DRUG TREATMENTS FOR PARKINSON’S
While there is no cure yet for Parkinson’s, there are many different drugs that can help manage the symptoms. This booklet is for people with Parkinson’s and their families. It provides information about the drugs most commonly used to help manage the condition.

The booklet starts with some practical points about drugs used for treating Parkinson’s, then it moves on to give further details about each individual drug, including:

- its name
- how it works
- how it’s used
- advantages
- disadvantages

There is a section that explains more about clinical trials to develop new drug treatments, and a glossary to explain the meaning of unfamiliar medical words or terms.

Living with Parkinson’s is not always easy, but there are many people who can help you with practical support, information, advice or just a listening ear when you need it. At the end of this booklet you’ll find a section explaining the many ways that Parkinson’s UK can help.

We cannot advise on ideal combinations or provide details about the strengths or duration of action for each medication. Each person with Parkinson’s responds differently to drugs used in Parkinson’s and you should discuss these issues with your specialist or Parkinson’s nurse.

We produce a range of free information resources. See page 53 for a selection that may be useful to you and details of how to order them.
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Disclaimer

We’ve made every effort to make sure the information in this booklet is correct at the time of printing. Parkinson’s UK, however, cannot take responsibility for the correctness, sufficiency or completeness of this information or any recommendation.

You should speak to a medical professional about your individual healthcare needs. Your specialist or Parkinson’s nurse (if you have one) will be able to give advice or information that’s relevant to your particular circumstances. You can also speak to a pharmacist for more information about your medication.

Please remember that information about drugs can change. This booklet does not list all the uses and side effects of these drugs. For full details, please see the drug information leaflet that comes with your medication.

“
My Parkinson’s nurse has been marvellous – very knowledgeable, encouraging and helpful over medication. He has seen my condition progress and has been able to make appropriate suggestions.”

Caroline, diagnosed in 2003
Researchers are still looking for ways to cure Parkinson’s. To date, no treatment can offer a cure. But there are many drugs that can help manage or reduce symptoms such as tremor, or problems with co-ordination, balance and movement. These drugs are improving all the time, too.

**Individual treatment**

Every person with Parkinson’s has a different experience of the condition. Some symptoms may trouble you more, or less, than they do another person. Your specialist or Parkinson’s nurse will aim to find the treatment that is best for you as an individual.

Finding the best medicine, dose and timing may take some time and will need some changes along the way. Because the symptoms of Parkinson’s change over time, your medication will sometimes have to change, too.

“No two people with Parkinson’s have the same symptoms, so at first, it’s a case of trial and error. But once the right combination is found for your symptoms, the drug treatment for Parkinson’s is very good.”

*Steve, diagnosed in 1999*

While you may be able to talk to your GP about any side effects of medication you experience, or speak to them about issues that aren’t related to the condition, ideally, you should discuss Parkinson’s medication with your specialist, Parkinson’s nurse or pharmacist. It is important not to make any changes to your own medication without talking to your specialist or Parkinson’s nurse first.
“My mum’s GP was fabulous and wouldn’t have done anything to change her medication. Instead he would leave this entirely to her neurology team and then consult them.”

Julie, whose mum has Parkinson’s

**Getting it right**

When you are diagnosed you will have a consultation with your specialist to discuss whether you need to start treatment immediately. For a lot of people who have just been diagnosed, Parkinson’s drugs can be a great help. Carefully introducing the best drug for treating Parkinson’s can often improve the symptoms.

However, if your symptoms are mild, you might decide, together with your specialist, to postpone drug treatment until your symptoms increase. This is because Parkinson’s drugs can become less effective over time, or you might start to develop side effects after taking them for a while.
For these reasons, drug treatment for Parkinson’s is often started at low doses and increased gradually, stepping up the doses, the frequency, or adding new drugs, until symptom control is achieved. Anyone with Parkinson’s can aim for a healthier lifestyle by focusing on exercise, relaxation and diet, reducing stress and alcohol intake, and stopping smoking.

No booklet is a substitute for advice from your specialist or Parkinson’s nurse. Choosing the right medication is always a decision that you make with them. With this in mind, you can show this booklet to your specialist or Parkinson’s nurse and ask them questions about the information here. You may find it a useful starting point when you are talking about next steps in your treatment.

**How the drugs work**

The symptoms of Parkinson’s appear when levels of a chemical messenger in your brain, called dopamine, become too low. This is because many of the brain cells that produce the dopamine have died or are dying. When dopamine levels in your brain get low, you will find that your movement slows down and it will take you longer to do things. You may lack co-ordination or your hands or other parts of your body may shake. This is known as tremor and can make everyday activities difficult or frustrating.

You may find it difficult to move freely, and your muscles might become stiff. Some people with Parkinson’s freeze suddenly and this leaves them unable to move. This is a Parkinson’s symptom, but can also be a sign that medication is not working as effectively as before. This is sometimes called ‘wearing off’, or you may suddenly go ‘off’.

“I realise that the time may come when I have to start taking Parkinson’s medication, but this will be my decision, after taking advice from my neurologist.”

Adrian, diagnosed in 2007
Most drug treatments for Parkinson’s aim to ease these symptoms by:

- increasing the amount of dopamine in the brain, or
- stimulating the parts of the brain where dopamine works, or
- blocking the action of other factors (enzymes) that break down dopamine

Managing other (non-motor) symptoms

People with Parkinson’s can also have non-motor symptoms – symptoms that aren’t connected to movement problems. These include anxiety and depression, pain and constipation. Parkinson’s drugs are not used to treat the symptoms of Parkinson’s that are not related to movement.

These types of non-motor symptoms will be treated separately depending on the problems you experience. Constipation and depression, for example, may be treated with drugs designed to treat those symptoms.

There are too many different treatment options to include all of the drugs for other symptoms in this booklet. Also, people with Parkinson’s will often receive the same or similar treatment for other symptoms, such as sleeping problems, as people without Parkinson’s would (as long as any medication given is compatible with their Parkinson’s medication and other factors of the condition).

Some people may experience side effects of medication. These are explained throughout the booklet. It is important to speak to your specialist or Parkinson’s nurse about anything you experience.

“My specialist is very easy to talk to and allows me to take an active part in my treatment. He makes sure that I have the relevant information to decide on medication – I am in the driving seat.”

Josie, diagnosed in 2007
We have a range of free information sheets about particular symptoms and side effects. See inside back cover for details of how to order these. Always tell your specialist or Parkinson’s nurse about any other symptoms you have. This can be easily done by giving them a copy of our non-motor questionnaire that you’ve filled in. The questionnaire is available to download from our website at parkinsons.org.uk/publications

“For my mother, it has been a difficult balancing act between reducing medication to lessen the incidence of night terrors and taking sufficient medication to manage her Parkinson’s symptoms.”

Chris, whose mother has Parkinson’s
Whatever treatment you and your specialist or Parkinson’s nurse decide on, you may find it helpful to bear these tips in mind.

**DO:**
- Keep a record of all the medications you are taking for Parkinson’s and for other conditions.

- Ask questions or have your specialist, Parkinson’s nurse or pharmacist explain something again if you don’t understand. They won’t mind! You can also ask for written information.

- Keep a brief diary or chart when your specialist or Parkinson’s nurse starts you on a new drug, changes your drugs or adjusts the dose or frequency. Record the dose and time you took the drug and what happened to your symptoms. This information can help the healthcare professional who is adjusting your medication.

- Keep your medication out of the reach of children or other people who might be confused and take it by mistake. Store it as you’re advised on the packet.

- Tell your specialist or Parkinson’s nurse if you think you could be pregnant.

