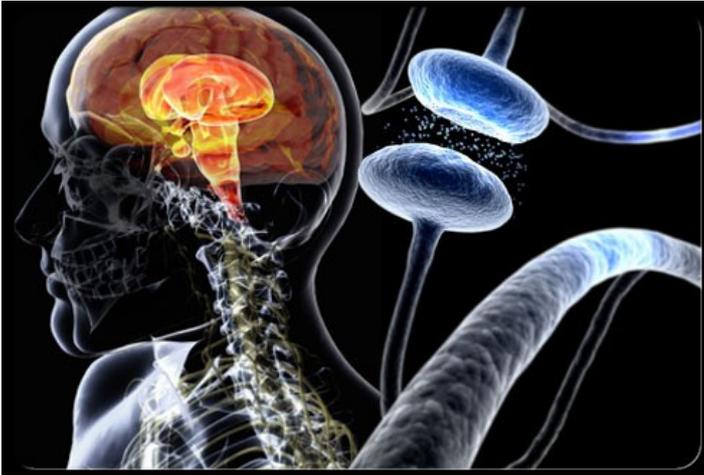


Parkinson's Disease: Symptoms, Stages and Treatment



What Is Parkinson's Disease?

Parkinson's disease is a brain disorder that causes a gradual loss of muscle control. The symptoms of Parkinson's tend to be mild at first and can sometimes be overlooked. Distinctive signs of the disease include tremors, stiffness, slowed body movements, and poor balance. Parkinson's was originally called a "shaking palsy," but not everyone with Parkinson's has a tremor.



Parkinson's Progression

While Parkinson's can be a frightening diagnosis, life expectancy is about the same as for people without the disease. For some people symptoms evolve slowly over 20 years. Early treatment can provide years that are virtually symptom-free. About 5% to 10% of cases occur before age 50. Two advocates for research developed Parkinson's early: Boxer Muhammad Ali at age 42 and actor Michael J. Fox at age 30.



Early Signs of Parkinson's

The early signs of Parkinson's may be subtle and can be confused with other conditions. They include:

- Slight shaking of a finger, hand, leg, or lip
- Stiffness or difficulty walking
- Difficulty getting out of a chair
- Small, crowded handwriting
- Stooped posture
- A 'masked' face, frozen in a serious expression



Symptom: Tremor

Tremor is an early symptom for about 70% of people with Parkinson's. It usually occurs in a finger or hand when the hand is at rest -- but not when the hand is in use. It will shake rhythmically, usually four to six beats per second, or in a "pill-rolling" manner, as if rolling a pill between the thumb and index finger. Tremor also can be a symptom of other conditions, so by itself it does not indicate Parkinson's.



Symptom: Bradykinesia

As people grow older, they naturally slow down. But if they have "bradykinesia," a sign of Parkinson's, the slow movement may impair daily life. When they want to move, the body may not respond right away, or they may suddenly stop or "freeze." The shuffling walk and "mask-like" face sometimes found in those with Parkinson's can be due to bradykinesia.



Symptom: Impaired Balance

People with Parkinson's tend to develop a stooped posture, with drooping shoulders and their head jutting forward. Along with their other movement issues, they may have a problem with balance. This increases the risk of falling.



Symptom: Rigidity

Rigidity occurs when the muscles stay stiff and don't relax. For example, the arms may not swing when a person is walking. There may be cramping or pain in the muscles. Most people with Parkinson's experience some rigidity.



Symptoms Beyond Movement

Other symptoms are common, but not everyone with Parkinson's will have all of them. They may include:

- Restless sleep or daytime fatigue
- A soft voice or slurred speech
- Difficulty swallowing
- Memory problems, confusion, or dementia
- Oily skin and dandruff
- Constipation



Diagnosing Parkinson's

Brain scans are not generally used to diagnose Parkinson's, although they may be used to rule out other conditions. Instead, your doctor may ask you to:

- Tap your finger and thumb together or tap your foot to check for slowed movement
- Rest your hand to observe your tremor
- Relax, while he moves your neck, arms, and legs to check for rigidity
- Stand while being gently pulled from behind to check for balance



Parkinson's or Essential Tremor?

If you have a tremor but no other Parkinson's-like symptoms, such as rigidity or slow movement, you may have benign essential tremor. This tremor runs in families and is much more common than Parkinson's. It usually affects both hands equally. Unlike Parkinson's, the tremor is worse when your hand is in motion. Essential tremor does not respond to levodopa, but may be treated with other medications.



