

Recovery After Stroke: Movement And Balance

Moving around safely and easily may not be something you think about, unless you've had a stroke. Many stroke survivors have trouble moving around. These problems range from balance issues to arm or leg paralysis. As a result, about 40 percent of stroke survivors have serious falls within a year of their strokes. But, there is good news. Rehab and therapy may improve your balance and ability to move.

Movement

The most common physical effect of stroke is muscle weakness and having less control of an affected arm or leg. Survivors often work with therapists to restore strength and control through exercise programs. They also learn skills to deal with the loss of certain body movements.

Paralysis and Spasticity

Paralysis is the inability of a muscle or group of muscles to move on their own. After stroke, signals from the brain to the muscles often don't work right. This is due to stroke damage to the brain. This damage can cause an arm or leg to become paralyzed and/or to develop spasticity.

Spasticity is a condition where muscles are stiff and resist being stretched. It can be found in the arms, fingers or legs.

Depending on where it occurs, it can result in an arm being pressed against the chest, a stiff knee or a pointed foot that interferes with walking. It can also be accompanied by painful muscle spasms.

Treatment for spasticity is often a combination of therapy and medicines.

- Spasticity treatment often includes range-of-motion exercises, gentle stretching, and splinting or casting.
- Medicine can treat the general effects of spasticity and act on multiple muscle groups in the body.
- Injections or shots of botulinum toxin (BOTOX® or MYOBLOC®) or phenol relax stiff muscles by blocking the nerve activity that makes them tight. The shots target only the affected muscle groups. A single shot can relax muscles

for three months or more. It can also improve some activities of daily living.

- A treatment option for severe spasticity is ITB™ Therapy. This involves the delivery of the drug baclofen directly into the spinal fluid. A pump is surgically placed under the skin near the abdomen. The pump delivers constant doses of the drug.
- Surgery is the last option to treat spasticity. Surgery can be done on the brain or the muscles and joints. Surgery may block pain and restore some movement.

Safety at Home

There are devices you can add to your home to help you move around easily and safely. Some examples include:

- grab bars
- ramps
- raised toilet seats
- tub benches
- hand-held shower heads
- plastic strips that adhere to the bottom of your tub or shower
- electric toothbrushes and razors

Movement Aids

Braces, canes, walkers and wheelchairs may help you move more freely. A physical therapist or

orthotist can suggest the best device for your needs. An orthotist makes mechanical devices such as leg braces or splints to help support limb function (orthotics). Of course, training in safety and proper use of orthotics is needed.

Balance

Balance is the body's ability to remain upright. Many stroke survivors have problems with balance. Some have a "static balance problem," which is trouble balancing when standing still. Others have a "dynamic balance problem," which is trouble maintaining balance while reaching, walking or turning.

The body uses different systems to stay balanced. First, the *sensory system* informs the central nervous system about the body's position in space. Then the *central nervous system* interprets that information. Next, the central nervous system quickly signals certain muscles to respond when balance is disturbed.

Finally, the body must be strong enough to carry out the response. A stroke can impact any of these systems.

- *Problems with Sensory Messages* - Sensory information is provided from vision, feelings in the legs and feet, and the inner ear. For example, if stroke affects your

vision, you may see double, lose your depth perception, or have trouble orienting yourself.

- *Problems Interpreting the Messages* - In some cases, stroke survivors receive sensory information as normal. But the nervous system cannot interpret that information correctly. For example, a flat surface may appear to tilt upward or an object may seem closer than it actually is.
- *Problems Responding to Messages* - When the central nervous system notices a threat to balance, it signals muscles to respond quickly and in a particular order. Stroke often affects how quickly and effectively you respond.
- *Problems with Strength* - Most stroke survivors have balance problems because one side of their body is weaker than the other. In some cases, the leg may not have enough muscle strength to provide support.

Treatment of Balance Problems

There are many types of balance problems, but treatment is available.

For balance problems due to weakness, therapy may combine braces and exercises to strengthen the legs. This can include weight-shifting in a standing position,

balancing while reaching for an object, or kicking a ball.

Balance problems due to sensory loss require other therapies.

People with damage to the inner-ear sensory system may have dizziness or a spinning sensation (vertigo). Staring at an object while moving your head in different directions may reduce symptoms.

In other cases, survivors with damage to one sensory function can learn to rely more heavily on other areas. For example, people with sensory loss in their feet may learn to use their vision to maintain balance.

What Can Help

- Get information on stroke recovery from National Stroke Association. Visit www.stroke.org to read the most up-to-date news you can use, or call 1-800-STROKES (1-800-787-6537).
- Subscribe to Stroke Smart magazine at www.stroke.org to view the latest gears and gadgets to assist you. It's free!
- Contact your local stroke association.
- Join a stroke support group. Other survivors will understand and offer encouragement and ideas for dealing with memory loss.

Professionals Who Can Help

- A general physician or doctor
- Your neurologist or psychiatrist
- An orthotist can make you a mechanical device such as a leg brace or splint that will help support limb function
- Physical therapist and occupational therapists
- National Stroke Association at www.stroke.org or call (800) 787-6537.

Rehabilitation is a lifetime commitment and an important part of recovering from a stroke. Through rehabilitation, you relearn basic skills such as talking, eating, dressing and walking. Rehabilitation can also improve your strength, flexibility and endurance. The goal is to regain as much independence as possible.

Remember to ask your doctor, “Where am I on my stroke recovery journey?”

Note: This fact sheet is compiled from general, publicly available medical information and should not be considered recommended treatment for any particular individual. Stroke survivors should consult their doctors about any personal medical concerns.

*NSA publications are reviewed for scientific and medical accuracy by the NSA Publications Committee.
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