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## Definition

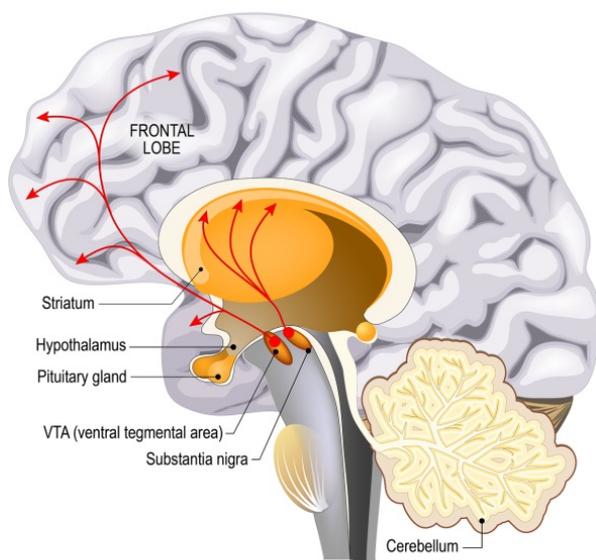
There are several conditions described as Parkinsonism, and idiopathic Parkinson's disease (also called Parkinson's or Parkinson's disease) is one of these conditions.

The National Institute for Health and Care Excellence (NICE) clinical knowledge summary (CKS) describes Parkinson's disease as 'a chronic, progressive neurodegenerative condition resulting from the loss of the dopamine-containing cells of the substantia nigra'.<sup>1</sup>

## Pathophysiology

The diagram below shows the location of the substantia nigra and the dopamine pathway in the brain.

### DOPAMINE PATHWAY



The following video from Parkinson's UK answers some of the most common questions about Parkinson's disease.

### ***Parkinson's UK – What is Parkinson's?***



Visit the Parkinson's UK ***Types of Parkinsonism*** page to find out about the other types of Parkinsonism.

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### **Prevalence and incidence**

As of 2018, the projected prevalence of Parkinson's disease in England in those aged 20 and over is 121,927 people, or around 1 in 460 people.

In terms of incidence, it has been reported that, in the UK in 2015, the lifetime risk of being diagnosed with Parkinson's disease was 2.7 percent, or around 1 in 37 people.

Parkinson's disease becomes more prevalent with increasing age; the aging population in the UK means that prevalence and incidence are expected to grow over the coming years.<sup>2</sup>

All of this data and further details can be found in Parkinson's UK's ***The incidence and prevalence of Parkinson's in the UK report***.

It is estimated that seven to ten million people worldwide have Parkinson's disease.<sup>3</sup> In the following Parkinson's UK video, people all over the world talk about their Parkinson's.

### ***Parkinson's UK – People over the world talk about their Parkinson's***



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### Signs and symptoms

As described by Parkinson's UK, there are multiple physical symptoms of Parkinson's disease, and these can be split into two classifications: motor and non-motor symptoms.

#### Motor symptoms (affecting movement):

- tremor
- bradykinesia (slow movement)
- rigidity
- falls and dizziness
- freezing (temporary inability to move)
- muscle cramps and dystonia.

#### Non-motor symptoms (do not affect movement):

- fatigue
- hypotension
- bladder and bowel problems
- restless legs
- skin and sweating problems
- sleep disturbance
- eating, swallowing and saliva control
- speech and communication issues
- eye problems
- foot care problems
- **pain**
- dental and oral health problems
- **anxiety**
- **depression**
- hallucinations and delusions
- memory and cognitive problems.

For details about each of these symptoms, visit the Parkinson's UK [Parkinson's symptoms](#) page.

In the following Parkinson's UK video, we meet Ron who experiences freezing and memory loss while working on his farm.

### *Parkinson's UK – Parkinson's freezing*



In the following Parkinson's UK video, Dr Robin Fackrell explains how we can manage non-motor symptoms.