Who Gets PD?

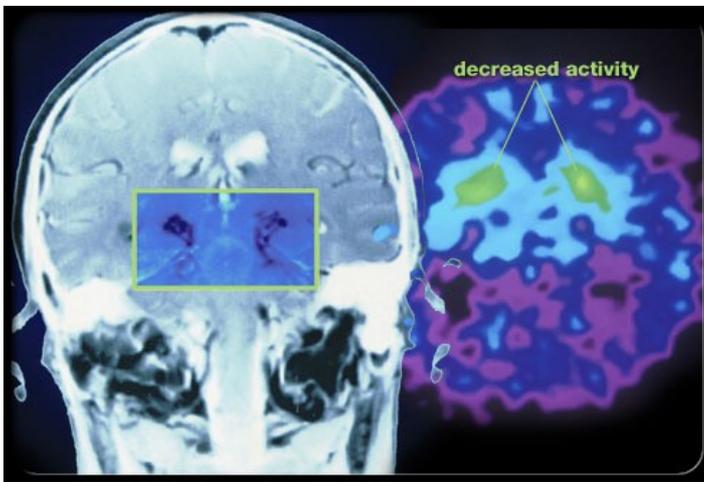
The average age of onset is 62, but people over 60 still have only a 2% to 4% likelihood of developing the disease. Having a family member with PD slightly increases your risk. Men are one-and-a-half times more likely to have Parkinson's than women.



What Causes PD?

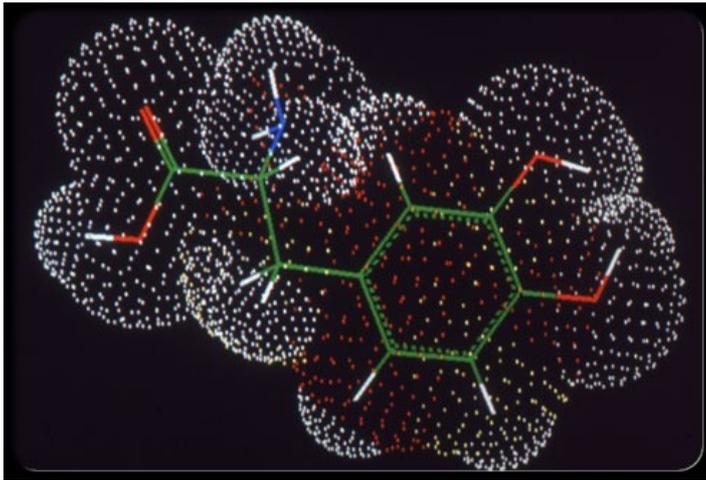
A small area in the brain stem called the substantia nigra controls movement. In Parkinson's disease, cells in the substantia nigra stop producing dopamine, a chemical that helps nerve cells communicate. As these dopamine-producing cells die, the brain does not receive the necessary messages about how and when to move.

Stages of PD



Parkinson's is progressive, which means changes continue inside the brain over time. Doctors measure the stages of PD by a careful assessment your symptoms. The Hoehn and Yahr Scale is one common tool that looks at the severity of symptoms. The Unified Parkinson Disease Rating Scale evaluates mental clarity and function, behavior and mood, activities of daily living, and motor functions. Staging can help determine the best treatment.

Treatment: Levodopa



Levodopa (L-dopa) is an amino acid that the brain converts into dopamine. It's been used since the 1970s and is still the most effective Parkinson's medication. It reduces bradykinesia and rigidity, helping people to move more easily. Eventually, levodopa may wear off quickly. It should not be taken with a high-protein diet. Common side effects are nausea, vomiting, and drowsiness. Hallucinations, paranoia and involuntary movements (dyskinesias) may occur with long-term use.

Treatment: Dopamine Agonists



Drugs that mimic dopamine, called dopamine agonists, may be used to delay the movement-related symptoms of Parkinson's. They include Apokyn, Mirapex, Parlodel, and Requip. Apokyn, an injectable, may be used when the effects of levodopa begin to wear off. Side effects may include nausea and vomiting, drowsiness, fluid retention, and psychosis.

