

# Mind over muscle



## Tips to help manage spasms and stiffness

by Aviva Patz

When Sam Jorgensen, 35, of Castle Rock, Colorado, wakes up in the morning, her legs feel “very tight, very heavy,” and her knees lock, making them “extremely difficult to bend without sitting down.” Daytime discomfort turns to nighttime pain if she hasn’t stretched or walked enough. Jorgensen, who was diagnosed with multiple sclerosis in 1998 and experiences spasticity daily, adds, “Sometimes it feels like my legs forget how to be legs.”

### What is spasticity?

More than 80% of people with multiple sclerosis experience some form of spasticity, defined as constant or episodic increased muscle tone and involuntary movements, pain and discomfort.

“Spasticity can involve tightness or pain in any limb, including the hand or arm, and the lower back, but it most commonly affects the legs,” says Kelli Doern, a physical therapist at Sheltering Arms Physical Rehab Centers in Virginia. “It can negatively impact balance and mobility.”

Spasticity can also cause painful, involuntary spasms of the extremities, whether sustained muscle contractions or sudden jerky movements.

Chrissy Grant, 48, of Longmont, Colorado, says that at night or in cold weather, her left leg will “jump” uncontrollably. “It’s like a lightning bolt of pain that jolts the leg,” says Grant, who was diagnosed with MS in 2016.

## Effects and types of spasticity

There are two types of spasticity:

1. Flexor spasticity occurs when the muscles — often the hips and knees — are so tight that the limbs are bent and difficult to straighten.
2. Extensor spasticity is essentially the opposite — muscles are tight in a straightened position and difficult to bend.

## What causes spasticity?

Spasticity is caused by damage to the nerves that control impulses to the muscles. Grant adds that sudden movements or position changes may worsen her muscles, as can extremes of temperature, humidity, infections and even tight clothing. Spasticity can feel different for each person living with MS.

