

# Managing Spasticity in MS



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# Introduction

Spasticity is one of the most challenging of all MS symptoms occurring in as many as 80% of people living with the disease. It comes and goes. It feels different to different people — and even to the same person at different times.

## What is spasticity?

The word spasticity refers to involuntary muscle stiffness and can interfere with normal movement, speech and gait (walking).

Spasticity is caused by poor signaling between your brain and the muscles due to demyelination, resulting in increased muscle tone, muscle spasms and sometimes pain because those signals are not being transmitted correctly.

Spasticity may be made worse by stress, sudden movements, extreme temperatures/humidity, tight clothing/shoes, poor posture, constipation or infections. If left untreated, spasticity may lead to permanent muscle shortening (contractures) or pressure ulcers. For many people, the extra effort needed to move around – when muscles are spastic – contributes significantly to fatigue. On the other hand, spasticity can also compensate for muscle weakness, making it easier to stand, walk and move.

There are two common patterns of MS-related spasms: flexor and extensor. Flexor spasticity is defined as an involuntary bending of the hips or knees up toward the chest (mostly involving the hamstring muscles on the back of the upper leg). Extensor spasticity is an involuntary straightening of the legs, mostly involving the quadricep muscles (front of the upper leg), the adductors (inner thigh muscles) and trunk. In extensor spasticity, hips and knees remain straight with the legs very close together or crossed over at the ankles. MS-related spasms can interfere with walking, climbing stairs, transfers, balance and coordination.

Spasticity may affect the upper extremities, but is more common in the lower extremities. Shoulder musculature, elbows, wrists and hands may be impaired in some people with MS. Any upper extremity spasticity may greatly interfere with normal functioning and activities of daily living including bathing, eating, handwriting, dressing and typing.

## How is spasticity assessed?

The presence and degree of spasticity can be determined by your healthcare provider. He or she will stretch your legs to check for involuntary resistance. For example, if your leg is spastic, your muscles will automatically resist when it is moved quickly. If spasticity is mild, there will be minimal resistance; if the spasticity is severe, your leg may be so stiff that it cannot be bent at all. Overactive reflexes are also an indication of spasticity.

# Treatment

## Treatment goals

Spasticity interferes with daily activities, so the primary goal of treatment is to reduce the negative effects as much as possible. Sections of this booklet detail what can be accomplished by physical therapy, medication, orthotic devices (splints or braces) and occupational therapy. Some strategies seek to relieve the affected muscles; others involve learning to work around spasticity by adopting new ways of doing things.

Treatment also aims to prevent the serious complications of spasticity. These include 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.

Contractures are not only painful and disabling, but can become permanent if left untreated, resulting in upper or lower extremities that may not regain full range of motion or may experience limited joint mobility. Treatment (and prevention) of contractures usually combines medication to relieve spasticity with physical and occupational therapy. Surgical measures are considered for those rare cases of spasticity that defy all other treatments.

## The treatment partnership

Because the condition is so individualized, successful treatment of spasticity demands a true partnership between you and your healthcare team. Your family also plays an important role. The first step in building a good treatment partnership is learning about the range of available treatment strategies.

Treatment begins with your healthcare provider recommending ways to relieve the symptoms. Strategies may include exercise, medication, assistive devices (orthotics) and/or changes in daily activities. Your healthcare provider may make referrals to other healthcare professionals, such as a physical therapist (PT) or occupational therapist (OT).

## Physical therapy

A physical therapist (PT) recommends and teaches specific exercises and movements that can increase flexibility and relieve or decrease spasticity. They may also use bracing and assistive devices for spasticity treatment.

First, you will have several tests that measure muscle tone, resistance, strength, balance and coordination. You'll also be asked about your general functioning in routine daily activities. Your ambulation or mobility will most likely be assessed.

In addition to stretching exercises you do yourself, PTs also relieve spasticity with specific exercises (done with the help of another person) to stretch and relax shortened muscle fibers, increase joint movement, extend contracted muscles and improve circulation. Some of these techniques may be taught to a family member or helper so that they can be performed on a routine basis at home. Physical therapy can also help maintain range of motion to prevent contractures.

