

Balance and walking

including gait, ataxia and footdrop

Problems with gait or difficulty in walking are common symptoms of MS. Gait problems can be due to a number of factors such as muscle weakness, muscle tightness or spasticity and a problem coordinating muscle actions known as ataxia. With the right information and support, these symptoms can be managed to maintain a healthy and active lifestyle.

How MS can affect balance and walking

Problems with balance and walking may be the direct result of MS damage to parts of the nervous system responsible for mobility, or may be caused indirectly by other MS symptoms. Difficulty with walking or a change in the manner of walking (gait) can be one of the first MS symptoms noticeable to others, for example, if someone's walking style visibly changes or if they begin to stumble or trip. Many people experience balance problems at some time during the course of MS, with some reporting it as a first symptom.

Balance and walking problems vary considerably from one person with MS to another and may include:

- Tripping, stumbling or falling
- Unsteadiness when walking or turning
- Needing support from walls, furniture or other people
- A heavy feeling in the legs when stepping forward
- Leg weakness when weight bearing
- Difficulty placing the foot squarely on the ground
- Taking slower, shorter steps
- Loss of confidence when walking

Direct effects of MS

Walking problems in MS can be caused by slowed or altered nerve conduction resulting in muscle weakness, spasm or spasticity (muscle stiffness), fatigue and sensory changes.

Balance problems can be the result of interruptions in communication between the brain and the rest of the body, such that a message coming from the brain to 'move' may not actually reach the legs, resulting in a stumble or fall.

Sensory changes affecting sensations in the feet and legs can have an impact on gait and balance. Numbness in the feet, for example, can reduce an individual's perceptions of the feet touching the ground, whilst over-sensitivity may make someone tentative in the way they walk.

Indirect effects of MS

Other MS symptoms can impact on walking and balance, and increase the risk of falling. These include pain, tremor, dizziness, vertigo and visual problems. For example, double or blurred vision or altered depth perception can make it difficult to place the feet or to judge steps and kerbs. Dizziness and vertigo can make it difficult to remain upright when unsupported, and even when standing still.

What is ataxia?

Ataxia is the medical term for lack of voluntary coordination of muscle movements. All of the movements we make, including walking or speaking, involve a complicated interaction of signals from the brain and feedback from the nerves in the limb or organ involved. A part of our brain called the cerebellum coordinates these messages. If damage to the nerve fibres in the cerebellum delays or interrupts the matching of these signals, ataxia can result. In MS, ataxia might appear as clumsiness, unsteady gait, impaired eye and limb movements, difficulty sitting upright or speech problems.

Although the symptom doesn't have an obvious impact on the life of many people with MS, ataxia when present, is an important factor in balance and walking problems.

What is foot drop?

Foot drop is a weakness in the ankle caused in MS by disruption in nerve pathways between the brain and the legs. This disruption makes it difficult to lift the front of the foot to the correct angle during walking, so it may catch or drag along the ground causing trips or falls.

Other MS symptoms can make foot drop worse. Numbness or other altered sensations in the feet may make it difficult to feel the floor. Muscle weakness or spasms in the leg muscles can make it more difficult to control a leg which has a dropped foot. Foot drop can make you self-conscious and might tire you out.

What should I do if I experience balance and walking problems?

Not all walking and balance problems are caused by MS, so it's important to get professional advice. A health professional, such as a neurologist, an MS nurse, GP or physiotherapist can work with you to determine the cause of your walking and balance problems, and advise on managing them.

How can I manage these symptoms?

Walking:

As various factors can affect walking, treatment of walking problems depends on what's causing any difficulties. Treatment may involve physiotherapy or medications to alleviate specific underlying symptoms, such as spasticity. Physiotherapists and exercise physiologists can help with individual assessments, particularly of gait, and provide tailored exercise programs and other action plans.

Balance:

There are several different approaches which may improve balance including exercises, yoga, tai chi and Pilates. Current research is also investigating the use of step training and sensory stimulation programs. Disturbed balance can also be managed to some extent by being aware of factors that make balance worse and that might increase the risk of a fall.

Ataxia:

Ataxia is usually treated with a combination of rehabilitation and compensatory strategies.

