

# Parkinson's Disease

Parkinson's disease is a neurological disorder that results in involuntary movements, tremors, stiffness, and difficulties with balance and coordination.

## Index

- [What is Parkinson's Disease?](#)
- [Symptoms](#)
- [Stages of Parkinson's Disease](#)
- [What causes Parkinson's?](#)
- [Diagnosing Parkinson's](#)
- [Medication Treatments](#)
- [Surgical treatments](#)
- [Related links and videos](#)

## What is Parkinson's disease?

Parkinson's disease is a neurological disorder that results in involuntary movements, tremors, stiffness, and difficulties with balance and coordination.

The symptoms usually begin slowly and become more severe over time.

The disease is associated with the loss of dopamine neurons in the substantia nigra.

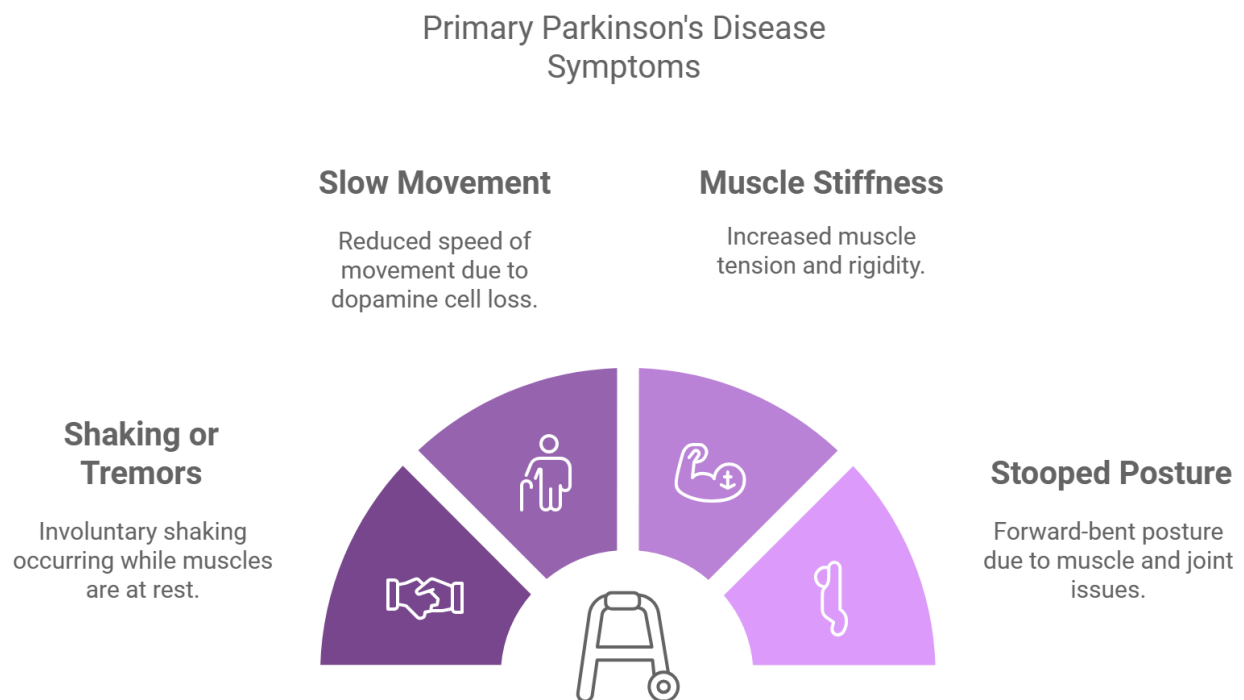
When your brain sends signals to your muscles, it uses dopamine to fine-tune movements. Lack of dopamine causes the slowed movements and tremors in Parkinson's disease.

Parkinson's affects more than 100,000 Canadians, and the numbers are expected to increase as the population ages.

Parkinson's disease isn't curable, but there are multiple ways to manage its symptoms.

## Primary Motor Symptoms

- **Shaking or tremors:** while muscles are at rest
- **Slow movement:** when cells that produce dopamine die, we move slowly.
- **Muscle stiffness and rigidity**
- **Stooped posture**



## Secondary Motor Symptoms can include:

- mask-like facial expression with less blinking than normal
- soft speaking voice
- small handwriting
- drooling & trouble swallowing

## Non-motor symptoms can include:

- constipation
- loss of bladder control
- low blood pressure when standing up
- sexual dysfunction
- depression
- loss of sense of smell
- sleep problems

# Stages of Parkinson's Disease

**Stage 1)** During the first stage, mild symptoms generally do not disrupt daily activities. Tremors and other movement symptoms may occur on only one side of the body. Changes in posture, gait, and facial expressions may also occur.

