

Parkinson's disease

Parkinson's disease is a progressive, degenerative neurological condition that affects a person's control of their body movements. It is not contagious and not fatal. It is thought to be genetic in a very small percentage of cases.

Symptoms of Parkinson's disease are caused by the progressive degeneration of nerve cells in the middle area of the brain. This causes a lack of dopamine, a chemical messenger necessary for smooth, controlled movements. The symptoms appear when about 70 per cent of the dopamine-producing cells have stopped working normally.

Parkinson's disease cannot be cured, but the symptoms can be managed. With a combination of medication and multidisciplinary support, people with Parkinson's disease can live independent and productive lives.

Incidence of Parkinson's disease

It is estimated that approximately four people per 1,000 in Australia have Parkinson's disease, with the incidence increasing to one in 100 over the age of 60. In Australia, there are approximately 80,000 people living with Parkinson's, with one in five people being diagnosed before the age of 50. In Victoria, more than 2,225 people are newly diagnosed with Parkinson's every year.

Symptoms of Parkinson's disease

The type, number, severity and progression of Parkinson's disease symptoms vary greatly. Every person is affected differently. Some of the main symptoms are:

- Tremor (shaking)
- Rigidity (muscle stiffness)
- Bradykinesia (slowness of movement)
- Freezing
- Stooped posture
- Shuffling gait
- Micrographia (small handwriting)
- Lethargy.

Causes of Parkinson's disease

At present, we do not know the cause of Parkinson's disease. Researchers worldwide are investigating possible causes, including:

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

Management of Parkinson's disease

No two people with Parkinson's disease will have exactly the same symptoms or treatment. Your doctor or neurologist can help you decide which treatments to use. People can manage their Parkinson's disease symptoms through:

- Medication
- Neurosurgery
- Multidisciplinary therapy (physiotherapists, dietitians, counsellors).

Medications for people with Parkinson's disease

Symptoms of Parkinson's disease result from the progressive degeneration of nerve cells in the middle area of the person's brain. This causes a deficiency in the availability of dopamine, which is necessary for smooth and controlled movements.

Most Parkinson's medications fit into one of the following broad categories:

- Levodopa – dopamine replacement therapy
- Dopamine agonists – mimic the action of dopamine
- COMT inhibitors – used along with levodopa. This medication blocks an enzyme known as COMT to prevent levodopa breaking down in the intestine, allowing more of it to reach the brain
- Anticholinergics – block the effect of another brain chemical (a neurotransmitter called acetylcholine) to rebalance its levels with dopamine
- Amantadine – has anticholinergic properties and improves dopamine transmission
- MAO type B inhibitors – prevent the metabolism of dopamine within the brain.

There is no 'best' drug treatment for Parkinson's. Each person has different symptoms, disease progression, lifestyle and physical tolerances. All of these factors will affect the timing, type, dose and combinations of medication.

As the disease progresses, your doctor will need to review and alter your medication program. It is important to see a neurologist or a doctor who has experience in helping people with Parkinson's disease. Seeing a neurologist regularly will help you to make sure you are getting the best possible medication management. A neurologist will manage your doses and any necessary adjustments. This is important as side effects can be a problem for people on large doses.

It is very important to take your medication promptly at the recommended time every day, whether you are at home, at work, in hospital or in a nursing home. Taking medications late can severely hamper the movements of a person with Parkinson's.

Medication will help to alleviate symptoms, but will not alter the progression of the symptoms over time. Over time, you may experience problems with your medication wearing off and may need to try different medication regimes to get the most benefit.

Surgery for people with Parkinson's disease

Neurosurgery (brain surgery) is an option to treat Parkinson's symptoms, but it is not suitable for everyone. There are strict criteria and guidelines on who can be a candidate for surgery and this is something that only your doctor and you can decide.

The three most common forms of surgery for Parkinson's disease are:

- Thalamotomy – the surgeon makes a lesion (cut) on part of the brain to alleviate some forms of tremor
- Pallidotomy – the surgeon makes a lesion on a different part of the brain to alleviate dyskinesia (wriggling movements)
- Deep-brain stimulation – the surgeon places an electronic deep-brain stimulator in the brain to control specific symptoms. The electrical impulse creates a lesion, which blocks abnormal nerve signals and reduces the targeted symptom. This device is sometimes called a brain pacemaker.

Support for people with Parkinson's disease

Early access to a multidisciplinary support team is important. These teams may include doctors, physiotherapists, occupational therapists, speech therapists, dietitians, social workers and specialist nurses. Members of the team assess the person with Parkinson's and identify any potential difficulties.

There are a limited number of multidisciplinary teams in Victoria that specialise in Parkinson's management.

Exercise and Parkinson's disease

Evidence suggests that regular exercise can improve some symptoms of Parkinson's disease and improve your quality of life. You should consult closely with your doctor, physiotherapist or healthcare professional when devising your own exercise program.

Benefits of regular exercise with Parkinson's disease

Benefits of regular exercise for a person with Parkinson's disease can include:

- Better control over gross motor movements, such as walking
- Greater muscle strength and flexibility
- Increased cardiovascular fitness
- Improved coordination and balance
- Improved posture
- Reduced muscle cramping
- Greater confidence in performing daily activities
- Reduced stress levels
- Improved joint mobility.

