

Meditative breathing may help manage chronic pain

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(PhysOrg.com) -- A new study published in the journal *Pain* offers support for the benefits of yoga-style breathing and meditation to help control chronic pain.

The research, completed by scientists at Arizona State University and the Barrow Neurological Institute in Phoenix, is the first to directly examine the benefits of breathing rate on physical and [emotional reaction](#) to pain.

In essence, the researchers put meditation to the test. During the study

trials, participants were subjected to brief pulses of moderately painful heat on their palms. They were asked to report what they felt in three ways: how strong was the pain, how unpleasant was the pain, and how much the pain affected their [emotional state](#)

By simply instructing participants to pace their breathing to an ellipse on a screen in front of them, the researchers eliminated expectations that could bias results. By actually administering a painful heat stimulus the researchers could also control the amount of pain each person received, and could compare pain ratings made when the person was breathing normally with their slow breathing.

The study involved two groups of women - 27 diagnosed with chronic pain from [Fibromyalgia](#) and 25 healthy women of the same age.

Compared to normal breathing, slow breathing reduced ratings of pain intensity and unpleasantness as well as negative emotion. The benefit of slow breathing in relieving pain was greatest in the healthy women.

Not all women with Fibromyalgia benefited from slow breathing. Only those who also reported having “a steady diet” of positive emotion in their lives - who had the “capacity” to feel positive - felt less pain when breathing at half their normal rates.

“Slow breathing provides a natural means for dampening activity in the stress system of the brain, leading to a reduction in pain,” said Alex Zautra, Foundation Professor of Psychology at ASU and the study’s lead author.

The first change that occurs with slower breathing is greater parasympathetic response, which provides a counterbalance to sympathetic activation that is often aroused by pain and that engenders feelings of anxiety and nervous tension, Zutra said.

“A greater state of calm induced with slower breathing also opens the mind to a greater capacity to feel emotions other than pain, providing perspective, flexibility and choice in the regulation of inner states,” he said. “In doing so, slow breathing reduces the dominance of the fight/flight response within us extending the calm influence of parasympathetic activation to allow for better emotion regulation and cognitive shifts from helplessness to action.”

For Fibromyalgia patients, however, meditative breathing alone is insufficient. Interventions that help them to experience positive emotions and learn to harness those feelings are needed to reignite their capacity to be resilient in the face of [chronic pain](#).

“Treatment for Fibromyalgia includes medication, but that only helps some - rheumatologists estimate even the latest medications are only 35 percent effective in relieving pain,” Zautra said. “Physical therapy and new mind-body methods designed to sustain positive affect and teach methods for coping with stressful situations are vital components of treatment.”

This study was funded by the Arizona’s Institute for Mental Health Research. Davis and Zautra are now conducting clinical trials to test the benefit of their mind-body intervention in a five-year project funded, in part, by the National Institutes of Health.

Provided by Arizona State University

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