

The placebo effect goes beyond humans, researchers find

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(Medical Xpress)—Rats and humans have at least one thing in common: They both react the same way to a placebo, according to a new University of Florida study.

"That was the big finding—that the animals that expected pain relief actually got pain relief when you gave them an inert substance," said co-author John Neubert, a pain specialist and an associate professor with the UF College of Dentistry department of orthodontics. "It helps validate our model that what we do in the rats, we believe, is a good representation of what's being seen in humans."

The investigation of [placebo](#) effects might lead to the identification of new therapeutic targets in the brain and of novel treatment strategies for a variety of health conditions.

A placebo response is a response seemingly to a treatment that has not actually been administered. For this study researchers looked at placebo responses in reference to pain and pain relief by evaluating how an animal responds when it "thinks" it's getting a [pain reliever](#).

UF researchers conditioned rats to expect morphine or salt water by giving injections of one or the other for two sessions. Then during the third session, researchers gave both groups the saline injection. About 30 to 40 percent of the group that had previously received morphine acted as if they had received morphine again and showed [pain relief](#).

"What that means is we can then go ahead and do more mechanistic studies and do [pharmacological studies](#) targeting different receptors," he said. "We could do different procedures and try to apply that knowledge into what we think is going on in humans."

The two-year study published in the journal *Pain* in October was the result of collaboration between Neubert and Niall Murphy, an addiction specialist and adjunct associate professor at the University of California Los Angeles. The two decided to look at placebo responses because that deals with pathways and mechanisms that relate to pain, reward and addiction.

"We know basic things about placebo response, but the study we did is important because now we can look at [placebo response](#) in ways that you can't in humans due to practical and ethical issues," Neubert said. "You can do different manipulations in a preclinical model that just couldn't be done in humans."

Early results from another study the researchers are conducting have demonstrated similar results in mice.

"This was a really exciting finding for us because we used our novel testing system that was developed here at UF, with the support of my department, the College of Dentistry, and funding from the National Institute on Drug Abuse at the NIH," Neubert said. "That will allow us to now closely model things that we see in humans. We're more confident in doing these preclinical studies and in doing translational research, where you take studies from the basic side of things and try to apply them to the human condition."

Dr. Jianguo Cheng, a professor and director of the Cleveland Clinic's [Pain](#) Medicine Fellowship Program, said the study has established a novel and useful model to investigate the mechanisms of placebo effects. The placebo effect deserves further study, said Cheng, who was not involved in the study.

"The authors ought to be commended for their innovative experimental design and rigorous and sophisticated analysis of the results," he said. "This combination constitutes a solid basis for the credibility of their findings. This elegant model convincingly demonstrated the cardinal features of placebo responses to sham or control intervention that are commonly seen in humans."

Provided by University of Florida

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