

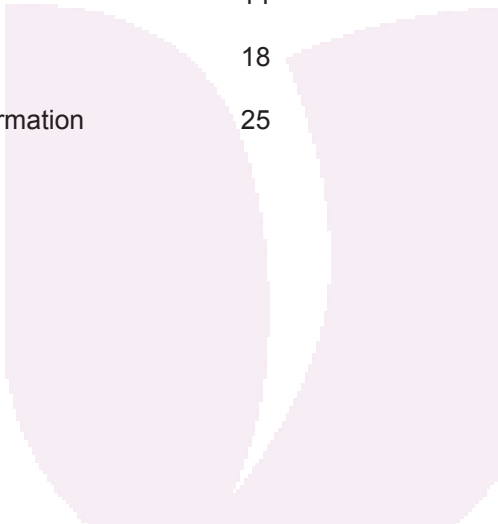
Parkinson's

Information for people living
with Parkinson's



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INTRODUCTION

Being told you have Parkinson's can be overwhelming. You may feel disbelief and denial, or fear and sadness. You may find it a relief that your doctor has found a reason for the problems you have been experiencing.

One of the best ways to deal with anxiety or fear is to be informed. In this brochure, we have provided information about Parkinson's. You will read about common symptoms, treatment options and lifestyle changes that can help you to better manage the condition. It is important to always discuss any questions about your condition or treatment with your doctor or other health care professionals.

It is important to remember that Parkinson's affects everyone differently. Do not assume that you will experience the same symptoms as someone else with the condition. Parkinson's progresses slowly and there are a number of medications available that effectively treat Parkinson's symptoms. A wide range of research into the causes of the condition also provides hope for the future.

WHAT IS PARKINSON'S?

Parkinson's is a slowly progressive condition, in which the symptoms get worse gradually over time. Parkinson's affects an area of the brain that controls movement and so is known as a 'movement disorder'.

Many of the symptoms of Parkinson's are related to movement and these usually respond to medical treatments.

Symptoms of Parkinson's

In the early stages of Parkinson's the symptoms may occur alone or in combination. A feature of Parkinson's is that it usually starts on one side on the body and after a period of several years will then start to involve the opposite side of the body. Common symptoms experienced with Parkinson's are:

- Tremor (shaking)
- Rigidity (a stiffness of the muscles)
- Bradykinesia (slowness of movement)

In addition, poor balance can occur often due to postural instability.

These symptoms are also associated with disturbance of gait (manner of walking), particularly as Parkinson's progresses.

Tremor

Tremor occurs in approximately 70% of people with the condition. It is classically a resting tremor as it affects a part of the body that is relaxed. A percentage of people also suffer from an action tremor, that is, the tremor occurs when the person attempts to do something.

The tremor seen in Parkinson's is usually worse when the limb is at rest, improves during voluntary movement and disappears during deep sleep. The tremor may be made worse by anxiety or stress, particularly when in a public place.

When a person with Parkinson's only has tremor it's very important to ensure that the diagnosis is correct, because there are other conditions that produce tremor, particularly familial or essential tremor, which can look very similar to Parkinson's, but which may require different treatment.

Rigidity

The stiffness, or rigidity of the muscles is a less visible symptom than tremor, but it is often more bothersome. The stiffness may also be accompanied to some degree by an aching type of pain in the limb affected, which is not relieved by analgesics such as aspirin, but which improves when the person is commenced on medication for their Parkinson's.

Bradykinesia (slowness of movement)

Probably the most disabling symptom of Parkinson's is a general slowness of voluntary movements. This is called bradykinesia and is often seen in association with the rigidity or stiffness of the muscles. Akinesia refers specifically to lack of movement, such as loss of arm swing, but is also used to mean slowing (bradykinesia) or reduction (hypokinesia) in the size of movements. Akinesia affects mainly the hands, or the trunk.

In the early stages of the condition, gait disturbance usually does not present a major problem once treatment for Parkinson's has begun, but as the years go by a person with Parkinson's may walk with short shuffling steps, in spite of treatment. Sometimes people will say that their feet tend to get stuck or frozen to the ground so that they have trouble taking the first step when starting to walk; or when walking, will suddenly come to an involuntary halt. They have similar problems when trying to turn around. Balance can become affected and fear of falling may severely restrict activity, but again this is usually after Parkinson's has been present for many years.

Another problem related to the slowness of movement is turning over and getting in and out of bed.

Postural instability

This may be experienced as poor balance, not being steady on standing, particularly when going from lying to sitting, or sitting to standing, or taking a backward step.

Other difficulties sometimes experienced

Speech changes: include a faster or slower rate of speech, a decrease in clarity/articulation of sounds and words, or a change to fluency so that it sounds like a stutter.

