

research update

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Focusing On Chronic Centralized Pain

Researchers at the University of Michigan's Investigating Disability factors and promoting Environmental Access for Healthy Living (IDEAL) Rehabilitation Research and Training Center (RRTC) are studying traumatic spinal-cord injuries (SCI) and the role that chronic centralized pain has in conjunction with psychological disorders.

These psychological disorders include anxiety; post-traumatic stress disorder; cognitive and/or mood disorders; dementia; alcohol-related disorders; substance abuse disorders; and central pain syndrome.

Centralized pain, or pain that arises from the central nervous system, is different from musculoskeletal pain. Musculoskeletal pain is often treated with medication such as opioids. But treating centralized pain with opioids can cause more harm than good.

What can make centralized pain challenging to treat is the psychological aspect of it.

A Strong Predictor

Mark D. Peterson, PhD, a physiologist with the IDEAL RRTC and faculty member of the University of Michigan's Department of Physical Medicine and Rehabilitation, studies the nature of pain in individuals with traumatic and non-traumatic SCI and the reasons why they feel pain besides it being an after-effect of the injury itself.

More specifically, Peterson looks at centralized pain and how it can coincide with psychological conditions, which can then affect a person's perception of pain, sometimes making the pain feel amplified.

"Chronic pain is a very strong predictor of psychological disorders



Mark D. Peterson, PhD

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across patient populations, and it could be a robust predictor of psychological morbidities in patients with chronic spinal-cord injury," he says.

Essentially, chronic pain could impact someone's mental health. Because of this, understanding the origin of pain in persons with SCI is exceedingly important, Peterson adds.

In addition to the person with a traumatic SCI being treated for his or her bodily injuries, his or her mental health needs should be addressed promptly, as well.

"We have to care for these individuals differently. There isn't that much done to address the psychological effects of the injury immediately after injury. If someone with a spinal-cord injury is not screened for depression, they could be at higher risk for suicide," Peterson says. "Mental health screening has to be an important part of the early health care process. Let's get individuals with spinal-cord injuries into a behavioral intervention. I want to see the day where we can include preventive medicine in the medical treatment process."

Peterson advises individuals who have experienced a SCI to consult with a variety of specialists/providers,

such as a psychologist and/or psychiatrist, a pain management specialist and a physical therapist. Having an advocate, such as a family caregiver or spouse, to assist with health care navigation can be helpful, especially in the beginning of the SCI journey.

He also says being physically active and adopting other healthy behaviors can help with managing physical and mental health, including centralized pain.

"A vast majority of people have a reduction in centralized pain if they can be physically active," Peterson says. "Sleep, nutrition and physical activity are important."

Body & Mind Connection

Carrie Pilarski, PhD, a rehabilitation psychologist who's also part of the University of Michigan's Department of Physical Medicine & Rehabilitation, works with SCI patients in the hospital and on an outpatient basis.

She understands the psychology behind the injury and how pain can



Carrie Pilarski, PhD

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play a part in psychological conditions that may develop following the injury.

“One thing I try to impress on people is that the psychological, physical and physiological aspects of people’s experiences are much more connected than they thought,” Pilarski says. “They are influencing each other, and it’s not something that we can separate very well, but it gives us multiple avenues for intervention. It is emotionally difficult to deal with pain, whether it’s in acute stages or especially if it’s chronic. Reminders of trauma-related experiences and ongoing trauma can increase psychological and mental health problems.”

As a rehab psychologist, Pilarski says one strategy she utilizes is cognitive behavioral therapy to help a person manage his or her thoughts about the pain he or she is feeling.

“If the person is anticipating pain and worried about being in pain or fearful of the things that might increase their pain, that is what we address to minimize the stress, fear and how they think about pain,” she says.

Pilarski says depression and anxiety can exacerbate the feelings of pain. On the other hand, when someone is in a positive mood, the same neurotransmitters in the brain can help a person feel less pain.

She agrees with Peterson that exercise is one of the best activities for someone with SCI. It can improve sleep, mood, energy and the ability to focus.

A Different Perspective

Other sources of support that can help with managing mental health include peer support services or support groups, as well as being part of a

faith-based organization or support group. Pilarski strongly advocates for the use of meditation and relaxation practices to manage stress responses.

Finally, she suggests that individuals with SCI set goals and think about what they can do rather than what they can’t do.

“We can focus on their functioning and participation in life instead of their pain,” she says. “Problem-solving is a strong confidence builder, and it can address self-image and self-efficacy. People oftentimes have skills, but they don’t realize that those same skills can be applied to their new situation. I tell people, try to take a different perspective, manage how you’re looking at your injury, increase enjoyable activities and have good social support.”

Michigan Medicine, the University of Michigan’s health care system, holds a SCI support group virtual meeting the fourth Tuesday of every month from noon-1:30 p.m. EST. The group is run by Pilarski and peer mentors who have a SCI. The group combines SCI-based topics and open discussions. For more information, call 734-936-7052.

Additional resources on subjects such as exercise can be found on The National Center on Health, Physical Activity and Disability website at nchpad.org.

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Elizabeth A. Katz is a science writer with Michigan Medicine. ■



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