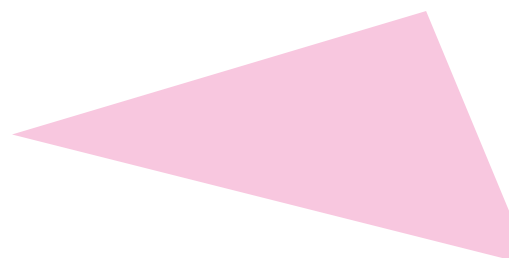




Therapy Guide

Parkinson's Disease

GKA.



The GKA Difference

Having worked in the area for over 25 years, the GKA team has a unique understanding of the condition and its ramifications – both on the sufferer and their carers/family. GKA has worked with high level Movement Disorder Specialists as well as many of the leading key opinion leaders (KOLs) active in the area.

GKA has a strong panel of respondents on its panel, including neurologists, geriatricians and specialist nurses. GKA also works alongside some of the largest patient organisations in the UK; given the struggles that many late-stage patients face, GKA is able to quickly adapt the healthcare market research to fit the needs of the patient while still meeting client requirements



The Lowdown

Parkinson's disease was first documented by Dr James Parkinson, who published 'An Essay on the Shaking Palsy' in 1817¹. Dr Parkinson was the first to describe what he termed "paralysis agitans". However it was Jean-Martin Charcot, a French Neurologist, who renamed the condition Parkinson's disease some sixty years later. Dr Parkinson was born on 11 April, which is now designated as World Parkinson's Day.

It is estimated that around 127,000 people in the UK have Parkinson's disease (PD), which equates to one in 500 people². It is mainly seen in people over the age of 50. Some 5 in 1,000 people in their 60s and about 40 in 1,000 people in their 80s have the condition³. It affects both men and women but is a little more common in men. Unless they are genetically predisposed, PD is not often seen in people under the age of 50. However, the fact that this disease does occur in younger people was famously highlighted (and widely publicised) by US actor Michael J Fox who was diagnosed when he was just 30 years old.

Some facts about Parkinson's Disease



127,000

In the UK have PD



No cure

As yet there is no cure for PD



>50 years old

Are the main age range affected



Men

affected more than women

Understanding Parkinson's Disease

PD is a progressive neurological condition. People with PD do not produce enough dopamine because the nerve cells in the part of their brain called the substantia nigra have died⁴. In a healthy person, dopamine serves as the messenger between the part of the brain and the nervous system that controls and co-ordinates body movements. Without dopamine, movements become slower and it can take patients longer to do specific tasks.

The symptoms of PD usually only start to develop when around 70-80 percent of the nerve cells in the substantia nigra have been lost⁵. The absolute cause for PD has not yet been established but current research points towards a combination of genetic changes and environmental factors playing a part. Several genetic mutations have been identified that may increase a person's risk but, to what extent, is still unclear. While rare, PD can run in families. Research is now being carried out looking at the link between pesticides, herbicides and pollutants and PD. However, current evidence remains inconclusive.

Symptoms and Diagnosis



The absolute cause for PD has not yet been established but current research points towards a combination of genetic changes and environmental factors playing a part. Several genetic mutations have been identified that may increase a person's risk but, to what extent, is still unclear. While rare, PD can run in families. Research is now being carried out looking at the link between pesticides, herbicides and pollutants and PD. However, current evidence remains inconclusive.

As there is no definitive test for the disease, diagnosis is based on symptoms, medical history and the results of certain physical exercises. The three main symptoms of PD, known collectively as parkinsonism, tend to affect movement and mobility⁶. These symptoms are:

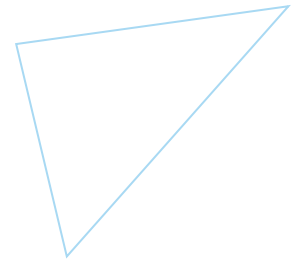
- **Involuntary tremors:** usually starting in the hand or arm, the uncontrollable shaking is more likely to occur when the limb is at rest.
- **Slowed movement:** known as bradykinesia, physical movements become impaired making everyday tasks, including walking, difficult.
- **Stiff and inflexible muscles:** rigid and tense muscles make it difficult to move around and can also affect facial expressions.