- Take your Parkinson’s drugs as recommended by your specialist or Parkinson’s nurse. Make sure you understand what to do if you forget a dose.

- Tell your specialist or Parkinson’s nurse straight away if you experience any side effects from the drugs you take to treat Parkinson’s, but don’t stop taking your Parkinson’s drugs until you are advised to do so.
• Tell your specialist or Parkinson’s nurse how your treatment is working for you. Making notes before your appointment can help you remember what you want to say.

• Remember that your pharmacist can also be a very good source of advice. They will also help you dispose of all your unused drugs if necessary.

DON’T:

• Assume that you will have serious side effects from the drugs you take to treat Parkinson’s. Many people don’t. However, if you think you are having side effects or if you have any other worries, talk to your specialist, Parkinson’s nurse or pharmacist right away.

• Assume that your treatment, dose or the timing of your medication should be the same as other people with Parkinson’s. Everyone is different.

• Change the dose or how often you take your medication on your own. Your specialist or Parkinson’s nurse should be asked for guidance about any changes to your medication.

• Forget to tell the doctors and nurses you are taking drugs to treat Parkinson’s, if you go to hospital. You should make sure staff understand that you need your medication on time. Some hospitals will allow you to look after your own medication, so that you can self-medicate outside of the usual drugs round.

Find out more: see our information sheet Going into hospital.

• Forget to wear a medical alert bracelet or necklace if you want to make health professionals aware of your condition and the drugs you are taking in the event of an emergency. These are items of jewellery that can be inscribed with important medical information and are widely available. You can also order our Medication Card, on which you can write down the drugs you are taking, and store this in your purse or wallet.

• Stop taking your Parkinson’s medication unless your specialist or Parkinson’s nurse tells you to. This can be dangerous and should only be done or stopped gradually with medical supervision.
Taking special care with Parkinson’s drugs

• It’s important that you tell your specialist or Parkinson’s nurse about any other medical conditions you have and any other medications you are taking.

• If you are pregnant, breastfeeding, or suspect you may be pregnant, tell your specialist or Parkinson’s nurse.

• Some Parkinson’s drugs can make you very sleepy. Sometimes this happens suddenly and without warning. Make sure you understand what safety precautions you need to take, for example whether you can drive.

• Sometimes it can be hard to know whether your sleep problems are part of the condition or whether they are a side effect of your Parkinson’s medication.

Find out more: see our booklet Driving and Parkinson’s and our information sheet Sleep and night-time problems in Parkinson’s.

• Some Parkinson’s drugs can make your blood pressure fall very quickly, causing you to feel dizzy or faint. Again, find out what safety precautions you should take in case this happens.

• With some Parkinson’s drugs, particularly dopamine agonists and in a small number of cases levodopa, some people have problems with impulsive or compulsive behaviour. Examples include gambling, becoming a ‘shopaholic’, binge eating and a focus on sexual feelings and thoughts, which may get in the way of everyday life. This behaviour can have a huge impact on people’s lives, so if you think this is happening to you or the person you are caring for, tell your GP, specialist or Parkinson’s nurse right away so they can help.

“It is important that other people realise the ‘on/off’ nature of Parkinson’s, otherwise they may not give the help needed because they believe the person with Parkinson’s is ‘putting it on’.

Beryl, diagnosed in 1996
If you have other conditions or take other medication

If you have other medical conditions, this may have an effect on your Parkinson’s symptoms and how effective the drugs are.

Some medications for other conditions can make Parkinson’s symptoms worse.

Also, if you have a problem with your digestive system, such as constipation (which is often experienced by people with Parkinson’s), this may affect how well your drugs enter your bloodstream. This may reduce the effectiveness of your medication.

• If you think you are experiencing any side effects (you can find examples of these in each section of this booklet), tell your specialist or Parkinson’s nurse right away, but do not stop taking your Parkinson’s drugs until they tell you to.

• If you are taking a drug for Parkinson’s, never stop taking it suddenly. This can be dangerous. Generally, these drugs should be stopped gradually with the help and guidance of your specialist or Parkinson’s nurse.

Find out more: see our information sheet Impulsive and compulsive behaviour in Parkinson’s.
Parkinson’s drugs can interact with drugs used for other conditions. The different drugs can make each other weaker or stronger. This can be dangerous. Herbal or complementary treatments may also affect your Parkinson’s drugs.

If you want to take a non-prescription medicine, check with your pharmacist first that it is safe.

It’s important that you give every healthcare professional who treats you details of the drugs you are taking for Parkinson’s.

Your specialist, Parkinson’s nurse or pharmacist can give you advice on specific interactions with different medications.

**Get It On Time**

Our Get It On Time campaign aims to raise awareness with hospital and care home staff of the importance of people with Parkinson’s getting their medication on time, every time. It is important for them to be aware that drug timings will vary from person to person and may be different to ward drug rounds. If people with Parkinson’s don’t get their medication at the right time, it leads to symptoms becoming uncontrolled, and it can take some time for this to be put right again.

Find out more at parkinsons.org.uk/getitontime and see page 52 for information about some of our Get It On Time resources.

“We had some trouble with getting medication on time when mum was first admitted to hospital. But then we had one fabulous nurse who picked up on the importance of mum’s medication on her admission to the ward. Mum was put as a priority on the drugs round.”

Julie, whose mum has Parkinson’s
Drugs to avoid

Some drugs can bring on Parkinson’s-like symptoms or react badly with Parkinson’s drugs and should be avoided unless they’re recommended by a specialist. These are some (but not all) of the drugs to avoid in Parkinson’s:

• chlorpromazine (Largactil)
• fluphenazine (Modecate)
• fluphenazine with nortriptyline (Motival)
• perphenazine (Fentazin/Triptafen)
• trifluoperazine (Stelazine)
• flupenthixol (Fluanxol/Depixol)
• haloperidol (Serenace/Haldol)
• metoclopramide (Maxalon)
• prochlorperazine (Stemetil)

Decongestants or cold remedies can affect some Parkinson’s medications. If you need to use these, check with your pharmacist which one is safest to use.

Domperidone (Motilium) is the anti-sickness drug of choice to prevent and treat nausea and vomiting caused by levodopa. Other anti-sickness drugs that are generally considered useful include cyclizine (Valoid) and 5-HT3 receptor antagonists like ondansetron.
There are many different drug treatments for Parkinson’s.

The tables in each of the following sections give you a summary of the main types, their names and how they are used.

“I’m grateful for the medication and support available to me and look forward to a few more years of ‘normal’ life.”

Caroline, diagnosed in 2003

**Drug names**

Sometimes, the same drug goes by a number of different names – even if the ingredients are the same and they do the same job.

**Class**

Each drug belongs to a class – a wider group of drugs that work in the same way.

**Unbranded (generic) name**

All types of drug have a common, or generic, name. Every drug that has the same active ingredient will have this name, no matter who it is made by. Though the active ingredient of the unbranded drug is the same as the branded version, some people may find they respond a bit differently to different versions. If you have any concerns you should discuss these with your specialist or Parkinson’s nurse.

**Brand name**

In addition to its common name, some drugs will also have a brand name, decided by the company who makes it.

For example, in the levodopa class of drugs used to treat Parkinson’s, co-beneldopa is an unbranded, or generic, name of a drug. Roche, one of the companies that makes co-beneldopa, sells it under the brand name Madopar.
These are the different types of levodopa that can be prescribed. This section explains what levodopa is and how it works, and looks at other considerations, including possible side effects.

