

Spasticity and Spinal Cord Injury Fact Sheet

Prevalence and Effects:

About 65–78% of the spinal cord injury (SCI) population experiences spasticity. Spasticity is an involuntary contraction of the muscles due to the disruption in neural pathways. Spasticity can be triggered by simple activities such as stretching, repositioning, and touch.

Treatment and Management:

Spasticity may have benefits such as maintenance of muscle tone. Some individuals are able to use their spasticity to complete functional tasks. Sudden increased spasticity can also act as a warning sign of an underlying medical condition such as urinary tract infection. However, severe spasticity can be extremely disruptive to quality of life (disrupted sleep, inability to transfer safely, etc.). Complications resulting from spasticity include pressure ulcers from shear and friction, falls, pain, and decreased range of motion.

Medications used to treat spasticity in SCI include baclofen (orally or via implanted pump), some benzodiazepines (orally), tizanidine (orally the gabapentinoids; gabapentin and pregabalin (orally)); and dantrolene. The choice of treatments and mode of administration depends in large part on the ongoing medical issues. Intrathecal baclofen pumps are surgically implanted and the medication is delivered directly to the fluid that surrounds the spinal cord. Because the medication is delivered directly to the fluid within the spinal canal, lower doses of medication are needed. This can be helpful for individuals who are unable to tolerate the side effects of oral medications. Due to the battery life, the pump must be replaced every 5 – 7 years. Nerve or motor point blocks including anesthetic medications, alcohol, phenol or neurotoxins (such as strains of botulinum toxin) can be injected into muscles to treat more localized spasticity. Non-pharmacological interventions utilized to treat spasticity include range of motion stretching exercises, vibration therapy, weight-bearing activities such as standing while using a standing frame, and splinting or bracing.