

Patient information from BMJ

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Pulmonary embolism: what is it?

A pulmonary embolism is a blockage in one of the main blood vessels that takes blood to your lungs. It is a medical emergency that needs to be treated as quickly as possible.

What is a pulmonary embolism?

The pulmonary arteries are the main blood vessels that carry blood from your heart to your lungs. If they become blocked by a blood clot this is called a pulmonary embolism (PE). This can be life threatening, as it can stop blood from reaching your lungs.

The blood clot that usually causes a PE doesn't form in the pulmonary arteries. Instead it typically forms in one of the deep veins of your legs. This is called **deep vein thrombosis** (DVT).

The blood clot then travels through your blood vessels to the pulmonary artery where it gets trapped. This can stop some or all of the blood that travels through this artery from reaching the lungs.

Most cases are caused by one of three things, or a combination of them:

- **Damage to the walls of blood vessels.** Blood can then stick to these rough, damaged surfaces and form clots. This can be caused by several things, including an injury or previous surgery.
- **Poor blood flow.** When blood is flowing sluggishly through blood vessels it's easier for clots to form. Several things can cause poor blood flow, including lack of exercise, older age, and heart failure.
- **Having blood that clots very easily.** Many things can cause this, including cancer, being pregnant, being overweight, and the genes you inherit from your parents.

Having some types of surgery can make DVT more likely, especially if you won't be able to move much for a while after the procedure. Your doctor might recommend that you take medication to reduce the chance of DVT in this case.

DVT can also develop during long flights, when people don't move for long periods. If you are on a flight that is likely to take more than a few hours, make sure you stay hydrated by drinking plenty of fluids, and flex your legs regularly to keep the blood moving.

What are the symptoms?

The symptoms of PE are similar to those of many other conditions, so your doctor won't be able to diagnose it just from your symptoms. If there's a high chance you have a PE, you will need some tests such as a computerised tomography (CT) scan and blood tests. You may also have other tests such as a chest x-ray and an electrocardiogram (ECG).

If you have a PE the symptoms will probably come on very quickly. The most common symptoms of PE are:

- Chest pain
- Difficulty breathing
- A sense of apprehension (severe worrying)
- Fast breathing
- Coughing
- Fever
- Increased heart rate, and
- Feeling faint.

If you develop sudden chest pain and difficulty breathing, get medical help straight away.

In some cases, patients can develop a PE with only mild symptoms or without any symptoms at all. If you're worried about a blood clot, speak to your doctor.

What will happen?

Most people recover from a PE. But it can be fatal, especially in more serious cases.

If you are diagnosed with a PE, you will need treatment for it. Please see our leaflet *Pulmonary embolism: what treatments work?* for more information.

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