Voice changes: include decreased volume of speech, a change to the quality of the voice so that it may sound husky, or a change to the pitch of the voice so it sounds monotonous.

These changes can affect the overall ability a person has to communicate and consequently interactions and relationships with other people may be affected.

Swallowing changes: include difficulty chewing, increased time to swallow food, food sticking in the throat, coughing or choking on foods or fluids. Swallowing changes, if severe, can result in chest infections.

Memory and concentration: a common question asked by people with Parkinson's and their relatives is about dementia. Recent studies have shown that there is some deterioration in cognition with Parkinson's. However, people with Parkinson's should be reassured that if this develops it is usually a late manifestation of the condition and in some cases can be improved with medication.

If problems do develop with memory, concentration and dementia in the early stages of the condition, then there should be suspicions regarding the correct diagnosis. An increasingly recognised condition called dementia with Lewy bodies is closely related to Parkinson's and causes problems with cognitive functions, such as memory and confusion, at the same time as, or even preceding the motor (movement) symptoms.

Depression: depression is very common in people with Parkinson's. It is related to many factors and not simply difficulties with movement. It is very important that depression is treated in its own right, as it usually does not respond to treatment aimed at reversing the motor problems of Parkinson's.

Anxiety: about 40% of people living with Parkinson's experience anxiety with or without panic attacks. If you are living with Parkinson's you may experience dizziness, shortness of breath and sweating as part of a panic attack. Some medications may assist along with counselling and relaxation techniques.

Sleep disturbances: poor sleep is commonly associated with Parkinson's. Medications are available so discuss these problems with your doctor.

Bowel and bladder: constipation can be a problem in the early, but particularly in the latter stages of the condition, as well as disturbance of bladder function. This is often the case at night. There may be other causes for disturbed bladder function, particularly in elderly men, including prostate problems. These require investigation and should not be attributed to Parkinson's, unless all other causes for bladder instability have been excluded.

Restless legs: people with Parkinson's can develop restless leg syndrome, in which the legs feel a discomfort that is relieved by moving them, this particularly occurs at night. Sitting still for any length of time, especially in the evening, can be very difficult. A sense of restlessness often makes a person want to get up and walk about to try and relieve the discomfort. This symptom can sometimes be helped by appropriate medication.

Fatigue: tiredness or lethargy is a common symptom, however, if you have Parkinson's it is important to do some form of exercise (see Therapeutic Exercises section).

Please note

No two people will experience Parkinson's in the same way. While we have outlined the main or most common symptoms associated with Parkinson's, there may be other symptoms.

Remember that Parkinson's does NOT result from something you have done (or not done) in the past. It is NOT caused by overwork or over-indulgence, and it is very unusual for Parkinson's to be related to injury of any sort. Symptoms are NOT imaginary and difficulties can only be overcome by appropriate treatment and perseverance.

How COMMON IS PARKINSON'S?

It is estimated that there are between 70,000 and 120,000 people living with Parkinson's in Australia. Men develop Parkinson's a little more commonly than women although the reason for this is not yet known.

Parkinson's may occur at any adult age, but is most common in older people. 1 in 7 people with Parkinson's are under the age of 40, but the average age of diagnosis is around 65 years. The number of people with Parkinson's worldwide varies from between 1 in 1,000 to 2 in 1,000 with the figure increasing to 1 in 100 in people over the age of 60.

WHAT IS THE CAUSE?

Many of the movement problems in Parkinson's have been linked to a significant reduction in a chemical called dopamine. Dopamine is one of a group of chemicals used by brain cells (neurons) to communicate with each other. Dopamine is produced by a small group of neurons that control movement. In Parkinson's these neurons degenerate leading to loss of dopamine. The reason why this occurs is not known, but is the key to understanding the cause of the condition.

It is clear from our present knowledge that the actual condition itself, or the degeneration (death) of neurons that is occurring, commences long before the person actually develops symptoms.

It is often asked whether Parkinson's is inherited. About 1 person in 10 has a relative who is known to have, or had, the condition. It is currently believed that the reason why one person develops Parkinson's, while another person doesn't probably involves many different factors, some of which may be genetic and other environmental.

IS THERE A CURE?

At this time there is no known prevention or cure for Parkinson's. The aim of drug treatment for Parkinson's is to correct the dopamine imbalance in the brain.

Levodopa remains the gold standard medical treatment for maximum symptom control. Levodopa is the chemical precursor of dopamine. In addition to levodopa, there are other treatment options available – most focus on restoring the balance of dopamine and other neurotransmitters by several means, these include: dopamine agonists, COMT inhibition, MAO type B inhibition, anticholinergic therapy and amantadine (more information about these medicines is provided later).

Once commenced on medication you will most likely need to take it everyday for the rest of your life. Usually if the medication is stopped the symptoms will return.

