

# If you expect an itch, you'll get an itch

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If you expect something is going to itch, the itching really does get worse. Leiden health psychologist Danielle Bartels has proved the effect of negative expectations on itching. What's remarkable is that this nocebo effect in itching can be reversed. "That offers good prospects for clinical practice," Bartels hopes. Ph.D. defense 18 November.

What helps against itching and what just makes the itch get worse? A lot of research has been done on the [placebo](#) and nocebo effects in dealing with pain, but little or no research has been on how these effects work for itching. "This research is very new and our Leiden research group has just got started with it," Danielle Bartels explains her Ph.D. research.

## Research on itch is like pain research

We know from research on pain what are the two most frequently used methods for learning about placebo and nocebo effects, namely previous treatment experiences and what a doctor says to you. This combination of conditioning and verbal [suggestion](#) creates expectations—positive and negative—that have an effect on the treatment outcomes. Bartels: "We're going to study itch using

the same methods as those used in pain research. The question is whether we will find placebo and nocebo effects here as well. These effects seem to be strongest when we combine the conditioning of itching with verbal suggestions. This is in line with research findings on placebo and nocebo effects in pain studies."

## Electrodes, stimuli and colored lights

The participants in Bartels' research were divided into three groups. One group received only conditioning, a second group was given only verbal suggestion and the third group had a combination of conditioning and verbal suggestion. The participants were administered stimuli via two electrodes placed on one of their arms, and were able to see different colors light up on a computer screen. "The story we told the participants (in other words the verbal suggestion) is that a third electrode would have an effect on the itching; if they saw a [green light](#), the itch would be less, a red light meant the itch would be stronger and a yellow light meant no change. But that third electrode was fake, so it had no influence at all on the itching, but rather acted as a placebo."

## Placebo effect

In the learning phase of the study, the stimuli applied differ for each group. In the group of participants who only receive the verbal suggestion, the strength of the signal remains the same. But in the third group, where the researchers combine conditioning with verbal suggestion, the itch is secretly reduced for the green light and increased for the red light so that the participant thinks that the third electrode is having an effect. In the test phase of the research, all the participants receive the same medium-intensity stimulus. Bartels: "Although the stimuli are the same, the participants in the group where we combine conditioning with verbal suggestion experience less itching with the green light and more itching with the red [light](#). The results from this group are very different from the control group."

## Nocebo effect is reversible

In a follow-up study, Bartels discovered a very important aspect of the [nocebo effect](#) on itch. "If we have stimulated itching using conditioning and verbal suggestion, it's possible to reverse it. We also use conditioning to do that; in this case we call it "counter-conditioning." Clinically, that's very relevant because in practice you really don't want any nocebo effects. But, suppose they are there, it's important to know whether they are permanent or whether you can stop them. Our studies in an experimental phase in healthy people can't simply be applied in a clinical setting, but it is very interesting to pursue these findings further. What you want, of course, is to keep the nocebo effect to a minimum, and boost the placebo effect. This research is so new that it has hardly even been studied with respect to pain so far."

Bartels is now working as a lecturer in Applied Psychology at Fontys University of Applied Sciences in Eindhoven. "Luckily, I spend one day a week teaching on campus, but with a small group of students. I aim to make my online lectures as interactive as possible and I ask everyone to first switch their camera on. Whenever it fits in with the study program, I tell my students about my research on placebo and nocebo effects."

This study is part of Andrea Evers' research theme on the impact of expectations on health, based on placebo and nocebo effects.

Provided by Leiden University

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