### *Parkinson's UK – Managing hidden Parkinson's symptoms*



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## Prognosis and complications

### Prognosis

Parkinson's disease is progressive and symptoms worsen over time, although the rate of progression is variable.<sup>4</sup> Parkinson's UK outlines the following stages of Parkinson's disease:

- 'Early or diagnosis stage. The time when someone is first experiencing symptoms, being diagnosed and then coming to terms with this.
- Maintenance stage. When symptoms are controlled, perhaps by medication.
- Advanced stage. Often called the 'complex phase'.
- Palliative stage. Providing relief from the symptoms, stress and pain of the condition.'<sup>6</sup>

Being an older age at onset and the duration of the disease have been linked to a higher rate of complications. Those who have early-onset disease may experience a later onset of motor complications and cognitive impairment.

The mortality rate for people aged 70 to 89 with Parkinson's disease has been shown by some studies to be two to five times higher than those of the same age without the disease.<sup>4</sup> Advances in treatment have resulted in normal to near-normal life expectancy.<sup>5</sup>

Additionally, the risk of dementia is around two to six times higher in people with Parkinson's disease.<sup>4</sup>

### Complications

The NICE CKS *Parkinson's disease – Complications* offers an extensive list of the complications associated with Parkinson's disease.

Parkinson's UK offers an *Anticipatory care plan*, which outlines common complications that people with Parkinson's disease might experience in the community; why these complications may arise; and what actions professionals can take to address them to prevent an unnecessary hospital admission.

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### Diagnosis/detection

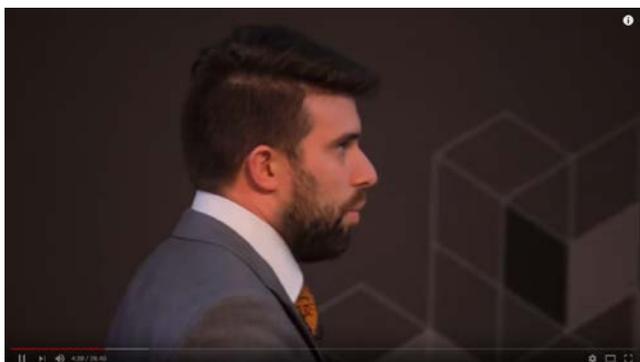
There is no definitive diagnostic test for Parkinson's disease. Diagnosis is based on clinical assessment.

The NICE guideline *Parkinson's disease in adults [NG71]* covers diagnosing and managing Parkinson's disease in people aged 18 and over.

The Parkinson's UK page *How is Parkinson's diagnosed?* offers information about diagnosis.

In the following Parkinson's UK video, Dr Alistair Noyce talks about the possibility of diagnosing Parkinson's disease at the earliest possible stage.

### Parkinson's UK – How early can Parkinson's be diagnosed?



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### Pharmacological treatment

The aim of treatment in Parkinson's disease is to control symptoms and maintain functional ability, but this should be carefully balanced against the side effects of pharmacological treatments. Pharmacological treatments for management of movement symptoms work by increasing the level of dopamine in the brain. Evidence for the management of non-motor symptoms in Parkinson's is increasing but falls behind the management of motor symptoms. Due to the variation in symptoms between people who suffer from Parkinson's disease, treatment plans need to be tailored to the individual. The treatment of Parkinson's disease is symptomatic. In addition, as it is a degenerative condition, constant review and treatment adjustments are needed as the disease progresses.

Pharmacological treatment options are covered in the NICE guidance ***Parkinson's disease in adults*** [NG71].

The *British National Formulary* also offers a ***Parkinson's disease*** treatment summary page with links to the individual treatment monographs.

