

Parkinson's disease

What is Parkinson's disease?

Parkinson's disease is a chronic and progressively degenerative neurological disorder which affects movements, cognition and a number of other brain functions.

We do not know the cause of Parkinson's disease. We do know that there are disturbed cell mechanisms that results in specific proteins accumulating within brain cells. One of the particular group of brain cells affected are those that produce dopamine and related molecules. Amongst other roles, dopamine allows smooth, coordinated function of the body's muscles and movement. Movement problems of Parkinson's disease appear when approximately 70% are damaged.

Diagnosis

Parkinson's disease is diagnosed by a Doctor and is based on the presence of the following movement abnormalities:

- Bradykinesia, or slowness of movement. It is the most important problem of Parkinson's disease and the diagnosis can't be made without it being present;
- Rigidity, or stiffness of the limbs and trunk;
- Postural instability; the ability to maintain posture and balance may be affected. This may cause falls, which can eventually lead to a loss of independence;
- Tremor (shaking, trembling), when the hand is at rest. This is a very obvious problem but it is not always present and may restrict a person's ability to conduct some simple tasks;
- Dyskinesia or abnormal involuntary movement. While not strictly a feature of Parkinson's disease, it is a common and disabling feature associated with treatment.

Although these problems with movement are the most prominent and well known, there are a number of brain disturbances which cause disability and loss of independence. These may include:

- Dementia in the form of difficulty in judgement and planning or increased risk of Alzheimer's disease.
- Hallucinations and psychosis;
- Depression and/or anxiety;
- Sleep disruptions;
- Difficulty in swallowing, chewing, and speaking;
- Constipation and problems with bladder function;
- Episodes of low blood pressure;
- Disturbed temperature regulation.

Thirty people are diagnosed with Parkinson's every day.

In the first few years, movement problems dominate. Initially these can be easily treated with medications. In time complications and difficulties with treatment lead to the need for complex treatments (advanced therapies below). In time however, problems with thinking, falls and continence dominate.

Treatment

At present there are no treatments that slow the progression of this disease although there are a number of therapies that can alleviate the movement problems. Most of these are directed at restoring dopamine levels in the brain. However they can cause dyskinesia impulsive behaviour, anxiety and mood disturbance. This may lead to the prescription of advanced therapies that include Deep Brain Stimulation and continuous drug infusions.

Each person must be prescribed a specific regimen to suit their particular needs, both in terms of timing and dose. As the disease progresses, the individual regimen needs to be reviewed and, when necessary, modified.

The treatment of the non-movement components is limited. Mood and psychosis can be treated with the same medications used when these problems occur in another context. Involvement of dieticians, speech pathologists, chiropodists, counsellors, psychologists, specialist nurses can help manage the complex end stages.

Research

The Institute has a number of research projects in its laboratories underway, for example:

- Scientists looking for the cause of Parkinson's disease continue to search for possible factors that may trigger the disorder, and study genetic factors to determine how 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.

20% of people affected are of working age.

To find out more about what's happening at the Florey Institute of Neuroscience and Mental Health please feel free to contact us (details below).

Prevalence

Parkinson's disease is a global phenomenon and is estimated to affect approximately 6.3 million individuals worldwide. It may affect anyone at any time.

It is conservatively estimated that in 2011 over 64,000 Australians were living with Parkinson's disease. This equates to 283 per 100,000 in the total Australian population, or 857 per 100,000 among the population aged over 50. Based on these estimates, approximately one in every 350 people in Australia lives with this condition.

Support & information services

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

These include:

Parkinson's Australia
www.parkinsons.org.au

Parkinson's Victoria
Tel: 1800 644 189

Carers Australia
www.carersaustralia.com.au

Carers Victoria
Tel: 1800 242 636

Beyond Blue
1300 224 636
www.beyondblue.org

Note: Statistics were obtained from the 2011 Deloitte Access Economics report.