Pulmonary Embolus

This leaflet offers information about pulmonary embolus. If you have any further questions or concerns, please speak to the staff member in charge of your care.

What is a pulmonary embolus and why have I got it?

A pulmonary embolus (PE) is a blockage of one or more of the blood vessels in the lungs. It is commonly caused by a blood clot that has developed in the leg or pelvic veins which then breaks off and travels to the lungs. Sometimes a PE happens for no obvious reason. Sometimes they may happen due to of the following:

- surgery
- trauma such as fractures or muscle injuries
- long periods of immobility
- long journeys including flights of over four hours duration or long unbroken car journeys
- pregnancy and the postpartum period
- use of combined oral contraception or hormone replacement therapy
- being overweight
- cancer.

Some people have an inherited or acquired tendency for their blood to clot. This is called thrombophilia and can mean a PE is more likely to happen. It can affect other members of the family and you will be given advice about this if needed.

What are the signs and symptoms?

The signs and symptoms of PE are:

- shortness of breath
- chest pain
- coughing up blood
- collapse in severe cases.

Do I need any tests to confirm the diagnosis?

If you show symptoms of a PE, you may have one or more of the following tests:

- **Chest X-ray** – to help diagnose a PE but mainly to check that there is no other cause.
- **VQ scan** – a two-part scan to confirm diagnosis of PE. Firstly, a contrast dye is injected into the lungs so the scanner can see the blood flow. Secondly, you are asked to breathe in a harmless gas that will show the air flow in the lungs. The two parts are then matched and looked at by a radiologist to see if you have a PE.

- **CTPA** – a non-invasive scan to try to see if you have a blood clot if other tests are not clear.
- **Pulmonary angiogram** – a non-routine test where a dye is injected into the blood vessels in the lung, so any blockages will show on an X-ray.
- **Electrocardiogram (ECG)** – a test to trace your heart rhythm to help confirm if you have a PE.
- **Echocardiogram** – a non-invasive ultrasound test to show any effects of PE on the heart.
- **Blood gas analysis** – a blood test to see how much oxygen is in your blood, as there may be less than normal after a PE.
- **Ultrasound** – a painless test where an ultrasound probe is used to look for clots in the deep veins of your legs or pelvis. If a clot is detected this may help confirm a PE diagnosis.

What treatments are available?

Once PE is confirmed you will be started on **anticoagulant** drugs which make your blood take longer to clot (sometimes called thinning the blood or making it less sticky) and this lessens the risk of your clot getting any bigger. Your body can then dissolve the clot itself over the next few weeks.

The most commonly used anticoagulants are rivaroxaban, apixaban, edoxaban or dabigatran. If you cannot have these for any reason you will be started on heparin or warfarin.

You do not normally need to have this treatment in hospital as most patients are treated at home.

- **Rivaroxaban**, **Apixaban, Edoxaban, Dabigatran** – you may be prescribed one of these drugs which are oral tablets. These drugs are termed ‘direct oral anticoagulants’. Dosing varies dependent on the drug - see the instructions on your dispensed medications.
- **Heparin** – is usually given by injection under the skin or by a drip into a vein with a fast effect. Warfarin tablets are also started and heparin is stopped when the warfarin starts to work fully.
- **Warfarin** – is taken once a day in tablet form. It takes several days to have a full effect so is used with heparin until the right blood level is reached and then the heparin is stopped.

Clot buster (thrombolytic) drugs may be used to dissolve the blood clot if the PE is life threatening. This is not a common treatment. Anticoagulants are still needed after this.

Surgery to remove the clot is only necessary in a small number of patients if the PE is life threatening. Anticoagulants are still needed after this.

IVC filter is used very rarely, when anticoagulants by themselves may not stop a PE happening again. A filter is put into the main blood vessel carrying blood to the heart (the inferior vena cava) to trap clots and stop them reaching your lungs. It is usually removed 10 to 12 days later when the risk is lower, although it may be left in place permanently.

What happens next?

Your anticoagulant treatment will need to be reviewed at the **anticoagulant clinic**.
If you are taking warfarin the clotting time of your blood must be regularly checked and measured against a standard. This gives us your International Normalised Ratio (INR), which we will normally try to keep between two and three, meaning your blood will take two to three times longer to clot than normal. Your dose of warfarin may be changed according to your INR.

As warfarin and direct oral anticoagulants can affect other medications you must tell anyone prescribing other drugs for you that you are on warfarin or direct oral anticoagulant.
Most people take anticoagulants for a minimum of three months. You may need to have treatment for longer depending on the cause of the blood clot and how bad it is. If you have had a clot before then you may be advised to stay on anticoagulation for life.

If you are advised to stop anticoagulation, you may be asked to have a blood test to check whether you have an inherited or acquired tendency to develop blood clots.

What do I need to do after I go home?

You should not return to work until your acute symptoms have gone, usually after six weeks. Your GP can advise about returning to work. You may continue to have chest pain for several weeks after your PE. Take regular painkillers to help this and if your chest pain changes or gets worse seek medical advice straightaway (see below).

You should only start driving again when you can carry out an emergency stop without feeling too much pain.

Being overweight can increase the risk of a clot developing so try to lose weight if needed. There is no medical reason to refrain from sex after a blood clot. Your doctor will tell you if there is anything else you should do or not do. This may depend on how bad your PE is.

What should I do if I have a problem?

If you experience any of the following go to A&E for urgent medical attention.

- worse shortness of breath
- new or worse chest pain
- coughing up blood.

Will I get another blood clot?

The risk of this depends on what caused your clot. You should take special precautions during:

- airline flights, particularly if longer than four hours
- In general, flying s not advised in the first four weeks after a PE. Once your symptoms have settled and you are tolerating anticoagulation well, it should be fine for you to travel but you may wish to discuss this with your GP or at your anticoagulation clinic.
- long periods of immobility
- pregnancy and the postpartum period.

You will also need to take extra precautions and advice after surgery, trauma or lower limb fracture. You should check with your GP first if you are thinking of taking hormone replacement therapy or the combined oral contraceptive pill.

If you are admitted to hospital, you must tell your doctor that you have had a blood clot.

Useful sources of information

NHS Pulmonary Embolism
Pulmonary embolism - NHS

Contact us

If you have any questions or concerns about pulmonary embolus, please contact the anticoagulant clinic on 020 8725 2826 (Monday to Friday, 9am to 4 pm). Out of hours, please contact our switchboard on 020 8672 1255 and ask for the haematology specialist registrar on call.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you advice and information when you have comments or concerns about our services or care. You can contact the PALS team on the advisory telephone line Monday, Tuesday, Thursday and Friday from 2pm to 5pm.

A Walk-in service is available:
Monday, Tuesday and Thursday between 10am and 4pm
Friday between 10am and 2pm.

The Walk-in and Advisory telephone services are closed on Wednesdays.
Please contact PALS in advance to check if there are any changes to opening times.

PALS is based within the hospital in the ground floor main corridor between Grosvenor and Lanesborough wings.

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS UK

The NHS provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.
Web: www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.
Tel: 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.

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