Webinar title: **Know Your Options for Treating Severe Spasticity**

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Today’s Agenda

• What is spasticity?
• What are the symptoms of spasticity?
• What are current spasticity treatment options?
What Could You Do if Your Spasticity Was Controlled?
What is Spasticity?

Tight, stiff muscles that make movement difficult or uncontrollable

Spasticity is caused by damage or injury to the part of the central nervous system (brain or spinal cord) that controls voluntary movement.

**Spasticity of spinal origin**
- Spinal cord injury
- Multiple sclerosis

**Spasticity of cerebral origin**
- Cerebral Palsy
- Stroke
- Traumatic Brain Injury
Signs and Symptoms of Spasticity

• Increased muscle tone
• Overactive reflexes
• Involuntary movements, which may include:
  • spasms (brisk and/or sustained involuntary muscle contraction)
  • clonus (series of fast involuntary contractions)

Symptoms of Spasticity

• Difficulty with care and hygiene
• Abnormal posture and poor balance
• Contractures (permanent contraction of muscles and tendons due to severe, persistent stiffness and spasms)
• Bone and joint deformities
• Spasticity related pain
• Increased fatigue
• Decreased functional abilities and delayed motor development

Spasticity Can Have an Impact on Your Life

- Limited movement of arms and legs
- Inability to walk properly
- Difficulty using hands to dress, bathe, eat, etc., which can increase caregiver burden
- Painful spasms
- Interference with work, school, and personal relationships
- Development of complications:
  - Painful deformities (contractures)
  - Skin sores
Spinal Cord Injury (SCI) & Spasticity

• Spasticity is a common problem after SCI

• Increased spasticity may also serve as a warning mechanism to identify pain or problems in areas where there is no sensation

SCI & Spasticity Statistics

273,000
INDIVIDUALS IN THE UNITED STATES HAVE SCI¹

40.6%
INCOMPLETE TETRAPLEGIA¹

18%
COMPLETE PARAPLEGIA¹

18.7%
INCOMPLETE PARAPLEGIA¹

75,000
LIVING WITH SEVERE SPASTICITY²

Multiple Sclerosis (MS)

- MS is a chronic disease that attacks the central nervous system (CNS), resulting in damage to the myelin sheath that surrounds and protects nerve fibers.
- Nerve impulses traveling to and from the brain can be distorted or interrupted when there is damage to the myelin or nerve fibers.
- Patches of scar tissue called plaques may form over the affected areas, further disrupting nerve communication.

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Multiple Sclerosis (MS) & Spasticity

- Spasticity is one of the more common symptoms of MS
- Although it can occur in any limb, it most commonly occurs in the legs
- If left untreated, spasticity can cause significant complications, including contractures and pressure sores
- Some degree of spasticity can be beneficial for individuals with significant weakness in the legs, as spasticity can be utilized for activities such as standing, transferring, or walking

MS & Spasticity Statistics

400,000 PEOPLE IN US HAVE MS\(^1\)

336,000 PEOPLE WITH MS EXPERIENCE SPASTICITY\(^2\)

136,000 INDIVIDUALS WITH MS LIVING WITH SEVERE SPASTICITY

Can Spasticity Be Treated?
Spasticity Management Options

- Oral Medication
- Rehabilitation Therapy
- Managing Spasticity-Related Pain
- Intrathecal Medication
- Motor Point Blocks, Nerve Blocks, Injections
- Neurosurgery
- Orthopedic Surgery
Rehabilitation Therapy

• Usually done in a clinic, a hospital, or at home

• May include:
  – Physical therapy
  – Occupational therapy
  – Speech therapy
Oral Medications to Treat Spasticity

• Drugs that act on central nervous system to relax muscles
  – Oral baclofen
  – Benzodiazepines (i.e. Valium*)

• Drugs that act directly on the muscle by blocking signals that cause muscles to contract
  – Dantrolene sodium (Dantrium*)

• Drugs that reduce activation of spinal (not skeletal) motor neurons via binding to alpha-adrenergic receptors
  – Imidazolines (Tizanidine)

*Valium® is a registered trademark of Roche Products Inc.
*Dantrium® is a registered trademark of Proctor & Gamble.
Additional Therapies

• Effective spasticity management may require use of two or more drugs, or a combination of oral medications with another type of treatment

• Some patients with more severe spasticity may not receive adequate results, or they may experience unacceptable side effects from oral medications

• In this case, they may try alternative therapies
Injection Therapy

• Used for specific muscle groups, such as one hand, one foot, or a shoulder

• Designed to work on the nerve site
  − Blocks communication between nerve and muscle

• May require repeat injections as effectiveness wears off over time
  − Botulinum toxins
  − Phenol and alcohol

Selective Dorsal Rhizotomy¹,²

- Surgical procedure performed along lower back
  - Surgeon uncovers and tests small nerve roots that make up sensory nerve fibers in the spinal cord
  - Involves cutting certain sensory (dorsal) roots that have abnormal responses to testing
- Not reversible
- General treatment for lower extremity spasticity
- Usually combined with intensive physical therapy

Orthopedic Surgery

• A surgical procedure for treating problems associated with spasticity
• Targets muscles, tendons, or bones
  - Soft tissue
    • Lengthening/releases
    • Tendon transfers
  - Bony procedures
    • Osteotomies
    • Fusions

Intrathecal Therapy

• Delivers liquid form of medicine directly to fluid around spinal cord
• Requires less medication (since it does not circulate throughout body)
• May produce fewer or more tolerable central nervous system side effects compared to other antispasticity medications

Talk to your doctor to determine what treatment option might be right for you.
For any follow up questions about Spasticity, related matters or other questions, please feel free to contact United Spinal Associations Spinal Cord Injury Resource Center by email or phone:

Spinal Cord Injury Resource Center  
Email: ask@unitedspinal.org  
Phone: 800-962-9629 M-F, 9am – 5pm Eastern