Strengthening exercises prescribed by the PT are important because a muscle that is spastic is not necessarily strong. And strengthening the spastic muscles, as well as the muscles that oppose the spastic ones, may be particularly beneficial. This is like making sure that both the “push” and the “pull” of the muscles are in good condition.

Hydrotherapy (therapy done in the water) may also be recommended as well as local application of cold packs. Hydrotherapy is a very effective way to temporarily relax spastic limbs, especially when used in combination with gentle stretching.

For those who are unable to stand independently, a standing frame allows for stretching of leg muscles, as well as pressure on the leg bones, which helps limit bone mineral loss (osteoporosis).

## Occupational therapy

Occupational therapists (OTs) are experts in modifications that make daily life with spasticity more comfortable and enhance independence. Individualized training can be very helpful in making daily activities such as dressing and showering easier and more energy efficient. Home modifications might include replacing small drawer pulls with large knobs, spraying drawer tracks with silicone to make the drawers glide, or lowering the clothes bar in your closets. Your OT may recommend assistive devices and will often have samples to let you try in order to determine what works best.

### Here is a small sample:

- Dressing aids: These include stocking aids, long-handled shoehorns and shoe/boot removers, which allow you to dress with a minimum of bending if you are experiencing stiffness in your trunk or legs; elastic shoelaces that let you slip in and out of shoes without having to retie them; zipper pulls and more.
- Toiletry and grooming aids: In addition to electric shavers and electric toothbrushes, there are easy-grip handles for shaving-cream cans, combs or brushes, long-handled brushes for washing your feet, and other tools to help you extend your reach while bathing.

For people who use wheelchairs, OTs may also recommend positioning changes that minimize spasticity. Sometimes simple adjustments in the height of a footrest or the width of a seat along with an appropriate seat cushion can make a world of difference.

OTs can also develop exercise programs for your hands and arms, and may recommend splints that position the hands to enhance function and preserve joint mobility.

## Medication

Along with other treatments, medications may be used to help you manage spasticity and enhance your quality of life. If you are prescribed medication, you will work closely with your healthcare provider to find the dose that is most effective.

The National MS Society's website lists common symptoms of MS and the medications used to treat those symptoms. To learn more about medications used to treat spasticity, visit [nationalMSSociety.org/Treating-MS/Medications](https://www.nationalmssociety.org/Treating-MS/Medications).

## Orthotic devices

Orthotic devices (such as braces and splints) maintain the leg in a more normal position, which makes it easier to move around or get into a more comfortable position. These devices should be fitted by a professional. A common example is the ankle-foot orthosis (AFO), which places the ankle in a better alignment. Although many drugstores and catalogs offer them over-the-counter, ill-fitting devices can aggravate spasticity and cause pressure sores or pain. Therapists can direct you to the best options and teach you how to use orthotics.

## Self-help

### Effective self-help means:

- Make sure that an appropriate exercise program is a regular part of your routine. The National MS Society's illustrated booklets, **Stretching for People with MS** and **Stretching with a Helper for People with MS** include exercises specifically for spasticity. Ask your healthcare provider for recommendations to meet your individual needs.
- Explore relaxation techniques such as progressive muscle relaxation, yoga, meditation or deep-breathing exercises.
- If your healthcare provider agrees, explore massage. Massage can help relax muscles and enhance range of motion and may be helpful in preventing pressure sores. Massage should not be used if pressure sores or reddened areas of skin are present. The American Massage Therapy Association has a national locator service and can supply names of qualified therapists. Call 877-905-0577 or visit **amtamassage.org**.
- Be patient but persistent through the adjustments in daily activities, the types and doses of medication, the type and timing of exercise, and the use of devices, gadgets and adaptations.

## Severe Spasticity

If none of the treatments discussed above have helped, surgery might be recommended. Surgical intervention is often not necessary and is only undertaken after serious consideration and for the most difficult cases of spasticity. The most effective way to avoid the need for surgery is to identify and address spasticity when it begins and continue to manage it over time.

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