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Study: Acupuncture Key in Pain Processing

Editorial Staff

Activation of brain areas involved in pain perception are significantly reduced under acupuncture, a study recently found.

The Radiological Society of North America (RSNA) presented the results of a pain processing study at an annual meeting held Nov. 30 for radiologists, radiation oncologists, medical physicists and related scientists.

The study was led by researcher Nina Theysohn, M.D., from the Department of Diagnostic and Interventional Radiology and Neuroradiology at the University Hospital in Essen, Germany. In a written statement, Theyson said that until now the role of acupuncture in the perception and processing of pain has been controversial but this study was able to bring forth a lot of answers with the help of functional magnetic resonance MRI (fMRI).

"Functional MRI gives us the opportunity to directly observe areas of the brain that are activated during pain perception and see the variances that occur with acupuncture," Theyson said.

The effectiveness of acupuncture was tested using fMRI by capturing pictures of the brain while patients experienced a pain stimulus with and without acupuncture, according to researchers. fMRI is known to measure the tiny metabolic changes that take place in an active part of the brain, while a patient performs a task or is exposed to a specific external stimulus.

The RSNA noted the study was conducted in close collaboration with the Department of Complementary and Integrative Medicine at the University of Duisburg-Essen. A total of 18 healthy volunteers underwent fMRI while an electrical pain stimulus was attached to the left ankle. Acupuncture needles were then placed at three places on the right side, including between the toes, below the knee, and near the thumb. With the needles in place, fMRI was repeated while electrical currents were again directed at the left ankle.

The researchers then compared the images and data obtained from the fMRI sessions with no acupuncture to those of the fMRI sessions with acupuncture. According to researchers, activation of brain areas involved in pain perception was significantly reduced under acupuncture and also affected brain activation in areas governing the patients' expectations of pain, similar to a placebo analgesic response.

"Acupuncture is supposed to act through at least two mechanisms - nonspecific expectancy-based effects and specific modulation of the incoming pain signal," Theyson said in a written statement. "Our findings support that both these nonspecific and specific mechanisms exist, suggesting that acupuncture can help relieve pain."

For more information on the study, visit www.RSNA.org.

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