

# Our expectations shape our health

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Positive expectations about a medicine may help it to work more effectively, even if you tell patients about this placebo effect. The reverse, the nocebo effect, works in the same way. Health psychologist

Stefanie Meeuwis found evidence for this in various studies.

Stefanie Meeuwis is fascinated by [placebo](#) and nocebo effects, because it covers an area of research that connects body and mind. She's interested in finding out whether you can, for example, imitate physical effects of medicines using psychological methods.

## Conditioning

Meeuwis devised a series of studies to test this. One of these studies was a pharmacological conditioning study. A special thing about this study was that the participants knew in advance that they were being conditioned. Conditioning is a learning mechanism where the body is trained to associate the effects of a medicine, with particular contextual factors, such as shape and colour of a pill. After a period of time these contextual factors create a particular [expectation](#) (of an effect), and consequently the effect occurs, even without any active medication being administered.

## Research design

In the experimental part of this study, Meeuwis conditioned the participants, who were healthy people who came to the lab three days a week for two weeks. In week 1 two research groups were given an anti-allergy medicine to combat itching; each time the medicine was given in combination with a drink. In week 2, the participants were given the drink combined with a placebo pill, in other words a pill without active ingredients. Meeuwis then tested the effect of the conditioning with the drink on the amount of itching the participants experienced.

## Placebo effect

Meeuwis found that the conditioned groups experienced slightly less itching. "This difference was marginal, but after the whole procedure we asked the participants which [medicine](#) they thought they had been given. The individuals who expected that they had been given the real medicines were the ones who reported less itching. This is an indication of the [placebo effect](#), namely that it works, even if the people already know that it is a placebo. We also see this in the conditioning study, when we asked the participants beforehand what their expectations were. The group that we told about the conditioning expected less itching and they experienced slightly less itching."

## Verbal suggestion

Meeuwis also conducted [various studies](#) using verbal suggestions, where people knew that they would be given these suggestions. "We wondered whether verbal suggestions would work for the expectations about itching, as well as the itching that people actually experienced. In one of the studies, for example, we administered a kind of tonic to the skin before inducing the itching. In the meantime, we gave the participants verbal suggestions about the tonic, namely that it would ensure that they experienced less itching. And even though the participants knew that this study was about expectations and that they would be given verbal suggestions, most of them still experienced less itching regardless."

## Nocebo effect

Meeuwis also included negative expectations in her research, because next to telling people about the impact of positive expectations being interesting, it's equally interesting to tell them about negative expectations and nocebo effects. A [negative effect](#) can be, for example, that people expect that symptoms will get worse. "As a result of this expectations, such a [nocebo effect](#) can have a [negative influence](#) on

health." Is it possible to avoid negative effects,] by informing people of the potential influence of negative expectations in a treatment, such as for nausea experienced in chemotherapy? There has been far less research on this issue, so much less is known about nocebo effects. This is what Meeuwis would like to study, together with an internationally renowned expert at the University of Sydney. She is applying for a Rubicon grant on this topic.

Provided by Leiden University

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