RadiologyInfo.org
For patients

Blood Clots



Blood clots are semi-solid masses of blood that can be stationary (thrombosis) and block blood flow or break loose (embolism) and travel to various parts of the body. Blood clots can be life-threatening depending on their location and severity.

Your doctor will likely perform a physical examination, and you may undergo a venous ultrasound or a CT angiography (CTA) scan of the chest, abdomen/pelvis or head to help diagnose your condition. Treatment may depend upon whether the clot is located in an artery or a vein. Your doctor may prescribe medication, catheter-directed thrombolysis, surgery or inferior vena cava (IVC) filter placement to treat your condition.

What are blood clots?

Blood clots are semi-solid masses of blood. Normally, blood flows freely through veins (http://www.radiologyinfo.org) and arteries (http://www.radiologyinfo.org) . Some blood clotting, or coagulation (http://www.radiologyinfo.org) , is necessary and normal. Blood clotting (http://www.radiologyinfo.org) helps stop bleeding if you are cut or injured. However, when too much clotting occurs, it can cause serious complications.

When a blood clot forms, it can be stationary (called a thrombosis (http://www.radiologyinfo.org)) and block blood flow or break loose (called an embolism (http://www.radiologyinfo.org)) and travel to various parts of the body.

There are two different types of clots:

- Arterial clots are those that form in the arteries. Once arterial clots form, they cause symptoms immediately. Because this type of clot prevents oxygen from reaching vital organs, it can cause a variety of complications like stroke, heart attack, paralysis and intense pain.
- Venous clots are those that form in the veins. Venous clots typically form slowly over a period of time. Symptoms of venous clots gradually become more noticeable.

Blood clots can occur in many different parts of the body, each area having different symptoms:

- Legs and arms: Symptoms of blood clots in the legs and arms vary and may include pain or cramping, swelling, tenderness, warmth to the touch and bluish- or red-colored skin. Clots that occur in larger veins are called deep vein thrombosis (http://www.radiologyinfo.org) (DVT). Blood clots can also occur in smaller, more superficial (closer to the skin) veins.
- Heart: Common symptoms for blood clots in the heart include pain in the chest and left arm, sweating and difficulty breathing.
- Lungs: The most common symptoms include shortness of breath or difficulty breathing, chest pain and cough. Other symptoms that may or may not appear are sweating, discolored skin, swelling in the legs, irregular heartbeat and/or pulse and dizziness.
- Brain: Patients with blood clots in their brains can experience problems with their vision or speech, seizures and general weakness.

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- Abdomen: Symptoms of abdominal blood clots can include severe abdominal pain, nausea, vomiting and diarrhea and/or bloody stools.

A blood clot can be life-threatening depending on the location and severity.

How are blood clots diagnosed and evaluated?

Evaluation of your condition differs depending on the location and type of your blood clot. Your doctor will usually begin by obtaining your medical history, as this may provide information about factors that caused the clot, and will also perform a physical examination. In an emergency situation where patients may be unable to describe their symptoms, doctors may send patients for testing immediately after a physical examination.

You may be sent for one or more of the following tests:

- Venous ultrasound (https://www.radiologyinfo.org/en/info/venousus) *:* This test is usually the first step for confirming a venous blood clot. Sound waves are used to create a view of your veins. A Doppler ultrasound (http://www.radiologyinfo.org) may be used to help visualize blood flow through your veins. If the results of the ultrasound are inconclusive, venography (https://www.radiologyinfo.org/en/info/venography) or MR angiography (https://www.radiologyinfo.org/en/info/angiomr) may be used.
- *CT Angiography of the chest:* If your doctor suspects you have a pulmonary embolism (http://www.radiologyinfo.org) , you may undergo a CT angiography scan. The most common cause of a pulmonary embolism is a fragment from a leg or pelvic clot that has broken off and traveled through the veins to the lung. You may be sent for a chest x-ray (https://www.radiologyinfo.org/en/info/chestrad) if your doctor believes you may have a condition other than a blood clot.
- *CT angiography of the abdomen and pelvis:* This type of CT scan may be used if your doctor suspects a blood clot somewhere in your abdomen or pelvis. It may also be used to rule out other conditions that cause the same symptoms as blood clots.
- *CT angiography of the head and neck:* If you are exhibiting the symptoms of a stroke, your doctor will order an emergency CT scan of the head in order to confirm the presence of a clot. In some cases, your doctor may order a cerebral angiography (https://www.radiologyinfo.org/en/info/angiocerebral) exam. A carotid ultrasound (https://www.radiologyinfo.org/en/info/us-carotid) could also be performed to see if a fragment from a blood clot in your neck has traveled to your brain.

Blood clots may cause symptoms that mimic other diseases or conditions. You may undergo additional testing to rule out other conditions.

How are blood clots treated?

Arterial clots:

Your doctor may recommend that you undergo catheter-directed thrombolysis (https://www.radiologyinfo.org/en/info/thrombo) , a procedure that delivers "clot busting" drugs to the site of the clot, or have surgery to remove the clot. These treatments are meant to manage clots aggressively since arterial clots can block blood flow to vital organs. They are typically only used in life-threatening or emergency cases.

Venous clots:

If you are diagnosed with a deep venous clot, you will be put on blood thinning medication to help thin your blood and allow it to pass more easily past the site of the clot.

Your doctor may ask you to undergo a procedure called inferior vena cava filter placement. This is recommended for patients who are at high risk for blood clots. A filter is placed into your vein to help prevent blood clot fragments from traveling through the

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veins to the heart or lungs.

Which test, procedure or treatment is best for me?

- *Suspected Pulmonary Embolism (https://www.radiologyinfo.org/en/info/acs-suspected-pe)*
- *Suspected Lower Extremity Deep Vein Thrombosis (https://www.radiologyinfo.org/en/info/acs-lower-extremity-deep-vein-thrombosis)*
- *Suspected Upper-Extremity Deep Vein Thrombosis (https://www.radiologyinfo.org/en/info/acs-upper-extremity-dvt)*

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