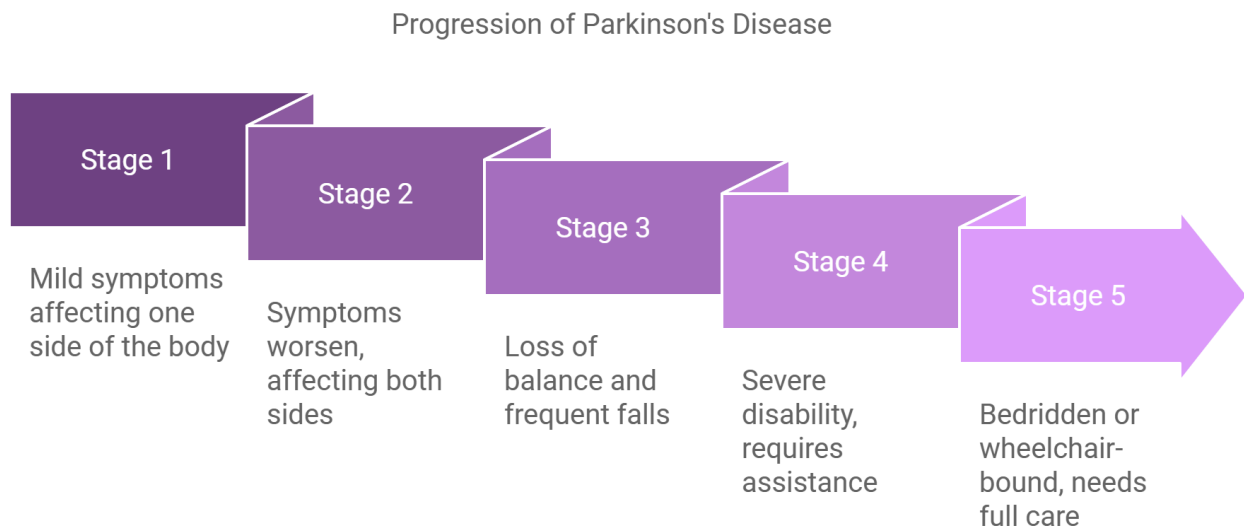
**Stage 2)** Symptoms worsen. Tremor, rigidity, and other movement symptoms affect both sides of the body. Walking problems and poor posture may be apparent. The individual can still live alone, but daily tasks are more challenging.

**Stage 3)** Loss of balance is the main characteristic. Falls are more frequent. Motor symptoms worsen. Functionally, the person's daily activities are limited, but they can still lead independent lives.

**Stage 4)** The symptoms have fully developed and are severely disabling. The individual can still walk and stand without assistance but may require a cane or

walker for safety. Significant aid is needed for daily living activities, and independent living is not possible.

**Stage 5)** Stiffness in the legs may make standing or walking impossible. The individual is bedridden or confined to a wheelchair unless aided and requires around-the-clock care for all activities.



## What causes Parkinson's Disease?

The condition's cause remains largely unknown, but scientists believe it is due to a combination of genetic and environmental factors.

Genetics causes about 10 to 15% of all Parkinson's cases. Experts have linked multiple genes to Parkinson's disease.

Environmental risk factors include head injury, your place of residence, and pesticide exposure.

Most people develop Parkinson's after age 60, 5% to 10% before 50.

Some research studies suggest this disease affects more men than women.

While Parkinson's itself is not fatal, disease complications can be severe.

## Diagnosing Parkinson's Disease

Diagnosis is primarily clinical and based on motor manifestations. Brain MRI or CT and molecular imaging of the striatum may be performed to support clinical assessment.

Parkinson's is a complex disorder that can be difficult to diagnose and challenging to manage.

## Medication Treatments

Levodopa has been the mainstay of Parkinson's disease treatment for over 50 years.

However, after a few years of treatment, and mainly due to disease progression, the benefit of levodopa decreases, and many patients experience motor complications.

This led to the introduction of many other medications, such as dopamine agonists and enzyme inhibitors.

You typically need to take a combination of medications to manage symptoms.

## Surgical Treatments

Surgical and infusion therapies can improve management in some patients with motor complications.

**Deep brain stimulation (DBS)** is a surgical therapy used to treat the movement symptoms of Parkinson's and specific side effects caused by medications. DBS may also improve sleep, pain, and urinary urgency symptoms.

Deep brain stimulation can help alleviate symptoms, but it is not a cure and cannot stop the progression of the disease.

**Infusion therapies** involve surgery to create a small opening in the abdomen for the placement of a tube in the intestine. A pump delivers medication directly to the intestine, mimicking natural receptor stimulation in the basal ganglia.

The average life expectancy for Parkinson's disease in 1967 was under ten years. Since then, it has increased by about 55%, rising to more than 14.5 years.

### Sources:

Parkinson's Disease

<https://my.clevelandclinic.org/health/diseases/8525-parkinsons-disease-an-overview>

Parkinson's Disease

<https://www.parkinsonclinicalguidelines.ca/parkinsons-disease/>

Parkinson's Disease

<https://www.nia.nih.gov/health/parkinsons-disease/parkinsons-disease-causes-symptoms-and-treatments>

State of current research

<https://www.michaeljfox.org/state-field>

What is Parkinson's?

<https://www.parkinson.org/understanding-parkinsons/what-is-parkinsons>

Stages of Parkinson's

<https://www.parkinson.org/understanding-parkinsons/what-is-parkinsons/stages>

You should not rely on information tools for medical, financial or legal advice. It provides general information only. NICE is not responsible for any use of the information other

than for general educational/informational purposes and no claim can be made against NICE or any of its personnel for any such use.

**Last Updated:** December 4, 2024

NICE - National Initiative for Care of the Elderly  
[www.nicenet.ca](http://www.nicenet.ca)