

WHAT IS PARKINSON'S DISEASE?

What is Parkinson's disease (PD)?

Parkinson's Disease is a **neurodegenerative** disorder that especially (but not exclusively) affects the dopamine-producing cells (neurons) in the brain. Neurodegeneration is the slow loss of groups of neurons in the brain or spinal cord over time, which leads to neurological symptoms and disability. There are wide-ranging symptoms. Neurodegeneration produces problems with movement, mood, thinking and memory, sleep, and even control of blood pressure, and bowel and bladder function.

All neurodegenerative diseases including Parkinson's disease are classified as "proteinopathies." In these diseases, the cells in the nervous system die because of the accumulation of proteins that fold abnormally and become toxic. **Alpha-synuclein** is a protein in the brain that is associated with the development of Parkinson's, and is the main component of **lewy bodies**, which can be seen under the microscope of brain tissue from individuals with Parkinson's disease (and also some other conditions). Active research is underway to try to understand the roles these proteins play in neurodegenerative diseases and to test new therapies that target these proteins.

What are the signs and symptoms of PD?

People with PD may experience:

- Tremor (shaking)
- Slowness of movement
- Rigidity (stiffness)
- Difficulty with balance

Other signs of PD may include:

- Small, cramped handwriting
- Reduced facial expression
- Shuffling walk
- Soft or mumbling speech
- Depression and anxiety
- Constipation and bladder changes
- Sleep problems

What causes PD?

There are many known risk factors for Parkinson's disease, both environmental and genetic. None of the risk factors are present in all people with PD and the contributing factors vary from person to person.

Who gets PD?

PD affects both men and women in almost equal numbers. It shows no social, ethnic, economic or geographic boundaries. Over 100,000 Canadians are living with PD today and approximately 6,600 new cases are diagnosed each year in Canada. While the condition usually develops after the age of 65, 10 percent of those diagnosed are under age 50. Approximately four million people worldwide are living with PD.

How is PD diagnosed?

PD is a “clinical diagnosis.” This means that there is no X-ray or blood test that can confirm PD. A physician arrives at the diagnosis only after a thorough examination. The process of making a PD diagnosis can be difficult. Blood tests and brain scans known as magnetic resonance imaging (MRI) may be performed to rule out other conditions that have similar symptoms.

What is the treatment for PD?

PD is a treatable neurodegenerative disorder. There are a number of effective medicines that help to ease the symptoms of PD. Some of the most obvious symptoms are caused by a lack of dopamine. The medicines most commonly used will attempt to either replace or mimic dopamine, which improves the tremor, rigidity and slowness associated with PD.

Can surgery help PD?

Certain types of surgery can be effective in individuals with PD. These include Deep Brain Stimulation (DBS) and Duodopa infusion pumps. Like medications, these procedures also treat the symptoms of PD but are not a cure for PD. When considering surgery, you would see both a neurologist and brain surgeon who specialize in the treatment of PD.

Can I live well with PD?

Exercise, good nutrition and the support of your health care team can help you live well. Learning as much as possible about PD will also help. Support groups are an excellent source of information and practical advice.

Is there a cure for PD?

There is no cure for PD. In order to find the cure, researchers must determine what causes PD. Top scientists around the world are working to find the cause and a cure. The Edmond J. Safra Program in Parkinson’s Disease and Morton and Gloria Shulman Movement Disorders Clinic is proud to be part of this effort.