AMERICAN PARKINSON DISEASE ASSOCIATION
Strength in optimism. Hope in progress.

Get in Touch
apda@apdaparkinson.org
800-223-2732
apdaparkinson.org

WHAT IS PARKINSON'S DISEASE?

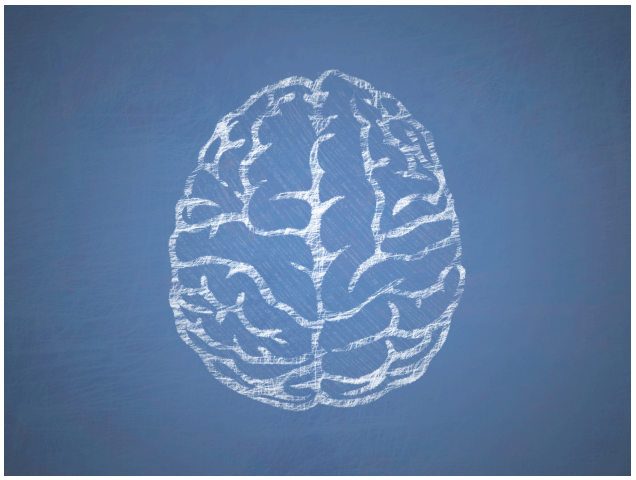
Parkinson's disease (PD) is a type of neurologic movement disorder, affecting the brain and causing difficulty with movements, or motor symptoms. PD is a chronic and progressive condition, meaning that symptoms worsen over time, which can affect the ability to perform common, daily activities.

In PD, cell loss occurs in a region of the brain called the **substantia nigra**. The substantia nigra produces **dopamine**, a chemical messenger that helps regulate movement. When the cells in this region die, they stop producing dopamine, which causes challenges with movement. Loss of neurons in other parts of the brain also occurs in PD, accounting for some of the non-motor symptoms of the disease.

Another important factor is **alpha-synuclein**, a protein that plays various roles in the healthy brain. In PD, alpha-synuclein clumps up in nerve cells, including those in the substantia nigra. These abnormal accumulations are called **Lewy bodies**. Researchers believe that alpha-synuclein build-up contributes to nerve cell death and is therefore a key element in PD development.

STATISTICS

- PD is the **fastest growing neurodegenerative disease in the world**, and the second most common after Alzheimer's disease.
- There are an estimated **1 million people in the U.S. living with PD** and more than 10 million people worldwide.
- **Every 6 minutes, someone is diagnosed with PD.**
- On average, 240 people are diagnosed with PD every day – totaling approximately 90,000 new diagnoses every year.
- The **average age of onset is 60**, but 10% of diagnoses occur before age 50 (known as Young Onset PD).
- Men are 50% more likely to get PD than women.
- **The annual economic burden of PD in the U.S. is approximately $52 billion.**



SYMPTOMS

Can vary widely from person to person

Motor Symptoms

- Tremor *(rhythmic shaking, particularly when the body is at rest)*
- Rigidity *(stiffness of movement)*
- Bradykinesia *(slowness of movement)*
- Postural instability *(balance problems)*
- Facial masking
- Walking/gait difficulties
- Vocal symptoms

Non-Motor Symptoms

Some can precede motor symptoms by years or even decades

- Loss of smell
- Sleep problems
- Depression and anxiety
- Fatigue
- Cognitive decline
- Gastrointestinal and urinary issues
- And others

Continued >

RISK FACTORS

In addition to age and gender (see 'Statistics'), a combination of genetic predispositions and environmental exposures may contribute to the development of PD.

Genetic Factors
More than 20 genes have been associated with PD and there may be many more that have yet to be identified. Currently, most people with PD *do not* have one of the known gene mutations. Having a first degree relative with PD modestly increases a person's risk.

Environmental Factors
Exposure to certain pesticides or solvents can increase the risk of PD, potentially in people who *also* have a genetic susceptibility. Traumatic brain injury can contribute as well. Because symptoms may not appear for many years, the connection to an environmental cause is often difficult to establish.

DIAGNOSING PD

Diagnosing PD can be relatively straightforward by detecting the primary motor symptoms during a neurological examination. To avoid misdiagnosis, consultation with a **movement disorder specialist** is recommended. If needed, there are some clinically available tests that can help with diagnosis, including cerebral spinal fluid analysis, skin biopsy, and specialized brain imaging.

TREATMENTS

Those diagnosed with PD should focus on improving symptoms and maintaining an active and positive lifestyle. It is possible to successfully manage symptoms through healthy choices, medications and therapies, and – in some cases – neurosurgical procedures. Treatments will change over the course of the disease.
At every stage, it is important to exercise and increase physical activity, eat a healthy diet, and pay close attention to mental health.

Medications: Several medications are available for the treatment of motor symptoms. The most effective treatment for PD is the combination medication of carbidopa-levodopa, which is intended to increase brain levels of dopamine. Additional medications or therapies may be useful in treating non-motor symptoms.

Rehabilitative Therapies:
- Physical Therapy – for balance, walking, and strength
- Occupational Therapy – for fine motor skills and independent living
- Speech Therapy – for speech and swallowing difficulties

Neurosurgical Procedures:
- Deep Brain Stimulation (DBS) – electrodes are placed deep within the brain to deliver electrical impulses that improve symptoms
- Focused Ultrasound – focused beams of ultrasound energy converge within the brain tissue to form a small lesion that restores normal brain circuitry

Exercise: Exercise may be one of the most powerful tools to fight some PD symptoms and potentially slow disease progression.

Further Reading: The American Parkinson Disease Association (APDA) works tirelessly to provide the support, education, research, and community that helps everyone impacted by PD live life to the fullest. To learn more about PD, our *PD Handbook* (apdaparkinson.org/handbook-download) and *PD: The Essentials* presentation (bit.ly/PDessentials) may be helpful resources to review next. APDA is here for you.

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