What is apomorphine?
People with Parkinson’s don’t have enough of a chemical called dopamine, because some of the nerve cells in their brain that make it have died. A lack of dopamine causes the symptoms of Parkinson’s.

Although there’s currently no cure for Parkinson’s, a range of drugs, treatments and therapies are available to manage the symptoms.

Apomorphine is a strong type of dopamine agonist. Dopamine agonist drugs act like dopamine to stimulate nerve cells. These nerve cells then control movement and other body functions, so this helps reduce Parkinson’s symptoms.

Unlike other dopamine agonist drugs, which are taken as tablets or patches, apomorphine is taken by injection or continuous infusion, using a pump. Infusion is when medication is delivered non-stop into your body using tubing with a needle at the end (called a cannula) that is inserted under the skin.

When is apomorphine prescribed?
Every person with Parkinson’s has a different experience of the condition. Your specialist or Parkinson’s nurse (if you have one) will try to find the treatment that is best for you. Because the symptoms of Parkinson’s change over time, your medication regimen will sometimes have to change as well.

Find out more: see our booklet Drug treatments for Parkinson’s.

Apomorphine is usually saved for more advanced Parkinson’s, when a person’s symptoms do not respond well to oral drug treatments.

Apomorphine doesn’t help everyone. But your specialist or Parkinson’s nurse may suggest trying it if you:

- have sudden and unpredictable changes in your symptoms, or
- have severe ‘off’ periods that aren’t controlled by other Parkinson’s medications
'On/off' refers to motor fluctuations, usually caused by levodopa ‘wearing off’ before the next dose is due. ‘On’ is when your symptoms are controlled and when you feel at your most capable. Being ‘off’ is when your Parkinson’s symptoms recur and affect you the most.

**Find out more:** see our information sheet *Wearing off and involuntary movements (dyskinesia).*

### How is apomorphine taken?

Apomorphine can be taken in one of these ways:

- a pre-filled disposable pen you can use to give injections as needed (APO-go PEN)
- infusion over a period of several hours (usually during the day) via a portable, battery-driven pump (a syringe driver) using a pre-filled syringe (APO-go PFS)
- infusion over a period of several hours (as above) using a portable, battery-driven pump (a syringe driver), a syringe (APO-go) and apomorphine in glass vials called ampoules. These may need to be diluted using salt solution (saline)

For each option, the dose can be adjusted to suit you. All methods give the drug through a fine needle inserted into the fatty layer under the skin (a subcutaneous injection). It is not an injection given into a vein (intravenously).

**Injection**

Injections can be effective if you have five or six ‘off’ periods a day. The APO-go PEN is a ready-loaded, multi-dose, disposable pen. It holds 30mg apomorphine, and the individual dose can be set by turning the dial.

The pen injects apomorphine just under the skin. The injection can be repeated several times a day, whenever you need it. One advantage of this method is that it is less likely to irritate your skin than continuous infusion using a pump with a syringe driver as you can change where you inject each time.

**Infusion**

If you have so many ‘off’ periods that repeated injections are unsuitable, you may use a syringe driver. This is a small, battery-driven pump that delivers a continuous dose of medication from a syringe. If you need more than seven to 10 injections a day, you may be changed to a syringe driver. This change can greatly improve your quality of life.

The syringe has a fine needle that will be inserted under your skin, either in your lower stomach or on the outside of your thighs.

You will be taught how to set up an infusion, but if you're unable to do it, a district nurse may be trained to set it up in the morning, before taking it out in the evening. The nurse may also set up the device so it can be left in to be removed the next day.
You may need to give yourself boosters of apomorphine using the pump. This can help control symptoms. You should discuss this with your specialist or Parkinson’s nurse.

If you use a pump, you can carry it in your pocket or a small pouch. The drug company can provide a pouch with an elasticated belt free of charge.

**Is injection or infusion right for me?**
No one method is right for everyone. If you are talking about taking apomorphine with your specialist or Parkinson’s nurse, you will discuss the most appropriate system for you. The choice will depend on how often you need to take apomorphine, how well you can use your hands, your lifestyle and whether you have anyone to help you if you need it.

Will I be trained how to use apomorphine?
Because apomorphine has to be taken by injection or infusion, you and your carer (if you have one) will have to learn how to do this. Ideally, apomorphine will be started in hospital, under the guidance of a Parkinson’s specialist or Parkinson’s nurse. This may mean you have to stay in hospital for a few days, or you may be trained at home.

