

Spasticity

Spasticity refers to feelings of stiffness and a wide range of involuntary muscle spasms (sustained muscle contractions or sudden movements). It is one of the more common symptoms of MS. Spasticity may be as mild as the feeling of tightness of muscles or may be so severe as to produce painful, uncontrollable spasms of extremities, usually of the legs. Spasticity may also produce feelings of pain or tightness in and around joints, and can cause low back pain. Although spasticity can occur in any limb, it is much more common in the legs.

There are two types of severe MS-related spasticity:

- In *flexor* spasticity, mostly involving the hamstrings (muscles on the back of the upper leg), and hip flexors (muscles at the top of the upper thigh), the hips and knees are bent and difficult to straighten.
- In *extensor* spasticity, involving the quadriceps and adductors (muscles on the front and inside of the upper leg), the hips and knees remain straight with the legs very close together or crossed over at the ankles.

Spasticity may be aggravated by sudden movements or position changes, muscle tightness (“adaptive shortening”), extremes of temperature, humidity, or infections, and can even be triggered by tight clothing.

Treatment with Exercise and Medication

There are a number of therapeutic approaches to the management of spasticity. Because spasticity varies so much from person to person, it must be treated on an individual basis and demands a true partnership between the person with MS, physician, nurse, physical therapist, and occupational therapist. Treatment begins with the physician recommending ways to relieve the symptoms, including exercise, medication, changes in daily activities, or combinations of these methods. The physician will track the progress and make referrals to other health professionals such as occupational and physical therapists.

- Daily stretching and other exercises are often effective in helping to relieve spasticity.
- If drugs are also needed, there are two major antispasticity drugs that have good safety records. Neither, however, can cure spasticity or improve muscle coordination or strength.
 - **Baclofen**, the most commonly used drug, is a muscle relaxant that works on nerves in the spinal cord. Common side effects are drowsiness and a feeling of muscle weakness. It can be administered orally or by an implanted pump (intrathecal baclofen). Intrathecal baclofen is used for severe spasticity that cannot be managed with oral medication.

- **Tizanidine (Zanaflex®)** works quickly to calm spasms and relax tightened muscles. Although it doesn't produce muscle weakness, it often causes sedation and a dry mouth. In some patients, it may lower blood pressure.
- Other, less commonly-used drugs, include:
 - Diazepam (Valium®)—not a “first choice” drug for spasticity because it is sedating and has a potential to create dependence. However, its effects last longer with each dose than baclofen, and physicians may prescribe small doses of Valium® at bedtime to relieve spasms that interfere with sleep.
 - Dantrolene (Dantrium®)—generally used only if other drugs have not been effective. It can produce serious side effects including liver damage and blood abnormalities.
 - Phenol, a nerve block agent
 - Botulinum toxin (Botox®) injections—have been shown to be effective in relieving spasticity in individual muscles for up to three months.
 - Clonidine—still considered experimental.

Treatment Helps Prevent Complications

Left untreated, spasticity can lead to serious complications, including contractures (frozen or immobilized joints) and pressure sores. Since these complications also act as spasticity triggers, they can set off a dangerous escalation of symptoms. Treatment of spasticity and muscle tightness by medication and physical and occupational therapy is needed to prevent painful and disabling contractures in the hips, knees, ankles, shoulders, and elbows. Surgical measures are considered for those rare cases of spasticity that defy all other treatments.

Spasticity Can Provide Some Benefit for People with Significant Weakness

Some degree of spasticity can also provide benefit, particularly for people who experience significant leg weakness. The spasticity gives their legs some rigidity, making it easier for them to stand, transfer, or walk. The goal of treatment for these individuals is to relieve the spasticity sufficiently to ensure comfort and prevent complications, without taking away the rigidity they need to function.

See also...

Sourcebook

- Aquatics/Aquatic Exercise
- Pain
- Physical Therapy
- Pressure Sores
- Rehabilitation
- Symptoms

Society Web Resources

- Brochure: Controlling Spasticity in MS
www.nationalmssociety.org/Spasticity
- Spotlight: MS and Mobility
www.nationalmssociety.org/Mobility
- Spotlight: Rehabilitation in MS
www.nationalmssociety.org/Rehab
- Medications Used in MS
www.nationalmssociety.org/Meds

Clinical Bulletins for Healthcare Professionals

- Spasticity
www.nationalmssociety.org/ClinicalBulletins

Books

Coyle P., Halper J. *Meeting the Challenge of Progressive Multiple Sclerosis* (3rd ed.). New York: Demos Medical Publishing, 2001.

—Ch. 4 Managing the Symptoms of Progressive Multiple Sclerosis

Holland NJ, Halper J (eds.). *Multiple Sclerosis: A Self-Care Guide to Wellness* (2nd ed.). New York: Demos Medical Publishing, 2005.

—Ch. 6 Maintaining Joint Flexibility and Mobility

Kalb R. (ed.) *Multiple Sclerosis: The Questions You Have; The Answers You Need* (3rd ed.). New York: Demos Medical Publishing, 2004.

—Ch. 2 Neurology

—Ch. 5 Physical Therapy

Schapiro R. *Managing the Symptoms of Multiple Sclerosis* (4th ed.). New York: Demos Medical Publishing, 2003.

—Ch. 4 Spasticity

The National Multiple Sclerosis Society is proud to be a source of information about multiple sclerosis. Our comments are based on professional advice, published experience, and expert opinion, but do not represent individual therapeutic recommendations or prescription. For specific information and advice, consult your personal physician.

To contact your chapter, call **1-800-FIGHT-MS** (1-800-344-4867) or visit the National MS Society web site: www.nationalmssociety.org.

