



Parkinson's disease

What is Parkinson's disease

Parkinson's disease is a chronic and progressively degenerative neurological disorder which affects the control of body movements.

Parkinson's disease occurs when dopamine-producing brain cells become impaired. Dopamine allows smooth, coordinated function of the body's muscles and movement. When approximately 70% of the dopamine-producing cells are damaged, the symptoms of Parkinson's disease appear.

Symptoms

The four primary symptoms of PD are:

- Tremor (shaking, trembling), usually commencing in one hand and travelling down that side before moving to the other; as the disease progresses the shaking may interfere with daily activities;
- Rigidity, or stiffness of the limbs and trunk;
- Bradykinesia, or slowness of movement, occurs when the brain can no longer control fine movements.

As these symptoms become more pronounced, patients may have difficulty walking, talking, or completing other simple tasks.

Early symptoms of PD are subtle and occur gradually. The speed of disease progression varies from one person to another.

Other symptoms may include:

- Depression and/or anxiety;
- Difficulty in swallowing, chewing, and speaking;
- Urinary problems or constipation;
- Problems with temperature regulation;
- Communication difficulties due to reduced non-verbal signals and facial expressions as well as impaired hand-writing;
- Sleep disruptions.

Prevalence

Parkinson's disease usually affects people over the age of 50, although up to 20% of people are diagnosed between the ages of 30 and 50 years. It is slightly more common in men than in women.

It is estimated that approximately 1-2 people per 1,000 have Parkinson's, with the incidence increasing to one in 100 over the age of 60.

Approximately 1,000 new cases are diagnosed in Victoria per annum, or an average of 19 each week.

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Causes

At present the cause of Parkinson's disease is unknown. Research worldwide is investigating possible causes including:

- Pesticides, toxins, chemicals;
- Genetic factors;
- Head trauma.

It is thought to be genetic in a very small percentage of cases.

Diagnosis and Prognosis

It is difficult to diagnose Parkinson's disease as there are no pathological tests or identifying markers to confirm a diagnosis. Diagnosis is based on a progressive history of deterioration in function and clinical impression.

Treatment

At present Parkinson's disease is incurable, however drug therapy can alleviate symptoms. The main form of treatment is medication, with the main objectives being to:

- increase the level of dopamine that reaches the brain;
- stimulate the parts of the brain where dopamine works;
- block the action of other chemicals that affect dopamine.

Drug therapy is complicated by side effects that often occur as a result of long-term use of anti-Parkinsonian medication (medication has a maximum benefit of 5 - 10 years). These side effects, including severe involuntary movement, can be as disabling as the condition itself.

There is no optimum drug treatment for Parkinson's disease. Each person must be prescribed a specific regimen to suit his or her particular needs, both in terms of timing and dose. As the disease progresses, the individual regimen needs to be reviewed and, when necessary, modified.

Brain surgery can be an option to treat Parkinson's symptoms in some cases. There are strict criteria and guidelines as to who can be a candidate for surgery.

The three commonly used forms of surgery are:

- Thalamotomy – a lesion (cut) is placed on part of the brain to alleviate some forms of tremor;
- Pallidotomy – a lesion is placed on a different part of the brain to alleviate dyskinesias (wriggling movements); and
- Deep brain stimulation – a deep brain stimulator is placed in the brain to control tremor.

Multidisciplinary assessment can be made of the person's abilities to identify potential difficulties and appropriate coping mechanisms before problems start. The multidisciplinary team may include physicians, dietitians, speech pathologists, chiropractors, counsellors, psychologists, specialist

nurses and volunteers.

Research Programs

Scientists looking for the cause of Parkinson's disease continue to search for possible environmental factors that may trigger the disorder, and study genetic factors to determine how defective genes could play a role.

Other scientists are working to develop new protective drugs that can delay, prevent, or reverse the disease. Finally, much work is being done to find improved methods of diagnosis.

Visit our website or request our latest Annual Report to find out more about Parkinson's disease research in the Oxidative Stress Laboratories.

Support Services

A number of support services exist to help people who experience Parkinson's disease and their families and friends. These include:

- Parkinson's Victoria
Tel: 1800 644 189
- Carers Victoria
Tel: 1800 242 636