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Managing pain

A new understanding of how chronic pain differs from acute is paving the way for alternative therapies

By Markian Hawryluk / *The Bulletin*

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When Karen Brannen moved to Central Oregon four years ago, she was just about ready to throw in the towel. A series of car accidents over 25 years left her with severe, debilitating pain. She had been on disability for at least six weeks three times in the previous six years.

“I was considering going on permanent disability and just giving up,” the 54-year-old La Pine woman said. “My strategy with pain was always to ignore it until it got to the point that I couldn't get out of bed. I just didn't know what else to do.”

According to the National Institute of Neurological Disorders and Stroke, Brannen is not alone. Some 90 million Americans experience chronic pain, and many struggle daily to find any relief. Researchers now understand that chronic pain is a completely different animal from the acute pain experienced when you stub a toe or burn yourself. That understanding is helping health practitioners find new ways to help people cope with their chronic pain.

Brannen found her way to Allison Suran, owner of Healing Bridge Physical Therapy and a physical therapist who has shifted much of her practice toward the management of chronic pain. Suran taught her how to better mitigate the pain cycle when it starts and how to avoid letting the pain take over her life.

“Pain is no longer an enemy. It's kind of a friend. It's the thing that I pay attention to that tells me that something else is out of whack,” Brannen said. “She really taught me to recognize the kinds of things that make it better and the kinds of things that make it worse.”

Brannen has started to exercise regularly again, even though it does cause her some pain. And she's learned that when she gets stressed or doesn't get enough sleep, the pain worsens, which in turn leads to more stress or more disrupted sleep. That's when it spirals out of control.

She now works for herself, as an independent insurance agent, allowing her more flexibility if she needs to get more sleep or back off of a hectic schedule.

“Some minor tweaking has made a huge difference,” Brannen said.

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Allison Suran of Healing Bridge Physical Therapy helps patients like Carol Foster find relief from chronic pain using a series of movements and exercises known as the Feldenkrais Method. The exercise technique is just one of the approaches that has shown promise in mitigating chronic pain.

Indeed, her chronic pain hasn't forced her back on disability in the past four years. And she's cut her medication use in half, mostly taking only sleep aids to make sure she gets enough rest.

Limited options

Experts maintain that one of the difficulties in treating chronic pain patients is that few good drug therapies exist for them. Brannen said she went through “drug roulette” for years with her doctors trying to find an effective solution. Some drugs simply don't work as well for chronic pain as they do for acute pain, and others have significant side effects, especially addiction, with long term use.

Researchers have discovered that chronic pain follows different pathways than acute pain. If you are poked with a needle, for example, receptors on the skin trigger an electrical impulse that travels along a nerve fiber to the spinal cord. The fiber connects with a nerve cell that passes the pain signal up the spinal cord to the brain, crossing various junctions, or synapses, along the way.

Opioid drugs, which are commonly used to treat severe pain, prevent the signals from crossing those synapses, thus blocking the pain.

Chronic pain, on the other hand, activates what researchers call silent synapses in the nervous system, finding a new path to the brain. These synapses, researchers say, transmit pain signals even when no apparent cause of the pain is present.

“Most pain medications target signals carried through a different system of receptors, so they have little or no effect on chronic pain signals,” said Dr. Min Zhuo, a physiology professor at the University of Toronto and one of the leading experts in chronic pain.

Research has also shown that chronic pain targets a much different part of the brain than acute pain. MRIs show that acute pain activates the sensory part of the thalamus, while chronic pain shows up in the prefrontal cortex, the site of emotion and learning.

In fact, researchers have discovered that chronic pain results in the same type of changes in the brain as with the creation of long-term memories.

“In some way, you can think of chronic pain as the inability to turn off the memory of the pain,” said Dr. Vania Apkarian, a professor of physiology and anesthesiology at Northwestern University.

He maintains that chronic pain acts like an old memory that gets stuck in the prefrontal cortex of the brain. The brain seems to remember the injury as if it were fresh and can't forget it.

“To control it, (doctors) tried to stop the sensory input to the brain,” he said. “We are saying there's a cognitive memory and emotional component in the brain that seems abnormal. Easing that may have

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Allison Suran of Healing Bridge Physical Therapy demonstrates an exercise during a chronic pain group class last month in Bend. The class focuses on the causes and potential fixes for chronic pain.

