on illness, it can have a very real effect on how some people feel. The strength of this effect depends on a variety of factors. Some things that can influence the placebo effect include:

The nature of the illness

How strongly the patient believes the treatment will work

The type of response the patient expects to see

The type of positive messages a doctor conveys about the treatment's effectiveness

Genes may also influence how people respond to placebo treatments



Some people are genetically predisposed to respond more to placebos. One study found that people with a gene variant that codes for higher levels of the brain chemical dopamine are more prone to the placebo effect than those with the low-dopamine version. People with the high-dopamine version of this gene also tend to have higher levels of pain perception and reward-seeking. ^[1]

When testing new medications or therapies, scientists want to know if the new treatment works and if it's better than what's already available. Through their research, they learn the sort of side effects the new treatment might produce, which patients may benefit the most, and if the potential benefits outweigh the risks.

By comparing the effects of a treatment to a placebo, researchers hope to be able to determine if the effects of the medicine are due to the treatment itself or caused by some other variable.

Advantages of Using a Placebo

The major advantage of using a placebo when evaluating a new drug is that it weakens or eliminates the effect that expectations can have on the outcome. If researchers expect a certain result, they may [unknowingly give clues](#) to participants about how they should behave. This can affect the results of the study.

To minimize this, researchers sometimes conduct what is known as a [double-blind study](#). In this type of study, neither the study participants nor the researchers know who is getting the placebo and who is getting the real treatment. By minimizing the risk of these subtle biases influencing the study, researchers are better able to look at the effects of the drug and the placebo.

One of the most studied and strongest placebo effects is in the reduction of pain. According to some estimates, approximately 30% to 60% of people will feel that their pain has diminished after taking a placebo pill. ^[2]

For example, imagine that a participant has volunteered for a study to determine the effectiveness of a new headache drug. After taking the drug, she finds that her headache quickly dissipates, and she feels much better. However, she later learns that she was in the placebo group and that the drug she was given was just a sugar pill.

The Placebo Effect in Psychology Experiments

In a psychology experiment, a placebo is an inert treatment or substance that has no known effects. Researchers might utilize a placebo control group, which is a group of participants who are exposed to the placebo or fake [independent variable](#). The impact of this placebo treatment is then compared to the [experimental group](#).

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Even though placebos contain no real treatment, researchers have found they can have a variety of both physical and psychological effects. Participants in placebo groups have displayed changes in heart rate



blood pressure, anxiety levels, pain perception, fatigue, and even brain activity. These effects point to the brain's role in health and well-being.

Causes

While researchers know that the placebo effect is a real effect, they do not yet fully understand how and why this effect occurs. Research is ongoing as to why some people experience changes even when they are only receiving a placebo. A number of different factors may contribute to explanations for this phenomenon.

Hormone Response

One possible explanation is that taking the placebo triggered a release of endorphins. Endorphins have a structure similar to morphine and other opiate painkillers and act as the brain's own natural painkillers.

Researchers have been able to demonstrate the placebo effect in action using brain scans, showing that areas that contain many [opiate](#) receptors were activated in both the placebo and treatment groups. Naloxone is an opioid antagonist that blocks both natural endorphins and opioid drugs. Using naloxone, placebo pain relief is reduced.

Expectation and Conditioning

Other possible explanations include conditioning and expectation. In some cases, a placebo can be paired with an actual treatment until it evokes the desired effect, an example of [classical conditioning](#). People who are highly motivated and expect the treatment to work may be more likely to experience a placebo effect.

A prescribing physician's enthusiasm for treatment can even impact how a patient responds. If a doctor seems very positive that a treatment will have a desirable effect, a patient may be more likely to see benefits from taking the drug. This demonstrates that the placebo effect can even take place when a [BACK TO TOP](#) taking real medications to treat an illness.

The Nocebo Effect



Conversely, individuals can experience more symptoms or side effects as a response to a placebo, a response that is sometimes referred to as the "nocebo effect." For example, a patient might report having headaches, nausea, or dizziness in response to a placebo.

How Powerful Is the Placebo Effect?

While placebos can affect how a person feels, studies suggest that they do not have a significant impact on underlying illnesses. A major review of more than 150 clinical trials involving placebos found that placebos had no major clinical effects on illnesses. Instead, the placebo effect had a small influence on patient-reported outcomes, particularly of perceptions of nausea and pain. ^[3]

However, another review conducted nearly 10 years later found that in similar populations, both placebos and treatments had similar effects. The authors concluded that placebos when used as part of a therapeutic plan. ^[4]

While placebos have a small influence on how people feel, but it is important to remember that they do not cure any underlying condition. By using placebos in research, scientists are able to determine the impact of a treatment on patients and whether new medications and treatment

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