With the right treatment and positive attitude people living with Parkinson's can maintain an active and rewarding lifestyle for many years after the diagnosis. Medication (mostly drugs to replace dopamine in the brain) is the key to managing the condition. Other treatments focus on various therapies – exercise, diet and self help programs.

WHAT WILL HAPPEN?

In the majority of people with Parkinson's, the symptoms progress slowly. The rate at which the condition progresses varies enormously from person to person, but in all cases it is measured in years – decades rather than months. However, even in the absence of treatment the symptoms can fluctuate from day to day.

Once established, the symptoms of Parkinson's do not go away spontaneously. The majority of people with Parkinson's will require some form of treatment within 12–18 months of diagnosis.

MEDICATIONS

Researchers have not yet found a way to prevent or cure Parkinson's, although the tremendous amount of ongoing research represents great hope for the future. Until a cure is discovered, however, symptoms can best be controlled through medication or surgery. Following is an overview of the treatments available that can control symptoms:

Levodopa – delivering dopamine to the brain

Levodopa is absorbed into the brain and converted to dopamine. There are two drugs containing levodopa in Australia; levodopa with carbidopa (Sinemet[®] or Kinson[®]) and levodopa with benserazide (Madopar[®]).

The carbidopa and benserazide in these tablets block an enzyme called dopa decarboxylase (DDC) that would otherwise breakdown the levodopa in the gut and bloodstream before it has a chance to enter the brain.

Levodopa therapy is the most effective way of reversing the symptoms of Parkinson's and therefore the majority of people will be commenced in the early stages on a small dose of levodopa. The dose might then be gradually adjusted according to their response.

Sometimes it is an advantage to be prescribed a controlled release (long acting) tablet at night, this can improve the ability to turn over and get out of bed during the night or first thing each morning.

Wearing off – the effects of levodopa diminish over time

Some people with Parkinson's will feel the effects of their medication 'wearing-off' within one to two years of taking levodopa. During 'wearing-off' you may find that your symptoms begin to come back before it is time to take your next dose of medication. Over time, many people will experience 'wearing-off'. Despite this, levodopa is still the gold standard for managing symptoms, but newer drugs are often used to extend its benefits.

You may start to notice that your medication is not working as well as it used to. If so, share these observations with your doctor, or other healthcare professional. They may be able to adjust your medication to provide better control of your symptoms.

In advanced or complex Parkinson's, levodopa (Duodopa[®]) can be delivered continuously, via a portable pump and permanent tube, directly into the intestine. After long-term levodopa treatment, dystonia (twisting postures) and other involuntary movements known as dyskinesias may begin to occur.

Dyskinesia may affect the face, tongue, upper body, arms and legs. The movements are jerky, characterised by sudden contractions followed by stretching and writhing motions.

Another problem that may develop during the course of Parkinson's and while taking levodopa are 'on/off' phenomena when the person will have sudden episodes of being unable to move. This usually occurs in about 50% of people with Parkinson's after about 5 years. This latter symptom may not always respond to medication.

COMT inhibitors

Entacapone (Comtan[®]) belongs to a class of drugs called COMT inhibitors. Like benserazide in Madopar[®] and carbidopa in Sinemet[®]/Kinson[®], these inhibitors also reduce the breakdown of levodopa before it reaches the brain, but by inhibiting a different enzyme. The addition of a COMT inhibitor provides a longer and smoother availability of levodopa to the brain. These agents are not effective on their own and must be taken at the same time as levodopa. It should be noted that it may take several weeks to see the full effects of adding a COMT inhibitor.

For some patients with pre-existing dyskinesias a reduction in levodopa dose may be necessary to reduce these unwanted effects.

The COMT inhibitors can be taken as separate tablets together with levodopa, however there is a treatment available, called Stalevo[®], that combines levodopa with both a DDC inhibitor and a COMT inhibitor in a single tablet.

Most patients will notice a discolouration of their urine, this is harmless and due to a component in the tablet.

Dopamine agonists – *mimicking the action of dopamine*

These drugs copy the action of natural dopamine. They do not replace it the way levodopa does. Each tablet has a longer duration of action than levodopa and therefore provides a more prolonged effect. The three oral drugs available in Australia are bromocriptine (Parlodel[®]/Kripton[®]), cabergoline (Cabaser[®]), and pramipexole (Sifrol[®]/Sifrol ER[®]). A transdermal patch option, rotigotine (Neupro[®]) is also registered in Australia.

These drugs can be added to levodopa therapy, thereby reducing the amount of levodopa that has to be taken and so reducing the fluctuations that develop while on levodopa therapy. These medicines can also be used as first-line treatments. However, these drugs do have side effects and, particularly in the elderly, can create confusion and hallucinations as well as postural hypotension – lowering of blood pressure when standing up. Your doctor will be able to advise you of other potential problems. These medications may cause obsessive compulsive behaviours such as; gambling, shopping or hypersexuality.

