

GAIT OR WALKING PROBLEMS

Many people with MS will experience difficulty with walking, which is more formally termed **gait**. Studies suggest that half the people with relapsing-remitting MS will need some assistance with walking within 15 years of their diagnosis.

Gait problems in MS are caused by a variety of factors. MS frequently causes fatigue. MS damage to nerve pathways may hamper coordination and/or cause weakness, poor balance, numbness, or spasticity (abnormal increase in muscle tone). Concern about falling and the emotional impact of appearing impaired in public causes problems too.

“Gait problems in MS are all over the map,” observes Sue Kushner, a physical therapist at Slippery Rock University in Pennsylvania, with long experience in multiple sclerosis. “This makes gait a difficult problem to address.” Difficult, but not impossible.

SPEAK UP

If you are having difficulty walking or keeping your balance, if fatigue turns

your legs to cement, don't despair, speak up. Many gait problems can be significantly improved with physical therapy, exercise, medication, or the right assistive device. You are not “giving in” when you seek treatment. Untreated gait problems can lead to emotional distress, injuries, added fatigue, and suspicion by other people that your gait problems stem from alcohol or drugs.

Consulting your primary health-care provider and getting an accurate assessment of your ambulatory patterns are sensible things to do.

DIAGNOSIS

You can expect to be referred to a physical therapist (PT). In order to analyze the biomechanics of your gait, a PT may ask you to walk across a

room or down a hallway in order to observe coordination, positioning of feet, posture, and momentum. You may be asked to provide your medical history. You may be asked to perform tests that measure muscle strength, fatigue levels, range of motion, and spasticity. Some PTs use video cameras to record their observations. (Research labs specializing in gait analysis have a wide range of high-tech machines to calibrate body movement.)

Evaluation may be embarrassing but it is not painful. Once the factors involved in your particular gait problems are identified, you, your PT, and your physician will work together on a plan of action.

Your insurance may have tight limits on reimbursement for PT. Review your coverage to avoid nasty surprises. Your physician and the National MS Society may be able to help you battle for the coverage required by your problems. Or you may need to pay physical therapy costs yourself. It is wise to be frank and upfront with your PT about cost, payment plans, and the benefits you can expect from therapy.

WEAKNESS

Muscle weakness clearly interferes with walking. Damage to neurons (nerve cells) can affect a particular muscle group or groups so they no longer respond to the nervous system

input that normally guides the act of walking. Sue Kushner points out that “Muscle weakness in MS isn’t the same as the couch-potato syndrome that can be addressed by strength training.” In fact, the wrong kind of exercise will do nothing to improve walking and can lead to fatigue and increased weakness.

Dr. Randall Schapiro of Fairview MS Center in Minneapolis is a strong advocate for exercise to keep people with MS fit, and he too warns, “What is good exercise for one person with MS may not be good for another.” Working with an experienced PT, people can learn both appropriate exercises and ways to compensate for lost strength.

Muscle weakness that interferes with walking is **not** the same thing as MS fatigue. But MS fatigue can make walking problems worse. Since fatigue is so common in MS, an assessment will include exploration of these problems too—and you may be advised to use a mobility aid to manage fatigue and muscle weakness.

But, you say, you want to improve your walking, not give up on it!

Using an aid is not an all or nothing choice. Many people continue to walk, and to work on improving their walking while using an aid. They find that assistive devices allow them to get where they want to go without

exhausting all their energy reserves. Marie E., of Rhode Island, who lives with progressive MS, got a fold-up wheelchair for outings that involve long distances. Using it lets her focus on shopping or seeing the sights instead of concentrating all her energy on not tripping.

BALANCE

Impaired balance not only makes walking difficult, it can result in falls and injuries. A loss of balance and coordination can produce a swaying, uneven gait—called **ataxia**—that is often mistaken for drunkenness.

“Poor balance is not always an isolated symptom,” observes Brian Hutchinson, a physical therapist at the Heuga Center for people with MS. “One leg may be weaker than the other or have spasticity, resulting in an uneven gait. Or, the source might be MS lesions in the parts of the central nervous system that control balance. It’s important to identify what’s causing the problem in order to find the best solution.”

