PARKINSON'S DISEASE

A progressive neurological condition brought on by the loss of brain cells that produce dopamine.

Symptoms

Tremors · **Slowed movement** · Loss of voluntary movement · **Rigidity**
Stilted gait · **Loss of sense of smell** · Gastrointestinal problems
Cognitive impairment · Difficulty sleeping · **Fatigue**

What causes Parkinson's?

Familial inheritance 10%
Unknown cause 90%

There is no confirmed cause for 90% of cases, but scientists believe it may be a combination of genetic, epigenetic and environmental factors. These triggers create a cascade effect, leading to the death of dopamine-producing cells.

Parkinson's disease is named for Dr. James Parkinson, an English surgeon who first described the "shaking palsy" in 1817.

7-10 Million
people around the world have Parkinson's.

Aging
is the biggest risk factor for Parkinson's. Most people are diagnosed after age 60.

50%
or more of dopamine-producing cells may be damaged or die before hallmark symptoms appear.

10-20%
of people with the disease are diagnosed before age 50, in the midst of their working years.

Diagnosis

There is no definitive method to diagnose Parkinson's disease. Developing one could allow for earlier diagnosis and, potentially, intervention once new treatments are available.

Biomarkers

are biological characteristics, such as a protein, hormone or genetic signature, that are indicative of a normal process or a disease. Finding biomarkers for Parkinson's will help scientists and physicians study, understand and better diagnose the disease.

Treatment

There are no therapies that slow or stop disease progression or repair damage, but scientists are hard at work looking for such treatments. Current options only manage symptoms:

Levodopa
replaces lost dopamine in the brain. Over time, it may become less effective and cause side effects.

Surgery
During deep brain stimulation surgery, doctors implant a tiny generator in the chest and electrodes in the brain. Small doses of electricity help some people with Parkinson's mitigate symptoms.

The future of treatment

How do we get there?

Impeding progression
Slowing or stopping Parkinson's, especially before symptoms become apparent, is crucial to improving quality of life and giving people with the disease more symptom-free years.

Repairing the brain
Scientists are investigating ways to fix the damage caused by Parkinson's to restore lost brain function.

Research
A better understanding of what's occurring on a molecular level in Parkinson's helps scientists develop potential new ways to diagnose and treat the disease.

Drug repurposing
Drugs developed and approved to treat other diseases may also be effective in Parkinson's. This approach saves time and money while getting potential therapies into clinical trials faster.

Clinical trials
Before becoming an approved therapy, all new drugs must first be tested for safety and effectiveness in humans through rigorous clinical trials.

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