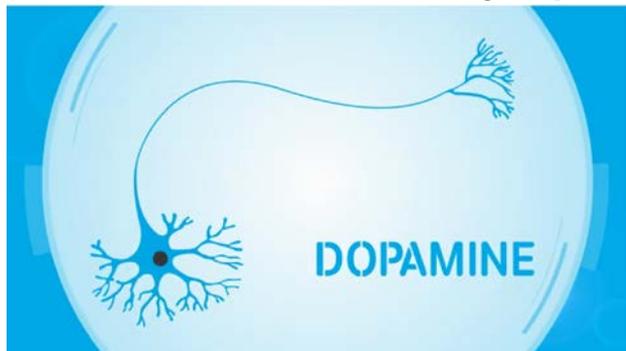
The Parkinson's UK ***Key information for hospital pharmacists*** leaflet supports the ***Get It On Time*** campaign and explains the importance of medicines optimisation for people with Parkinson's. It is aimed at those working in a hospital setting, but the important messages around managing Parkinson's disease medicines can be applied to all settings.

### ***Parkinson's UK – Medicine optimisation for patients with Parkinson's***



The following Parkinson's UK video is a simple explanation of the use of pharmacological treatments in Parkinson's disease. It may be helpful when thinking about how to explain the action of medicines used in Parkinson's disease.

### ***Parkinson's UK – Parkinson's drugs explained***



### **Swallowing difficulties**

As **dysphagia** is a complication of Parkinson's disease, it is important to consider the route and formulation of medicines.

The Specialist Pharmacy Service (SPS) ***Parkinson's disease medicines formulations for adults with swallowing difficulties*** and Parkinson's UK's '***Nil by mouth' medication dose calculators and guidelines*** both offer recommendations for managing medicines for those with Parkinson's disease and swallowing difficulties.

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### **Non-pharmacological treatment**

The Parkinson's UK ***Therapies*** page describes how a range of different teams can offer therapies that help people with Parkinson's disease to manage their symptoms.

Parkinson's UK suggests ***Deep brain stimulation*** as an alternative treatment option for those whose symptoms are not controlled by medicines.

In the following HAVAS LYNX video, we meet Matt, who talks about his experience of Parkinson's disease and his deep brain stimulation therapy.

### ***HAVAS LYNX – Living with Parkinson's, Matt Eagles***



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### Patient support

Parkinson's UK has a dedicated **Support for you** page with information on support services, general information and support for carers.

They also have a **Caring for your resident with Parkinson's booklet** for those working in care homes, containing information on how to care best for someone with Parkinson's.

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### Further resources

The NICE **Parkinson's disease, tremor and dystonia** page contains links to all NICE products on Parkinson's disease. This includes the NICE quality standard **Parkinson's disease [QS164]**, which covers the management of Parkinson's disease in adults.

Parkinson's disease can increase the risk of hospital admission. The *Parkinsonism & Related Disorders* article **Measuring the burden and mortality of hospitalisation in Parkinson's disease** examines the 'English Hospital Episode Statistics (HES) data on all admissions related to PD over a 4 year period to establish the size of the problem, the direct healthcare costs of admissions, the reasons why patients were admitted, and hospital mortality with the aim of recommending initiatives to reduce the burden of PD admissions.'<sup>7</sup>

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### External websites

CPPE is not responsible for the content of any non-CPPE websites mentioned on this page or for the accuracy of any information to be found there.

All web links were accessed on 3 February 2023.

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### References

1. National Institute for Health and Care Excellence. Clinical knowledge summary. ***Parkinson's disease – Definition.*** February 2018.
2. Parkinson's UK. ***The incidence and prevalence of Parkinson's in the UK.*** 2018.
3. Parkinson's Association of San Diego. ***Parkinson's disease – At a glance.*** [no date].
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5. NHS. ***Conditions – Parkinson's disease.*** April 2019.
6. Parkinson's UK. ***Advanced Parkinson's.*** [no date].
7. Low V et al. **Measuring the burden and mortality of hospitalisation in Parkinson's disease: A cross-sectional analysis of the English Hospital Episodes Statistics database 2009–2013.** *Parkinsonism and Related Disorders.* 2015; 21(5): 449–454.

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