



# Pulmonary embolism

## What is a pulmonary embolism?

A pulmonary embolism happens when a blood vessel in your lungs becomes blocked. Most of the time, this blockage is caused by a blood clot and happens suddenly.

It can be very serious because it can stop blood going to your lungs. Fast medical treatment can be lifesaving.

## What are the symptoms?

The symptoms of a pulmonary embolism can sometimes be difficult to recognise because they can vary between different people. And the symptoms of a blood clot to the lungs are also seen in many other lung conditions.

The main symptoms are chest pain, feeling short of breath, coughing and feeling faint or even passing out.

**See a GP** if you, or someone you care for, has a combination of these symptoms:

- chest pain
- shortness of breath (read more about this at [blf.org.uk/breathlessness](https://blf.org.uk/breathlessness))
- coughing, including coughing up blood
- feeling dizzy or faint

A blood clot in your leg can break off and travel to your lungs, so another warning sign can be a painful, red or swollen leg (usually the calf).

Some people with a pulmonary embolism get a lot more breathless than others. Watch out for these symptoms:

- **you suddenly have severe difficulty breathing or**
- **your heart is beating very fast and you feel lightheaded or**
- **you suddenly get chest pain or**
- **someone has passed out**

**Call 999 for an ambulance or go to A&E if you experience any of them.**

## What causes a pulmonary embolism?

Usually a pulmonary embolism is caused by a blood clot travelling up from one of the deep veins in your legs. This kind of clot is called a deep vein thrombosis (DVT).

In many cases, the clot occurs because of a change such as pregnancy or recent surgery. But in about 40% of cases, your health care professional may be unable to find the cause of a pulmonary embolism. It can happen for no obvious reason. This can be called 'unprovoked'.

## What increases my risk of getting a pulmonary embolism?

When you've been inactive for a long time, your chance of getting a pulmonary embolism increases.

This is because when you're inactive, blood tends to collect in the lower parts of your body, particularly in your lower legs. This isn't usually a problem because when you start to move, your blood flow increases and blood begins to move more evenly round your body. But if you're immobile for a long time, the flow of blood around your body can slow a lot. This can be:

- after an operation or a serious limb injury
- after long periods of bed rest
- during a long-haul flight or a long train or car journey lasting more than 6 hours

Around half of all people with a pulmonary embolism get it while they're in hospital.

Less commonly, you might have a condition that causes your blood to clot more easily than normal, such as cancer, or cancer treatments such as chemotherapy and radiotherapy.

Other factors that increase your risk of developing a pulmonary embolism include:

- being overweight
- pregnancy – your risk is increased for up to 6 weeks after giving birth
- smoking
- taking some forms of hormone-based contraception or hormone replacement therapy (HRT). Your chances of developing a blood clot are very small if you're taking the contraceptive pill or HRT, and your health care professional will consider your individual risk before they prescribe them.

## How is a pulmonary embolism diagnosed?

It can be hard for doctors to decide if you have a pulmonary embolism because the symptoms are similar to many other conditions. It's important to diagnose it because treating a pulmonary embolism isn't always easy and treatments can cause side effects.

If your doctor suspects a pulmonary embolism, you'll have a number of tests, such as a **chest X-ray** or an **ultrasound scan** to see if you have a blood clot in your leg, and tests to check how well your lungs are working.

Based on your doctor's assessment, you may also have specialised tests such as:

- a blood test to look for a protein called **D-dimer**. High levels of D-dimer in your blood suggest that pieces of blood clot are loose in your bloodstream.
- a **computerised tomography pulmonary angiography (CTPA)** to see the blood vessels in your lungs. You are injected with a dye that helps to show your blood vessels and a scanner uses X-rays to build a detailed picture of the blood flow in your lungs.
- a **ventilation-perfusion scan**, also called a **V/Q scan** or **isotope lung scanning**, to examine the flow of air and blood in your lungs. If the scan shows parts of your lungs have air in them but no blood supply, this may be the result of a pulmonary embolism. You will be asked to inhale a slightly radioactive gas and given an injection of slightly radioactive material. The radioactivity in this test is harmless to adults. But women who are, or might be, pregnant should tell the radiographer.
- **leg vein ultrasound** to confirm you have a clot in the leg. This is not necessary if you've been diagnosed with clots by one of the other methods.

## How is a pulmonary embolism treated?

If you need treatment for a pulmonary embolism, you'll almost always receive this in hospital. But if your clot is small, you may be discharged quickly. Sometimes, if your health care professional assesses your clot is very low risk, you may be diagnosed and treated as an outpatient.

