

Research In Focus: A Weekly Digest of New Research from the NIDILRR Community

People with SCI Who Are More Mobile May Experience Less Pain

A spinal cord injury (SCI) is damage anywhere along the spinal cord, usually from an accident or other trauma. An SCI can cause paralysis below the waist (paraplegia) or above the waist (tetraplegia). More than 80% of people with SCI experience chronic pain. This pain may be caused by nerves “misfiring” through the damaged part of the spinal cord and sending pain signals to the brain. Previous studies have shown that being physically mobile may help reduce chronic pain after an injury. In a recent NIDILRR-funded study, researchers looked at the connection between mobility and pain one year after an SCI. They wanted to find out whether people with SCI who were more mobile experienced less severe pain than people who were less mobile. The researchers also looked at what other factors might be related to having more severe pain after an SCI.

Researchers at the [Spaulding Harvard Spinal Cord Injury Model System Center](#) looked at data from the National Spinal Cord Injury Statistical Center database. These data were collected from 1,980 adults with SCI who were treated at SCI Model System Centers across the United States between 2000 and 2013. The participants provided data about their demographics (gender, age, and pre-injury employment status) and their type of injury (paraplegia or tetraplegia) at the time they were discharged from the hospital or rehabilitation center after their SCI. Then, they were interviewed one year after their SCI and answered questions about pain, mobility, and mood. To measure pain severity, the participants were asked how bad their pain was during the past four weeks, on a scale between 0 (no pain) and 10 (as bad as you can imagine). To measure mobility, the participants were asked how many hours per day they typically spent out of bed, how many days in a typical week they left the house, and how many nights during the past year they spent away from home (besides hospital stays). The answers to these questions were combined to create a mobility score for each participant between 0 and 100, with higher scores meaning more frequent mobility. To measure mood, the participants were asked whether or not they had ever felt “down, depressed, or hopeless” during the past two weeks.

The researchers found that there was a connection between mobility and pain one year after SCI: The participants with high mobility (scores between 60 and 100) reported the lowest pain, while the participants with moderate mobility (scores between 20 and 60) reported the highest pain. Interestingly, the participants with little mobility (scores below 20) reported slightly milder pain than the participants with moderate mobility, though their pain experience was still higher than the participants with the most mobility.

In addition, the researchers found that some other factors were related to pain severity one year after SCI. Among the participants, women reported more severe pain

than men; older participants reported more severe pain than younger participants; and participants with paraplegia reported more severe pain than those with tetraplegia. In addition, the participants who were employed at the time of injury reported milder pain than those who were unemployed. Finally, the participants who reported feeling depressed one year after SCI had more severe pain than those who were not depressed.

The authors pointed out that there could be other factors affecting both mobility and pain levels at the same time, such as the person's general health, and these factors could be part of the connection found in this study. It is also possible that people who are in less pain are able to be more mobile and active. Researchers may want to conduct clinical trials testing how mobility interventions, such as exercise programs or even simulations like "virtual walking," may reduce pain after an SCI.

The authors noted that, in this study as well as prior studies, people with SCI who spend more time out of bed or away from home tend to experience less pain. Even small amounts of physical activity may stimulate motor nerve pathways, which can help the nervous system and result in less pain. Activity-based interventions may help to prevent pain if started soon after an SCI. Rehabilitation providers may also want to set rehabilitation goals that involve going out and being active in the community. This may be especially important for people with SCI who are older, who have paraplegia, or who may be less inclined to be active due to unemployment or depression.

[To Learn More](#)

The Northwest Regional SCI System Center hosts regular discussions with people who have personal and professional experience with SCI. Among the video topics you'll find:

- Universal fitness after SCI
- Adaptive recreation, fitness, and leisure activities
- Swimming and yoga
- To walk or roll: The controversy over walking and research
- Perspectives on pain
- and much more at

http://sci.washington.edu/info/forums/reports/report_subject.asp

The Model Systems Knowledge Translation Center offers Managing Pain After SCI, a hot-topic module featuring videos and factsheets on how people with SCI experience pain and tool, techniques, and exercises which may help: <http://www.msktc.org/sci/Hot-Topics/Pain>

The Spinal Cord Injury Research Center at MedStar National Rehabilitation Hospital offers a "How-To" video series of exercises, as well as video tips that are helpful for getting out and about such as traveling on a metro or transferring to a car. View the collection at <http://sci-health.org/resources/videos/>

To Learn More About this Study

Marcondes, B.F., Sreepathi, S., Markowski, J., Nguyen, D., Stock, S.R., Carvalho, S., Tate, D., Zafonte, R., Morse, L.R., and Fregni, F. (2016) [Pain severity and mobility one year after spinal cord injury: A multicenter, cross-sectional study](#). *European Journal of Physical Medicine and Rehabilitation*, 52(5), 630-636. This article is available from the NARIC collection under Accession Number J73918.

Research In Focus is a publication of the National Rehabilitation Information Center (NARIC), a library and information center focusing on disability and rehabilitation research, with a special focus on the research funded by NIDILRR. NARIC provides information, referral, and document delivery on a wide range of disability and rehabilitation topics. To learn more about this study and the work of the greater NIDILRR grantee community, visit NARIC at www.naric.com or call 800/346-2742 to speak to an information specialist.

NARIC operates under a contract from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), Administration for Community Living, Department of Health and Human Services, contract #GS-06F-0726Z.