

# PARKINSON'S DISEASE



**Centurion**  
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*Shaping Lives...*  
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## **INTRODUCTION:**

Parkinson's disease is a progressive disorder of the nervous system that affects movement of the body.

## **ETIOLOGY:**

- **Genetic factors**
- **Environmental factors:** Such as exposure to certain toxins and chemicals, head injuries, and viral infections.

## **PATHOPHYSIOLOGY:**

- Parkinson's disease occurs when the neurons in the brain that produce the neurotransmitter dopamine start to die.
- Dopamine is mainly responsible for sending signals to the part of the brain that controls the movements of body.
- The loss of dopamine-producing neurons is caused by the accumulation of abnormal proteins in the brain, known as Lewy bodies.
- Lewy bodies are made up of clumps of protein, which can disrupt the normal functioning of neurons and lead to their death.
- When there is not enough dopamine, movement can become impaired cause Parkinson's disease.

## **CLINICAL MANIFESTATION:**

- Tremors or shaking, especially in the hands, arms, legs, or jaw
- Rigidity or stiffness in the limbs and torso
- Slowness of movement (bradykinesia), which can make simple tasks take longer to complete
- Balance problems and difficulty with coordination, which can lead to falls
- Stooped posture and a shuffling gait

- Freezing, or the sudden inability to move, particularly when trying to initiate movement
- Soft, muffled, or slurred speech
- Depression, anxiety, and other mood disorders
- Loss of sense of smell (anosmia)
- Sleep disturbances, such as insomnia, restless legs syndrome, and sleep apnea
- Cognitive impairment, such as difficulty with memory, attention, and executive function
- Fatigue and general malaise
- Constipation and other gastrointestinal problems
- Urinary problems, such as urinary frequency, urgency, and incontinence
- Sexual dysfunction

#### **DIGNOSIS:**

- **Electroencephalogram (EEG)**
- **MRI**
- **CT SCAN**
- **A dopamine transporter (DaT) scan**

#### **PHARMACOLOGICAL MANAGEMENT:**

- **Levodopa:** Examples include Sinemet, Duopa, and Rytary. Levodopa is converted into dopamine in the brain and can help improve motor symptoms such as tremors, rigidity, and slowness of movement.
- **Dopamine agonists:** Examples include pramipexole (Mirapex), ropinirole (Requip), and rotigotine (Neupro). Dopamine agonists mimic the effects of dopamine in the brain and can help improve motor symptoms.
- **MAO-B inhibitors:** Examples include selegiline (Eldepryl, Zelapar) and rasagiline (Azilect). MAO-B inhibitors help prevent the breakdown of

dopamine in the brain, which can help improve motor symptoms and reduce the need for levodopa.

- **COMT inhibitors:** Examples include entacapone (Comtan) and tolcapone (Tasmar). COMT inhibitors help prolong the effects of levodopa and can help reduce motor fluctuations.
- **Amantadine:** Examples include Symmetrel and Gocovri. Amantadine can help improve motor symptoms and reduce dyskinesias (involuntary movements) that can be caused by long-term use of levodopa.

### **NON- PHARMACOLOGICAL MANAGEMENT/PREVENTION:**

- **Exercise regularly:** Studies suggest that regular exercise may help reduce the risk of developing Parkinson's disease.
- **Maintain a healthy diet:** Eating a diet rich in fruits, vegetables, and whole grains, and low in processed foods, may help lower the risk of Parkinson's disease.
- **Avoid toxins:** Exposure to certain toxins, such as pesticides and herbicides, has been linked to an increased risk of Parkinson's disease. Avoiding exposure to these toxins may help lower the risk of developing the disease.
- **Protect the head:** Head injuries have been linked to an increased risk of Parkinson's disease. Taking steps to prevent head injuries, such as wearing a helmet while biking or playing contact sports, may help lower the risk.
- **Quit smoking:** Smoking has been linked to an increased risk of Parkinson's disease, so quitting smoking may help lower the risk.