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Fibromyalgia Health Center



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Brain Scans Show Fibromyalgia Patients Process Pain Differently

Activity in certain regions suggests why they're less able to prepare for pain or respond to pain relief

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The altered response of the VTA also could explain why fibromyalgia patients often do not respond to narcotic painkillers, he added.

The investigators also noted a different response in the periaqueductal gray (PAG), a small structure in the center of the brain that plays a role in pain transition. "In animals, it has been shown that if you electrically stimulate this area, pain responses go down," Loggia said.

The PAG activates in healthy people who have received a cue that pain is imminent, as they prepare themselves for the pain to come. But the region does not activate when people with fibromyalgia are warned of oncoming pain, suggesting that they are less capable of guarding against pain signals, Loggia said.

The study provides "another piece of evidence that in fibromyalgia something is fundamentally amiss, and this idea that it is a peripheral disorder is mistaken," said Dr. John Kassel, a professor of neurology and director of the division of neuromuscular medicine at Ohio State University's Werner Medical Center.

However, there are some drawbacks to the study and its conclusions.

Loggia noted that the altered brain activity could be explained away by the fact that fibromyalgia patients endure constant pain and the disorder has altered the brain response, instead of the other way around.

"The healthy volunteers go from a state of no pain to a state of pain," he said. "But fibromyalgia patients go from a lower level of pain to a higher level of pain, which could affect the way they process the pain and relief cues."

In addition, the researchers failed to compare the response of fibromyalgia patients to that of people with other chronic pain conditions, Kassel said.

"This may not be something caused by fibromyalgia," he said. "It could be something that just happens in most chronic pain patients."

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SOURCES: Lynn Webster, M.D., president, American Academy of Pain Medicine; Marco Loggia, M.D., Massachusetts General Hospital and Harvard Medical School, Boston; John Kissel, M.D., professor, neurology, and director, division of neuromuscular medicine, Wexner Medical Center, Ohio State University, and member, American Academy of Neurology; Nov. 5, 2013, *Arthritis & Rheumatism*



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