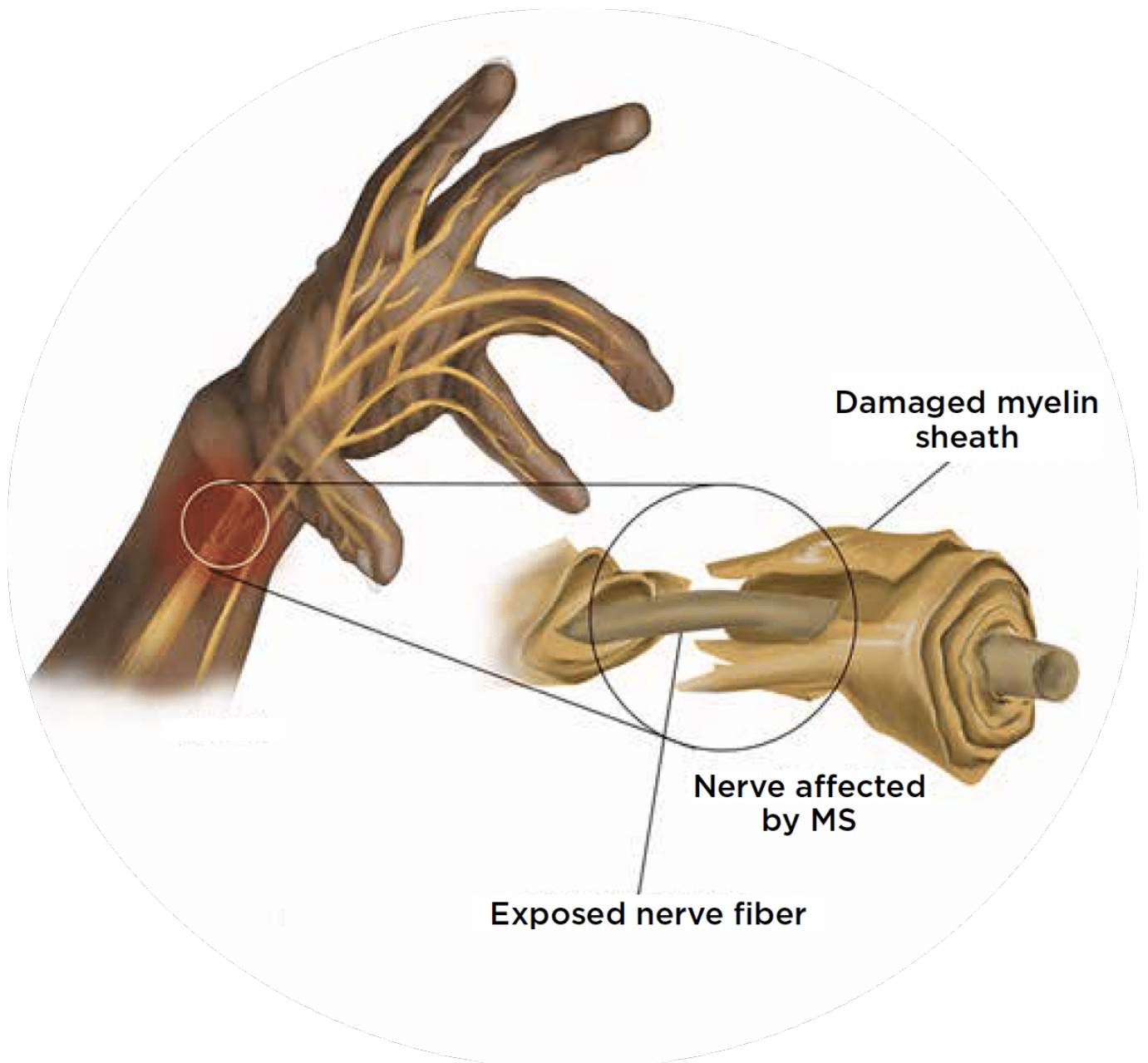


Illustration: Chidiebere Ibe

Grant experiences spasticity only in her left leg, corresponding to the MS lesions in her brain. Alayna Webb, 30, of Ephrata, Washington, gets spasticity symptoms in her legs — with stiffness and jerking that often leads to muscle spasms or cramps — and at times in her arms, hands, or face and also her back. In her face, it feels like twitching. “It’s more annoying than anything else,” says Webb, who was diagnosed in 2018.

## **10 ways to treat spasticity**

It’s essential to address spasticity early, Doern says, because left untreated, it can lead to severe problems, including reduced joint mobility, contractures (frozen or unmovable joints) and pressure sores. These are the best-known ways to treat and manage spasticity:

**1. Stretching.** Exercise is the first line of management. “Stretching elongates the muscles, allowing them to relax,” Doern explains. “They will likely tighten up again, so performing stretches throughout the day, holding them for 30 seconds to 1 minute each, will be most helpful.” For some people, like Jorgensen, a daily stretching regimen is enough to manage symptoms. She stretches 10 minutes each in the morning and at night. She also walks for at least 10 minutes during the day. She stretches her hamstrings, quads, calves, glutes, feet, and ankles, as well as her hips and pelvis.

**2. Medications.** For more moderate to severe spasticity, your healthcare professional may prescribe muscle relaxants, such as baclofen or tizanidine. Webb says tizanidine helps “calm my muscles down and allows me to get rest if the spasticity is interfering with sleep.” These drugs can cause side effects, however, such as sleepiness, nausea, and feeling “high,” according to Grant, which is why a small percentage of people opt to have a baclofen pump (intrathecal baclofen) surgically implanted in the abdomen, where it delivers medication directly to the spine. “You can be on a lower dosage when it goes right to where you need it, bypassing many of the side effects,” Doern explains.

**3. Botox.** The same neurotoxin (onabotulinmtoxinA) that smooths forehead wrinkles can also relax tight muscles. Injections of Botox to spastic muscles temporarily block connections between the nerves and the muscles, relieving painful spasms and improving function. Doern cautions that Botox can cause weakness: “Evidence supports improved function when Botox is used to manage upper limb spasticity, but the evidence is not as supportive for improved function when used to manage lower limb spasticity,” she says.

**4. Relaxation techniques, deep breathing and guided imagery.** Whether you use structured techniques (like progressive relaxation) or just pause to inhale mindfully or listen to soft music, the goal is to reduce physical and mental tension. “Reducing stress relaxes you and relaxes your muscles,” Doern says. Grant uses the breathing patterns she learned in childbirth classes 16 years ago to quiet her spasticity, telling herself, “Let’s slow down, take some deep breaths, really focus on listening to the breath. The calmer I am,” she adds, “the

less spasticity I have.”

**5. Therapeutic massage.** A 2020 study showed that Swedish massage and reflexology reduce spasticity. “It elongates the muscles, stretching out and reducing tightness in the muscle,” Doern explains. She recommends using a vibrating massage gun, as vibration has been shown to reduce tightness. “You could also roll a tennis ball along the muscle, applying pressure to the muscle to relax it,” she adds.

**6. Acupuncture.** Korean and Chinese researchers have shown that acupuncture and electroacupuncture (acupuncture with electrical stimulation) can reduce spasticity after stroke. Doern believes there’s strong anecdotal evidence to support the same benefit in MS.

**7. Cold therapy.** Cooling the spastic limbs — by submerging them in cold water, applying ice packs, or using cooling sprays — can temporarily reduce spasticity for some people. The therapy, when used for about 20 minutes on the affected limb, works by tamping down the sensitivity of the muscle, according to a 2018 study.

**8. Aquatic therapy.** Although evidence for aquatic therapy is mixed, some people find that water’s natural buoyancy and weightlessness helps reduce spasticity, mainly by making it easier to perform stretching and range-of-motion exercises. A water temperature of 80 to 84 degrees should help prevent heat-related fatigue.

**9. Bracing.** Wearing a physical brace, called an ankle foot orthosis (AFO), can help maintain proper motion in cases such as foot drop, where you’re no longer able to lift your foot fully. There are also dynamic splints that are spring-loaded to simulate natural walking motion. Grant uses an AFO on her left leg. “It automatically springs my step forward, so my toes don’t drop,” she says. She wears it for longer distance walking, like from her car to the doctor’s office. At home, she uses a cane and a “dance sock” she bought to help her foot glide more easily across the floor and carpet.

**10. Cannabis.** Reviews of published studies have generally shown that synthetic cannabinoids can help symptoms of pain and spasticity. Talk to your healthcare provider about whether cannabis may help your symptoms; note that laws governing its use vary by state.

**Aviva Patz is a writer in Montclair, New Jersey.**

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