

Rapid Recovery Hyperbarics

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Chronic pain can alter the brain

Study: Scans of sufferers found activity in areas that should be at rest

Reuters

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CHICAGO - Brain scans of people in chronic pain show a state of constant activity in areas that should be at rest, U.S. researchers said on Tuesday, a finding that could help explain why pain patients have higher rates of depression, anxiety and other disorders.

They said chronic pain seems to alter the way people process information that is unrelated to pain.

“It seems that enduring pain for a long time affects brain function in response to even minimally demanding attention tasks completely unrelated to pain,” the researchers wrote in the Journal of Neuroscience.

Dante Chialvo, a researcher at Northwestern University in Chicago who worked on the study, said: “People with chronic pain — meaning pain that lasts more than six months after their injury — have many other issues that affect their quality of life as much as pain. It is not known where they come from.”

Recent studies have shown that in healthy people, certain regions of the brain take over during a resting state, something known as a default mode network. “It takes care of your brain when your brain is at rest,” Chialvo said in a telephone interview.

When a person performs a task, this network quiets down, he said, but not in people with chronic pain.

Instead, a front region of the cortex mostly associated with emotion is constantly active, disrupting the normal equilibrium.

To study this activity, Chialvo did a type of brain scan known as functional magnetic resonance imaging on 15 people with chronic back pain and 15 healthy people.

They gave their volunteers a simple attention task — tracking a moving bar on a computer screen — to observe the brain shifting out of default mode to handle the task. Both groups performed the task well but when they measured areas of the brain activated, differences emerged.

“Where we were surprised is the difference in how much brain they used to do the task compared with the healthy group. It was 50 times larger,” Chialvo said. They said disruptions in this default network could explain why pain patients have problems with attention, sleep disturbances and even depression.

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“These findings suggest that the brain of a chronic pain patient is not simply a healthy brain processing pain information but rather it is altered by the persistent pain in a manner reminiscent of other neurological conditions associated with cognitive impairments,” they wrote.

