Walking & gait disturbances

The scientific and medical term for a person's walking pattern is gait. Walking is something most of us do without thinking, but for people living with Parkinson's, it can become a daily challenge.

What causes gait disturbances in Parkinson's?

Gait disturbance is the medical term for changes in how a person walks. These changes occur because the brain is losing dopamine, a neurotransmitter that helps control smooth, automatic movements. When walking is no longer "automatic," the brain must work much harder to coordinate every step, which can lead to fatigue and an increased risk of tripping or falling.

In Parkinson's, walking changes usually happen because the automaticity of movement, including walking, is affected and appropriate information between brain and body is not happening. This makes it hard for the body to maintain a steady rhythm or take steps of the right size. These changes happen in some people even before their diagnosis and can become more pronounced as the condition progresses.

These changes are usually grouped into two categories:

- **continuous** (changes that happen with every step) and
- **episodic** (problems that come and go suddenly).

While these symptoms can be frustrating, many can be managed with the right mix of exercise, strategy training, and medication optimisation.

What types of walking challenges may occur in Parkinson's?

As a result, walking needs extra conscious effort, and coordination becomes harder. Every person's journey with Parkinson's is different, but here are some of the most common walking changes people notice:

- **Slowness (Bradykinesia):** You may feel like you are walking through water or that your legs are heavy. You might take shorter steps and walk more slowly. Your muscles are slower (bradykinesia) and stiffer (rigidity), so it reduces how far joints can move. This often leads to longer trips from A to B.
- **Small, shuffling steps:** Instead of taking full strides, steps may become very short, and the feet may stay close to the ground. This can make it easier to trip on rugs or uneven paths. You'll see small, flat-footed steps that drag on the ground. This happens because the basal ganglia (which act like a control panel for our body movement) don't send smooth movement signals. Your muscles are slower (bradykinesia) and stiffer (rigidity), so feet don't lift properly.
- **Reduced arm swing:** One or both arms may not move much while walking. Arm swing happens without thinking. But dopamine loss in the basal ganglia disrupts this automatic action, usually asymmetrically. This is often one of the earliest motor symptoms of Parkinson's.
- **Freezing of Gait (FoG):** This is a sudden feeling that your feet are "glued" to the floor. It often happens when you try to start walking, turn around, or walk through a narrow doorway. This is the main cause of falls in Parkinson's.

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- **Hurrying Steps (Festination):** This is when a person feels like they are "chasing" their own balance. Steps get faster and shorter as the person tries to keep their centre of gravity steady. This means taking quick, small steps with a forward leaning posture. Your centre of gravity shifts too far forward. You feel like you're hurrying involuntarily because of the body's attempt to stay upright.
- **Turning in One Piece ("En Bloc"):** Instead of a smooth turn, you may find yourself taking several small steps to turn your whole body around as if you were one solid block.
- **Difficulty starting or stopping:** You may hesitate when starting to walk, stop too late, or overshoot the stop. You may struggle with movement signals and posture control, making initiation and braking really difficult.
- **Stooped Posture:** Parkinson's can cause the body to lean forward at the hips and knees. You may lean forward with your knees bent. Muscles become stiff and tight. Poor motor control means you can't straighten your body as you normally would. This shift in balance makes it harder to stay steady and can lead to falls.

What kinds of treatments are available?

The goal of pharmacological and non-pharmacological treatment options is to help you walk more naturally and reduce the risk of falling.

- **Medications:** The most common treatment is Levodopa, which is a natural precursor to dopamine that can help replace the missing dopamine in your brain. It is very good at helping with speed and step size, though it may not always help with freezing and balance.
- **Rehabilitation:** Working with a physiotherapist or exercise physiologist is one of the best things you can do. They can teach you gait training strategies, which use your "thinking brain" to bypass the parts of the brain that aren't working right.
- **Rhythmic Cues (RAS):** Using a steady beat, like counting, certain music or a metronome, can help your brain find a rhythm again. This is called Rhythmic Auditory Stimulation (RAS) and has been shown to improve walking initiation, turning faster and having less freezing during turning.
- **Visual Cues:** Visual cues, such as stepping over laser lights from special shoes or following lines on the floor, are also effective in walking faster and with longer strides, turning faster and having less freezing during turning.
- **Occupational therapy:** OTs can help adapt your daily activities and modify your home environments to reduce fall risk. They are also best placed to prescribe assistive technology.
- **Assistive Devices:** While a walking stick or frame will not prevent freezing from happening, working with your physiotherapist to find the right assistive device can keep you stable and stop a freeze from turning into a fall.
- **Advanced Options:** For some, Deep Brain Stimulation (DBS) is an option. It can help with many movement symptoms, but in some cases, it can actually make balance or walking slightly worse, so it is important to discuss this carefully with your care team and neurologist to see if it would be suitable for your situation.

Infosheet kindly reviewed by Dr Paulo Henrique Silva Pelicioni. He is an NHMRC Early Leadership Fellow and Senior Lecturer at UNSW Sydney and a conjoint senior research fellow at Neuroscience Research Australia (NeuRA), specialising in movement disorders and fall prevention in Parkinson's. His work focuses on developing clinical tools and neurorehabilitation strategies to reduce fall risk and improve mobility for Australians living with Parkinson's. He leads interdisciplinary research that bridges physiotherapy, neuroscience, and public health to enhance care and equity for people with Parkinson's in Australia.

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