

Parkinson's disease

Parkinson's disease is a progressive disorder that affects the nervous system and the parts of the body controlled by the nerves. Symptoms start slowly. The first symptom may be a barely noticeable tremor in just one hand. Tremors are common, but the disorder may also cause stiffness or slowing of movement.

In the early stages of Parkinson's disease, your face may show little or no expression. Your arms may not swing when you walk. Your speech may become soft or slurred. Parkinson's disease symptoms worsen as your condition progresses over time.

Although Parkinson's disease can't be cured, medications might significantly improve your symptoms. Occasionally, your health care provider may suggest surgery to regulate certain regions of your brain and improve your symptoms.

Symptoms

Parkinson's disease symptoms can be different for everyone. Early symptoms may be mild and go unnoticed. Symptoms often begin on one side of the body and usually remain worse on that side, even after symptoms begin to affect the limbs on both sides.

Parkinson's symptoms may include:

- **Tremor** : Rhythmic shaking, called tremor, usually begins in a limb, often your hand or fingers. You may rub your thumb and forefinger back and forth. This is known as a pill-rolling tremor. Your hand may tremble when it's at rest. The shaking may decrease when you are performing tasks.
- **Slowed movement, known as bradykinesia** : Over time, Parkinson's disease may slow your movement, making simple tasks difficult and time-consuming. Your steps may become shorter when you walk. It may be difficult to get out of a chair. You may drag or shuffle your feet as you try to walk.
- **Rigid muscles** : Muscle stiffness may occur in any part of your body. The stiff muscles can be painful and limit your range of motion.
- **Impaired posture and balance** : Your posture may become stooped. Or you may fall or have balance problems as a result of Parkinson's disease.
- **Loss of automatic movements** : You may have a decreased ability to perform unconscious movements, including blinking, smiling or swinging your arms when you walk.
- **Speech changes** : You may speak softly or quickly, slur, or hesitate before talking. Your speech may be more of a monotone rather than have the usual speech patterns.
- **Writing changes** : It may become hard to write, and your writing may appear small.

Causes

In Parkinson's disease, certain nerve cells called neurons in the brain gradually break down or die. Many of the symptoms of Parkinson's are due to a loss of neurons that produce a chemical messenger in your brain called dopamine. When dopamine levels decrease, it causes irregular brain activity, leading to problems with movement and other symptoms of Parkinson's disease.

The cause of Parkinson's disease is unknown, but several factors appear to play a role, including:

- **Genes.** Researchers have identified specific genetic changes that can cause Parkinson's disease. But these are uncommon except in rare cases with many family members affected by Parkinson's disease.

However, certain gene variations appear to increase the risk of Parkinson's disease but with a relatively small risk of Parkinson's disease for each of these genetic markers.

- **Environmental triggers.** Exposure to certain toxins or environmental factors may increase the risk of later Parkinson's disease, but the risk is small.

Researchers also have noted that many changes occur in the brains of people with Parkinson's disease, although it's not clear why these changes occur. These changes include:

- **The presence of Lewy bodies.** Clumps of specific substances within brain cells are microscopic markers of Parkinson's disease. These are called Lewy bodies, and researchers believe these Lewy bodies hold an important clue to the cause of Parkinson's disease.
- **Alpha-synuclein found within Lewy bodies.** Although many substances are found within Lewy bodies, scientists believe that an important one is the natural and widespread protein called alpha-synuclein, also called a-synuclein. It's found in all Lewy bodies in a clumped form that cells can't break down. This is currently an important focus among Parkinson's disease researchers. Researchers have found the clumped alpha-synuclein protein in the spinal fluid of people who later develop Parkinson's disease.

Risk factors

Risk factors for Parkinson's disease include:

- **Age :** Young adults rarely experience Parkinson's disease. It ordinarily begins in middle or late life, and the risk increases with age. People usually develop the disease around age 60 or older. If a young person does have Parkinson's disease, genetic counseling might be helpful in making family planning decisions. Work, social situations and medicine side effects are also different from those of an older person with Parkinson's disease and require special considerations.
- **Heredity :** Having a close relative with Parkinson's disease increases the chances that you'll develop the disease. However, your risks are still small unless you have many relatives in your family with Parkinson's disease.
- **Sex :** Men are more likely to develop Parkinson's disease than are women.
- **Exposure to toxins :** Ongoing exposure to herbicides and pesticides may slightly increase your risk of Parkinson's disease.

Complications

Parkinson's disease is often accompanied by these additional problems, which may be treatable:

- **Thinking difficulties :** You may experience cognitive problems, such as dementia, and thinking difficulties. These usually occur in the later stages of Parkinson's disease. Such cognitive problems aren't usually helped by medicines.
- **Depression and emotional changes :** You may experience depression, sometimes in the very early stages. Receiving treatment for depression can make it easier to handle the other challenges of Parkinson's disease.

You also may experience other emotional changes, such as fear, anxiety or loss of motivation. Your health care team may give you medicine to treat these symptoms.

- **Swallowing problems :** You may develop difficulties with swallowing as your condition progresses. Saliva may accumulate in your mouth due to slowed swallowing, leading to drooling.
- **Chewing and eating problems :** Late-stage Parkinson's disease affects the muscles in the mouth, making chewing difficult. This can lead to choking and poor nutrition.
- **Sleep problems and sleep disorders :** People with Parkinson's disease often have sleep problems, including waking up frequently throughout the night, waking up early or falling asleep during the day.

People also may experience rapid eye movement sleep behavior disorder, which involves acting out dreams. Medicines may improve your sleep.

- **Bladder problems :** Parkinson's disease may cause bladder problems, including being unable to control urine or having difficulty in urinating.
- **Constipation :** Many people with Parkinson's disease develop constipation, mainly due to a slower digestive tract.

You may also experience:

- **Blood pressure changes :** You may feel dizzy or lightheaded when you stand due to a sudden drop in blood pressure (orthostatic hypotension).
- **Smell dysfunction :** You may experience problems with your sense of smell. You may have trouble identifying certain odors or the difference between odors.

- **Fatigue** : Many people with Parkinson's disease lose energy and experience fatigue, especially later in the day. The cause isn't always known.
- **Pain** : Some people with Parkinson's disease experience pain, either in specific areas of their bodies or throughout their bodies.
- **Sexual dysfunction** : Some people with Parkinson's disease notice a decrease in sexual desire or performance.

Prevention

Because the cause of Parkinson's is unknown, there are no proven ways to prevent the disease.

Some research has shown that regular aerobic exercise might reduce the risk of Parkinson's disease.

Some other research has shown that people who consume caffeine — which is found in coffee, tea and cola — get Parkinson's disease less often than those who don't drink it. Green tea also is related to a reduced risk of developing Parkinson's disease. However, it is still not known whether caffeine protects against getting Parkinson's or is related in some other way. Currently there is not enough evidence to suggest that drinking caffeinated beverages protects against Parkinson's.