Placebo effect

Summary

- A placebo is any medical treatment that has no active properties, such as a sugar pill.
- Around one third of people who take placebos (believing them to be medication) will experience an end to their symptoms.
- Belief in a treatment may be enough to change the course of a person's physical illness.

What is the placebo effect?

Placebo is Latin for ‘I will please’ and refers to any medical treatment that is inert (has no active properties). A placebo doesn't have to be a pill. It can be any inert or ‘dummy’ treatment.

The placebo effect is the positive effect on a person's health experienced after taking a placebo. It is triggered by the person's belief in the benefit from the treatment and their expectation of feeling better, rather than the characteristics of the placebo.

'Impure placebos' are medications that have an active effect on the body, but not on the condition being treated.

Placebos are often used in clinical trials for new treatments.

How do placebos work?

It is still not known exactly how the placebo effect works. Some of the theories that attempt to explain it include:

- **self-limiting disorders** – many conditions, such as the common cold, are self-limiting. They will resolve by themselves anyway, with or without placebos or medications, and the end of symptoms is just a coincidence
- **remission** – the symptoms of some disorders, such as multiple sclerosis and lupus, may come and go. A remission (period of time when the symptoms go away) during a course of placebos may be coincidence, and not due to the placebos at all
- **a change in behaviour** – the placebo may increase a person's motivation to take better care of themselves. Improved diet, regular exercise or rest may be responsible for the easing of their symptoms
- **altered perception** – the person's interpretation of their symptoms may change with the expectation of feeling better. For example, they may interpret a sharp pain as an uncomfortable tingling instead
- **reduced anxiety** – taking the placebo and expecting to feel better may be soothing and reduce the levels of stress chemicals the body produces, such as adrenaline
- **brain chemicals** – placebos may trigger the release of the body's own natural pain relievers, the brain chemicals known as endorphins
- **altered brain state** – research indicates that the brain responds to an imagined scene in much the same way as it responds to an actual visualised scene. A placebo may help the brain to remember a time before the onset of symptoms, and then bring about change to the body. This theory is called 'remembered wellness'.

What else helps placebos to work?

Some other things that help the placebo effect to work include:

- **the characteristics of the placebo** – if the pill looks real, the person taking it is more likely to believe that it contains medicine. Research shows that larger sized pills suggest a stronger dose than smaller pills, and taking two pills appears to be more potent than swallowing just one. Generally, injections have a more powerful placebo effect than pills
- **the person's attitude** – if the person expects the treatment to work, the chances of a placebo effect are
higher, but placebos can still work even if the person is sceptical of success. The power of suggestion is at work here

- **doctor–patient relationship** – if the person trusts their health care practitioner, they are more likely to believe that the placebo will work.

**Placebos and clinical trials**

Placebos have been used in clinical trials for a long time, and are an essential part of research into new treatments. They are used to help test the effectiveness of a new health care treatment, such as a medication. For ethical (moral) reasons, people participating in clinical trials are told that they may be given a ‘dummy’ treatment.

Usually, one group of people takes the medication while another group (the ‘control group’) takes the placebo. The placebo may be a sugar pill. In some cases, none of the participants know whether they are taking the active or inactive (placebo) substance. Sometimes, not even the researchers know (this is called a double-blind test).

Comparing the results from both groups should show the effects of the medication.

Around one third of people taking placebos for health complaints (including pain, headache and seasickness) will experience relief from symptoms. To show that a new treatment is more effective than can just be explained by the placebo effect, the results from the people taking the new treatment are compared with the results from the people taking a placebo.

**The placebo effect does not imply an ‘imaginary’ illness**

If a person’s symptoms are relieved by taking a placebo or undergoing a ‘dummy procedure’, it may seem logical to assume that their illness must have been imaginary. This is not the case.

Medical research has shown that state of mind plays an important role in the development of disease. For example, stress is known to increase blood pressure, which in turn is a risk factor for heart disease. So, just as the mind can contribute to a physical disorder, it can also contribute to its cure.

**The argument against placebos**

Arguments against the use of placebos, include:

- Placebos have the power to cause unwanted side effects. Nausea, drowsiness and allergic reactions, such as skin rashes, have been reported as negative placebo effects – also known as nocebo effects (see below).
- Deceiving people is wrong, even if it helps someone’s symptoms to go away.

**The ‘nocebo’ effect**

The nocebo effect is a negative effect (such as pain or nausea) brought on by the expectation of experiencing that negative effect after taking a placebo.

This expectation of negative effects from placebo may be triggered when the patient is told which adverse effects they might experience before starting treatment.

**Open-label placebos**

Sometimes open-label placebos are used in clinical studies. This means that people are openly and knowingly prescribed placebo medication for a condition so that doctors can’t be said to have been deceptive or dishonest.

Despite being told that the medication they are taking is a placebo, the placebo effect can still occur for people using open-label placebos. It is thought that this could be due to:

- feeling hopeful because of participating in a study
- expectations of relief
- the physical effect of pill-taking (such as opening a pill bottle, or swallowing)
- natural fluctuations in pain levels (for example, pain coincidentally decreases when a placebo is taken).

**Where to get help**

- **Your GP (doctor)**

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