

Sugar pills relieve pain for chronic pain patients

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Someday doctors may prescribe sugar pills for certain chronic pain patients based on their brain anatomy and psychology. And the pills will reduce their pain as effectively as any powerful drug on the market, according to new research.

Northwestern Medicine scientists have shown they can reliably predict which chronic pain patients will respond to a sugar placebo pill based on the patients' brain anatomy and psychological characteristics.

"Their brain is already tuned to respond," said senior study author A. Vania Apkarian, professor of physiology at Northwestern University Feinberg School of Medicine. "They have the appropriate psychology and biology that puts them in a cognitive state that as soon as you say, 'this may make your pain better,' their pain gets better."

There's no need to fool the patient, Apkarian said.

"You can tell them, 'I'm giving you a [drug](#) that has no physiological effect but your brain will respond to it,'" he said. "You don't need to hide it. There is a biology behind the [placebo response](#)."

The study was published Sept. 12 in *Nature Communications*.

The findings have three potential benefits:

- Prescribing non-active drugs rather than active drugs. "It's much better to give someone a non-active drug rather than an active drug and get the same result," Apkarian said. "Most pharmacological treatments have long-term adverse effects or addictive properties. Placebo becomes as good an option for treatment as any drug we have on the market."
- Eliminating the [placebo effect](#) from drug trials. "Drug trials would need to recruit fewer people, and identifying the physiological effects would be much easier," Apkarian said. "You've taken away a big component of noise in the study."
- Reduced health care costs. A sugar pill prescription for chronic pain patients would result in vast cost savings for patients and the health care system, Apkarian said.

How the study worked

About 60 chronic back pain [patients](#) were randomized into two arms of the study. In one arm, subjects didn't know if they got the drug or the placebo. Researchers didn't study the people who got the real drug. The other study arm included people who came to the clinic but didn't get a placebo or drug. They were the control group.

The individuals whose pain decreased as a result of the sugar pill had a similar [brain anatomy](#) and psychological traits. The right side of their emotional brain was larger than the left, and they had a larger cortical sensory area than people who were not responsive to the placebo. The chronic [pain placebo](#) responders also were emotionally self-aware, sensitive to painful situations and mindful of their environment.

"Clinicians who are treating [chronic pain patients](#) should seriously consider that some will get as good a response to a sugar pill as any other drug," Apkarian said. "They should use it and see the outcome. This opens up a whole new field."

More information: Etienne Vachon-Preseu et al, Brain and psychological determinants of placebo pill response in chronic pain patients, *Nature Communications* (2018). [DOI: 10.1038/s41467-018-05859-1](#)

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