Therapeutic strategies that may help balance deficits include inner ear (or vestibular) exercises. Aerobic activity, stretching, and strengthening specific muscles can address some of the “secondary” reasons for balance difficulties, he said.

The right assistive device is often the most effective strategy. A brace called an ankle-foot orthotic, or AFO is often prescribed. AFOs are lightweight and designed to be hidden by socks or pant legs. A cane or walker is another solution to poor balance. An aid is far safer than “wall-walking” (holding onto a wall or nearby objects for support) and, Hutchinson notes, people who use them tend to move around more. Installing grab bars around the home can also make transfers easier and daily activities safer.

NUMBNESS

Loss of feeling or tingling in the legs or feet mean the brain is not receiving the full sensory input from the foot. As Marie E. describes it, “It’s like I’m wearing thick heavy boots so I can’t feel where I’m stepping.”

Foot numbness can also result in “foot drag,” where the foot does not move forward in a smooth motion because the brain is not receiving input about where the foot is in space.

Solutions may involve using a cane, walker, or Canadian crutch (which has an arm cuff and grab handle). The aid relays missing information to the brain by carrying sensations from the ground through the device into the hand and arm. Visual cues may also work. People learn to watch where

their feet are falling to compensate for the lack of sensation.

Marie likes the convenience of collapsible canes, which can be easily stowed in a bag or under a chair.

SPASTICITY

Spasticity is abnormal muscle tone or tightness of muscles. As a person moves, the nervous system sends streams of signals to muscle groups to expand or contract in sequence. MS damage can interfere with these coordinated events, leaving certain muscles in a constricted or spastic state. Spasticity can cause uneven gait and more. In spastic limbs, muscles may atrophy from lack of use and joints may develop contractures—freezing in one painful position—if they remain rigid over time.

The right mix of medications, stretching, and exercise can control spasticity, improve gait, and prevent these serious complications. Baclofen and tizanidine are the most often used medications. A PT can recommend exercises to safely stretch spastic muscles. Good management calls for a team approach, with the individual, the physician or nurse, and the PT all contributing.

Sometimes spasticity actually helps gait problems. The increased stiffness allows some people who have weak legs to walk or stand more easily.

However, Dr. Mindy Aisen, director of Rehabilitation Research and Development at VA Headquarters in Washington, DC, warns against relying on spasticity too much. “Excessive stress on joints or muscles can lead to unnecessary permanent damage,” she said.

FEAR OF FALLING

It is embarrassing as well as frightening to fall down in public. People have been known to stop going out at all to avoid the possibility of a fall. But staying put at home is not much of a solution. In fact it may have unintended consequences.

Kathy Dieruf, assistant professor in the Physical Therapy Program at the University of New Mexico in Albuquerque, explained, “The painful consequences of a prior fall or current fear of falling may lead to a devastating downward spiral of decreased activity, decreased strength and endurance, diminished range of motion, and increased impairment that may actually add to the risk of falling.”

“IT’S IMPORTANT TO BE IN THE WORLD”

Janet L., of Philadelphia, pulled up to a neighborhood delicatessen and decided to leave her cane in the car. “It didn’t seem that far to walk,” she

thought. As she threaded her way past some outdoor tables, she suddenly lost her balance—and fell across a stranger’s lap. “I was so mortified I wanted to cry,” she recalled. But she had the presence of mind to keep her sense of humor.

“Come here often?” she asked. They both started laughing. She pulled herself up and explained that she sometimes loses her balance due to multiple sclerosis.

Janet works as a peer counselor at the Greater Delaware Valley Chapter. She knows that it’s not always easy to keep a sense of humor in this kind of situation, but for her it’s the best strategy. As she puts it, “MS is not something you have control over—but you do have control over how you choose to handle the problems.” A former dancer, Janet is keenly aware of the ways in which her loss of balance and muscle weakness have changed her gait. Her advice?

“Keep moving! It’s important to be in the world.”

ASSISTIVE TECHNOLOGY

We human beings are distinguished by our ability to develop technologies that make tasks easier. In a sense, all technology from safety pins to supersonic jets is “assistive” technology, helping us to accomplish feats we couldn’t do otherwise. When physical

disability develops, canes, braces, walkers, wheelchairs, and scooters assist. They help people move about easily.

