



## **Education**

### **Pulmonary Embolism**

#### **What is a pulmonary embolism?**

A blood clot that travels through the blood vessels is called an embolus. A pulmonary embolism is a blood clot that blocks an artery in your lungs. It can be a life-threatening problem.

#### **How does it occur?**

Inside the body, blood is normally a fluid. Occasionally, something goes wrong with the clotting system and blood clots form where they are not supposed to -- inside the blood vessels, usually in leg veins. The clot may form because you sit for long periods or have injured your leg, but often the cause is not known.

Clots tend to break into pieces. These pieces may float in the bloodstream until they block a blood vessel. A pulmonary embolus is a blood clot that breaks off from the wall of a vein and travels to the lungs.

Blood clots may form more easily in your blood vessels if your blood is flowing very slowly through your veins or if disease or medicines you are taking increase the tendency to clot. Your risk of developing blood clots increases if:

- You smoke.
- You are less active as a result of surgery, disability, or illness.
- You have cancer or heart failure or other heart diseases.
- You have problems with your veins, such as phlebitis (inflammation of the wall of a vein) or varicose veins.
- You have broken a leg or hip.
- You have had a stroke or a heart attack.
- You have had blood clots before.
- You use birth control pills or certain other medicines.
- You sit for long periods (such as with car and airplane travel).

#### **What are the symptoms?**

Symptoms of a pulmonary embolism may include:

- chest pain (often it hurts when you take a deep breath)
- shortness of breath
- dizziness
- fever
- coughing up blood
- swelling of veins in the neck or swelling in the legs
- feeling anxious
- lightheadedness or fainting.

#### **How is it diagnosed?**

Your health care provider will examine you and take your medical history. To confirm the diagnosis and determine how severe any damage is, your provider will order tests and scans, which may include:

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- chest x-ray
- CT scan
- electrocardiogram (a recording of the heart's electrical activity, also called an ECG)
- measurement of the level of oxygen in your blood (arterial blood gas)
- lung scan (using radioactive tracers to get pictures of the circulation of blood in your lungs)
- ultrasound scan of your legs to look for clots
- pulmonary angiogram (an x-ray using special dye to create a picture of the arteries in the lungs).

### **How is it treated?**

You usually need to be in the hospital. Your treatment depends on the results of lab tests, how sick you are, and where the embolus comes from. Most pulmonary embolisms can be treated with blood thinners (anticoagulants). These medicines stop the clot from getting bigger and allow your body to try to dissolve the blood clot. They also stop more clots from forming. You will start taking a blood thinner by IV or by injection in the hospital. You will continue taking a different kind of blood thinner, usually a pill, after you leave.

You may need a thrombolytic drug. This type of drug is a powerful clot dissolver that works quickly to dissolve the embolus. Because this medicine makes it much harder for your blood to clot, you must be watched carefully for too much bleeding during your treatment.

If you are very ill, surgery to remove the embolus from your artery may be your only chance for survival. The surgery will improve blood flow through your lungs.

If you keep having more emboli, you may have surgery to put a small plastic filter in the large abdominal vein that returns blood to the heart. The filter can trap blood clots and prevent them from reaching your lungs.

### **How long will the effects last?**

How long the effects last depends on:

- the size of the clot
- how easily the medicines dissolve the clot
- the reason the clot formed.

Many of the symptoms will get better with treatment, but you may have less energy and stamina for several weeks. Most people need to take blood thinners for 3 to 6 months. People who have a very high risk of getting more clots may need to take blood thinners for life.

### **How can I take care of myself?**

- Follow the treatment prescribed by your health care provider.
- If you are taking a blood thinner:
  - Make sure you understand how to take your medicines and follow the instructions exactly.
  - Make sure you have all the blood tests recommended by your provider to check how well your blood thinner is working.
  - Avoid pain medicines such as aspirin, ibuprofen (Motrin, Advil, Nuprin), and naproxen (Naprosyn, Aleve). These medicines may cause bleeding or ulcers. Be sure that you tell all health care providers who treat you about all the products (prescription, nonprescription, supplements, natural remedies, and vitamins) you are taking.
  - Blood thinners will make you bleed more than usual. To help prevent cuts, consider wearing rubber gloves or garden gloves for household and outdoor work. Don't walk barefoot.
- Do not smoke.
- Watch for signs of swelling in your legs.
- Put your legs up and wear special elastic stockings if prescribed by your health care provider.
- Ask your health care provider how soon you can start or go back to a regular exercise program.

### **What can I do to help prevent a pulmonary embolism?**

- Get regular exercise according to your health care provider's recommendation.
- If you are bedridden or recovering from major surgery, your provider may prescribe a blood thinner to prevent

clots from forming while you are inactive.

- If you travel long distances, be sure to stand and walk often (for example, get up every hour, and move your legs and feet while you are sitting). Don't sit cross-legged on long trips.
- Unless your health care provider has asked you to limit liquids, drink plenty of fluids.
- If you are planning surgery, ask your provider what can be done to prevent blood clots.
- Do not smoke.
- Avoid wearing anything on the legs that restricts the return of blood from the feet to the heart such as knee high hose that have an elastic band at the top of them.

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