Finally, another dopamine agonist available in Australia is apomorphine (Movapo[®]/Apomine[®]). Apomorphine is very potent and is given by injection. It is very effective as a rescue drug, as it reliably works within 5–10 minutes and gives relief of symptoms for around an hour. Apomorphine can also be given by continuous daytime infusion via a pump that is inserted daily into the subcutaneous fat. Apomorphine should be considered in anyone experiencing troublesome fluctuations or Parkinsonian symptoms that cannot be controlled with oral medications.

MAO inhibitors – reduce the breakdown of dopamine in the brain

In the brain dopamine is broken down by an enzyme called monoamine oxidase B (MAO B). This discovery led to research into the area of MAO inhibitors and the search for a drug that would inhibit MAO B exclusively, thus allowing a lower dose of levodopa to be more effective.

Subsequently the drug selegeline (Eldepryl[®], Selgene[®]) was developed and has been used in the treatment of Parkinson's. It has an anti-Parkinson affect which is fairly mild and, when used in conjunction with levodopa, may improve the symptoms of Parkinson's. Rasagiline (Azilect[®]) is also a MAO B inhibitor and can be taken with or without levodopa therapy and is a once daily dose.

Anticholinergics – block acetylcholine in the brain

Anticholinergic drugs work by blocking a chemical in the brain called acetylcholine.

In a healthy brain there is normally a balance between dopamine and acetylcholine. In a brain affected by Parkinson's acetylcholine becomes more active due to the loss of dopamine. Anticholinergics can help maintain and balance dopamine and acetylcholine levels.

There are several anticholinergics available in Australia including benzhexol (Artane[®]), biperiden (Akineton[®]) and benztropine (Cogentin[®]). These drugs were the mainstay of treatment prior to the development of levodopa, but are now rarely used.

Others

Amantadine (Symmetrel[®]) is a drug that was originally used for its anti-Parkinsonian effects, but has in the last few years been reported to be effective in suppressing drug-induced dyskinesias in many patients.

Importance of diet with medications

The medications used for Parkinson's are usually taken with food initially as they can produce nausea and even vomiting. However, if you can tolerate levodopa without food, it is more rapidly and reliably absorbed and therefore more effective.

Future developments

There have been great advances in the medical treatment of Parkinson's over the last 10–15 years and it is very likely that this progress will continue. We can therefore expect to have more effective drugs to control it in the future.

SURGICAL TREATMENT

Before the discovery of levodopa in the 1960s, surgical treatment of different parts of the brain was the most effective treatment for Parkinson's. For many people, the symptoms of Parkinson's can now be controlled satisfactorily with medication. Some people still require surgery, or stimulation of the brain, to improve their symptoms of Parkinson's.

Recently, brain surgery has been proven to significantly improve Parkinsonian symptoms in patients who respond to medication but can't maintain their quality of life with medical therapy alone.

From animal models of Parkinson's, it has become clear that specific areas of the brain become overactive as a result of the condition. Suppressing that overactivity can reverse many of the symptoms. This can be achieved either by inserting a probe and destroying a small part of the brain (lesioning) or inserting a permanent stimulating wire into the brain attached to a pacemaker box, which blocks the overactivity by high frequency stimulation (deep brain stimulation, DBS).

Lesioning or DBS of specific parts of the brain can reverse different Parkinson's symptoms. The choice of procedure is complicated and suitability for surgery is best assessed by a movement disorders specialist with experience in this area.

Importantly, surgery does not cure Parkinson's and in most instances medication is not stopped but is often reduced. Parkinson's still progresses, even when surgery has been performed. Not all people with Parkinson's would be suitable for surgery, for example if there is any evidence of dementia, or if general medical condition is poor, surgical treatment would not be recommended.

WHO TREATS PARKINSON'S?

Once you have been diagnosed with Parkinson's, ideally you will have access to a team of healthcare professionals. Physicians, nurses, occupational therapists, physical therapists, dietitian, speech and language therapists and social workers are just a few of the people who can help provide care. You should think of yourself and your family (and caregiver) as key members of any team involved in your care.

You may not need the support of every member of the team right away and the healthcare professionals that you see on a regular basis may change due to adjustments in your needs.

When you visit any healthcare professional, it may help to prepare a list of questions and concerns. Also, it is a good idea to bring a notebook with you to write down information that you are given.

YOU CAN PLAY A ROLE

Learn about your medications, ask your neurologist or pharmacist about each one. It is important you understand:

- How much of your medication you should take
- Under what circumstances your medication should be taken (before, with, or after food)
- What other types of medication you should not combine with your current medication.

