

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

### Young Men with Spinal Cord Injury May Benefit from Testosterone Screening

About 12,000 Americans develop a spinal cord injury (SCI) each year, according to the National Spinal Cord Injury Statistical Center. An SCI is damage anywhere along the spinal cord after an accident or other trauma. People with SCI may lose movement or feeling in their arms and legs (tetraplegia) or only in their legs (paraplegia), depending on which part of the spinal cord is injured. SCI is much more common in men than women, and it is most common in men under age 50.

People with SCI may develop body changes that can put them at a greater risk for health problems as they get older. One body change that may affect men with SCI is a decrease in their testosterone levels. Testosterone is the male sex hormone, and it also supports men's bone, muscle, and cardiovascular health. Men with low testosterone levels may experience sexual problems, as well as metabolic changes that could put them at higher risk for obesity, Type II diabetes, or heart disease. Although testosterone is made in a man's testicles, the levels are regulated by another hormone called luteinizing hormone (LH) made by the pituitary gland. In a recent NIDILRR-funded study, researchers compared testosterone levels between a group of young men with SCI and a group of similar-aged men without SCI. The researchers wanted to find out if a higher proportion of men with SCI had low testosterone compared with the men without SCI, and what factors were most associated with having low testosterone among the men with SCI. They also tested LH levels in the men with SCI to determine whether low LH levels were linked with low testosterone levels in men with SCI.

Researchers at the [Rehabilitation Research and Training Center on Secondary Conditions in SCI](#) looked at data from 58 men with SCI who were enrolled in a larger study. The men were 23-45 years old, and all had their SCI for at least a year. These men had no other major health problems that could impact their testosterone levels. The researchers looked at data from blood tests measuring their total testosterone levels, and categorized the men as having either low testosterone levels (below 300 nanograms per deciliter) or normal testosterone levels (above 300 nanograms per deciliter). They compared the percentage of the men with SCI who had low testosterone with the percentage of men ages 20-49 who had low testosterone in a general-population national survey, the Third National Health and Nutrition Examination Survey (NHANES III). To look at factors that might be linked to low testosterone among the men with SCI, the researchers looked at their age; whether they had tetraplegia or paraplegia; their height, weight, and percentage of body fat; and their other hormone levels in the blood tests, including their LH levels.

The researchers found that about 25% of the men with SCI had low testosterone, compared to only about 7% of the men without SCI. When the researchers looked more closely at the men with SCI, they found that the men with low testosterone were about 6 years older than the men with normal testosterone. Low testosterone was almost twice as common among the men with tetraplegia (39%) as in the men with paraplegia (20%). The men with low testosterone tended to have a higher percentage of body fat than the men with normal testosterone (36% vs. 30%) although their weight and body mass index (BMI) were similar. The men with low testosterone had lower LH levels on average than the men with normal testosterone.

The authors noted that low testosterone may be a more common problem in men with SCI than was previously thought. Although men's testosterone levels generally decrease with age, even young men with SCI may have low testosterone levels, which could affect their sex lives and also put them at greater risk for health problems as they get older. The decrease in testosterone may be at least partially explained by decreases in LH production after SCI. The authors recommend testosterone screening for men with SCI, even if they have no symptoms of low testosterone. Screening may be especially important for men with tetraplegia or those who have more body fat. Testosterone replacement therapy may improve health and quality of life for men with SCI who have low testosterone.

#### [To Learn More](#)

The Northwest Regional SCI System Center hosts discussion forums with individuals with SCI and healthcare and rehabilitation professionals who cover a wide array of topics. Specific topics include:

- General medical concerns after SCI  
<http://sci.washington.edu/primary/index.asp>
- Everybody's doing it: Aging with SCI  
<http://sci.washington.edu/info/forums/reports/aging-2012.asp>

MedlinePlus, maintained by the National Library of Medicine, is a trusted source for health information, from general explanations of conditions and treatments to videos and guides for a wide range of health topics. The section on Men's Health includes information on testosterone, screening for low testosterone, and more  
<https://medlineplus.gov/ency/patientinstructions/000722.htm>

#### [To Learn More About this Study](#)

Sullivan, S. D., Nash, M. S., Tefera, E., Tinsely, E., Blackman, M. R., Groah, S. (2017) [Prevalence and etiology of hypogonadism in young men with chronic spinal cord injury: a cross-sectional analysis from two university-based rehabilitation centers](#). Physical Medicine and Rehabilitation (2017), 751-760. This article is available from the NARIC collection under Accession Number J77456.

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