CHRONIC pain

Chronic pain may start with an acute injury but uses a different pathway to the brain. Long after the injury has healed, the brain continues to register the pain, and

a bigger effect on suffering."

That understanding is paving the way for new breakthroughs in chronic pain research. For example, Zhuo has bred genetically engineered mice that lack the gene needed for long-term memory. Those mice can feel acute pain but not chronic pain.

So while chronic pain may start with a particular injury, it can persist long after the original injury has healed. X-rays or MRIs show no problems at the injury site, yet patients still feel excruciating pain. Researchers such as Zhuo believe that's because an injury can cause changes in the brain that will continue to trigger pain for years.

traditional medications often offer little relief.

VS.

ACUTE pain

Acute pain, such as when you cut or burn yourself, triggers an electrical impulse that travels up the spinal cord, registering as pain in the brain. Pain medications seek to prevent that signal from reaching the brain.

Other approaches

Those research findings may help explain why many chronic pain patients are finding relief in more holistic approaches, such as those Suran uses.

"Part of what's happening is because they've created this pain superhighway," Suran explained, "that results in hypersensitivity. The brain is triggered more easily by the pain or stresses in their lives or their lifestyles or their movements. So the pain that is there is exacerbated more easily."

Suran helps her clients understand that the pain they're feeling is due to this hypersensitivity rather than to a new or ongoing injury. That can help encourage them to continue to be active and to exercise even if they experience some pain.

That's really the key to desensitizing the nervous system, she said, and to break the downward spiral of pain and inactivity. A person experiencing pain often becomes less active, which in turn makes him or her more sensitive to pain.

"Movement is exactly what nerves need to decrease their hypersensitive state," Suran said. "But for folks who have chronic pain conditions, finding the right amount and level of movement or exercise can be challenging. What is it you can do that you might have some pain tomorrow but you can do it again tomorrow." Then as the pain diminishes, the level of activity is increased.

Suran uses the Feldenkrais Method to help her chronic patients increase their activity levels. The method teaches an awareness about body movements, ensuring that any movement is done with the correct form. She guides clients through a series of fundamental movements or exercises that helps them relearn proper movements and minimize abnormal movements that can exacerbate their pain.

"I tell people, 'We may or may not change your pain. We will improve your coping skill. We will get you to where you can tolerate more activity,'" Suran said. "If you make getting rid of pain the only goal, you set yourself up for failure."

Carol Foster, 57, of Bend, admits she was somewhat skeptical when she had her first session with Suran to address her ongoing back and shoulder pain.

"I'm a believing Christian, so I will not get into the whoo-whoo, far-out Chinese medicine and all the weird stuff. I won't do it," she said. "So when I first heard Feldenkrais, I though, 'Here we are, way out.'"

She decided to give it a try anyway.

"My first appointment, she worked on just half of my body. While she was working I thought this is going to do nothing," Foster said. "The movements were so minute, I couldn't believe it. I thought, 'What is this? Come on, really!'"

But when she finished, Foster's disbelief had dissipated along with her pain.

“It was like my right side was so relaxed I was ready to roll off the table, and my left side was like stone,” she said.

Foster said the Feldenkrais Method is difficult to describe, but it helps a person to become more aware of the body and how it moves. The movements are slight, gentle, such as moving an arm or a shoulder lightly up and down, or moving the head from side to side. It trains the nervous system how to direct movement with significantly less effort and strain, which can avoid triggering chronic pain.

“It empowers the patients to become more aware of their own movements and learn to change these basic, often lifelong patterns through becoming more curious in their own movement,” Suran said.

Foster continues to see Suran in individual appointments, attends group classes on pain management at Healing Bridge and follows instructions on CDs at home in between.

The techniques have allowed Foster to resume going on camping trips with her husband. Because of her chronic pain, she often couldn't walk for more than half a mile on a rough trail. Now she's back to hiking six to eight miles to more remote campsites.

“I have more fluid movements so I move differently and get my brain away from what's hurting and move differently,” she said. “It's so wonderful for people with chronic pain. We can get our minds going in a different way and think about what feels good.”

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