Write down any changes in the way you feel. Is your walking changing? Are you having trouble swallowing? Is your voice getting softer? Have you had any falls recently? Are you feeling depressed or down? Have you been feeling nervy or anxious, have you had a panic attack?

Note any changes in the effectiveness of your medications e.g. is your medication not lasting as long as it used to ('wearing off')?

Make the most of your visit to your neurologist:

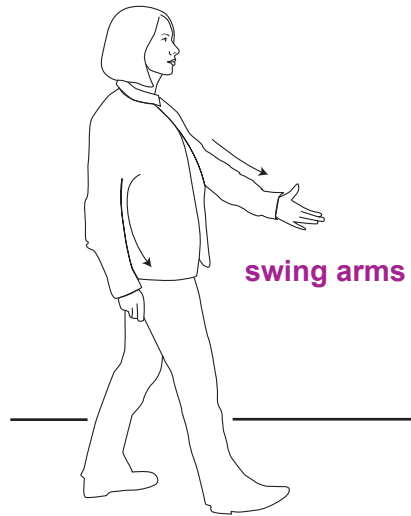
- What is the reason for your visit?
- Do you feel better since your last visit, if you feel different, what do you think is the reason?
- Is your present medication effective?
- Let your doctor know if you are still staying active and keeping up social activities.
- Ask your doctor to explain anything you do not understand.

ADVICE FOR DAILY LIVING

Walking

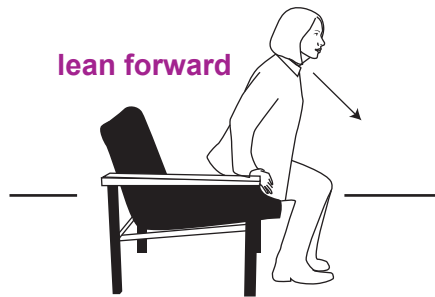
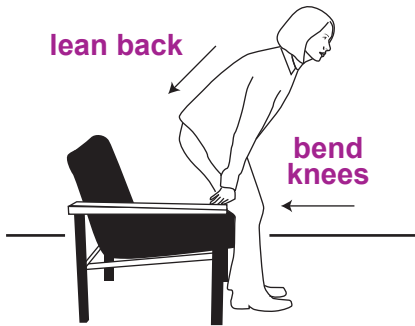
Walking, especially outdoors, is one of the most beneficial forms of exercise. Walking helps you maintain your mobility, independence and keeps you fit and feeling good.

- Check footwear first – low heels and good arch support are recommended
- Gentle stretches of calf and thigh muscles help to prepare your legs for walking
- The walking route should be safe and easy to complete, e.g. flat footpath or sports oval, avoid busy road crossing, rough ground, obstacles and crowds
- Concentrate on long strides
- Swing your arms
- Stand tall/look ahead
- Avoid doing other things like talking or carrying something while you are walking
- When you turn, turn in a wide arc of movement and keep using long steps
- Pay extra attention when walking over uneven surfaces as your balance may be affected.



If you experience freezing episodes, or if you walk with short shuffling steps, the following strategies can help:

- Think about each movement before you do it
- Trigger walking by stepping over a strip of white adhesive tape on the floor, or imagine stepping over a log
- Say out loud 'long steps, 1–2, 1–2' or listen to the regular beat of a metronome to trigger the step
- Place cue cards around the house with instructions written on them, for example 'go', 'start', or 'step'
- Rock gently from side to side to get started



Sitting and standing

To sit down, approach close to the chair:

- Turn your body so that the backs of your knees touch the chair behind you
- Lean forward, bend your knees
- Reach back for the arm support
- Lower your body slowly into the chair. Ensure your chairs and bed are correct height.

To get out of a chair:

- Wiggle your bottom forward
- Place feet back
- Lean forward – nose over toes
- Stand up

Getting dressed

It may be helpful to sit down on a stable chair to dress. Buttons, belts and laces can be troublesome, so look for alternatives.

Clothes should have ample openings for your arms, legs and head. You should try to work out the best way to get dressed by yourself because this will help to maintain independence. If you require assistance and it is available then ask.

Personal care

You may find it difficult to wash in the usual position of standing up and leaning forward. It may help you to sit on a chair in front of the washbasin. You could use an electric razor to avoid the risk of cutting yourself.

If you take a bath, be sure there is a non-slip rubber mat in the tub. This helps prevent slipping. Some people find it easier and more comfortable to sit on a special bath seat. Using a shower is a safer option than having a bath. If using a shower, then a shower chair and a shower hose may be helpful. Rails may be installed for extra safety. An occupational therapist can advise you regarding rails and equipment.

Speech/voice/swallowing

Speech, voice and swallowing difficulties may be considerably improved or managed with a course of speech therapy. Contact a local speech pathologist as soon as any changes to speech, voice and/or swallowing ability are noticed. Research has shown that getting treatment earlier achieves more beneficial results than when treatment is delayed.