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<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
<th>Forms available</th>
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<tbody>
<tr>
<td>Levodopa is always given combined with either benserazide or carbidopa. These help the levodopa get into the brain where it’s needed.</td>
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<tr>
<td>Co-beneldopa (benserazide plus levodopa)</td>
<td>Madopar</td>
<td>Capsules, dispersible tablets</td>
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<td></td>
<td>Madopar CR</td>
<td>Controlled release (CR) capsules (see page 23)</td>
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<tr>
<td></td>
<td>Caramet CR</td>
<td>Controlled release tablets</td>
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<td></td>
<td>Duodopa</td>
<td>Intestinal gel</td>
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<tr>
<td></td>
<td>Sinemet</td>
<td>Tablets</td>
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<td></td>
<td>Sinemet Plus</td>
<td>Tablets</td>
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<tr>
<td></td>
<td>Sinemet CR</td>
<td>Controlled release tablets</td>
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<td></td>
<td>Half Sinemet CR</td>
<td>Controlled release tablets</td>
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<td></td>
<td>Lecado</td>
<td>Prolonged release tablets</td>
</tr>
<tr>
<td>Co-careldopa (carbidopa plus levodopa, available in unbranded form)</td>
<td>Stalevo</td>
<td>Tablets</td>
</tr>
<tr>
<td>Co-careldopa plus entacapone (see page 39)</td>
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How levodopa works

Dopamine is a chemical messenger made in the brain. The symptoms of Parkinson’s are caused by a decrease in the levels of dopamine, due to the death of the nerve cells in the brain that make it.

Unfortunately, taking dopamine as a drug would not help you, because it could not cross into your brain where it’s needed. Doctors can get around this by using levodopa.

Levodopa is a chemical building-block that your body converts into dopamine. Levodopa already occurs naturally in your body, and taking it as a drug treatment boosts the supply. The nerve cells in your brain then have more of this ingredient and can then make more dopamine. Levodopa is given with benserazide or carbidopa, as this makes sure it can enter the brain more efficiently.

How levodopa is used

Levodopa has been used to treat Parkinson’s since the 1960s. Later, it was found that adding benserazide or carbidopa could allow more levodopa to get into the brain and make it work better.

Levodopa can be used at all stages of Parkinson’s. However, it can have side effects that build up over time. One side effect of levodopa is ‘off’ periods, where your body becomes so stiff and slow that you are unable to move. Another side effect that can happen with long-term use of levodopa is involuntary movements (dyskinesia).

Although levodopa may be taken at any stage of the condition, based on current scientific evidence, there is no particular time to start taking it that is right for everyone. You and your specialist or Parkinson’s nurse will need to talk it over, and agree what is the best choice for you at this time.

Treatment will usually start with a low dose and this is gradually increased until you and your specialist or Parkinson’s nurse agree that your symptoms are under control.

If you have problems with swallowing, this may determine...
the form of drug you will take. There may be a suitable option that is easier to swallow, if you can’t easily take tablets. There are some options that release active ingredients slowly (controlled or prolonged release capsules or tablets). These allow you to take fewer tablets in a day. However, these will not be suitable for everyone who takes levodopa.

Several different forms are available:

**Tablets**
These come in different strengths, depending on the dose your specialist or Parkinson's nurse thinks you need.

**Controlled release (CR) or prolonged release capsules or tablets**
These let the levodopa enter your body slowly instead of all at once. Involuntary movements (dyskinesia) can be a side effect of taking high doses of levodopa. Controlled release options can sometimes reduce the number of times that this happens. They can also be taken before going to bed to reduce stiffness during the night.

**Dispersible tablets**
This form can be mixed with water to make a drink. It takes effect more quickly than capsules because it doesn’t need to be broken down in your stomach to release the active ingredient. It can also be used if you have trouble swallowing tablets or capsules. If you are prescribed non-dispersible tablets or capsules, these should not be crushed or put into water.

**Intestinal gel**
This option is only suitable for a very small number of people, whose symptoms can’t be controlled with the more common forms of treatment. The drug is pumped continuously through a tube that is surgically inserted in the intestine. If you are prescribed this option you are less likely to experience involuntary movements. You might also have fewer ‘off’ periods. It may also help to control your symptoms at night.
Advantages of levodopa
Levodopa is seen as the most effective treatment for Parkinson’s symptoms. When taking it, you may experience a big improvement in your symptoms, especially with stiffness and slowness of movement.

Disadvantages of levodopa
Becomes less effective over time
After a while, you may have a less predictable response to levodopa. You may get ‘off’ periods when you feel weak and can’t move well. The effect of the dose may wear off more quickly, maybe even before your next one is due or has begun to work. When this happens, sometimes your specialist or Parkinson’s nurse will change or increase your dose, the form of drug or how often you take it.

Movement problems
One of the main problems with levodopa is a side effect called dyskinesia. These are spasms or muscle movements that happen when you don’t want them to. Dyskinesia can increase over time, although not everyone will have this side effect.

Sleepiness and fainting
Levodopa drug treatment can make you feel very sleepy. Sometimes this happens quite suddenly and without warning. Levodopa can also make you faint or feel dizzy.

Your specialist or Parkinson’s nurse may add other Parkinson’s drugs to take alongside levodopa. This will help it to be more effective in treating the symptoms of your Parkinson’s.
Other side effects
We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most common side effects that can happen with levodopa include: nausea and vomiting, hypotension (low blood pressure), loss of appetite, psychological problems, hallucinations (seeing, hearing, feeling and smelling things that aren’t there), and sleep problems.

Levodopa and diet
Taking levodopa with food can sometimes help to reduce feelings of sickness. However, for some people, protein (which is found mainly in meat, fish, eggs, cheese and beans) seems to interfere with the way levodopa medication works, by affecting how well the drug is absorbed by the body.

Protein is needed by the body so it’s important not to stop eating protein. However, some people may benefit from taking their medication at least 30 minutes before they eat. Your specialist or Parkinson’s nurse can advise you on timing your doses and this should be discussed with them when you are first prescribed the drug. They can also help you get advice from a dietitian.

Find out more: see our booklet Diet and Parkinson’s.

Impulsive and compulsive behaviour
A small number of people taking levodopa have problems with impulsive or compulsive behaviour. This can also be called impulse control disorder. It affects a much smaller percentage of people taking levodopa than those taking dopamine agonists, but it is still a possible side effect.

Impulsive behaviour is when a person can’t resist the temptation to carry out activities that could lead them to harm themselves or others. In many cases, this behaviour is out of character.

“...If I have food and particularly if I have protein, I find that levodopa doesn’t work and I experience freezing. I’m amazed when I hear that other people with Parkinson’s haven’t always been told that this can happen. It has a huge effect on me.”

Paul, diagnosed in 2001
Compulsive behaviour is when a person has an overwhelming drive or urge to act in a certain way, often repetitively, to reduce the worry or tension that they get from that urge. Both of these can have a devastating impact on the person with Parkinson’s and those around them.

Some examples are gambling, becoming a ‘shopaholic’, binge eating, and a focus on sexual feelings and thoughts, which may get in the way of everyday life. Other behaviour may include punding, which is repetitive collecting and sorting of objects.

Another potential problem is dopamine dysregulation syndrome, where someone with Parkinson’s might be tempted to take more of their Parkinson’s medication than they are prescribed.

If you think this is happening to you or the person you are caring for, tell your GP, specialist or Parkinson’s nurse right away.

It is important that all people with Parkinson’s are assessed for any potential risk of impulsive and compulsive behaviour before they start taking their medication.

There are certain factors that may mean you’re more likely to experience this behaviour: a family history of gambling or alcohol abuse, a personal history of addictive behaviour, being male, being a younger person with Parkinson’s, being a smoker, or single and living alone.

Even if you do not fit any of these categories, treatment should be monitored over time. People with Parkinson’s, their carers, friends and family members should work with healthcare professionals to monitor any changes in behaviour.