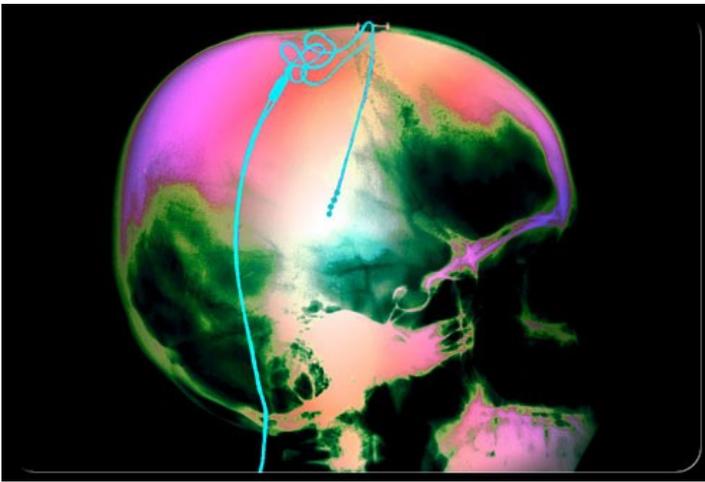
Treatment: Other Medications



Comtan and Tasmar can improve the effectiveness of levodopa, with a possible side effect of diarrhea. Patients on Tasmar need regular monitoring of their liver function. Stalevo combines levodopa, carbidopa, and entacapone (the drug in Comtan). Azilect, Eldepryl, and Zelapar, which inhibit the breakdown of dopamine, may be prescribed early in the disease or used along with levodopa. They should not be used with certain antidepressants.

Surgery: Deep Brain Stimulation

Electrodes can be implanted into one of three areas of the brain -- the globus pallidus, the thalamus, or the subthalamic nucleus -- on one or both sides. A pulse generator goes in the chest near the collarbone. Electric pulses stimulate the brain to help reduce a patient's rigidity, tremors, and bradykinesia. It doesn't stop the progression of PD or affect other symptoms. Not everyone is a good candidate for this surgery.



Surgery: Pallidotomy and Thalamotomy

These surgical procedures use radio-frequency energy to permanently destroy a pea-sized area in the globus pallidus or the thalamus. These areas are associated with tremor, rigidity, and bradykinesia, so movement generally improves after surgery with less reliance on levodopa. However, because these surgeries are irreversible, they have become less common than deep brain stimulation.



A Better Diet for Parkinson's

It's important to have a well-balanced diet, with calcium and vitamin D for bone strength. Although protein can interfere with levodopa, you can avoid the problem by taking the medicine about a half-hour before mealtime. If you have nausea, take your medicine with crackers or ginger ale. Eating a high-fiber diet with lots of fluids can prevent constipation.



Can Symptoms Be Prevented?

Researchers are investigating supplements or other substances that may protect neurons from the damage of Parkinson's, but it is too soon to say whether they work. A 2002 study found that 1,200 mg per day of coenzyme Q10 slowed the progression of early Parkinson's. **Coffee drinkers and smokers may have a lower risk of developing Parkinson's** (although smoking obviously has other serious health consequences).



The Role of Environmental Toxins

Studies indicate that exposure to pesticides and herbicides may increase the risk of Parkinson's. Some people may be genetically more susceptible to environmental exposures. Research in this important area is continuing.



Parkinson's and Exercise

Exercise may actually have a protective effect by enabling the brain to use dopamine more effectively. It also helps improve motor coordination, balance, gait, and tremor. For the best effect, you should exercise consistently and as intensely as you can, preferably three to four times a week for an hour. Working out on a treadmill or biking have been shown to have a benefit. Tai chi and yoga may help with balance and flexibility.



Living With PD

Parkinson's affects many aspects of daily life, but with medications and accommodations, you can remain active. Medication can help you cope with mood disorders, such as depression and anxiety. An occupational therapist can provide a home safety evaluation. You may need to remove fall hazards, such as throw rugs or cords, and add grab bars in the bathroom. A speech therapist can help with swallowing and speech problems.



A Note for Caregivers

Caring for a person with Parkinson's can be challenging. As motor skills decline, simple tasks may become more difficult, but the Parkinson's patient may struggle to maintain independence. Both the medications and the disease itself can lead to mood changes. Support groups and online forums are available from the American Parkinson Disease Association and the National Parkinson Foundation.



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