

# Barrow researcher reports that slow breathing reduces pain

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Research performed by a scientist at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center has shown that controlled breathing at a slowed rate can significantly reduce feelings of pain.

Chronic [pain](#) sufferers, specifically fibromyalgia (FM) patients, also reported less pain while [breathing](#) slowly, unless they were overwhelmed by [negative feelings](#), sadness or depression.

The research was led by Arthur (Bud) Craig, PhD, at Barrow, and was done in collaboration with investigators in the Department of Psychology at Arizona State University. It was published recently in *PAIN*, the refereed journal of the International Association for the Study of Pain (IASP). The findings offer an explanation for prior reports that mindful Zen meditation has beneficial effects on pain and that yogic breathing exercises can reduce feelings of depression. These results also underline the role that a person's positive or negative attitude can have on their feelings of pain.

The study involved two groups of women aged 45 to 65. One group was composed of women previously diagnosed with fibromyalgia, and the other group was "healthy controls."

During the trial, participants were subjected to moderately painful heat pulses on their palms. The heat pulses were administered while they were breathing at normal rates and when participants reduced their breathing rates by 50 percent. After each heat pulse, participants were

asked to report their feelings three ways: how strong the pain was (pain intensity), how uncomfortable it was (pain unpleasantness) and how their mood varied (affect).

The researchers analyzed the participants' ratings of [pain intensity](#) and unpleasantness and found an overall reduction in reported pain when the healthy control participants were paced to breathe slowly. However, fibromyalgia patients benefited from slow breathing only if they reported positive affect.

Other studies have shown that depression is a hallmark of fibromyalgia and that the connection between pain and emotion is particularly evident in people diagnosed with the fibromyalgia syndrome.

Results of the Barrow study showed that FM patients as a whole did not show a lessening of pain when breathing slowly, but those FM patients with strong positive affect as a trait (meaning it is an aspect of their personality, not simply the situation) did show some improvement. "This fits with the idea that FM patients in general have low positive affect, or energy reserves. Those who do have some positive energy left in their "mental battery" can use it to reduce pain by breathing slowly, just like healthy normals," says Dr. Craig.

Provided by St. Joseph's Hospital and Medical Center

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