General recommendations on exercising and Parkinson's disease

General recommendations on getting started include:

- Aim for at least 15 minutes of exercise every day.
- Include a thorough stretching program that targets each joint and muscle group.
- Spend a few minutes warming up and cooling down. This could include marching in place or stretching.
- Start with the easiest exercises first. Slowly introduce the more difficult exercises as your fitness increases.
- Try to perform each movement to the best of your ability.
- Stop and rest if you feel tired at any point, as over-exertion can make your symptoms worse.
- Stop doing any exercise that causes you pain.
- If you suffer from fatigue, try exercising earlier in the day.
- Try to make exercising fun. You could exercise with others or play your favourite music.

Safety while exercising and Parkinson's disease

If you are at risk of falling or freezing (sudden inability to move), general safety suggestions include:

- Do your exercises sitting down.
- Hold onto a chair when doing standing exercises.
- Don't do floor exercises if you can't get up by yourself.
- Only exercise when other people are at home who can help if necessary.
- Exercise with others.
- Ask for assistance from a family member or friend.

Sample exercise program for a person with Parkinson's disease

Be guided by your doctor, physiotherapist or healthcare professional when devising an exercise program. Aim to build up to 8–10 repetitions of each exercise. Ideally, the exercise program should target overall fitness and muscle flexibility, as well as specific body parts.

Exercises for overall fitness

Walking is excellent for overall fitness. Suggestions include:

- Choose flat, obstacle-free terrain.
- Gently stretch your leg muscles before you start walking.
- Taking larger strides may help you balance better.
- Focus on lifting each foot and placing it down heel first.
- Count each step – this can help to make a smoother, more rhythmic walking style.
- If walking isn't practical or possible for you, explore other options such as water aerobics or stationary cycling.
- Aim to perform aerobic exercise about three times per week.

Exercises for muscle flexibility

Stretching suggestions include:

- Hold an easy stretch and don't bounce.
- Maintain the stretch for 30 seconds.
- Repeat each stretch twice.
- If you feel any pain or discomfort, ease off.
- Incorporate gentle stretching into your warm-up and cool-down routines.

Exercises for your face

Pull faces at yourself in the mirror. Suggestions include:

- Surprise – lift your eyebrows and open your mouth.
- Displeasure – frown and purse your lips together.
- Disgust – crinkle your nose as if you're smelling something truly awful.
- Pleasure – make a big smile.

Exercises for your head and shoulders

Suggestions include:

- Turn your head slowly from left to right, aiming to glance over each shoulder.
- Lift your face to the ceiling, then drop your chin to your chest.
- Drop your left ear to your left shoulder. Straighten up. Drop your right ear to your right shoulder.
- Raise and lower your shoulders. Roll your shoulders forwards, then backwards.

Exercises for your arms and torso

Suggestions include:

- Clasp your hands and raise your arms overhead. Lower slowly.
- Put your hands behind your head and open out your elbows.
- To improve your posture, spend time lying flat on your back, preferably without a pillow. If this is too difficult, use the flattest pillow you can tolerate.

Exercises for your hands and wrists

Suggestions include:

- Touch the tip of each finger to your thumb.
- Rotate your hands so the palms face up, then down.
- Bend your hands at the wrists, up and down.
- Clench and unclench your fists.

Exercises for your legs

Suggestions include:

- Lie flat on your back, bend one knee, and hug it to your chest. Straighten the leg. Repeat with the other leg.
- Sit down, extend one leg and make a circle with your foot. Repeat on the other side.
- While sitting down, rock your feet from heel to toe, encouraging full ankle movement.
- While sitting down, straighten one leg at a time.
- While sitting down, slowly raise and lower your leg as if stamping your foot in slow motion. Repeat with the other leg.
- Perform stationary marching, lifting each leg as high as you can.
- Lie flat on your back with your knees bent. Lift your buttocks off the bed.

Exercises using light weights

Light weights can increase the intensity of your exercise program. You can buy weights that strap with Velcro tape to your wrists and ankles, or use household items such as soup tins or water-filled bottles. Choose a weight that you can push or lift (without pain or fatigue) for an easy 10 repetitions. Only increase the weight once you can comfortably perform three sets of 10 repetitions.

Help for carers of people with Parkinson's disease

Being a carer for a person who has Parkinson's disease can be difficult. A wide range of agencies can provide help and support, including counselling, carer education programs, information and support groups. These agencies for carers include Parkinson's Victoria and Carers Victoria.

Where to get help

- Your doctor
- Neurologist
- Physiotherapist
- Community services at your local council
- Parkinson's Victoria Tel. 1800 644 189 or (03) 9581 8700
- Independent Living Centres Australia Tel. (03) 9362 6111 or 1300 885 886, TTY (03) 9314 9001
- Carers Victoria Tel. 1800 242 636 or (03) 9396 9500, TTY (03) 9396 9587
- The Brain Foundation Tel. 1300 886 660 or (03) 9905 3950
- BrainLink Tel. 1800 677 579 or (03) 9845 2950
- Monash Health – Kingston Movement Disorders Clinic Tel. (03) 9265 1411
- Eastern Health – Wantirna Health Tel. (03) 9955 1229
- Peninsula Health – Rosebud Community Rehabilitation Centre Tel. (03) 5986 3344
- Elsternwick Private Hospital Tel. (03) 9519 9700
- St John of God Health Care – Frankston Rehabilitation Hospital Tel. (03) 9788 3333

Things to remember

- Parkinson's disease is a manageable condition.
- No two people with Parkinson's disease will experience the condition the same way, so management will also vary.
- A neurologist is the best person to see if you have Parkinson's disease – your doctor can arrange this.
- Good management is a combination of medication and multidisciplinary support.
- Regular exercise can improve some of the symptoms of Parkinson's disease.

This page has been produced in consultation with, and approved by:

Parkinson's Victoria

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