

PARKINSON'S DISEASE

GLOSSARY



THE
MICHAEL J. FOX
FOUNDATION

ALPHA-SYNUCLEIN – DEPRESSION

Alpha-synuclein

A protein normally found in neurons and the main component of protein clumps called Lewy bodies. Researchers believe that Lewy bodies are associated with neuron death. A mutation in the gene that directs the production of the alpha-synuclein protein is the basis for a rare, inherited form of Parkinson's disease.

Antioxidant

Chemical compound or substance that inhibits oxidation: damage to cells, proteins or genetic material by free radicals (the same chemical reaction that causes iron to rust). Some studies have linked oxidative damage to Parkinson's disease.

Ataxia

Loss of balance and decreased muscle coordination during voluntary movements.

Autonomic dysfunction

Problems with the functioning of the autonomic nervous system, which controls the underlying processes that keep our bodies working such as bladder and bowel movements, sweating, sexual function and blood pressure regulation.

Basal ganglia

Region deep within the brain consisting of large clusters of neurons responsible for voluntary movements such as walking and movement coordination. Many of the motor symptoms of Parkinson's disease are brought on by loss of or damage to dopamine neurons in this region, which encompasses the striatum, the subthalamic nucleus and the substantia nigra.

See also: [neuron](#)

Biomarkers

Measurable, biological characteristics that can be used to determine the risk, presence or progression of disease. For example, high blood pressure is a biomarker of potential heart disease. No biomarker of Parkinson's disease has been validated, but researchers are working toward such a tool.

Bradykinesia

Slowing down and loss of spontaneous and voluntary movement. One of the cardinal symptoms of Parkinson's disease. From the Greek brady, slow, and kinesia, movement.

Clinical trials

Organized medical studies that test the safety and efficacy of new treatments, such as drugs or surgical, in human beings. Also called interventional studies or trials.

Cognitive dysfunction

Loss of intellectual functions (such as thinking, remembering and reasoning) severe enough to interfere with daily activities. This may include executive dysfunction and/or changes in personality, mood and behavior. Cognitive dysfunction in Parkinson's disease typically does not respond to dopamine-replacement therapy and ranges from mild impairment to dementia.

Compulsive Behavior

Irresistible impulses to act, regardless of the rationality of the motivation. Some compulsive behaviors — excessive gambling or shopping, hypersexuality, and binge eating — have been associated with dopamine agonists used to treat Parkinson's disease.

Deep brain stimulation (DBS)

Treatment for the motor symptoms of Parkinson's. In a surgical procedure thin electrodes are implanted into the brain, targeting motor circuits that are not functioning properly. A small device (similar to a cardiac pacemaker) emits electrical pulses to stimulate a brain region and block signals that cause some Parkinson's symptoms. At present, DBS treats only the symptoms that respond to dopamine-replacement therapy (tremor, rigidity and slowness of movement) and is used primarily for patients with severe Parkinson's disease, such as those with significant medication-induced side effects like debilitating dyskinesias.

Dementia

Decline in memory and/or intellectual functioning severe enough to interfere with social or occupational functioning. Some Parkinson's patients experience dementia, generally at later stages of disease progression. This symptom does not respond to dopamine-replacement therapy.

Depression

Mental state, and non-dopamine-responsive symptom of Parkinson's disease, characterized by feelings of despondency and a lack of ability to initiate activity. Research has shown that some depression medications are safe for people with Parkinson's.



DOPAMINE – GAIT DIFFICULTY OR DYSFUNCTION

Dopamine

Neurotransmitter chemical produced in the brain that helps control movement, balance and walking. Lack of dopamine is the primary cause of Parkinson's motor symptoms.

Dopamine agonist

Class of drugs commonly prescribed in Parkinson's disease that stimulate dopamine receptors and produce dopamine-like effects. These drugs are sometimes associated with compulsive behaviors.

Dopamine-non-responsive

Refers to symptoms of Parkinson's disease that do not improve when treated with current dopamine-replacement therapies. These symptoms include cognitive dysfunction, postural instability and gait difficulty, sleep disorders, speech disorders, depression, and others.

Dopamine-replacement therapy

Class of drugs that are converted into dopamine in the brain. Levodopa is a dopamine-replacement therapy.

Dysarthria

Slurred speech. A common problem in Parkinson's disease.

Dysequilibrium

Unsteadiness or imbalance. A common problem in Parkinson's disease.

Dyskinesia

Involuntary, uncontrollable, excessive movements that are a common side effect of long-term levodopa treatment for Parkinson's disease. These movements can be lurching, dance-like or jerky; can involve any part of the body (e.g., extremities, head and neck); and are distinct from the rhythmic tremor commonly associated with Parkinson's disease.

Dysphagia

Difficulty swallowing that results from difficulty coordinating and controlling the muscles responsible for moving food from the mouth through the esophagus to the stomach. In later stages of disease, this can increase the risk of food or liquid "going down the wrong tube," which can cause pneumonia.

Dystonia

An abnormal, involuntary, often painful sustained posture or muscle cramping. This can involve any body part — hand, foot, head. It can exist as a separate disease or be part of Parkinson's, especially when medication wears off.