## Taking anticoagulant drugs

The main treatment is called an anticoagulant. This is a drug that causes chemical changes in your blood to stop it clotting easily. This drug will stop the clot getting larger while your body slowly absorbs it. It also reduces the risk of further clots developing.

There are many types of anticoagulants, and your health care professional will give you the best one for you. Your first treatment is likely to be injected, then later you're likely to take tablets.

You will usually be recommended to take these drugs for at least 3 months to prevent blood clots. Some people need to take them for longer or indefinitely. For example, people who have significant, life-threatening features with pulmonary embolism, recurrent clots or an unprovoked clot may be advised to stay on the drug for the rest of their lives.

Like any drugs, anticoagulants may have side effects, and effects will vary from person to person. One of the most important problems is bleeding more easily and excessively. Because of this, if you're prescribed warfarin, you may need regular blood tests to make sure you're on the best dose. There are newer anticoagulant tablets which don't need regular blood tests. Your health care professional will make sure you take the best drug for you and your condition. Read more about warfarin at [nhs.uk/conditions/warfarin](https://www.nhs.uk/conditions/warfarin)

Anticoagulants interact with many other drugs, including herbal remedies. They can be affected by alcohol and certain foods. Your doctor, nurse and pharmacist can help you to manage your medication.

In more severe cases of pulmonary embolism, other treatments may be needed to remove or break up a clot. This might be done with drugs called thrombolytics, or less commonly, surgery.

## Recovering from a pulmonary embolism

Often, your GP will follow up after your embolism. But it's becoming more common to go back to a thrombosis service based in a hospital. This is to make sure you understand all the information and there're no problems with the drug you're taking.

Most people are treated for pulmonary embolism for at least 3 months, and some may be treated for the rest of their lives.

### How long will I feel breathless?

It's common to feel breathless for a few weeks or months after a pulmonary embolism. But if these symptoms last for more than 8 weeks, talk to a health care professional.

If you live with a condition that made you breathless before the clot, it's unlikely your breathlessness will be improved.

There are lots of conditions that can make you feel short of breath after pulmonary embolism. But your health care professional will want to check that it is not caused by pulmonary hypertension. Find out about pulmonary hypertension at [blf.org.uk/pulmonary-hypertension](https://www.blf.org.uk/pulmonary-hypertension)

### What happens when my treatment ends?

When you come to the end of treatment, your doctor may suggest further investigations to see if there was a reason for the clot – if there was one. Very rarely there might be a family history of clots. If there is, ask to be referred to a specialist. Routine testing for genetic risk is not recommended.

## What can I do to avoid getting a pulmonary embolism?

There are a number of ways you can help to prevent a pulmonary embolism.

**Take anticoagulant medication** as prescribed by your health care professional.

**Wear compression stockings** if recommended by your health care professional. These fit tightly round your lower legs and encourage your blood to flow more quickly around your body.

### Keep active

- After surgery, move around or do leg exercises as soon as you can.
- On long-haul flights and other long journeys, do leg stretching exercises: bend and straighten your legs, feet and toes every 30 minutes when you're sitting. Stand up and walk around when you can. Do some deep breathing. It also helps if you drink water regularly. Wear flight socks.
- If you're at risk of developing blood clots, consult your health care professional before travelling long distances.

## Changing your habits

We can all reduce our risk of having a pulmonary embolism by changing our habits. For example:

- not smoking
- getting regular exercise – at least 150 minutes a week (read more at [nhs.uk/Livewell/fitness/Pages/physical-activity-guidelines-for-adults](https://www.nhs.uk/Livewell/fitness/Pages/physical-activity-guidelines-for-adults))
- not sitting still for a long time – such as when we're watching tv or using a computer. Take an active break every 30 minutes or so
- eating a healthy balanced diet, with plenty of fruit and vegetables (read more at [blf.org.uk/eating-well](https://www.blf.org.uk/eating-well))
- keeping a healthy weight

Stopping smoking is particularly important in preventing a possible pulmonary embolism. Find out how to quit smoking at [blf.org.uk/smoking](https://www.blf.org.uk/smoking).

## More information and support

Our friendly helpline are dedicated to answering your questions. Give them a call on **03000 030 555**.

Get in touch with us to find support near you.

Helpline: 03000 030 555

Monday to Friday, 9am-5pm

Ringling our helpline never costs more than a local call and is usually free, even from a mobile.

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We value feedback on our information. To let us know your views, and for the most up to date version of this information and references, call the helpline or visit **blf.org.uk**