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Introduction to Parkinson's disease

What is Parkinson's disease?

Parkinson's disease is a condition whose main features are

- slowed movement
- tremor
- gait or balance problems

More than 1 million people in the United States have Parkinson's disease. Although it more commonly develops in people in their 60s or older, it can occur as early as age 20.

What causes Parkinson's disease?

Parkinson's disease is caused by a **loss of nerve cells** in a specific part of the brain called the **substantia nigra**. Cells in the substantia nigra communicate with other movement control centers in the brain by secreting dopamine and other neurotransmitters. When substantia nigra cells die, they stop secreting dopamine, and the other **movement control centers become unregulated**. This disturbance in the movement control centers of the brain cause the main symptoms of Parkinson's disease (**slowness, tremor and gait or balance problems**).

In most patients, what causes the loss of substantia nigra cells remains unknown. Environmental toxins that may cause parkinsonism include

- manganese
- carbon monoxide
- organic solvents
- certain pesticides

However, most people with Parkinson's disease have not been exposed to these toxins. A number of genes have been shown to cause Parkinson's disease in about 10% of patients, but these gene abnormalities do not occur in most individuals with Parkinson's disease. Currently, researchers suspect that the cause of Parkinson's disease in most individuals reflects a combination of genetic factors and environmental exposure(s).

What is the usual course of Parkinson's disease?

The first **symptom and disease course varies** considerably in people with Parkinson's disease. However, several general statements can be made. The most common initial symptom is tremor. Symptoms of **tremor or slowness usually begin on one side of the body**, often involving either an arm or leg. Over time (in some

people, 5 years or more) the other limb on the same side, and then limbs on the opposite side are affected. Mobility (arising from a chair or walking) may be limited as the disease progresses. For most individuals on treatment, lifespan is not shorted by Parkinson's disease.

In addition to the well known symptoms of tremor, slowness, and imbalance, **other problems such as excess saliva, a soft voice, as well as hand or foot cramps may occur.** Loss of the sense of smell is common. Depression, anxiety and a number of sleep disorders are quite common. Constipation, more frequent urination, incontinence, increased sweating, and impotence may develop. About 40% of people with Parkinson's disease will develop changes in memory and intellectual function.

A variety of treatments are available for many of the symptoms of Parkinson's disease. These include general health measures, physical and speech therapy as well as number of [medications](#). For some patients with more advanced symptoms, [surgical treatments](#) are appropriate. The treatment for Parkinson's disease is individualized and is guided by number of factors including the general health and symptoms of an affected individual. A number of new treatments for Parkinson's disease are under development.

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