



Education

Deep Vein Thrombosis

What is deep vein thrombosis?

Deep vein thrombosis (DVT) occurs when a blood clot forms in a deep-lying vein, usually in the legs. Such a clot is dangerous because the clot may break loose, travel through your bloodstream, and block arteries in your lungs, causing permanent damage or death.

How does it occur?

DVT may occur when the blood moves through deep veins in your legs more slowly than normal or when there is some factor that makes your blood more likely to clot. When you are bedridden (after surgery, for example) or when you sit still for a long time (such as during a long plane flight), your blood moves more slowly. Blood pools in the larger veins of your legs, and clots may form. Also, injury, major illness, and some medicines increase the tendency for blood to clot.

Your risk of having DVT increases if you have some conditions, including:

- immobility
- orthopedic surgery
- fractures of the hip or leg
- pelvic surgery
- stroke
- congestive heart failure
- varicose veins
- some cancers.

Smoking cigarettes also increases the risk you will have a blood clot.

What are the symptoms?

About half of people with DVT have no symptoms until a clot blocks a major vein. When DVT causes symptoms and blocks blood flow, symptoms may include:

- swelling of the calf, ankle, foot, or thigh
- increased warmth of the leg
- redness
- pain in the leg
- bluish discoloration of the skin on the leg or toes.

How is it diagnosed?

Your health care provider will ask about your medical history and your symptoms. Your provider will examine you, especially any abnormal areas, such as a swollen leg. Sometimes the clotted area can be felt deep in the calf or thigh. Your legs may be measured to compare sizes on the right and left.

Tests are needed to confirm the diagnosis. The most common tests are plethysmography, ultrasound exams, and contrast venography.

- **IPG (impedance plethysmography)** measures vein function in the arm or leg. Your health care provider or a technologist will place a pressure cuff on your arm or leg and measure how fast the veins empty.
- **Ultrasound exams** use sound waves to make pictures. Sound waves are bounced off the deep veins in an arm or leg. These echo pictures help locate any blockages. Ultrasound is also used to measure how fast the blood flows through the veins.
- **Contrast venography** is used when other tests don't give a definite answer. A special dye is injected into a vein while x-ray pictures are taken. It usually shows any blockages in your veins.

Blood clots are sometimes discovered by doing a CT scan (computed tomography) of the pelvis.

How is it treated?

The goals of treatment are:

- Prevent more clotting.
- Prevent complications of the clot, such as a stroke.
- Allow time for the clot to dissolve.
- Prevent new clots.

Shots of blood thinners (anticoagulant drugs) are used to prevent blood clots. Examples of these medicines are heparin, dalteparin, enoxaparin, and tinzaparin. These medicines are prescribed very carefully because they can cause internal bleeding. Treatment requires balancing the risk of internal bleeding from the medicine and the risk of clots. You will have blood tests to check the effect of the medicine on your blood clotting.

Your health care provider will also prescribe bedrest. This may seem odd because bedrest can lead to clots. But if you have a clot and have started taking medicine for it, bedrest may reduce the risk of a piece of the clot breaking off and causing problems somewhere else in your body.

You may start your treatment at the hospital. When your blood tests show that your dose of heparin is at a safe and stable level, you may be able to go home, where you will keep taking a blood thinner. You may learn how to give yourself shots of heparin, a home health nurse may visit to give you the medicine, or you may be switched to warfarin (Coumadin), which you can take by mouth.

You will have your blood checked often with blood tests to make sure your blood clotting ability is in a safe and recommended range.

You may need to take a blood thinner for many weeks, maybe even for 6 months after your clot has been diagnosed. If you have a condition that keeps you at high risk for blood clots, you may need to take a blood thinner for the rest of your life.

How can I help take care of myself?

If you take anticoagulants:

- Be sure to take the right amount of medicine at the right time each day.
- You will need blood tests on a regular basis to check how fast your blood clots. Follow your health care provider's schedule for having these tests.
- Wear a bracelet that lists the drugs you take.
- Before taking any new medicines, even nonprescription drugs, contact your health care provider. Most medicines, including antibiotics, can interfere with or increase the effects of blood thinners.
- Tell your other health care providers, such as dentists or podiatrists, that you are taking a blood thinner.
- Do not take aspirin unless specifically prescribed by your provider.

If you are taking a blood thinner, call your health care provider right away if you have any of the following symptoms:

- faintness
 - dizziness
 - severe headaches
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- severe stomach pain
- increased weakness
- red or brown urine
- bruises that increase in size without further injury
- red or black bowel movements
- cuts that do not stop bleeding
- coughing up blood
- unexpected bleeding from any part of your body.

How can I help prevent deep vein thrombosis?

If you have had DVT or are at risk of having DVT, you can help prevent it by following these guidelines:

- Avoid sitting for long periods of time. When you are traveling, move your feet and legs often. Go for short walks if possible.
- Avoid crossing your legs and ankles when you sit.
- Get regular exercise, according to your health care provider's advice.
- Maintain a healthy body weight.
- Ask your provider about special stockings you can wear to help prevent clots. Make sure you know how to wear them correctly.
- Keep your legs raised when you are in bed or sitting down. Leg elevation promotes the return of blood through the leg veins.
- Leg exercises are important to prevent pooling of blood in the legs. If you have had major surgery, walking as soon as possible after the surgery will help lower your risk of having DVT. If you are unable to exercise, ask your health care provider if you should have someone massage your lower legs and move your legs through some range-of-motion exercises. If you are currently being treated for DVT, do not massage your legs. Massage could cause the clot to break loose.
- If you are scheduled for surgery, ask your surgeon what you can do to help prevent blood clots after surgery.
- Stop smoking. Smoking increases the risk for blood clots.

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