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Deep vein thrombosis

Deep vein thrombosis (DVT) is a condition that occurs when a blood clot forms in a vein deep inside a part of the body. DVT mainly affects the large veins in the lower leg and thigh, but can occur in other deep veins, such as in the arms and pelvis. DVT most often affects only one side of the body.

Causes

DVT is most common in adults over age 60. But it can occur at any age. When a clot breaks off and moves through the bloodstream, it is called an embolism. An embolism can get stuck in the blood vessels in the brain, lungs, heart, or another area, leading to severe damage.

Blood clots may form when something slows or changes the flow of blood in the veins.

Risk factors include:

- A pacemaker catheter that has been passed through a vein in the groin
- Bed rest or sitting in one position for too long, such as plane or car travel
- Family history of blood clots
- Fractures in the pelvis or legs
- Giving birth within the last 6 months
- Pregnancy
- Obesity
- Recent surgery (most commonly hip, knee, or female pelvic surgery)
- Too many blood cells being made by the bone marrow, causing the blood to be thicker than normal (polycythemia vera)
- Having an indwelling (long-term) catheter in a blood vessel
- Age greater than 60

Blood is more likely to clot in someone who has certain problems or disorders, such as:

- Cancer
- Certain autoimmune disorders, such as lupus
- Cigarette smoking

- Conditions that make it more likely to develop blood clots
- Taking estrogens or birth control pills (this risk is even higher with smoking)

Sitting for long periods when traveling can increase the risk for DVT. This is most likely when you also have one or more of the risk factors listed above.

Symptoms

DVT mainly affects the large veins in the lower leg and thigh, most often on one side of the body. The clot can block blood flow and cause:

- Redness of the skin
- Skin that feels warm to the touch
- Swelling (edema) of a leg or arm
- Pain or tenderness in a leg or arm

Exams and Tests

Your health care provider will perform a physical exam. The exam may show a red, swollen, or tender leg.

Tests that are often done to diagnose a DVT are:

- D-dimer blood test
- Doppler ultrasound exam of the area of concern
- A pelvic or abdominal MRI or CT

Blood tests may be done to check if you have an increased chance of blood clotting, including:

- Activated protein C resistance (checks for the Factor V Leiden mutation)
- Genetic testing for other mutations, such as the prothrombin G20210A mutation
- Antithrombin III levels
- Antiphospholipid antibodies
- Complete blood count (CBC)
- Lupus anticoagulant
- Protein C and protein S levels

Treatment

Your provider will give you medicine to thin your blood (called an anticoagulant). This will keep more clots from forming or old ones from getting bigger.

Heparin is often the first medicine you will receive.

- If heparin is given through a vein (IV), you must stay in the hospital. However, most people can be treated without staying in the hospital.

- Low molecular weight heparin can be given by injection under your skin once or twice a day. You may not need to stay in the hospital as long, or at all, if you are prescribed this type of heparin.

One type of blood-thinning medicine called warfarin (Coumadin or Jantoven) may be started along with heparin. Warfarin is taken by mouth. It takes several days to fully work.

Another class of blood thinners are called direct oral anticoagulants (DOAC), including:

- Rivaroxaban (Xarelto)
- Apixaban (Eliquis)
- Dabigatran (Pradaxa)
- Edoxaban (Savaysa)

These medicines work in a similar way to heparin and can be used right away in place of heparin. Your provider will decide which medicine is right for you.

You will most likely take a blood thinner for at least 3 months. Some people take it longer, or even for the rest of their lives, depending on their risk for another clot.

When you are taking a blood thinning medicine, you are more likely to bleed, even from activities you have always done. If you are taking a blood thinner at home:

- Take the medicine just the way your provider prescribed it.
- Ask your provider what to do if you miss a dose.
- Ask your provider if you need to take an oral medicine on an empty stomach.
- Get blood tests as advised by your provider to make sure you are taking the right dose. These tests are usually needed with people who are taking warfarin.
- Find out how to watch for problems caused by the medicine.

In rare cases, you may need a procedure instead of or in addition to anticoagulants. These may involve:

- Placing a filter in the body's largest vein to prevent blood clots from traveling to the lungs
- Removing a large blood clot from the vein or injecting clot-busting medicines

Follow any other instructions you are given to treat your DVT.

Outlook (Prognosis)

DVT often goes away without a problem, but the condition can return. The symptoms can appear right away or you may not develop them for one or more years afterward. Wearing compression stockings during and after the DVT may help prevent this problem.

Possible Complications

Complications of DVT may include:

- Pulmonary embolism (which may be fatal)
- Constant or intermittent pain and swelling (post-phlebitic or post-thrombotic syndrome)

- Varicose veins
- Non-healing skin ulcers (less common)
- Changes in skin color

When to Contact a Medical Professional

Contact your provider if you have symptoms of DVT.

Go to the emergency room or call the local emergency number (such as 911) if you have DVT and you develop:

- Chest pain
- Coughing up blood
- Difficulty breathing
- Fainting
- Loss of consciousness
- Other severe symptoms

Prevention

To prevent DVT:

- Move your legs often during long plane trips, car trips, and other situations in which you are sitting or lying down for long periods.
- Take blood-thinning medicines your provider prescribes.
- Do not smoke. Smoking increases the risk for blood clots. Talk to your provider if you need help quitting.

Alternative Names

DVT; Blood clot in the legs; Thromboembolism; Post-phlebotic syndrome; Post-thrombotic syndrome; Venous - DVT

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