Travelling

As a rule, travelling should not present any difficulties, but you should always consult your doctor. Planning your trip may help you identify and avoid any potential difficulties. Ensure you have medication when travelling overseas as availability may vary. Ensure your medication is accessible (in hand baggage). Read the fine print in travel insurance as some pre-existing conditions are not covered.

Employment

If it is impossible to continue in your present job, you should try to find out whether you could continue part time, or if there is some other form of employment more compatible with your state of health.

If work is not possible, don't become inactive. Try to find some occupation that meets your inclinations and qualifications and that calls for some physical activity. Your condition does not necessitate complete rest, on the contrary, you should lead as active a life as you can.

Driving

Talk to your doctor about your ability to continue to drive a motor car.

All states and territories require that a person with Parkinson's disclose their diagnosis to the relevant authority.

A driving assessment may be recommended. Advice on driving and Parkinson's can be provided by your neurologist or your general practitioner (GP). Written information can also be obtained through Austroads or your local motor registry. It is important to consider being assessed if you feel your Parkinson's symptoms are interfering with your driving ability. Most people with Parkinson's can continue to drive safely for many years. However, recent research suggests that patients' self-assessment of ability to drive is not always accurate. Annual review of your driving ability with your doctor and a carer/family member who regularly travels with you is recommended to decide whether more formal review is required. Contact your local RTA, or occupational therapist for assessment centres close to you.

Leisure and hobbies

People living with Parkinson's often talk about the importance of keeping active through hobbies and leisure pursuits. Many people living with Parkinson's continue their hobbies, sometimes with simple modifications. Many continue activities such as gardening, needlework, painting and drawing, writing poetry, playing or listening to music, being actively involved in a local club such as Rotary or Bowls, volunteering at their local school, to name a few. Speak to an occupational, or diversional therapist if you need help finding a way to maintain your hobby or interests.

General suggestions

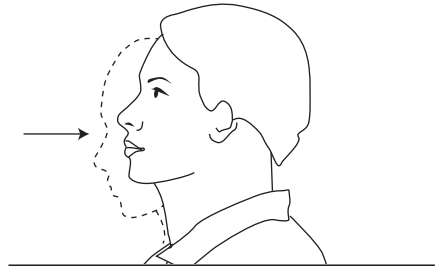
- Concentrate on what you are doing, and don't try to do two things at once.
- Take all the time you need to make each individual movement, and remember that what matters is accomplishing it, not doing it quickly. Learn to proceed step by step.
- Don't give up when you seem unable to do something, such as buttoning and unbuttoning your clothes, cutting your food, writing or washing. Have a break and then try again later.
- Adequate nourishment is important. If you find that you cannot digest a full meal without complaint, eat less at one time, but eat more often (up to six meals per day).

THERAPEUTIC EXERCISES

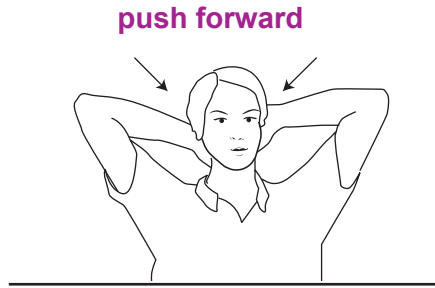
Regular exercise can help maintain flexibility, improve posture, keep muscles strong and joints supple. It can improve circulation to the heart and lungs. It can provide a sense of achievement and control over your condition and it can also enhance your mood.

The following pages outline some physical exercises that may be beneficial. It is important to establish a daily routine for these exercises and to stop them if you are tired. A physiotherapist is recommended to develop an individual exercise program.

Neck and shoulder exercises



- Shrug your shoulders up and down
- Rotate your shoulders up, back and down
- Repeat 10 times each
- Pull your head straight back keeping your jaw and eyes level
- Hold for 5 seconds
- Repeat 10 times

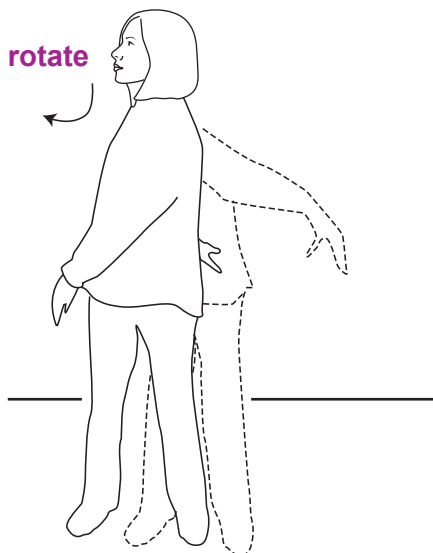


- First, take your right ear to your right shoulder, and then lightly grab the side of your head with your right hand while reaching behind your back with your left hand
- Feel a gentle stretch on the left side of your neck
- Hold for 10 seconds

