



**American  
Stroke  
Association.**  
A division of the  
American Heart Association.

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FOR



let's talk about  
**STROKE**



**Recovery**

let's talk about

## Spasticity After Stroke

After a stroke, muscles may become stiff, tighten up and resist stretching. This is called spasticity. Spasticity relates to muscle tone. Tone is the natural tension, or contraction, in a muscle that resists stretching. Stroke may cause an abnormal increase in muscle tone, leading to spasticity. Muscle contractions become more intense. The contractions may involve one muscle or a group of muscles. For some, spasticity may be mild muscle stiffness, for others it may be severe, resulting in pain or spasms.

Spasticity may also lead to fixed joints (contracture). When muscle tone is abnormally tight, it causes muscles to shrink and shorten. Joints can become stuck in one position and quite hard to move. For example, this may cause a wrist to curl in or an arm to stay in a folded position up against the chest.



### What causes spasticity and how common it is?

A stroke is a brain injury. When the injured area of the brain controls muscle tone, spasticity may occur. About 25 to 43% of survivors will have spasticity in the first year after their stroke. It's more common in younger stroke survivors. It's also more common when the stroke is caused by a bleed (hemorrhagic). The timing of spasticity occurring after a stroke can vary. It may start soon after having the stroke or more than a year later.

### What are the effects of spasticity?

Effects of spasticity include:

- Stiff fingers, arms or legs
- Muscles contract and relax on their own
- Contracture that may cause pain or discomfort
- Muscle tiredness
- Muscle and joint deformity over time

Examples:

- A clenched fist
- Tensed fingers
- A bent arm held against the chest
- Tightness in the knees
- Involuntary crossing (scissoring) of the legs
- A foot that's bent at an angle
- A weakened foot that drags, making it hard to walk (also known as foot drop)
- Curled toes, making it hard to walk (also known as claw toe)

Everyday tasks may become much harder when an arm or hand is affected. Simply grasping and using objects, reaching overhead or taking care of personal hygiene can be a challenge. Walking becomes much harder when the legs or feet are affected. The risk of falling increases.

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### How is spasticity treated?

- Moving as much as possible is important to ease muscle tightening and prevent muscle shortening. Regular stretching with a wide range of motion is helpful. Regular exercise of the affected limbs is beneficial.
- Braces or splints may help to hold a muscle in place and stop it from contracting.
- Shots of botulinum toxin into spastic muscles in the upper and lower limbs can bring relief. There may be some soreness in the area of the injections.
- There are oral medications that can help. However, side effects, such as weakness, sleepiness or nausea may occur when taking oral medications.
- ITB (intrathecal baclofen) therapy involves implanting a small pump. The pump delivers medication (baclofen) directly into the spine. The medicine travels via the spinal fluid. This helps prevent side effects that may happen with oral medication. ITB may be considered when a patient doesn't respond well to other treatments.

Your health care provider will prescribe the best treatment approach for you based on how severe your spasticity is. A combination of physical therapy and medication can be quite effective.



### HOW CAN I LEARN MORE?

- 1** Call 1-888-4-STROKE (1-888-478-7653) to learn more about stroke or find local support groups, or visit [strokeassociation.org](https://strokeassociation.org).
- 2** Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers, at [strokeconnection.org](https://strokeconnection.org).
- 3** Connect with others sharing similar journeys with stroke by joining our Support Network at [strokeassociation.org/supportnetwork](https://strokeassociation.org/supportnetwork).

### Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your health care provider.

For example:

**What are the best stretching exercises to keep my muscles from tightening?**

### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit [strokeassociation.org/letstalkaboutstroke](https://strokeassociation.org/letstalkaboutstroke) to learn more.