As well as these main indicators, a person with PD can also suffer from a number of other symptoms, including depression, erectile dysfunction, constipation, difficulty in swallowing, insomnia, balance, nerve pain and memory loss. It has also been found that people with PD have an increased risk of developing melanoma skin cancer ⁷.

The tremors tend to start in the fingers of one hand before progressing up the arm. They will sometimes then occur in the foot on the same side of the body before being seen in the other side of the body. Being a progressive disease, the symptoms of PD slowly worsen meaning it can become increasingly difficult to carry out everyday activities without assistance.

Parkinson's Disease treatment and stages



Parkinson's stages

The stages of PD are usually classified under one of two systems: the simple four-stage scale or the more robust Hoehn and Yahr scale. Each patient will progress through the various stages at a different rate.

Under the less complex system, the four main stages of PD are classified as:

- **Early/Diagnosis:** When symptoms first appear.
- **Maintenance:** When symptoms are mostly controlled, often by medication.
- **Advanced:** Also known as the complex phase, the symptoms become more apparent.
- **Palliative:** Where only relief from symptoms such as stress and pain can be provided.

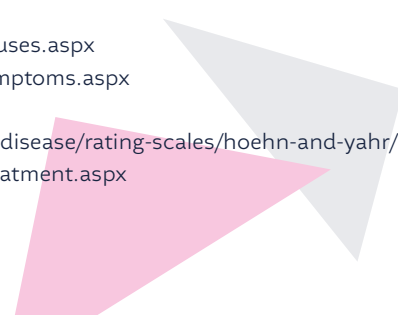
The Hoehn and Yahr scale, originally

published in 1967, has now been expanded to include two additional stages⁸

- **Stage 0:** No signs of disease.
- **Stage 1:** Symptoms on one side only (unilateral).
- **Stage 1.5:** Unilateral symptoms involving neck and spine.
- **Stage 2:** Symptoms on both sides (bilateral) but balance is not affected.
- **Stage 2.5:** Bilateral symptoms with impaired balance.
- **Stage 3:** Balance impairment yet physically independent.
- **Stage 4:** Severe disability but still able to stand/walk unaided.
- **Stage 5:** Wheelchair or bed-bound when unassisted.

References

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- 2 - <http://www.parkinsons.org.uk/content/what-parkinsons>
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- 5 - <http://www.nhs.uk/Conditions/Parkinsons-disease/Pages/Causes.aspx>
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Treating Parkinson's

While there is no cure for PD there are a number of treatments, which are used to reduce the main symptoms and to maintain quality of life as long as possible. In the early stages of the disease, treatments may not be needed as the symptoms are mild. As the disease progresses, however, the treatments include physiotherapy, occupational therapy, speech therapy, dietary advice, medication and, sometimes, surgery.

The three main drugs used to ameliorate the main symptoms of PD are: levodopa, dopamine agonists and monoamine oxidase-B inhibitors. Levodopa is absorbed by the nerve cells in the brain and converted

into dopamine. It offers rapid improvement but, as more nerve cells die, it becomes less effective. Dopamine agonists act as a substitute for dopamine and have a similar but milder effect compared to levodopa. Finally, monoamine oxidase-B inhibitors such as selegiline and rasagiline work by blocking the effects of the chemical responsible for destroying dopamine.

In the later stages of the disease, catechol-Omethyltransferase (COMT) inhibitors are prescribed to prevent levodopa from being broken down by an enzyme called COMT. However, it does have notable side effects⁹.





We are GKA.

If you have been asked to carry out a healthcare market research study surrounding Parkinson's Disease or one of the related conditions, why not give us a call today?

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