



Pulmonary Embolism (PE)

What is PE?

A Pulmonary Embolism (PE) is a blockage in the pulmonary arteries. These are blood vessels that move blood to the lungs. The blockage is usually caused by a blood clot that formed somewhere in the body, came loose, travelled through the heart, and stopped in the lungs.

In most cases, the initial site of the blood clot is the deep veins of the leg and/or pelvis (Deep Vein Thrombosis or DVT). There are other rare causes of PE including:

- Air bubbles.
- Fat.
- Pieces of tumour.
- Amniotic fluid.

This information sheet is about PEs caused by blood clots.

Symptoms of PE include:

- Shortness of breath.
- Chest pain that is often sharp and worse on deep breathing.
- Rapid heart rate.
- Coughing up blood.
- Light headedness.
- Passing out.

Is PE dangerous?

A PE is a medical emergency.

It must be treated straight away.

If a PE is not treated properly, it can cause lung damage and sometimes death.

Why did I get a PE?

A PE can happen to anyone at any age.

For many patients, a risk factor or reason for the PE is never found, and the clot is called unprovoked or unprecipitated.

For patients with one or more risk factors causing a PE, the clot is called provoked or precipitated.

There are many risk factors for PE. Some can be controlled, others cannot be controlled, such as your age and family history. PE risk factors include:

- Reduced mobility due to:
 - Surgery, especially hip and knee surgery.
 - Significant leg injuries, especially if you require a boot or plaster.
 - Long distance journeys.
- Hospital stays.
- Oestrogen-containing medications including oral contraceptives and hormone replacement therapy.
- Pregnancy or if you have recently given birth.
- Some medical conditions like:
 - Cancer.
 - A kidney disorder called nephrotic syndrome.
 - Some immune problems, such as antiphospholipid syndrome.
- Some blood disorders, such as polycythemia vera or essential thrombocythemia.
- Previous Deep Vein Thrombosis (DVT) or PE.
- Smoking.
- Obesity.
- Increased age – progressively increasing risk after age 50.
- An inherited tendency to clot, called inherited thrombophilia.
- Family history of venous blood clots, even if an inherited thrombophilia cannot be identified.



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How is a PE treated?

PEs are treated with medications.

The medications are called anticoagulants. They are also commonly referred to as “blood thinners” or “anti-clotting medications”. There are several types of anticoagulants including:

- Infusions (heparin)
- Injections (enoxaparin/Clexane®, fondaparinux/Arixtra®)
- Tablets (warfarin/Coumadin® or Marevan®, apixaban/Eliquis®, dabigatran/Pradaxa®, rivaroxaban/Xarelto®).

Anticoagulant medication helps the body dissolve blood clots and prevent new blood clots from forming. They prevent blood clots from travelling to the lungs.

Most people with a PE need to stay in hospital for a few days or more while the anticoagulant medication is started. Treatment is different for everyone:

- Some patients will be treated with infusions or injections first.
- Other patients start taking tablets straight away.
- Almost everyone will need at least 3 months of anticoagulant treatment, and often longer than 3 months.

Are there any long term effects of a PE?

If you have had a PE, your risk of getting another PE or DVT in the future is increased¹. The recurrence rate is different for everyone. It depends on the:

- Triggers you had.
- Your risk factors.
- Your age.
- Your gender.

If your recurrence rate is very high, you may be advised to continue anticoagulant medication long term.

Chronic thromboembolic pulmonary hypertension (CTEPH) is a very rare complication. It can occur months to years after a PE². People with this condition experience shortness of breath that occurs slowly and gradually worsens over time.

¹ Heit J.A., et al. Predictors of recurrence after deep vein thrombosis and pulmonary embolism: a population-based cohort study. *Arc of Intern Med.* 2000, 160(6): 761-768.

² Pengo V., et al. Incidence of chronic thromboembolic pulmonary hypertension after pulmonary embolism. *NEJM.* 2004, 350(22): 2257-2264.

What do I need to do in the future, now that I have had a PE?

Some people will need to stay on anticoagulant medication long term. If your doctor said it is safe for you to stop the medication, and you are not taking it; there are several things you should remember.

You should have preventative anticoagulant medication during periods of high risk for a new PE or DVT.

For example:

- After surgery.
- If you are immobile for any reason.
- Flights over 4 hours.

The preventative medication may be low dose Clexane injections or an anticoagulant tablet.

If your PE was triggered by oestrogen containing medication, you should avoid these medications for life.

If your PE was pregnancy related, you may require preventative anticoagulant medication for future pregnancies. This will be low dose Clexane during pregnancy, after birth, or both.

See your doctor immediately if you have symptoms of a PE, blood clot or DVT in an arm or leg.

PE Symptoms include:

- Shortness of breath.
- Chest pain.
- Rapid heart beat.

DVT Symptoms include:

- Swelling.
- Pain.
- Warmth.
- Redness.

Stop smoking to reduce your risk.

If obesity was one reason for your DVT, losing weight can also reduce your risk.

This leaflet was developed by THANZ for education and information purposes only and does not replace advice from a treating health professional. Always see your health care provider for assessment and advice about your individual health before taking action or relying on published information.



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