Find out more: see our information sheet Impulsive and compulsive behaviour in Parkinson’s.

Withdrawal syndrome with levodopa
Research has shown that withdrawal symptoms can happen when someone very suddenly stops taking levodopa, perhaps because they are experiencing impulsive and compulsive behaviour. It can lead to symptoms including depression, anxiety or pain. Any withdrawal from Parkinson’s drugs needs to be done in a tapered way, under the supervision of a health professional, to avoid the risk of developing this syndrome.
These are the different types of dopamine agonists that can be prescribed. This section explains what dopamine agonists are and how they work, and looks at other considerations, including possible side effects.

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<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
<th>Forms available</th>
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<tr>
<td>Bromocriptine (available in unbranded form)</td>
<td>Parlodel</td>
<td>Tablets, capsules</td>
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<tr>
<td>Cabergoline (available in unbranded form)</td>
<td>Cabaser</td>
<td>Tablets</td>
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<td>Pergolide</td>
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<td>Ropinirole (available in unbranded form)</td>
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<td>Requip</td>
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<td>Spiroco XL</td>
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<td>Rotigotine</td>
<td>Neupro</td>
<td>Skin patch</td>
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<td>Apomorphine</td>
<td>APO–go PEN</td>
<td>Pre-filled pen for intermittent injection</td>
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<td></td>
<td>APO–go PFS</td>
<td>Pre-filled syringe for infusion. Can be used with a continuous infusion pump</td>
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Taking special care with dopamine agonists
If you are prescribed these drugs for Parkinson’s, please make sure you read the important safety advice that comes with them, and the general information on pages 15–18.

How dopamine agonists work
Dopamine is a chemical messenger made in the brain. The symptoms of Parkinson’s are caused by a decrease in the levels of dopamine, due to the death of the nerve cells in the brain that make it.

One treatment option is to use levodopa, which is converted into dopamine in the brain. Another possible approach is to use dopamine agonist drugs, which act like dopamine to stimulate your nerve cells.

How dopamine agonists are used
Dopamine agonists are used at all stages of Parkinson’s. You might take them alone when treatment is being started, or alongside levodopa to help the levodopa work better.

Treatment with dopamine agonists has to be started carefully, with the dose gradually being increased until you and your specialist or Parkinson’s nurse are happy that your symptoms are under control.

Some dopamine agonists are now being made as ‘one a day’ tablets. These can be a better option for the body and may help both movement and other symptoms of Parkinson’s.

Several different forms are available:

Tablets and capsules
These come in different strengths, depending on the dose your specialist or Parkinson’s nurse thinks you need.

Prolonged release tablets
These can be taken less frequently and they work longer in the body, compared to normal capsules and tablets.

Skin patch
A dopamine agonist patch is also available. It may be good if you have trouble swallowing tablets, as well as for those who have problems with drooling and gastritis. It might also reduce stomach upsets. The patch should be held in place for 30 seconds. Once in place it lasts for 24 hours. The patch may cause a skin reaction, such as reddening or itching, but this is usually mild or moderate, will only affect the area
the patch has been and will normally disappear after a few hours when you remove the patch. Moving the patch to a different site every day will help to avoid irritation. The patch should be stored in a refrigerator.

Injection or infusion
Apomorphine is a dopamine agonist that is given by injection or infusion pump. It is the strongest known dopamine agonist. It is saved for more advanced Parkinson’s that does not respond as well to oral drug treatments or when most orally taken Parkinson’s medication becomes less effective or does not work. If you continue to have sudden and unpredictable changes in your symptoms that aren’t controlled by other Parkinson’s medications, apomorphine can help.

You may need to have injections of apomorphine between doses of your usual tablets, or you may need apomorphine more often. In this case, you can use a portable, battery-driven pump, which gives the drug through a needle under the skin. However, this is not commonly used, and is only suitable in certain cases.

Ideally, apomorphine will be started in hospital, under the guidance of a specialist or Parkinson’s nurse. Once you are settled on this treatment, you and your carers (if relevant) can be trained in how to use it. If you or a carer are unable to do this, district nurses will be able to help you with this treatment.
Apomorphine can cause severe short-term nausea and sickness, so an anti-sickness drug called domperidone (Motilium) will also be given two to three days before this treatment is started and continued for at least two weeks or more, once your treatment is underway.

Injections of apomorphine are taken in a similar way to insulin for diabetes. There is a ready-to-use injection pen that works within 10 minutes and is often used as a ‘rescue’ measure. This is very useful if you have a sudden ‘off’ period. Soreness or nodules can develop at the place where the needle enters your skin. If this happens, do not stop the treatment and make sure to get advice from your specialist or Parkinson’s nurse. It is important to change injection site to minimise scarring or infection. Simple massage, silicone gel patches or ultrasound can help to reduce any nodules that form.

Find out more: see our information sheet Apomorphine.

Advantages of dopamine agonists

Delaying levodopa treatment
Scientific studies suggest that dopamine agonists can be effective treatments for several years when used alone. However, this will not be the case for everyone.
Fewer movement problems
Your symptoms may be controlled during the day for longer than is usually the case with levodopa. Where this happens, you may be less prone to long-term side effects such as the ‘on/off’ effect and dyskinesia (movements that you can’t control).

Helping levodopa work better
Dopamine agonists can also be taken with levodopa, at all stages of Parkinson’s. They can help when the effect of levodopa wears off or doesn’t always work so well. Dopamine agonists may help to smooth out the ‘on/off’ effect that you may have with levodopa.

Fewer tablets to take (in some cases)
There are now some once-daily preparations that could make a big difference by reducing the number of tablets you take. But this option may not suit everyone.

Positive effects on non-movement symptoms
Dopamine agonists have recently been shown to have a good effect on the symptoms of Parkinson’s not related to movement, including sleep problems, pain and mood.

Disadvantages of dopamine agonists

Heart problems
Some of the older dopamine agonists increase the risk of heart problems. As a group, these are known as the ‘ergot’ types and they include: bromocriptine, pergolide and cabergoline. Because of this risk, these Parkinson’s drugs are only used when other dopamine agonists do not work well. All newer dopamine agonists are non-ergot in type. These are apomorphine, pramipexole, ropinirole and rotigotine. They have not been associated with an increased risk of heart damage. Doctors prefer to use these if possible.

Sleepiness and fainting
Dopamine agonist drugs can make you feel very sleepy, faint or dizzy. This is most likely to happen when you start taking the drugs. Once a stable dose is reached, this effect often wears off. In a few people, sleepiness happens quite suddenly. Sudden sleep onset, without any warning, has been reported. If this happens, it’s important that you tell your specialist or Parkinson’s nurse.

Other side effects
We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most
common side effects that can happen with dopamine agonists include: nausea, constipation, low blood pressure, headaches, psychological problems, hallucinations (seeing, hearing, feeling and smelling things that aren’t there), movement problems, swollen limbs, a stuffy nose and a dry mouth. Sight problems can include blurred vision, so it’s important to have regular eye checks.

**Impulsive and compulsive behaviour**

Some people taking dopamine agonists have problems controlling compulsive or impulsive behaviour. It can also affect people taking levodopa, but it more frequently affects people taking dopamine agonists.

Impulsive behaviour is when a person can’t resist the temptation to carry out certain activities that could lead them to harm themselves or others. In many cases, this behaviour is out of character.

Compulsive behaviour is when a person has an overwhelming drive or urge to act in a certain way, often repetitively, to reduce the worry or tension that they get from their drive or urge.

“When my medication wears off, my memory is affected. I recall events much more slowly, especially when I am in ‘off’ mode for some time. I try not to let this worry me, so long as my memory returns with adequate medication, which so far it does.”