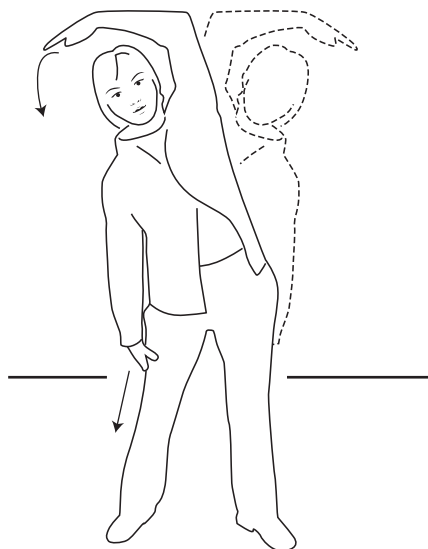
- Repeat on the other side
- Bend your head backwards
- Apply light pressure and push the back of your head forwards with your fingertips
- Hold for 10 seconds
- Repeat once

Trunk exercises

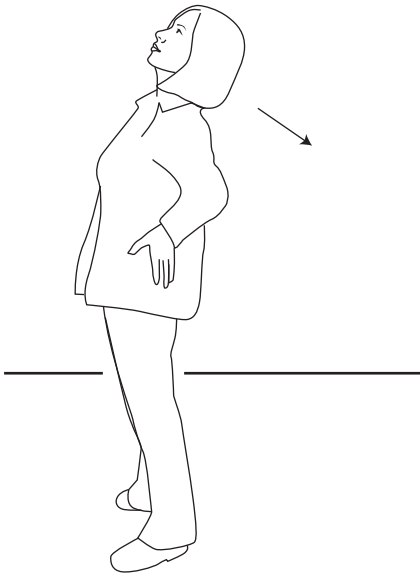
You may wish to hold a chair for support whilst doing all of these exercises.



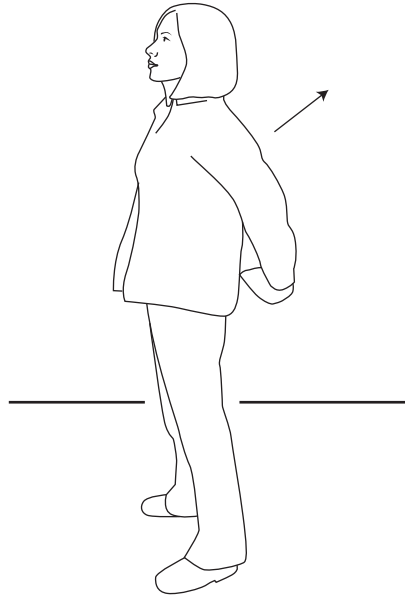
- Feet apart
- Rotate your head, shoulders and hips together (slowly) side to side
- Repeat 10 times



- Feet apart
- Stretch sideways
- Repeat 10 times



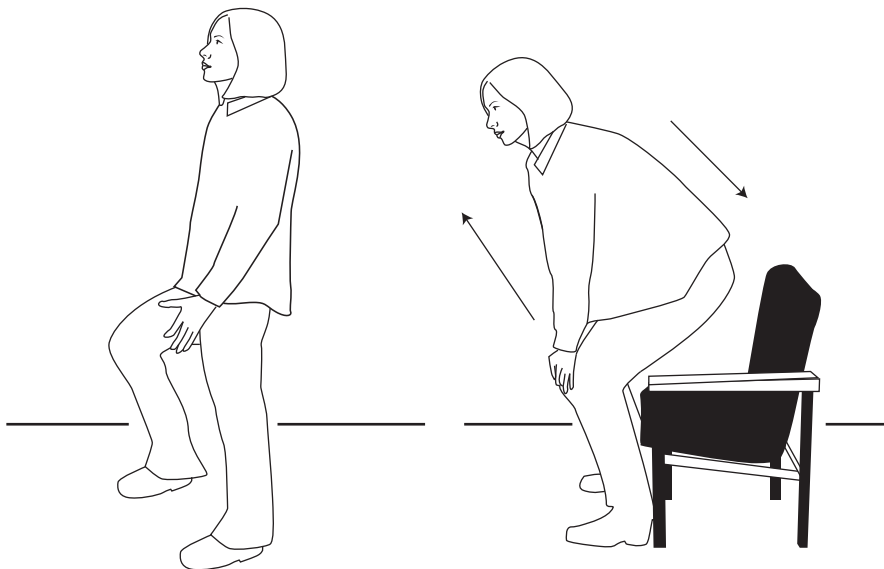
- Feet apart
- Rest hands on your lower back
- Bend backwards
- Hold for 10 seconds
- Repeat once



