



FAQ

Parkinson's disease

Frequently asked questions about Parkinson's disease

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This document was reviewed by Professor Dr. Shen-Yang Lim

Frequently asked questions about Parkinson's disease



The information provided in this document is for educational purposes only and is not a substitute for medical care. If you have questions about your health, speak with a healthcare professional.

1. What is Parkinson's disease?¹

Parkinson's disease (PD) is a chronic and progressively worsening condition that causes degeneration of nerve cells in the brain, impacting both motor and non-motor systems. This results in motor symptoms such as tremors, stiffness, slowness of movement, and gait and balance difficulties; and non-motor symptoms such as cognitive impairment, blood pressure issues, constipation, and sleep disorders.

2. What are the causes of Parkinson's disease?²⁻⁴

PD is a neurodegenerative condition affecting the brain that primarily causes a loss of dopamine-producing brain cells in the substantia nigra. While the exact causes of PD are often multi-factorial, the aggregation of alpha-synuclein proteins in the brain is believed to play a major role, leading to the death of brain cells. However, the underlying reasons for these protein aggregations are complex and still under debate.

Besides ageing, which overall is the biggest risk factor for PD, researchers have found several environmental factors that are associated with PD development. These include pesticides and other environmental toxicants. Underlying genetic factors may also contribute substantially to PD risk. All these factors can act to disrupt normal cellular functions, such as mitochondrial function and autophagy (a process that helps clear out damaged parts of cells), contributing to the neurodegenerative process.

3. How common is Parkinson's disease?^{5,6}

As people live longer, the number of individuals with PD has grown and is projected to continue to grow substantially. In the past 25 years, the prevalence of PD has doubled. In 2019, global estimates showed that over 8.5 million people were living with PD – an accelerated increase that makes PD the world's fastest-growing neurological disorder.

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4. What are the symptoms and signs of Parkinson's disease?^{1,7}

PD is often recognised by its impact on movement (motor symptoms), but it also includes a range of other symptoms that can affect different non-motor aspects of daily life. The four key motor features are slowness of movement (bradykinesia), resistance to movement (muscular rigidity), shaking that occurs when muscles are relaxed (resting tremor), and challenges with balance (which might make the affected person more likely to fall, i.e., postural instability) and gait.

There are four major domains of non-motor symptoms. These include neuropsychiatric (including depression, anxiety, psychosis, impaired cognition, and dementia), sleep-related (such as dream-enacting behaviours or REM sleep behaviour disorder [RBD]), autonomic (including gastrointestinal, urinary, and sexual dysfunction; and orthostatic hypotension), and sensory (including pain and olfactory disturbance) features.

5. How is Parkinson's disease diagnosed?⁸⁻¹⁰

PD is diagnosed primarily through a careful evaluation of the medical history, a clinical examination, and through observing how well symptoms improve with specific treatments and their evolution over time (months and years). There is currently no single test that can definitively diagnose PD, such as a blood test or genetic test, although there have been recent advances that put this within reach. Instead, doctors often use these methods to rule out other conditions that might mimic PD.

6. What treatment options are available for Parkinson's disease?^{8,11-13}

The primary emphasis in the care of individuals with PD should focus on maximising quality of life and reducing disability. Conventional medical and surgical therapies are still limited to providing only partial (although usually quite substantial) relief.

Levodopa is often the first treatment used for managing PD. Levodopa is a medication that increases dopamine levels in the brain. In the early

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stages of the disease, levodopa and similar medications typically work well, and the improvement in symptoms can be quite noticeable. However, as the disease progresses, the effectiveness of these medications might decrease, and their duration of action might become shorter. This 'wearing-off' phenomenon results in symptoms reappearing before the next dose of medication and is often accompanied by involuntary movements (dyskinesias) during ON periods when the medication is working. In some cases, these motor response complications may require device-aided treatments such as deep brain stimulation (DBS) or dopamine infusions.

The incorporation of allied healthcare professionals, such as specialist nurses, physiotherapists, and speech therapists, is essential to provide the best quality of care for patients with PD, aiming to support the patient and caregivers, maintain as much independence as possible, and prevent complications that can arise from the disease and treatments.

7. What strategies can support management and quality of life in people living with Parkinson's disease?¹⁴

While PD progresses gradually, it can eventually impact everyday activities, such as socializing, working, managing a home, and even the ability to perform self-care activities. Adjusting to these changes can be challenging. Joining support groups can provide emotional support, valuable information, and practical advice to help manage PD. Some also find individual or family counselling beneficial in developing coping mechanisms.

Staying informed about PD can be crucial, as it helps alleviate fear of the unknown and encourages active participation in health management. Many individuals with PD continue to work, albeit with modifications to their schedules and work environments to better manage and accommodate the symptoms. Engaging with available resources and making necessary adjustments can significantly aid in maintaining quality of life despite the challenges of PD.

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Lexicon^{1,4,10,15-19}

Autophagy is a process that helps clear out damaged parts of cells.

Bradykinesia refers to slowness of movements. Patients with PD often report feeling weak, slow, or clumsy, and this may be misinterpreted by family members as a 'normal' part of aging.

Degeneration refers to the irreversible loss of cells, tissues or organs, causing loss of normal structure and/or function over time.

Mitochondria are parts of cells (organelles) that produce the energy that the cells need to function.

Motor systems refer to the parts of the nervous system that coordinate muscle movement and control.

Muscular rigidity refers to resistance to changes in position. This symptom may sometimes be perceived by patients as stiffness or cramps.

Non-motor systems involve functions that are not related to physical movements, such as sense of smell and mental processing.

Orthostatic hypotension refers to a significant decrease in blood pressure that occurs when transitioning from a lying or sitting position to standing up, and can sometimes result in fainting spells.

RBD (REM Sleep Behavior Disorder) refers to a condition in which the person physically acts out his/her dreams (e.g., shout, punch, or kick) while in the REM stage of sleep.

The olfactory area is a brain structure associated with the sense of smell.

Tremor refers to an unintentional shaking of the body or a part of it (such as the hands).

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