

(SCIRE logo with words “Spasticity and SCI,” “Problematic vs. Non-Problematic Spasticity,” and “Part 1/7” appear on screen.)

(Medium close-up shot of Dr. Patricia Mills, Principal Investigator from the Faculty of Medicine in the University of British Columbia.)

Dr. Patricia Mills: The definition of spasticity has evolved over time.

More recently, clinicians are describing spasticity as a sensorimotor disorder as a result of a lesion to the upper motor neuron system, (so the brain or the spinal cord), characterized by intermittent or sustained involuntary muscle activation.

(Close-up of a man with SCI’s leg experiencing a spasm.)

(Cut to physiotherapist moving and examining the leg of a man with SCI.)

What typically happens is that after an injury, individuals with spinal cord injury are in a spinal shock so they have no reflexes and no spasticity at first.

As the spinal shock resolves and changes in the spinal cord occur, the spasticity can emerge.

(Return to medium close-up of Dr. Patricia Mills.)

Not everyone gets it, but approximately 80% of people with SCI will [get spasticity].

(Man with spasticity transferring from his wheelchair to his bed.)

At first, it may be quite mild and perceived as non-problematic.

(Man lying on a bed while his right leg spasms.)

In some individuals, spasticity will progress and become more severe in intensity and frequency and it can become problematic.

(Physiotherapist stretching leg of man with spasticity.)

Man with SCI: Sometimes you can feel it coming like a twitch, kind of like a sneeze-you can feel it coming.

Other times it just comes on sudden.

(Man with SCI discussing with a physiotherapist.)

(Man with SCI walking with help of parallel bars while physiotherapist stands by giving advice.)

At the moment it is a huge problem; with the pain and the tightness, the tone is there all the time.

With some of the drugs it relieves it and this allows me to do other things.

At times, the tone is beneficial when it helps me stand up.

But I'm trying to find a balance.

(Return to medium close-up of Dr. Patricia Mills.)

Dr. Patricia Mills: Individuals with SCI can experience spasticity that can be problematic or non-problematic.

(Graphic with the word "Spasticity" branching into two categories: Non-Problematic and Problematic. Under the "Non-Problematic" category is an explanation with the words "if spasticity does not cause problems with pain or skin breakdown, it can be helpful.")

The way that we think about non-problematic spasticity is if it either doesn't cause problems with pain or skin breakdown, it can be helpful.

(Return to medium close-up of Dr. Patricia Mills.)

So if you have an area of weakness that has muscle spasms, you can activate those spasms in order to help with things like positioning or transfers, and sometimes even walking.

(Another man with SCI explains his experience with spasticity to a physiotherapist.)

Man with SCI 2: Spasticity for me has been the biggest inhibitor from getting ambulatory again.

(Cut to close-up of man with SCI's legs as he tries to walk.)

It's been ongoing for about 9 months now.

The issue for me is to actually get into the parallel bars where I've been trying to walk.

With my right leg particularly, the spasticity comes on, and I'm unable to load that leg to take a stride and continue forward in a walking pattern.

(Split screen with man with SCI speaking to a physiotherapist on the left screen, and a recording of a physiotherapist helping man with SCI stand from his wheelchair as he experiences a spasm on the right screen.)

When I first started dealing with this as an issue, it was impossible to get upright for any length of time before the spasticity kicked in and I really had to return to a sitting position or deweight off the right leg.

(Graphic of a tree named “Problematic Spasticity” branches into four branches: Body Structure, Function, Quality of Life, and Cosmesis.)

Problematic spasticity may be something that affects the body.

(Animation of “Body Structure” branch branching into “Pain,” “Contractures,” and “Skin Breakdown.”)

So for example, it can cause pain, it can cause contractures, it can lead to skin breakdown because of the frequent spasms causing rubbing against surfaces.

(Animation of “Function” branch branching off into “Active Function” and “Passive Function.”)

It can also cause problems with function, either passive function or active function.

(Animation of “Quality of Life” branch branching off into “Employment,” “Volunteering,” and “Recreational Activities.”)

Another area that it can affect is general quality of life in participation.

(Animation of “Cosmesis” branch growing a “Perception of Yourself” branch.)

One other thing is cosmesis: if it interferes with your perception of yourself.

(Return to medium close-up of Dr. Patricia Mills.)

So when you’re asking an individual whether or not their spasticity is problematic, they may ask you: what do you mean by that?

And that’s one way to think about categorizing problematic spasticity that I find useful.

(Words “To learn more visit scireproject.com” and “follow us @SCIREProject” appear.)

(Fades into next screen with bolded words “Thank you to” followed by the words “Principal Investigator Patricia Mills,” and “Participants: Lance Blanco, Victor Winterfeld, Tova Plashkes, Mustafa Hasan, Ed Bell, Jami Bennett, Matthew Querée, Shannon Sproule and the rest of the

SCIRE Team.” Below: logos of the Rick Hansen Institute, University of British Columbia, icord, and Ontario Neurotrauma Foundation.)

(Words “Created by Merilin Paart at the Knowledge Mobilization Studio at the Centre for Hip Healthy and Mobility” and Knowledge Mobilization Studio logo appear on screen before dipping to black.)