

Brain waves can reveal chronic pain patterns, opening doors to personalized treatments

Brain signals can be used to detect how much pain a person is experiencing, which could overhaul how we treat certain chronic pain conditions, a new study has suggested.

The research, [published in Nature Neuroscience](#) [May 22], is the first time a human's chronic-pain-related brain signals have been recorded. It could aid the development of personalized therapies for the most severe forms of pain.

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Researchers from the University of California, San Francisco, implanted electrodes in the brains of four people with chronic pain. The patients then answered surveys about the severity of their pain multiple times a day over a period of three to six months. After they finished filling out each survey, they sat quietly for 30 seconds so the electrodes could record their brain activity. This helped the researchers identify biomarkers of chronic pain in the brain signal patterns, which were as unique to the individual as a fingerprint.

Next, the researchers used machine learning to model the results of the surveys. They found they could successfully predict how the patients would score the severity of their pain by examining their brain activity, says Prasad Shirvalkar, one of the study's authors.

"The hope is that now that we know where these signals live, and now that we know what type of signals to look for, we could actually try to track them noninvasively," he says.

[**This is an excerpt. Read the original post here**](#)