Judy, diagnosed in 1990

Both of these can have a devastating impact on the person with Parkinson’s and those around them.

Some examples are gambling, becoming a ‘shopaholic’, binge eating, and a focus on sexual feelings and thoughts, which may get in the way of everyday life. Other behaviour may include punding, which is repetitive collecting and sorting of objects.

If you think this is happening to you or the person you are caring for, tell your GP, specialist or Parkinson’s nurse right away so they can help.
It is important that all people with Parkinson’s are assessed for any potential risk of impulsive and compulsive behaviour before they start taking their medication.

There are certain factors that may mean you’re more likely to experience this behaviour: a family history of gambling or alcohol abuse, a personal history of addictive behaviour, being male, being a younger person with Parkinson’s, being a smoker, or single and living alone.

Even if you do not fit any of these categories, treatment should be monitored over time. People with Parkinson’s, their carers, friends and family members should work with healthcare professionals to monitor any changes in behaviour.

**Find out more:** see our information sheet *Impulsive and compulsive behaviour in Parkinson’s.*

**Dopamine agonist withdrawal syndrome**

Recent research has discovered dopamine agonist withdrawal syndrome, which can happen when someone very suddenly stops taking dopamine agonists, perhaps because they are experiencing impulsive and compulsive behaviour. It can lead to symptoms including depression, anxiety or pain. Any withdrawal from Parkinson’s drugs needs to be done in a tapered way, under the supervision of a health professional, to avoid the risk of this syndrome.

“Parkinson’s medications do a lot of good, when they are monitored. If you’re aware that you, or a friend or relative, may be experiencing impulsive and compulsive behaviour, use the information available. Don’t live in denial. Speak with a healthcare professional. I don’t want anyone else to go through what I’ve been through with impulsive and compulsive behaviour.”

Stephen, diagnosed in 2001
MAO-B INHIBITORS

These are the different types of MAO-B inhibitors that can be prescribed. This section explains what MAO-B inhibitors are and how they work, and looks at other considerations, including possible side effects.

<table>
<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
<th>Forms available</th>
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<tbody>
<tr>
<td>Rasagiline</td>
<td>Azilect</td>
<td>Tablets</td>
</tr>
<tr>
<td>Selegiline (available in unbranded form)</td>
<td>Eldepryl</td>
<td>Tablets, liquid</td>
</tr>
<tr>
<td></td>
<td>Zelapar</td>
<td>Tablets that dissolve on the tongue</td>
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</tbody>
</table>

Taking special care with MAO-B inhibitors

If you are prescribed these drugs for Parkinson’s, please make sure you read the important safety advice that comes with them, and the general information on pages 15–18.

Unfortunately, taking dopamine as a drug treatment for Parkinson’s would not help you, because it could not cross into your brain where it’s needed.

MAO-B inhibitors can help your nerve cells to make better use of the dopamine that it does have. They do this by blocking an enzyme called monoamine oxidase type B (MAO-B), which breaks down dopamine in your brain. This helps to increase the amount of dopamine that the brain can use, which helps to relieve the symptoms of Parkinson’s.

How MAO-B inhibitors work

Dopamine is a chemical messenger made in the brain. The symptoms of Parkinson’s are caused by a decrease in the levels of dopamine, due to the death of the nerve cells in the brain that make it.
How MAO-B inhibitors are used
A MAO-B inhibitor can be used on its own in early Parkinson’s, or in combination with other drugs at all stages of Parkinson’s. These drugs are mainly available as tablets. There is also a form that dissolves on the tongue and a liquid preparation. These may help if you have trouble swallowing.

Advantages of MAO-B inhibitors

Improving Parkinson’s symptoms
On its own, a MAO-B inhibitor can help with some Parkinson’s symptoms, but it can become less effective over time.

Not all have to be stepped up gradually
Many drug treatments for Parkinson’s have to be started gradually, with the dose slowly being increased over time. Rasagiline can be started on the full dose, but selegiline can’t.

Delaying levodopa treatment
By taking a MAO-B inhibitor at an early stage of Parkinson’s, you might be able to start levodopa later when your symptoms become more difficult to manage.

Helping levodopa work better
When you have been taking levodopa for a while, you may find that its effects wear off too quickly. When taken with levodopa, these drugs can help it work better.

A MAO-B inhibitor can help with this. Taking a MAO-B inhibitor may also reduce the dose of levodopa you need and lengthen the time between your doses of levodopa.

Disadvantages of MAO-B inhibitors

Combination with antidepressants
If you’re taking some types of antidepressant, you might not be able to take MAO-B inhibitors, as these drugs can interact with each other to raise blood pressure to a dangerous level.

Combination with decongestants
Decongestants or cold remedies can affect some types of MAO-B inhibitor. If you need to use one of these products, check with your pharmacist which one is safest to use.

Worse levodopa side effects
Because MAO-B inhibitors strengthen levodopa, the side effects of levodopa, including unwanted movements and sickness, can get worse, too.
If this happens, your specialist or Parkinson’s nurse can help you reduce the dose of levodopa.

**Dietary precautions**
Your specialist or Parkinson’s nurse may advise you to avoid certain foods, such as cheese, broad beans, Bovril, yeast extracts or fermented soya bean (tofu).

**Other side effects**
We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most common side effects that can happen with MAO-B inhibitors include headache, aching joints, indigestion, flu-like symptoms and depression.
COMT INHIBITORS

These are the different types of COMT inhibitors that can be prescribed. This section explains what COMT inhibitors are and how they work, and looks at other considerations, including possible side effects.

<table>
<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
<th>Forms available</th>
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</thead>
<tbody>
<tr>
<td>Entacapone</td>
<td>Comtess</td>
<td>Tablets</td>
</tr>
<tr>
<td>Tolcapone</td>
<td>Tasmr</td>
<td>Tablets</td>
</tr>
</tbody>
</table>

**Taking special care with COMT inhibitors**

If you are prescribed these drugs for Parkinson’s, please make sure you read the important safety advice that comes with them, and the general information on pages 15–18.

**How COMT inhibitors work**

Dopamine is a chemical messenger made in the brain. The symptoms of Parkinson’s are caused by a decrease in the levels of dopamine, due to the death of the nerve cells in the brain that make it.

Unfortunately, taking dopamine as a drug treatment for Parkinson’s would not help you, because it could not cross into your brain where it’s needed. However, you can boost the supply in your brain by taking levodopa, a drug that acts as a chemical building-block to help your body produce more dopamine.

COMT inhibitors can block an enzyme that breaks down levodopa.

**How COMT inhibitors are used**

These drugs are used alongside levodopa, to help it work more smoothly. They can be tried if your dose of levodopa is not working for long enough (end-of-dose deterioration) or it ‘wears off’.
COMT inhibitors do not help Parkinson’s on their own – they have to be used with levodopa. COMT inhibitors come as tablets. There is also a combined tablet that includes levodopa, carbidopa (one of the ‘helper’ drugs that are always given alongside levodopa) and the COMT inhibitor entacapone.

**Advantages of COMT inhibitors**

**Helping levodopa work more smoothly**
COMT inhibitors can help when levodopa is not working long enough and starts to wear off between your doses. It can help to reduce the ‘off’ time when you have more trouble with your Parkinson’s symptoms and it can increase the amount of ‘on’ time when your symptoms are better controlled.

**Taking less levodopa**
In many cases, levodopa can be taken less often and at a lower dose.

**Improving Parkinson’s symptoms**
Sometimes, adding a COMT inhibitor to your medication regime can help your Parkinson’s symptoms.
Disadvantages of COMT inhibitors

Liver damage
With tolcapone, there is a risk of liver damage that can be fatal. It is rare, but for this reason, it is a second choice, only used if you can’t take another COMT inhibitor. If you take this drug, you will need regular blood tests to check the health of your liver.