Essential tremor

Movement disorder that may be confused with Parkinson's disease. A fast tremor that is most pronounced when using the hands, as with writing or eating. This is in contrast to tremor of Parkinson's disease, which is most pronounced when the limb is at rest.

Executive dysfunction

Disturbances in "executive functions," which are brain processes that allow a person to plan and initiate activities toward a goal, regulate behaviors, exercise judgments, maintain attention and concentration, problem solve and multitask. Many people with Parkinson's experience some type of executive dysfunction. This symptom does not respond to dopamine-replacement therapy.

Facial masking

Decreased facial expression and blinking. A form of bradykinesia.

See also: hypomimia

Familial Parkinson's disease

Parkinson's disease that runs in families and is thought to have a primarily genetic cause. Familial Parkinson's disease accounts for less than five percent of Parkinson's cases worldwide.

See also: sporadic Parkinson's disease

Fatigue

State in which one feels tired or exhausted, and the capacity for normal work or activity is reduced. Common, poorly understood symptom of Parkinson's disease.

Festination

Involuntary quickening of steps and shuffling, which makes it difficult for a person to stop moving. Festination is a common feature of Parkinson's disease.

Freezing

Abrupt and temporary inability of Parkinson's patients to move. This symptom frequently occurs when beginning to walk, moving through doorways or turning around.

Gait difficulty or dysfunction

Refers to any abnormality of walking associated with Parkinson's — imbalance, shuffling, or freezing, for example.

See postural instability



Genetic predisposition

Any inherited genetic pattern that may make some individuals more prone than others to certain health conditions, disorders or diseases.

Hypomimia

A clinical term for facial masking — an immobile face with reduced blinking. From the Greek hypo, less, and mimia, imitation or expression.

See also: [facial masking](#)

Levodopa

Most commonly administered drug to treat Parkinson's motor symptoms. In the brain, levodopa is converted into dopamine — the brain chemical that is lacking in Parkinson's disease.

See also: [Sinemet](#), [dopamine](#)

Lewy bodies

Abnormal protein clumps that accumulate in brain cells in Parkinson's disease. Researchers believe that Lewy bodies play a role in the degeneration and death of dopamine neurons. At autopsy, the presence of Lewy bodies is used to confirm a Parkinson's diagnosis.

LRRK2

Gene implicated in one to two percent of all Parkinson's disease cases. The LRRK2 gene directs the production of the LRRK2 protein kinase, an enzyme that modifies the function of other proteins.

Micrographia

Small, cramped handwriting that is a symptom for many Parkinson's patients.

Mild cognitive impairment

Also known as MCI, a decline in memory and/or intellectual functioning that is not as severe as dementia. MCI occurs frequently in Parkinson's disease and may progress to dementia in some patients.

Monoamine oxidase B inhibitors (MAO-B Inhibitors)

Drugs that enhance the effect of dopamine-replacement therapy by preventing enzymes from breaking the medications down. Some studies suggest that MAO-B inhibitors may slow the progression of Parkinson's disease but this has not been proven in the clinic.

Motor Fluctuations

Inconsistent and sometimes unpredictable responses to levodopa. This can include wearing "off."

See also: [Off phenomenon](#)

Movement disorders

Conditions that interfere with normal movement. Some, like Parkinson's disease, are characterized by lack (or "poverty") of movement, others by excessive movement. Besides Parkinson's, conditions categorized as movement disorders include essential tremor, multiple system atrophy, progressive supranuclear palsy, Huntington's disease, Tourette's syndrome and cerebral palsy.

Movement disorders specialist

Neurologist with specific training in the subspecialty of movement disorders. Movement disorders specialists typically treat a greater number of patients with movement disorders.

Multiple System Atrophy

Movement disorder that may be confused with Parkinson's disease. MSA is a degenerative condition characterized by low blood pressure when standing. It may lead to parkinsonism, rigidity, ataxia, fainting or incontinence. Also known as Shy-Drager syndrome.

Neurodegeneration

Slow and progressive death (degeneration) of certain brain cells in conditions such as Parkinson's disease, Alzheimer's disease and Lou Gehrig's disease (ALS).

Neurologist

Physician specializing in diseases and disorders of the brain, spinal cord, nerves and muscles, including stroke, Parkinson's disease, epilepsy, Alzheimer's disease and muscular dystrophy.

See also: [movement disorders specialist](#)

Neuron

Nerve cell used to transmit information within the central nervous system. Parkinson's disease involves death of and/or damage to dopamine neurons.

Neuroprotective

Providing protection to or stimulating the regrowth of any part of the body's nervous system. No currently available treatment for Parkinson's disease has been proven to provide a neuroprotective or neuroregenerative effect. Available Parkinson's disease treatments are symptomatic.



Neurotransmitter

Specialized chemical messenger (e.g., dopamine, norepinephrine, serotonin) that allows nerve cells to communicate with each other. Most neurotransmitters play different roles throughout the body, many of which are not yet known.

See also: **dopamine**, **serotonin**

Non-motor symptoms

Poorly understood symptoms of Parkinson's that affect capabilities and characteristics other than movement. These include cognitive impairment, sleep problems and depression and typically do not respond to dopamine-replacement therapy.

