



# Falls Prevention

In 1817, when James Parkinson wrote his essay on Parkinson's disease (PD), he observed that, "the patient, on proceeding only a very few paces, would inevitably fall." While aging may put us all at an increased risk for falling, people living with PD have twice the risk of their peers. Falls often result in injuries ranging from minor cuts to serious fractures, impacting a person's mobility and quality of life. While many people attribute falls to the motor symptoms of Parkinson's, there are many other contributing factors. Being aware of these is the first step to preventing a fall.

## Motor Symptoms

The primary motor symptoms of PD, such as rigidity (stiffness) and bradykinesia (slowness of movement), along with associated changes in posture, all contribute to risk of falling. Axial rigidity, which is reduced flexibility and adaptability in the neck and trunk, results in postural instability (loss of balance), increasing a person's chances of falling. Problems with center of mass, or center of gravity, can also contribute to falls. A person's center of mass is located just below the navel and the legs form the base of support. In PD, it is not uncommon for a person's center or middle to move away from his or her base of support. This may cause a loss of balance during daily activities such as standing up, bending down or forward, turning sharply, walking while turning the head, or talking.

Falls may also occur due to impaired postural reflexes (a complex set of movements that we make automatically to maintain balance when we stand up and walk); postural change (a tendency to lean forward, with stooped posture and shuffling gait); and freezing (the inability to initiate movement, as though one's feet were stuck to the floor).

Another risk factor for PD-related falls stems from the problems that some people with PD have with their vision, such as double and blurry vision and changes in depth perception.

## Nonmotor Symptoms

There are also nonmotor symptoms that can increase the risk of falls. For instance, a person with PD may experience low blood pressure when arising from sitting or lying down, which in turn produces lightheadedness and can cause a fall.

Then there is constipation, which increases the risk of bathroom falls because it can lead a person to strain for a bowel movement. In turn, this can stimulate a drop in heart rate and increased or decreased blood pressure — sometimes resulting in dizziness and falls. Constipation also causes physical pressure on the bladder, which contributes to urinary incontinence. This can result in falls as a person rushes to the bathroom or slips on lost urine.

Fatigue and exhaustion due to disturbed sleep or lack of sleep are also hidden risk factors, as are stress and emotional reactions to life's events. While stress tends to worsen symptoms overall, many people with PD also develop an increased and sometimes incapacitating fear of falling.

Lastly, there are problems with executive function in PD — the ability to select, organize and sequence information and related functions. This may lead to distraction, causing an increase in fall risk.

## Other Considerations

The home, if not adapted for PD needs, may also present fall risks. This could be due to the presence of physical obstacles, such as furniture, or because the person is so comfortable at home that he or she is not attentive to the risk of falling.

## How Can PD-Related Falls Be Prevented?

Parkinson-related falls are not amenable to medical and surgical therapies, but there are some actions that people with PD can take to be aware of and lessen their risk.

### Talk to the Healthcare Team

The first step in prevention is for the person with PD to talk to his or her healthcare team, including a doctor, nurse and other professionals.

A healthcare professional can help a person assess whether medications, a physical condition, stress and/or environmental hazards are contributing to the risk of falls. Correct detection and interpretation of any gait and balance disturbances is essential to planning therapy. The healthcare team can evaluate balance using measures such as the Berg Balance Scale.

Lastly, a person's current medication regimen may need assessment and adjustment. Generally, when it comes to falls, 'less is best.' An ideal plan includes careful titration (that is, small adjustments in medication dosages and/or timing of dosages) that will help to optimize a person's function. It also includes consideration of decreasing the number of medications the person is taking to minimize adverse symptoms.

### Exercise

Exercise plays an essential role in keeping a person with Parkinson's disease healthy and able to participate in activities of daily living.

For reducing the risk of falls, exercises that specifically challenge and strengthen a person's balance, address axial rigidity and improve flexibility are ideal. They help maintain the postural stability and mobility needed to prevent

falls. Exercise also enhances a person's awareness of the location of his or her center of mass, which can improve balance.

Research has shown that enriched exercises — those that include attentiveness, concentration and focus on activity and movement are beneficial to balance and will help diminish symptoms that negatively impact Quality of Life. One such exercise is therapeutic Qi Gong (pronounced chee gung), which improves balance and flexibility through weight shifting, axial mobility and walking.

### Make the Home Safer

Adjustments in the home may aid in preventing falls. The use of adequate lighting and contrasting wall colors can help, as can patterns to follow in floor tiles or rugs. Eliminating glare and clutter, which can be distracting and unsafe, may also help.

In the bathroom, the use of non-skid surfaces and grab bars can reduce the risk of falls. Getting in and out of the bath and bed can be easier when a steady chair is used. Raised toilets and low beds also help to reduce injuries.

It may be helpful to place furniture close together so there is a "touch path" that allows the person with PD to touch furniture to initiate movement, but does not impede the stride. Other tips are to properly maintain — and properly use — such ambulation aids as handrails, grab bars, canes, walking sticks, wheeled walkers, scooters and wheelchairs. And one more tip: in selecting footwear, be sure to favor safety over beauty.

## Conclusions

**Fall prevention is an important component of living with Parkinson's. By talking to the healthcare team, exercising and making the home safer, a person with Parkinson's can decrease his or her risk of falling and increase quality of life.**