This risk has not been seen with the other available COMT inhibitor, entacapone.

Worse levodopa side effects
Because COMT inhibitors strengthen levodopa, the side effects of levodopa, including unwanted movements and sickness, can get worse, too. If this happens, your specialist or Parkinson’s nurse can help you reduce the dose of levodopa.

Other side effects
We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most common side effects that can happen with COMT inhibitors include: sleeping problems, loss of appetite, diarrhoea, dizziness, fainting, falls, hallucinations (seeing, hearing, feeling and smelling things that aren’t there), headache, confusion, dry mouth, chest pain, sleepiness and getting flu or having flu-like symptoms. These drugs can also discolour your urine.

“Parkinson’s is a progressive condition. Medicines can help, and over the years I will take newer and stronger types. I know that some will make me feel sick and a lot of adjustments will need to be made along the way.”

Keith, diagnosed in 2001
GLUTAMATE ANTAGONIST

There is only one glutamate antagonist that can be prescribed. This section explains what a glutamate antagonist is and how it works, and looks at other considerations, including possible side effects.

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<tr>
<th>Unbranded (generic) name</th>
<th>Brand name</th>
<th>Forms available</th>
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<tbody>
<tr>
<td>Amantadine</td>
<td>Symmetrel</td>
<td>Capsules, syrup</td>
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</table>

**Taking special care with a glutamate antagonist**

If you are prescribed this drug for Parkinson’s, please make sure you read the important safety advice that comes with it, and the general information on pages 15–18.

**How a glutamate antagonist works**

Exactly how this drug works for Parkinson’s isn’t known yet. It may modify levels of certain chemicals in the brain.

**How a glutamate antagonist is used**

Amantadine can be used to treat tremor and stiff muscles. It isn’t used very often and it is unlikely to be prescribed alone. It is usually given with other drug treatments for Parkinson’s and can be used at all stages of Parkinson’s.

It is started at a lower dose and the amount is stepped up gradually. Amantadine is available as capsules and syrup.

**Advantages of a glutamate antagonist**

**Fewer movement side effects**

The SIGN guidelines for the NHS in Scotland, and the NICE guidelines...
for the NHS in England and Wales (which are also recommended for use in Northern Ireland), say there is not enough scientific evidence to support it as a first choice in early Parkinson’s. But for some people, amantadine may reduce dyskinesia (involuntary movements) caused by your other Parkinson’s drugs, without making your Parkinson’s symptoms worse.

**Disadvantages of a glutamate antagonist**

**Limited effects on Parkinson’s**
Amantadine is not a first choice for the treatment of Parkinson’s and it may have only a mild effect. Over time, amantadine can become less effective.

**Blurred vision, fainting, confusion or dizziness**
If you have these side effects, it is not safe to drive or use machinery.

**Other side effects**
We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most common side effects that can happen with a glutamate antagonist include: feeling nervous, anxious or overexcited, poor concentration, headache, hallucinations (seeing, hearing, feeling and smelling things that aren’t there), movement problems, sleep problems such as insomnia, fast or irregular heartbeat, loss of appetite, nausea and vomiting, constipation, sweating, swollen hands and ankles, and skin reactions.
These are the different types of anticholinergics that can be prescribed. This section explains what anticholinergics are and how they work, and looks at other considerations, including possible side effects.

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<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
<th>Forms available</th>
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<tbody>
<tr>
<td>Orphenadrine (available in unbranded form)</td>
<td>Disipal</td>
<td>Tablets</td>
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<tr>
<td>Procyclidine (available in unbranded form)</td>
<td>Arpicolin</td>
<td>Syrup</td>
</tr>
<tr>
<td></td>
<td>Kemadrin</td>
<td>Tablets</td>
</tr>
<tr>
<td>Trihexyphenidyl (benzhexol) (available in unbranded form)</td>
<td>Broflex</td>
<td>Syrup</td>
</tr>
</tbody>
</table>

**Taking special care with anticholinergics**

If you are prescribed these drugs for Parkinson’s, please make sure you read the important safety advice that comes with them, and the general information on pages 15–18.

**How anticholinergics work**

These drugs block the action of acetylcholine, a chemical messenger that is found in your body. Acetylcholine helps to send messages from your nerves to your muscles.

**How anticholinergics are used**

These drugs are older and are not used very often for Parkinson’s today. Sometimes they are prescribed for reducing tremor and muscle stiffness. They can be used on their own, especially in the early stages of your Parkinson’s, before levodopa is prescribed.
Anticholinergics can also be used with levodopa or a glutamate antagonist. They are taken as tablets or as a liquid.

**Advantages of anticholinergics**

**Possible effect on mild movement symptoms**
Older medical studies found some benefit with Parkinson’s symptoms. Anticholinergics can be effective for younger people in the early stages of Parkinson’s when symptoms are mild.

**Possible effect on other Parkinson’s symptoms**
Anticholinergics may also be used to reduce saliva production if you have a problem with drooling.

Oxybutynin is an anticholinergic that is used in people without Parkinson’s to reduce bladder contractions that can cause a strong, frequent urge to urinate. It is only used very cautiously in people with Parkinson’s.

**Disadvantages of anticholinergics**

**Limited effect on movement symptoms**
These drugs are not recommended in guidelines for the NHS in Scotland. The authors of these guidelines say the benefits do not outweigh the disadvantages.

**Memory problems**
Anticholinergics are not very often given to people with Parkinson’s because they can cause memory problems or make them worse. If you’re taking anticholinergics, your specialist or Parkinson’s nurse must closely monitor your situation.

**Side effects**
Another reason these drugs are not seen as a first choice is their side effects. We can’t list all the possible side effects of all Parkinson’s drugs in this booklet. However, some of the most common side effects that can happen with anticholinergics include: dry mouth, blurred vision, upset stomach, constipation, dizziness and trouble urinating. Confusion, hallucinations (seeing, hearing, feeling and smelling things that aren’t there), forgetfulness and psychological problems are less common, but they can also happen with these drugs.
If you have Parkinson’s, it is important to take your Parkinson’s medication as advised by your specialist or Parkinson’s nurse. Taking your medication for Parkinson’s at the right time will help you to manage your symptoms more effectively.

**Keep a chart**

Having a written record of all your medications, when and how you take them may help you to keep a track of what you take – especially if you have a complicated regime with a number of tablets. We have free resources to help you with this, including the Parkinson’s medication record and the Parkinson’s medication card. See page 53 for more information on these.

**Taking it on time**

From using alarms on a digital watch to setting the oven timer, we hear of many tools people with Parkinson’s use to remind them to take their medication on time. The trick is to find a solution to suit you.

**Pill timers**

A pill timer is a box that you can store your Parkinson’s drugs in to remind you when to take each dose. They are useful if you have to take lots of different tablets, or if you have trouble remembering to take your medication.

There are many different types and sizes of pill timer. Some have sections for different times of day, so you can store all of your Parkinson’s drugs for one day. Others are big enough to hold your tablets for a whole week, with sections for each day. Some weekly pill timers are also split into times of day.

When you choose a pill timer, make sure it has enough space for the number and size of the tablets you have to take.

Some pill timers have labels on each section that show days or times. Others have a timer or a digital clock face with an alarm to remind you to take your Parkinson’s drugs.
Pill timers vary in cost, depending on the type and who it is made by. An occupational therapist or pharmacist can help you to choose the right option.