APO-go nurse advisors can also start you on treatment. APO-go nurse advisors are registered general nurses with specialist experience in APO-go injections and infusions as well as the general management of Parkinson’s.

If you or your carer are not able to insert the needle or set up the equipment, a district nurse may come daily to do this. APO-go nurse advisors can also support you with home visits and telephone contact if you need it.

**What are the advantages of apomorphine?**

**Injections can act as a rescue treatment**
Injections using the pen are taken in a similar way to insulin for diabetes. Apomorphine works within five to 10 minutes, much faster than oral medications, and can act as a ‘rescue’ treatment if your tablets or capsules don’t take effect. The effects generally wear off after 40 minutes, but by this time, your usual medication may have kicked in. This is very useful to treat a sudden ‘off’ period.

Because of this, it can sometimes help people with Parkinson’s to stay in employment or to continue other activities for longer than may otherwise be possible.

If you are concerned about not being able to give yourself an injection during an ‘off’ period, you should speak to your specialist or Parkinson’s nurse.

**You may experience fewer ‘off’ periods**
You may find that if you use a continuous infusion of apomorphine over several months, you can significantly reduce the number of ‘off’ periods.

“I, or a friend, give my sister her apomorphine. We have to insert the needle every morning and take it out at night before she goes to bed. She was admitted to hospital when the apomorphine was started, and this is where I was taught the technique. For her, the treatment is effective.”

Lily, whose sister has Parkinson’s
What are the disadvantages of apomorphine?

**Only available by injection or infusion**
At the moment, apomorphine can only be given in this way. Other methods have been tried but proved to be unsuitable. This may have an impact on your lifestyle. If possible, it is important to involve a partner, close friend or relative who can give injections if you can’t move well enough to do it yourself.

**Causes nausea and vomiting**
Apomorphine can cause severe short-term nausea and sickness. If you experience these side effects you may take an anti-sickness drug called domperidone (Motilium). This will be given with apomorphine, beginning at least two days before you start treatment.

Anti-sickness medication may be gradually reduced after a short while. For some people, it can be stopped completely. Speak to your specialist or Parkinson’s nurse to find out what is best for you.

**Injection sites can become sore and irritated**
The areas of skin where the needle goes in can become sore, especially when an apomorphine pump is used. You’ll need to change where you put the needle each day to reduce the risk of this happening. A small number of people use their syringe drivers continuously, day and night. If you have to do this, you need to change where your needle is inserted each time, otherwise your skin will get very sore.

Lumps (nodules) may appear under the skin where the needle is inserted, but these can be treated using ultrasound. You can prevent them by making sure the place where the needle is inserted is clean, changing the injection site every day and gently rubbing your skin once you’ve taken the needle out.

Some people experience a reaction at the injection site, however this is rare.

If your skin becomes very sore, speak to your GP, specialist or Parkinson’s nurse.

**Hallucinations and delusions**
Not everyone who takes Parkinson’s drugs will experience hallucinations and delusions, but they can affect people who take apomorphine. They can be disturbing to those who experience them and the people around them. Speak to your GP, specialist or Parkinson’s nurse about any hallucinations or delusions that you or the person you care for are experiencing. In general, they can be treated, but in cases where they can’t, there may be ways to manage their impact.

**Find out more:** see our information sheet *Hallucinations and delusions in Parkinson’s.*

**Impulsive or compulsive behaviour**
Some people who take dopamine agonists, including apomorphine, may experience impulsive or compulsive behaviour.
Some examples of this behaviour include gambling, binge eating, becoming a ‘shopaholic’ or thinking about sex so much that it gets in the way of everyday life. This behaviour can have a devastating impact on you and those around you. If you think this is happening to you or someone close to you, tell your specialist or Parkinson’s nurse right away. You may feel that some of this behaviour is embarrassing or uncomfortable to talk about. But remember it won’t reflect badly on you – your healthcare professional will have spoken to others with similar problems, and won’t tell anyone else what you tell them. They may be able to make changes to your medication to help with this problem.

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

**Practical issues**

The drug breaks down in contact with light and air, so it should be used as soon as it is opened. You should always check the solution before you use it – it should be clear, colourless and without any specks. Do not use if the solution has turned green.

Also, try not to spill the drug as it can leave a blue or green stain on clothing, furniture and carpets.