Rehabilitation may include an exercise program to strengthen the core muscles (those in your torso, from your shoulders down to your hips). This is because many people with ataxia may spend much of their day sitting down, leading to weakness of the muscles, especially the core muscles, which then makes ataxia and balance worse. You may be given exercises by a physiotherapist to help you build core stability and strength in your muscles.

Compensatory strategies involve trying to find ways to make specific tasks and situations easier to manage. Depending on the impact of ataxia on balance and walking, specialised equipment, aids and clothing may help. Some examples include tight fitting Lycra clothing, weighted wrist or ankle cuffs, hiking sticks and walking aids. An occupational therapist or physiotherapist with expertise in MS can advise you on these approaches.

Foot drop:

Foot drop can be managed with some lifestyle modifications and therapies. Health professionals such as physiotherapists, orthotists and podiatrists can advise on exercises to strengthen the foot and ankle muscles. Ankle supports and other orthotic devices may be used to hold the foot in an appropriate position. In addition, equipment can correct or guide foot movements, including functional electrical stimulation which uses small electrical charges to stimulate the foot into a more natural position for walking.

How can I reduce the risk of trips and falls?

Consider these options:

Footwear

- **Suitable and well-fitting footwear** can help support your foot and lessen the dragging along the floor
- **Shoes with laces or adjustable Velcro fastenings**, may be safer than slip-ons that can become loose with wear
- **Boots** can be helpful as they provide ankle support
- **Avoid cumbersome or heavy shoes** that quickly tire your muscles

Awareness

- **Be aware of your surroundings** when moving about, concentrate and be ALERT: assess your location and environment for tripping hazards.
- **Plan your movement**, consider which route offers the least potential risk or fewest obstacles. If an obstacle does exist, can this be either safely moved or negotiated?

Remove hazards

- Some clutter is inevitable, but try to keep the main routes you use to move around the house **free from obstacles**
- **Tape down or use non-slip mats** under rugs particularly in the bathroom and bedroom, or consider removing them completely
- With **electrical items**, try to **keep wires and cables covered or taped down** in walking areas to prevent trips or falls. An extension lead can help to reroute cables away from places where they might be a tripping hazard.

Information and assistance:

General

- **Your MS Nurse or GP** should be the first contact for any new and / or persistent balance or walking concerns.
- **Your neurologist, MS Nurse, physiotherapist or other healthcare provider** can help you to manage symptoms on an ongoing basis and discuss the best approach for your individual circumstances.
- **Contact your state MS organisation** (details below) to access services including peer and/or online support and other resources.
- For information about MS and MS treatments visit www.msaustralia.org.au
- **contact details for your state/territory MS organisations are:**

MS Limited (Victoria NSW ACT Tasmania)	1800 042 138	msconnect@ms.org.au	www.ms.org.au
MSWA (Western Australia)	1300 097 989	communications@mswa.org.au	www.mswa.org.au
MS Society SA & NT (South Australia NT)	1800 812 311	msassist@ms.asn.au	www.ms.asn.au
MS Queensland	1800 177 591	info@msqld.org.au	www.msqld.org.au

Other organisations

- **Independent Living Centres 1300 885 886** (www.ilcaustralia.org.au) – to view a comprehensive range of products to assist with day-to-day living.
- **Carers Australia 1800 242 636** www.carersaustralia.com.au provides information and advice to carers, their friends and families about carer support and services.

Other resources

- The MS Australia **Ataxia and Tremor** Symptom Sheet may be useful – access here: <https://www.msaustralia.org.au/about-ms/symptoms>

The articles and posts on the MS Australia Wellbeing Wednesday platform, Facebook page and MS Uninterrupted blog, often include health and wellbeing topics, sometimes related to balance and walking:

<https://www.msaustralia.org.au/living-ms>

<https://www.facebook.com/MSAustralia/>

<https://www.uninterrupted.org.au/>

Sources: This fact sheet comprises material from previously published Australian state/territory MS organisation leaflets plus Multiple Sclerosis (MS) UK Trust online resources (and associated references), and has been endorsed by a medical expert, an MS Nurse and a person living with MS.

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