Olfactory dysfunction

Reduced or impaired ability to smell, which can be an early sign of Parkinson's disease. Researchers are studying olfactory dysfunction as a possible avenue toward a biomarker of Parkinson's disease.

Off phenomenon

Times when medication loses benefit and symptoms of Parkinson's return. As disease progresses, this can come on before the next medication dose is due. Onset can be gradual or sudden and unpredictable.

Parkin

Mutations in this gene have been associated with a familial form of Parkinson's disease. Researchers believe that the normal function of parkin is to help degrade one or more proteins that are toxic to dopamine neurons.

Parkinson's disease

Chronic, neurodegenerative disorder that affects one in 100 people over age 60. The cardinal symptoms are bradykinesia, resting tremor, rigidity and postural instability or gait dysfunction, but most patients experience non-motor symptoms, as well. While the average age at onset is 60, many people are diagnosed much younger. There is no objective test, or biomarker, for Parkinson's, so the rate of misdiagnosis can be relatively high. Estimates of the number of people living with the disease therefore vary, but research indicates that at least 1 million people in the United States, and more than 5 million worldwide, have Parkinson's disease.

Parkinsonism

Generic term referring to slowness and mobility problems that result from or look like Parkinson's disease. Several conditions that are not actually Parkinson's disease, including multiple system atrophy and progressive supranuclear palsy, as well as a number of medications, can result in parkinsonism and a misdiagnosis of Parkinson's disease.

Physical therapy

Use of exercises and physical activities to help condition muscles and restore strength and movement. Physical therapy may be useful to maintain balance and flexibility as part of an overall Parkinson's disease treatment regimen.

Pill-rolling

Description of the typical resting tremor of the hands in Parkinson's disease, so named because the alternating movements of the thumb and forefinger give the appearance of rolling a small object between the fingers.

See also: **tremor**

Postural instability

Difficulty with standing or walking, characterized by dizziness, imbalance or incoordination, which can lead to falls. These symptoms do not respond to dopamine-replacement therapy.

See also: **gait dysfunction**

Prognosis

Expected future course of an illness.

Progressive Supranuclear Palsy (PSP)

Movement disorder that can be mistaken for Parkinson's disease. PSP is a neurodegenerative disease characterized by problems looking up and down, frequent falls and parkinsonism. It does not consistently respond to dopamine-replacement therapy.

PWP

Abbreviation for "People with Parkinson's" or "Person with Parkinson's."

Resting tremor

An unwanted and uncontrollable movement that affects a limb (or less commonly the head or chin) when it is at rest and stops for the duration of a voluntary movement. One of the cardinal clinical features of Parkinson's disease.

See also: **tremor**



RIGIDITY – YOUNG-ONSET PARKINSON'S DISEASE

Rigidity

Abnormal stiffness in a limb or other body part. One of the cardinal clinical features of Parkinson's disease, rigidity is often most apparent when a clinician moves a patient's limb.

Serotonin

Brain chemical that may be deficient in some cases of depression and whose potential role in Parkinson's disease is under investigation.

Sinemet

Brand name of the most commonly prescribed medication for Parkinson's. A combination of levodopa and carbidopa.

See also: [levodopa](#)

Sleep disorders

Chronic troubles with amount, duration or quality of sleep. Many people with Parkinson's do not feel rested and have daytime sleepiness. Both Parkinson's disease and Parkinson's medications can contribute to sleep disturbances.

Speech disorders

Symptoms of slurring words, decreased volume and tone of speech, and hoarseness of voice that affect up to 90 percent of people with Parkinson's at some time in the course of their disease. Speech therapy is the recommended treatment as these symptoms do not respond to dopamine-replacement therapies.

See also: [physical therapy](#)

Sporadic Parkinson's disease

Most common form of Parkinson's disease, accounting for upwards of 95 percent of cases, likely arising from a combination of genetic and environmental factors. Sporadic Parkinson's disease is sometimes called idiopathic, meaning that the cause is unknown. Sporadic Parkinson's disease does not run in families, unlike other (much rarer) forms of Parkinson's disease.

See also: [familial Parkinson's Disease](#)

Symptomatic

1. Term used by people with Parkinson's to describe the state in which they are strongly affected by symptoms and in which their medication or treatment regimen is providing little to no relief.

2. Pertaining to treatments that affect the symptoms of a disease but not the underlying actions that cause the disease to progress. All currently available therapies for Parkinson's disease are symptomatic, meaning that they do not slow the biological disease progression.

See also: [neuroprotective](#)

Tremor

Involuntary, uncontrollable, rhythmic movements (fast or slow) that may affect the hands, head, voice or other body parts. Resting tremor is one of the cardinal clinical features of Parkinson's disease.

See also: [resting tremor](#)

Wearing off

"Off" periods refer to times when medication loses benefit and symptoms of Parkinson's return. As disease progresses, this can come on before the next medication dose is due. Onset can be gradual or sudden and unpredictable.

See also: [off phenomenon](#)

Young-onset Parkinson's disease

A rare form of Parkinson's disease characterized by onset of symptoms before age 50.