We have a selection of pill timers available to purchase from our online shop. Visit parkinsons.org.uk/shop to see whether one of these would suit you.

The Disabled Living Foundation, an organisation that provides information on a range of equipment for disabled and older people, can also advise you on options available. Contact them at:

Disabled Living Foundation
Helpline: 0845 130 9177
(textphone 020 7432 8009)
(10am to 4pm Mondays to Fridays)
helpline@dlf.org.uk
www.dlf.org.uk
Improving Drug Treatments

As yet, there is no cure or perfect drug for the treatment of Parkinson’s. Research into better treatments is vital.

This is why some people with Parkinson’s agree to take part in research to test new Parkinson’s drugs or other aspects of the condition and its treatment.

You may be invited to join a study (often called a clinical trial). This should only happen through your specialist or Parkinson’s nurse. You might be able to ask your doctor if you can be in a trial.

Details of some clinical trials are posted on the Parkinson’s UK website at parkinsons.org.uk/research, with details of who to contact for further information.

Clinical trials are often sponsored by the manufacturer of a drug. Sometimes they are funded by public organisations such as the NHS or a government research council. Before they go ahead, clinical trials have to be approved for safety and ethics by an independent committee of experts.

Parkinson’s UK also sponsors some clinical trials that examine the best use of existing drugs, and others on the non-movement symptoms of Parkinson’s.

Before you start treatment in a trial, you should always ask for written information about it. You should also have time to talk about the pros and cons with your specialist or Parkinson’s nurse and your family before you decide whether to take part.

You should never feel under any pressure to take part or to continue in a clinical trial. Saying no or leaving the trial will not affect the way you are treated – it is your right to do this and your specialist or Parkinson’s nurse will continue to do their very best for your care.
Clinical trials for drugs generally go through four phases:

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
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</thead>
<tbody>
<tr>
<td>Healthy volunteers take the drug.</td>
<td>People with the condition volunteer to take the drug.</td>
<td>A larger number of people with the condition volunteer to take the drug – some may get a ‘dummy’ treatment.</td>
<td>Once the drug is approved for doctors to prescribe, people with the condition volunteer for follow-up studies.</td>
</tr>
<tr>
<td>In some cases, people with the condition may take part in this stage of the trial.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assesses the safe dose, side effects, how it works in the body.</td>
<td>Studies how well the drug works, safe and effective dose and side effects.</td>
<td>Studies safety, effectiveness and side effects over a longer period and compares the new drug to other treatments.</td>
<td>Continues to study safety and effectiveness over a longer period.</td>
</tr>
</tbody>
</table>
If you have more questions about your drug treatment, talk to your specialist or pharmacist.

**Parkinson’s nurses**

Parkinson’s nurses provide expert advice and support to people with Parkinson’s and those who care for them. They can also act as a liaison between other health and social care professionals to make sure your needs are met.

Parkinson’s nurses may not be available in every area, but your GP or specialist can give you more details on local services.

**Reporting a side effect**

The Medicines and Healthcare products Regulatory Authority (MHRA) is the government body that makes sure that drugs work and are safe. It is keen to receive feedback about medication side effects.

To report a side effect, you should complete a Yellow Card form, available from your pharmacist, GP, specialist or via the Yellow Card information service (**0808 100 3352**). You can also complete this form online, or download and print it out from [yellowcard.mhra.gov.uk](http://yellowcard.mhra.gov.uk)

Speak to your pharmacist, GP, specialist or Parkinson’s nurse if you need any help to fill in this form.

You can also report any side effects from your Parkinson’s medication directly to your GP, specialist or Parkinson’s nurse.

**Information and support from Parkinson’s UK**

If you need more general information, support or to talk through general queries about your Parkinson’s medication, call the Parkinson’s UK helpline and ask to speak with a nurse adviser. Call **0808 800 0303** (calls are free from UK landlines and most mobile networks) or email [hello@parkinsons.org.uk](mailto:hello@parkinsons.org.uk)

Our helpline can also put you in touch with one of our local information and support workers, who provide one-to-one
information and support to anyone affected by Parkinson’s. They can also provide links to local groups and services.

Our website has information about your local support team and how to contact them at parkinsons.org.uk/localtoyou

You can find details of our local groups and your nearest meeting at parkinsons.org.uk/localgroups. You can also visit our online discussion forum at parkinsons.org.uk/forum to speak with other people in a similar situation.

Further resources

Further information on Parkinson’s and related topics is available from Parkinson’s UK. We produce a wide range of free booklets, information sheets and cards about living with Parkinson’s. They’re available from our distributor (see right) and many are available on our website at parkinsons.org.uk/publications

Resources include:

Get It On Time materials

Resources to help you stay in control of your Parkinson’s drugs when you are in hospital.
Parkinson’s medication record
A booklet you can use to record information about your drugs, the times you take them, and contact details for the healthcare professionals involved in your care.

Parkinson’s medication card
A card you can write your drug treatment and healthcare professionals’ details on, to carry with you in case of emergencies.

Parkinson’s alert card
A card you can carry with you to tell people you have Parkinson’s. It’s useful in case of emergencies, or when you’re having problems with movement or communication.

Diet and Parkinson’s
This booklet includes information on diet and Parkinson’s medication.

Driving and Parkinson’s
Includes useful information on driving, such as how you need to inform the DVLA or DVA and your car insurer when you are diagnosed with Parkinson’s.

Impulsive and compulsive behaviour in Parkinson’s
This resource offers more information about the side effect some people with Parkinson’s get from taking some Parkinson’s drugs.

Living with Parkinson’s
A comprehensive guide to day-to-day life with Parkinson’s.

Resources for professionals
• Drug treatments for Parkinson’s: A2 poster
• Drug treatments for Parkinson’s: a pocket guide
• The professional’s guide to Parkinson’s
• Parkinson’s: key information for hospital pharmacists

To order any of these, or to request a catalogue of all our publications, please contact:

01473 212 115
resources@parkinsons.org.uk

You can also download them from our website at parkinsons.org.uk/publications
Levodopa is always given combined with either benserazide or carbidopa. It can be used at all stages of Parkinson’s.

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<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levodopa (see page 21)</td>
<td></td>
</tr>
<tr>
<td>Co-beneldopa (benserazide plus levodopa)</td>
<td>Madopar</td>
</tr>
<tr>
<td></td>
<td>Madopar CR</td>
</tr>
<tr>
<td>Co-careldopa (carbidopa plus levodopa, available in unbranded form)</td>
<td>Caramet CR</td>
</tr>
<tr>
<td></td>
<td>Duodopa</td>
</tr>
<tr>
<td></td>
<td>Sinemet</td>
</tr>
<tr>
<td></td>
<td>Sinemet Plus</td>
</tr>
<tr>
<td></td>
<td>Sinemet CR</td>
</tr>
<tr>
<td></td>
<td>Half Sinemet CR</td>
</tr>
<tr>
<td></td>
<td>Lecado</td>
</tr>
<tr>
<td>Co-careldopa plus entacapone (see next page)</td>
<td>Stalevo</td>
</tr>
<tr>
<td>Dopamine agonists (see page 27)</td>
<td></td>
</tr>
<tr>
<td>These drugs may be given on their own or prescribed alongside levodopa or other drugs.</td>
<td></td>
</tr>
<tr>
<td>Bromocriptine (available in unbranded form)</td>
<td>Parlodel</td>
</tr>
<tr>
<td>Unbranded (generic) name</td>
<td>Brand names</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Cabergoline (available in unbranded form)</td>
<td>Cabaser</td>
</tr>
<tr>
<td>Pergolide</td>
<td>Available in unbranded form</td>
</tr>
</tbody>
</table>
| Pramipexole (available in unbranded form) | Mirapexin  
  Mirapexin prolonged release |
| Ropinirole (available in unbranded form) | Adartrel  
  Ralnea XL  
  Requip  
  Requip XL  
  Spiroco XL |
| Rotigotine | Neupro |
| Apomorphine | APO-go PEN  
  APO-go PFS |

Unlike other dopamine agonists, apomorphine is usually reserved for late Parkinson’s when symptoms are severe and levodopa is not working well all the time.

