



Focus on Blood Clots

What you need to know about risk factors, symptoms, and treatment

The medical term for blood clots in the veins is **venous thromboembolism** (thrahm-bö-EM-bö-lizm), or **VTE**. This describes two related conditions that are serious but highly preventable:

- **Deep vein thrombosis (DVT)**
- **Pulmonary embolism (PE)**

What Is the Difference Between DVT and PE?

DVT is a condition occurring when a blood clot forms in the veins of the lower leg or calf and can extend to the large deep veins of the upper legs or thighs. It is rare, but

DVT can occur in an arm, usually because of intravenous (IV) access lines or in athletes due to repetitive injury.

Your legs and arms have two major types of veins: superficial and deep.

- **Superficial veins** are near the surface of the skin where they are sometimes visible.
- **Deep veins** are located near the bones and are surrounded by muscle.

Contracting (squeezing) muscles around the deep veins sends blood back to the

heart. A blood clot that develops in a deep vein can block this blood flow. It may or may not cause symptoms like leg swelling.

DVT is not usually life-threatening, but it can be if the blood clots break loose and go into the lungs. This condition is known as **pulmonary edema**. It can be fatal if the traveling clot, called an **embolus**, clogs the main lung arteries. PE is the third most common cause of vascular death, and many people die in the first hour of a PE.

Reduce Your Risk of PTS

A long-term side effect of DVT is the development of **post-thrombotic syndrome (PTS)**. PTS can last a long time and impact a person's quality of life. *If someone has DVT symptoms, it is important to get treatment right away to prevent PTS.* About 30% of people who experience a DVT can develop PTS. This condition can show up within two years of the DVT episode. People who develop PTS may experience the following signs and symptoms:

- Chronic pain
- Swelling in the leg
- Discoloration of the leg
- Open sores or ulcers

Who Is At Risk?

VTE is generally diagnosed in people who:

- Smoke or used to smoke
- Have been pregnant
- Have had lengthy surgery (especially orthopedic)
- Are over age 40
- Are inactive
- Have had cancer
- Have excess weight
- Have taken birth control pills
- Have had hormone replacement therapy
- Have a family history of DVT
- Have a family history of genetic mutations, such as Factor V Leiden
- Recently traveled a long distance
- Have had a spinal cord injury

Other risk factors are heart failure, some types of lung disease, kidney disease, infections, and other inflammatory diseases.

If you have these risk factors, it's important to discuss your concerns with your health care provider and develop a plan for preventing blood clots.

For more information, review these related flyers:

- Lifesaving Tips to... Control Your Cholesterol
- Pulmonary Embolism
- Understanding Deep Vein Thrombosis

Symptoms of DVT

Some people do not develop signs, so it can be difficult to diagnose DVT. Your health care provider will diagnose using a combination of risk factors and symptoms. That's why it is important to report both your medical history and any symptoms to a health care provider. These problems may develop suddenly or slowly:

- Sudden swelling of one leg
- Pain or tenderness in the calf muscle or groin
- Skin that is warm to the touch on the legs
- Fullness of the veins just beneath the skin (seeing these veins more easily or if they look swollen)
- Changes in skin color (blue, red, or very pale)

Symptoms of PE

A PE is a blood clot that occurs in the lungs and can be a life-threatening condition. *Signs and symptoms of PE occur quickly and need immediate medical treatment.* Call emergency services if you are experiencing the following symptoms:

- Coughing up bloody phlegm
- Shortness of breath

- Sharp chest pain usually when breathing in or taking a deep breath
- A sudden, unexplained sense of anxiety
- Sudden collapse or fainting
- Rapid pulse
- Coughing
- Sweating

Although rare, some people may also experience dizziness, back pain, or wheezing.

How Are DVTs and PEs Diagnosed?

- Ultrasound exam. This is the easiest and most reliable method for diagnosing DVT. It is simple, painless, and widely available.
- A specific blood test called **D-dimer**. This measures recent and active clotting.
- An invasive test known as a **venogram** (an X-ray test using dye injected into the veins).
- Magnetic resonance imaging (MRI) or a computed tomography (CT) scan of the legs, chest, or abdomen may sometimes be needed.
- PE may be diagnosed by a special type of chest CT scan, a lung scan, or less commonly by an invasive procedure known as a pulmonary angiogram.

What Can I Do to Prevent VTE (Blood Clots)?

- **Stay active.** Walking helps with blood circulation and weight loss.
- **Talk with a health care provider** about a program or medications to help quit smoking.
- **Maintain a healthy body weight and eat a healthy diet.**
- **Discuss risks of birth control or hormone replacement therapy with your health care provider.**
- **If you are hospitalized for any medical condition or undergo a surgery, ask your health care provider what care you're getting to decrease your risks for DVTs and PEs.**
- **Find out if there is any history of VTE or abnormal blood clotting in your family.** If so, discuss any tests or steps you should take with your health care provider.
- **If you take long airline or auto trips, get up and walk every hour or so, and flex your foot and raise on your toes 10 to 15 times each hour to encourage blood flow in your calves.** In addition, avoid alcohol and drink plenty of fluids while on long trips.
- **Follow your health care provider's instructions to keep any medical conditions under control.** New oral medications that will require less monitoring are soon going to be more widely available. Discuss all treatment options with your health care provider.

How Are DVTs and PEs Treated?

Treatment of acute DVT has these four goals:

1. Stop the clot from getting bigger.
2. Stop the clot from breaking free in your vein and moving to blood vessels in the lungs.
3. Decrease your chance of having another DVT.
4. Minimize the likelihood of developing PTS.



Blood Thinners

DVTs and PEs are treated with medications called **anticoagulants** (commonly known as blood thinners), which decrease the blood's ability to clot. Blood thinners are first usually given as an intravenous medication or injection, followed by either an injection or a pill. Ask your health care provider what is best for you and how long you would need to take these medications.

Giving a blood thinner as soon as a clot is suspected may improve symptoms and prevent complications.



Compression

In addition to blood thinners, a provider may prescribe compression stockings. These stockings will help to reduce leg pain, swelling, discoloration, and ulcers.



Medical Treatment

Clot removal is usually recommended only for major clots that are higher up in the leg, and in active, healthy patients who do not have any serious associated diseases.

Thrombolysis involves giving clot-dissolving medications through an **intravenous** (IV) line in the arm vein or by an **IV catheter** (a small tube used to deliver medicine or drain fluids in the body) threaded through a leg vein. The medication is injected into the clot through many tiny holes in the catheter. Sometimes a device like a tiny vacuum cleaner cleans out the pieces of the clot.

For large clots in the legs, an **angioplasty** (a balloon to open the vein wider) or a **stent** (a small tube inserted in the blockage) may be needed if narrowed areas remain after the clot is dissolved.

Some people may have **thrombectomy**. This is when the clot is extracted through a small incision in the groin.

Questions for Your Doctor

It is important to work closely with your health care provider about your diagnosis and treatment. You can bring this form with you to help talk to your medical provider about any questions and concerns you may have.

