How the Mind Controls Pain
Why physical pain is intricately linked to emotional response.
By Suzanne Levy, Health

Science is beginning to investigate and support the role of therapies such as biofeedback and meditation in pain control. The idea that the mind has power over the body may be especially useful to chronic pain patients who often find themselves without satisfactory medical treatments.

The emotional response to pain

Pain travels along two pathways from a source, such as an injury, back to your brain. One is the sensory pathway, which transmits the physical sensation. The other is the emotional pathway, which goes from the injury to the amygdala and the anterior cingulate cortex areas of the brain that process emotion.

"You may not be aware of it, but you're having a negative emotional reaction to chronic pain as well as a physical reaction," says Natalia Morone, M.D., assistant professor of general internal medicine at the University of Pittsburgh School of Medicine. Mind-body treatments that involve meditation and relaxation probably affect these emotional pathways. However, Dr. Morone admits that many doctors don't put much stock in this theory. "Anything to do with mind-body medicine around pain is going to be controversial. This is all very new."

Research is beginning to show the connection

In a 2005 study, researchers at Stanford University in Palo Alto, Calif., used functional magnetic resonance imaging (fMRI), which measures activity in different areas of the brain, to see whether subjects could learn to control a brain region involved in pain and whether that could be a tool for altering their pain perception.

Laura Tibbitts, 34, an event planner from San Francisco who severely injured her arm, shoulder and back when she was thrown off of a horse, participated in the study. In describing her pain, she says: "My muscles and nerves feel like a bunch of snakes that are all intertwined, but then I also get a stabbing and shooting pain. So you have that horrible, achy, uncomfortableness, but then you get these jolts of pain."

In the study, Tibbitts was asked to increase her pain and as she did, an image of a flame on a computer monitor became stronger and more vibrant. Then she was told to decrease her pain, which caused the flame to die down. "Sometimes I would imagine that the pain was literally being scooped out from me, taken away and carried off. Other times I used water imagery, like it was flowing through me and taking it away," says Tibbitts. After the test, she learned that she had been able to produce a 30 percent to 40 percent reduction in her overall pain.

Giving control to pain patients

For Sean Mackey, M.D., director of the pain management division at Stanford University School of Medicine and one of the study's researchers, the research revealed a striking element of empowerment. "Patients would say, 'A-ha! For the first time I could see the pain in my brain, and I could control it. And that was a very powerful experience,'" he says.

Dr. Mackey believes pain medicine is moving away from the concept of strict mind-body separation toward a more unified—and ancient-sounding—view in which "mind and body are really one."

The bottom line for pain patients is that they may want to pursue pain-control techniques such as biofeedback, yoga, and meditation. But they also need to be on the alert for scams and beware of claims made by therapists seeking to exploit their desperation. Before turning to one of these therapies, it's best to thoroughly research the practitioner you choose.

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