The idea is not appealing initially. To many people, a cane represents “febleness”; a wheelchair or scooter says that MS has “taken over.”

The majority of people with MS who use the right assistive technology end up with a very different perspective. They recognize that a brace or cane allows them to walk with confidence; a wheelchair or scooter provides safety, speed, and saves energy for more important things.

But for some people, over-reliance on an aid **can** have an adverse effect on strength and stamina. As Dr. Aisen points out, “Being overly fatigued does nobody any good, but sometimes practicing walking makes walking better.” A rehab professional with MS experience can help people improve their gait **and** manage fatigue, weakness, and balance problems. In other words, professionals look for individual solutions to individual gait problems.

The assistive technology industry offers options aplenty—from rolling walkers to weighted 4-pronged canes; from ultra-light power-assist wheelchairs to fully-powered multi-level wheelchairs. There are excellent Web sites with information about such

equipment. A good starting place is ABLEDATA (www.abledata.com), a federally funded project that offers product information, resources, and links. Their advice is worth noting: “To select devices most appropriate to your needs, we suggest combining ABLEDATA information with professional advice, product evaluations, and hands-on product trials.”

Do-It-Yourselfers run the very real risk of using devices incorrectly and causing unnecessary damage to their muscles or joints.

Brian Hutchinson notes that physical and occupational therapists are often able to help people try out different devices before making a purchase. Sue Kushner encourages her clients to choose devices that are aesthetically pleasing. And there are attractive choices available.

Janet, the former dancer, used the Internet to locate designer cane makers, and she now has a collection in different colors and styles, including a glittery Lucite cane that she used when she was a bridesmaid in a friend’s wedding.

REIMBURSEMENT

Full or partial reimbursement for assistive technology (or durable medical equipment) may be available through private or public insurance, community organizations, social

service agencies, or your state’s vocational rehabilitation agency. Remember to explore veterans benefits if you have done military service. Reimbursement programs require a prescription from a physician or a rehabilitation professional, and a statement that explains the medical necessity of the purchase. The statement may take some preparation.

People with MS often fail to fit standard disability categories because gait problems (like other MS symptoms) can come and go, and vary in intensity.

- Take some time to understand what your policy or program requires for reimbursement.
- Clearly communicate these requirements to your physician or therapist, as reimbursement will depend on supporting material from your health-care providers.
- Contact your National MS Society chapter for assistance if your health-care provider is unfamiliar with the procedures.

“It is important to have a strong advocate to explain why a device is justified,” said Dr. Aisen.

FUTURE GAIT RESEARCH AND TECHNOLOGY

At present, people with MS gait problems remain mobile and independent through physical therapy, exercise,

medication, and assistive technology. New ways to prevent permanent losses and to improve the technology that compensates for losses are in development.

Dr. Aisen, for one, is optimistic that research being done in other conditions, such as spinal cord injury and stroke, will eventually prove useful in MS. There is some evidence that intensive, repetitive physical therapy can improve damaged neural function, perhaps by stimulating the brain to create new neural pathways.

Researchers are testing the compensatory effects of electrical stimulus for symptoms such as foot-drop or spasticity, and studies on the biomechanics of gait are underway that may give the health-care community a better basic understanding of gait problems.

Innovations in assistive technology are also expected to continue at a brisk pace—in part to keep up with aging baby-boomers. Lighter, more flexible mobility aids with sporty styling and cheerful colors are already available. “Sick” is out and “active” is in for people who compensate for disabilities with assistive devices.

The following Society publications may be of interest. On our Web site, go to “Living with MS” and look for “Library and Literature” or call the Society chapter nearest you by dialing **1-800-FIGHT-MS [1-800-344-4867]**.

- Managing MS through Rehabilitation
- Fatigue: What You Should Know
- Spasticity: The Basic Facts
- Exercise as Part of Everyday Life
- Stretching for People with MS
- Stretching with a Helper for People with MS

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 recommendation or prescription. For specific information and advice, consult your personal physician.