**Is apomorphine available on the NHS?**

The APO-go PEN can be prescribed, and the needles come free of charge with the prescription. Speak to your GP, specialist, Parkinson’s nurse or pharmacist about how you can get the equipment you need.

The battery driven pumps are loaned free of charge from the drug companies that make them.

You can get the fine infusion tubes that are used with syringe drivers from your local district nursing service or GP. Regionally this may differ, so you should check with your GP surgery.

**How may apomorphine affect other medications I take?**

In general, apomorphine does not affect other drugs that are used to treat Parkinson’s. However, your specialist team may reduce some of the other treatments you take, when you take apomorphine, as they may no longer be needed.

**More information and support**

Your specialist or Parkinson’s nurse will aim to find the best treatment for you as an individual, and they are the best people to speak to about your medication, including apomorphine.

You can also speak to a pharmacist if you want to know more about a particular Parkinson’s drug.

For information about apomorphine, you can also contact the medical information line of the pharmaceutical company that provides apomorphine:

**Genus Pharmaceuticals (APO-go)**

APO-go helpline 0844 880 1327

www.apo-go.co.uk

**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 make contact with other health and social care professionals to make sure your needs are met.

The role of the Parkinson’s nurse varies. Each will offer different services, aiming to meet local needs. Some nurses are based in the community, whereas others are based in hospital settings.
Many Parkinson’s nurses are independent prescribers. This means they can prescribe and make adjustments to medication, so someone with Parkinson’s doesn’t always need to see their specialist for changes to or queries about their Parkinson’s drugs.

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

You can find out more at parkinsons.org.uk/nurses

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

You can call our free confidential helpline for general support and information. Call **0808 800 0303** (calls are free from UK landlines and most mobile networks) or email hello@parkinsons.org.uk. We run a peer support service if you’d like to talk on the phone with someone affected by Parkinson’s who has faced similar issues to you. The service is free and confidential – ring the helpline to talk to someone about being matched with a volunteer.

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

We also have a self-management programme for people with Parkinson’s, partners and carers. It is an opportunity to reflect on life with the condition, learn about self-management and think about the future. To find out if there is a group near you visit parkinsons.org.uk/selfmanagement

Our website parkinsons.org.uk has a lot of information about Parkinson’s and everyday life with the condition. You can also find details of your local support team and your nearest local group meeting at parkinsons.org.uk/localtoyou

You can also visit parkinsons.org.uk/forum to speak with other people in a similar situation on our online discussion forum.
Thank you
Thank you very much to everyone who contributed to or reviewed this information sheet:

Dr Tom Foltynie, Senior Lecturer and Honorary Consultant Neurologist in Movement Disorders, University College London

Emma Briggs, Parkinson's Disease Nurse Specialist, University Hospitals of Morecombe Bay NHS Foundation Trust

Ruth Harris, Clinical Pharmacist, University Hospital of South Manchester NHS Foundation Trust

Thanks also to our information review group and other people affected by Parkinson's who provided feedback.
Apomorphine (2014)

If you have comments or suggestions about this information sheet, 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 Editorial and Creative Services, 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 information sheet from?

☐ GP, specialist or Parkinson’s nurse ☐ Information and support worker

☐ Parkinson’s UK local group or event ☐ Ordered from us directly

☐ Our website ☐ Other ...........................................................................................................................................................................................

How useful have you found the information sheet? (1 is not useful, 4 is very useful) 1 2 3 4

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

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

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, please complete the details below and we’ll be in touch.

☐ Membership ☐ Information review group (who give us feedback on new and updated resources)

Name ...........................................................................................................................................................................................

Address ...........................................................................................................................................................................................

Telephone ..........................................................................................................................................................................................

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

What is your ethnic background? ☐ Asian or Asian British ☐ Black or Black British ☐ Chinese ☐ Mixed

☐ White British ☐ White other ☐ Other (please specify) ...........................................................................................................................................................................................
We’re the Parkinson’s support and research charity. Help us find a cure and improve life for everyone affected by Parkinson’s.

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.

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
parkinsons.org.uk
*calls are free from UK landlines and most mobile networks.

How to order our resources
0845 121 2354
resources@parkinsons.org.uk
Download them from our website
at parkinsons.org.uk/publications

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 information sheet can be found in the Microsoft Word version at parkinsons.org.uk/publications