**Monoamine oxidase type B (MAO-B) inhibitors** (see page 35)
These drugs are sometimes used alone in early Parkinson’s, or with levodopa and sometimes other drugs, in late Parkinson’s.

| Rasagiline | Azilect |
| Selegiline (available in unbranded form) | Eldepryl  
  Zelapar |
Catechol-O-methyltransferase (COMT) inhibitors
(see page 39)
In late Parkinson’s, COMT inhibitors are used alongside levodopa to help it work more smoothly.

<table>
<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entacapone</td>
<td>Comtess</td>
</tr>
<tr>
<td>Tolcapone</td>
<td>Tasmr</td>
</tr>
</tbody>
</table>

Glutamate antagonist (see page 43)
This is usually used with other Parkinson’s medication and has an effect on tremor and stiff muscles.

<table>
<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amantadine</td>
<td>Symmetrel</td>
</tr>
</tbody>
</table>

Anticholinergics (see page 45)
These drugs are not used very often for Parkinson’s but sometimes they are used for reducing tremor and stiff muscles.

<table>
<thead>
<tr>
<th>Unbranded (generic) name</th>
<th>Brand names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orphenadrine (available in unbranded form)</td>
<td>Disipal</td>
</tr>
<tr>
<td>Procyclidine (available in unbranded form)</td>
<td>Arpocolin Kemadrin</td>
</tr>
<tr>
<td>Trihexyphenidyl (benzhexol) (available in unbranded form)</td>
<td>Broflex</td>
</tr>
</tbody>
</table>
**Acetylcholine**
A chemical messenger found in the body that sends messages between nerve cells and muscles. These messages can affect the way muscles work. The anticholinergic drugs work on acetylcholine.

**Dopamine**
A chemical messenger made in the brain. It transmits messages from the brain to other parts of the body, mainly to the ones that control movement. In Parkinson’s, there is less dopamine because the brain cells that make it die. Parkinson’s symptoms are caused by this loss of dopamine.

**Dyskinesia**
Involuntary or unusual movements, such as jerking, twitches or spasms. They can affect any part of the body. The strength of dyskinesias can vary from mild to severe. Dyskinesia happens because of the combination of the condition and Parkinson’s medication. It is most common in people who have been taking levodopa for many years. The prescription often has to be adjusted to find a balance between enough medication to control the symptoms, and a dose that does not bring on too much dyskinesia.

**Enzyme**
Complex proteins made by living cells, which speed up chemical reactions in the body, such as breaking down drugs. Some Parkinson’s drugs work by acting on enzymes in the body.

**‘On/off’**
Describes changes in the ability to move, which happens in some people with long-standing Parkinson’s who take levodopa. In the ‘on’ state, the person can move, while in the ‘off’ state they can stop moving altogether. People can switch from one state to the other in minutes or even seconds.

**‘Wearing-off’**
An effect experienced by many people who have been taking Parkinson’s drugs for some time. The dose does not work for as long as it used to and the beneficial effects wear off before it is time to take the next dose.
Drug treatments for Parkinson’s

If you have comments or suggestions about this booklet, we’d love to hear from you. This will help us ensure that we are providing as good a service as possible. We’d be very grateful if you could complete this form and return it to:

Resources and Diversity, Parkinson’s UK, 215 Vauxhall Bridge Road
London SW1V 1EJ.

Or you can email us at publications@parkinsons.org.uk. Thanks!

Please tick...

☐ I have Parkinson’s. When were you diagnosed? .................................................................
☐ I’m family/a friend/a carer of someone with Parkinson’s
☐ I’m a professional working with people with Parkinson’s

Where did you get this booklet from?

Please tick...

☐ GP, specialist or Parkinson’s nurse
☐ Parkinson’s UK local group or event
☐ Our website
☐ Information and support worker
☐ Ordered from us directly
☐ Other ..................................................................................................................................................

How useful have you found this booklet? (1 is not useful, 4 is very useful)  ☐ 1  ☐ 2  ☐ 3  ☐ 4

Has this resource given you information that might help you manage your condition better?

☐ NA  ☐ It hasn’t helped  ☐ It has helped a little  ☐ It has helped a lot

Have you found the publication easy to read/use?  ☐ Yes  ☐ No

Continued over the page
What aspects did you find most helpful?
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Were you looking for any information that wasn’t covered?
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Do you have any other comments?
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If you would like to become a member of Parkinson’s UK, or are interested in joining our information review group (people affected by Parkinson’s who give us feedback on new and updated resources), please complete the details below and we’ll be in touch.

☐ Membership ☐ Information review group

Name ..................................................................................................................................................................................................................................................................................................................................................................................................................
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Address ..................................................................................................................................................................................................................................................................................................................................................................................................................
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Telephone ..................................................................................................................................................................................................................................................................................................................................................................................................................

Email ..................................................................................................................................................................................................................................................................................................................................................................................................................

What is your ethnic background?

Please tick...
☐ Asian or Asian British ☐ Black or Black British ☐ Chinese ☐ Mixed
☐ White British ☐ White other ☐ Other (please specify) ..................................................................................................................................................................................................................................................................................................................................................................................................................

Thank you to everyone who contributed to or reviewed this booklet:

Kate O’Donnell, Medicines Management Pharmacist – Community Services, University Hospital of South Manchester NHS Foundation Trust

Lee Kieft, Parkinson’s Disease Nurse Specialist, The Queen Elizabeth Hospital, Woolwich, London

Thanks also to our information review group and other people affected by Parkinson’s who provided feedback.

We make every effort to make sure that our services provide up-to-date, unbiased and accurate information. We hope that this will add to any professional advice you receive and will help you to make any decisions you may face. Please do continue to talk to your health and social care team if you are worried about any aspect of living with Parkinson’s.

References for this booklet can be found in the Microsoft Word version at parkinsons.org.uk/publications

How to order our resources
01473 212 115
resources@parkinsons.org.uk
Download them from our website at parkinsons.org.uk/publications

Can you help?
At Parkinson’s UK, we are totally dependent on donations from individuals and organisations to fund the work that we do. There are many ways that you can help us to support people with Parkinson’s. If you would like to get involved, please contact our Supporter Services team on 020 7932 1303 or visit our website at parkinsons.org.uk/support. Thank you.
Every hour, someone in the UK is told they have Parkinson’s. Because we’re here, no one has to face Parkinson’s alone.

We bring people with Parkinson’s, their carers and families together via our network of local groups, our website and free confidential helpline. Specialist nurses, our supporters and staff provide information and training on every aspect of Parkinson’s.

As the UK’s Parkinson’s support and research charity we’re leading the work to find a cure, and we’re closer than ever. We also campaign to change attitudes and demand better services.

Our work is totally dependent on donations. Help us to find a cure and improve life for everyone affected by Parkinson’s.

**Parkinson’s UK**
Free* confidential helpline **0808 800 0303**
Monday to Friday 9am–8pm, Saturday 10am–2pm. Interpreting available.
Text Relay **18001 0808 800 0303**
(for textphone users only)
[hello@parkinsons.org.uk](mailto:hello@parkinsons.org.uk)
[parkinsons.org.uk](http://parkinsons.org.uk)
*calls are free from UK landlines and most mobile networks.