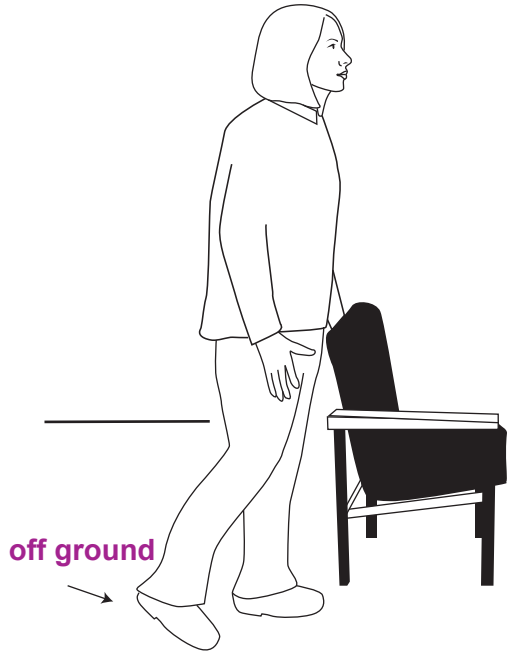
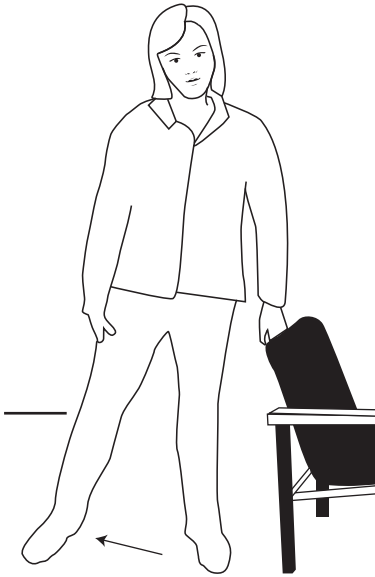
- Feet apart
- Lace fingers behind your back
- Squeeze your shoulder blades together
- Slowly raise your arms
- Hold for 10 seconds
- Repeat once

Leg exercises

You may wish to hold a chair for support whilst doing all these exercises.

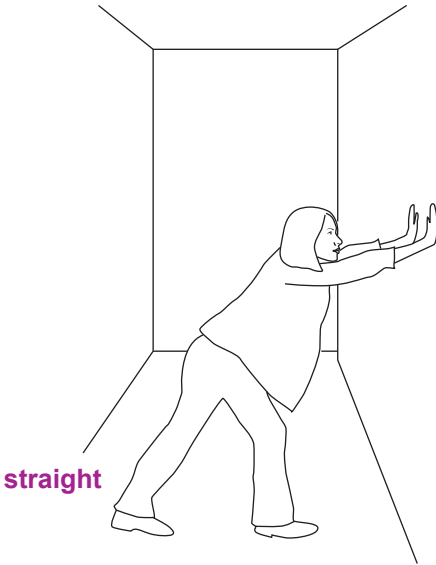


- March on the spot for 2 minutes
- Lift your knees as high as possible
- Swing your arms
- Hold a chair for support if necessary
- Following previous instructions for sitting and standing, however, push to stand using legs (if possible do not use arm rests)
- Repeat 10 times



- Slowly take a leg out to the side and return (lifting your foot off the ground)
- Repeat 10 times on each side

- Pull a leg straight back (lifting your foot off the ground) and return slowly. Squeeze buttocks
- Repeat 10 times each side



- Stretch your calf keeping your heel on the floor. Keep your back leg straight and your front knee bent
- Hold for 10 seconds
- Repeat once on each side

- Place your foot on a stool
- Lean forward reaching down to your shin until a stretch is felt in the back of your thigh (hamstring)
- Hold for 10 seconds
- Repeat once on each side

Support, assistance and further information

Parkinson's organisations

In every state or territory you will find a Parkinson's organisation. Each organisation provides support, information and education. Support groups help people living with Parkinson's maintain control of their lives through activities, sharing experiences and contact with other people living with Parkinson's and their carers.

You can contact your state organisation by calling 1800 644 189 or visit:

- Parkinson's ACT** - www.parkinsonsact.org.au
- Parkinson's NSW** - www.parkinsonsnsw.org.au
- Parkinson's NT** - www.parkinsonswa.org.au
- Parkinson's QLD** - www.parkinsons-qld.org.au
- Parkinson's SA** - www.parkinsonssa.org.au
- Parkinson's TAS** - www.parkinsonstasmania.org.au
- Parkinson's VIC** - www.parkinsonsvic.org.au
- Parkinson's WA** - www.parkinsonswa.org.au
- Parkinson's Australia** - www.parkinsons.org.au

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