CONDITION

Deep vein thrombosis

Deep vein thrombosis is a blood clot in a deep vein, usually in the leg.

WHAT IT IS
Blood clot in a deep vein

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
One-sided swelling, pain, warmth, skin colour changes

WHAT CAUSES IT
Slowed blood flow, vein injury, increased clotting

HOW IT IS DIAGNOSED
Compression ultrasound, sometimes CT or MR venography

MAIN TREATMENT
Anticoagulant medicines

CAN IT BE CURED?
Sometimes - the clot can resolve

IS IT AN EMERGENCY?
Sometimes - with chest pain or sudden breathlessness

LONG-TERM OUTLOOK
Most recover; recurrence or lasting symptoms can occur

Overview

Deep vein thrombosis, usually called DVT, is a blood clot in a vein deep inside the body. Most DVTs form in the lower leg, thigh, or pelvis. They can also develop in an arm, particularly around an intravenous catheter or implanted medical device.

A DVT can partly or completely block blood flow, causing swelling and pain, although some clots cause few or no symptoms.

DVT matters because part of the clot can break away and travel to the lungs. This is called a pulmonary embolism, or PE. It can interfere with breathing and circulation and needs emergency care.

DVT and PE are together known as venous thromboembolism, or VTE. Prompt treatment reduces the chance that a clot will grow, travel to the lungs, or return.

Symptoms

DVT symptoms usually affect one leg or arm. They may include:

Discomfort may be worse when standing or walking, but symptoms cannot confirm DVT. Muscle injury, infection, joint problems, and other conditions can cause similar changes.

Some DVTs cause no clear symptoms and are found during a scan or after symptoms of a pulmonary embolism develop.

Sudden breathlessness, chest pain, coughing up blood, fainting, or severe light-headedness may indicate a pulmonary embolism. These are emergency symptoms.

- Swelling, often starting in the calf or ankle
- Aching, tenderness, or cramping pain
- Warmth over the affected area
- Red, darker, or otherwise changed skin colour
- Veins near the skin becoming more noticeable

Causes and risk factors

A DVT forms when blood clots inside a deep vein. This is more likely when blood flow slows, a vein is damaged, or the blood has an increased tendency to clot.

Limited movement can slow blood flow in the legs. This may happen during a hospital stay, recovery from surgery, bed rest, or a long journey. Surgery, fractures, and serious injuries can also damage veins and activate clotting.

Other risk factors include:

Several factors may occur together. For example, surgery can involve tissue injury, reduced movement, and inflammation.

A DVT is "provoked" when it follows a clear temporary factor, such as surgery or prolonged immobility. It is "unprovoked" when no major temporary cause is found. This can affect how long treatment is considered.

Having a risk factor does not mean that you have or will develop DVT. Some people develop one without an obvious reason.

- A previous DVT or pulmonary embolism
- Active cancer or some cancer treatments

- Pregnancy and the weeks after giving birth
- Medicines containing oestrogen, including some contraceptives and hormone therapy
- Older age or obesity
- Certain heart or inflammatory conditions
- An intravenous catheter in a large vein
- A family history of blood clots
- An inherited or acquired clotting tendency, called thrombophilia

Diagnosis

DVT cannot be diagnosed reliably from symptoms alone. A healthcare professional will ask about symptoms, medicines, recent travel, surgery, injuries, pregnancy, and previous clots. They may examine and measure both limbs.

A clinical assessment estimates how likely DVT is and guides which tests are needed.

A D-dimer blood test detects a substance released when clots are broken down. A low result can help rule out DVT in someone assessed as less likely to have one. A raised result does not confirm DVT because surgery, pregnancy, infection, cancer, and other conditions can also increase it.

Compression ultrasound is the main imaging test. It uses sound waves to examine blood flow and whether a vein can be gently compressed. A vein containing a clot may not compress normally.

If the first scan is negative but concern remains, another ultrasound may be arranged. CT or MR venography may be used for a suspected pelvic clot or when ultrasound is unclear.

Testing for inherited clotting conditions is considered only when the result could affect treatment or advice for the person or their family.

Treatment and management

The main treatment is an anticoagulant like warfarin or apixaban . These medicines are often called blood thinners, although they do not literally thin the blood or directly dissolve the clot. They help prevent the DVT from growing while the body gradually breaks it down and reduce the risk of another clot.

Anticoagulants are available as tablets or injections. The suitable type depends on factors

including kidney function, pregnancy, cancer, other medicines, and bleeding risk.

Treatment often continues for at least several months. Some people need it for longer because their risk of another clot remains high. Follow-up balances this benefit against bleeding risk. Do not stop an anticoagulant without medical advice.

Anticoagulants can increase bleeding. Tell healthcare professionals, including dentists and pharmacists, that you take one. Check before using non-prescription medicines or supplements because they may increase bleeding or change how the anticoagulant works.

Most DVTs do not need surgery. Clot-dissolving medicines, called thrombolytics, or procedures to remove a clot may be considered for selected people with a large clot threatening a limb or causing severe symptoms. These treatments carry a greater bleeding risk.

A filter in the large vein leading to the heart may occasionally be considered when anticoagulation cannot be used or has not worked as expected. It is not a routine treatment.

Correctly fitted compression stockings may ease swelling or discomfort for some people, but they are not routinely used solely to prevent long-term complications.

Medicines commonly used for this include apixaban , dabigatran , fondaparinux and rivaroxaban . Which one suits you, if any, is a decision for you and your doctor.

Complications

The most immediate complication is a pulmonary embolism, when part of the clot travels to the lungs. Treatment greatly reduces this risk but does not remove it immediately.

Some people develop post-thrombotic syndrome months or years after a leg DVT. Damage to the vein and its valves can cause ongoing swelling, aching, heaviness, itching, skin colour changes, or, in severe cases, ulcers.

DVT or pulmonary embolism can also recur. The risk depends on what caused the first clot, whether risk factors remain, and whether there have been previous clots.

Bleeding is the main complication of anticoagulants. Minor bruising can occur, but persistent, heavy, or internal bleeding needs urgent assessment.

Prevention

Not every DVT can be prevented. Some develop without a clear trigger, and inherited clotting tendencies cannot be removed.

During a hospital stay, your risk may be assessed. Prevention can include early movement, compression devices, stockings, or a preventive dose of an anticoagulant. The appropriate option depends on clotting and bleeding risks.

During long journeys, move your ankles and legs regularly and get up when safe. Avoid staying in one position for the entire journey. People with a previous clot or other major risk factors may need individual travel advice. Do not take aspirin or an anticoagulant for travel unless it has been recommended for you.

If you use medicine containing oestrogen and have had DVT, discuss future options during follow-up. Pregnancy planning may also need specialist advice after a previous clot or when a clotting tendency is known.

Take an anticoagulant exactly as directed. If you miss doses or cannot take it because of vomiting, a procedure, or another problem, seek prompt advice rather than changing the plan yourself.

Living with it and what to expect

Pain and swelling often improve after treatment starts, but recovery is not immediate. Symptoms may settle over days or weeks, while the body can take months to break down or reorganise the clot. The vein may not return completely to its previous state.

Gentle walking is usually encouraged once treatment has started and symptoms allow. Increase activity gradually. Elevating the affected leg while resting may help swelling. Advice may differ after a procedure, severe DVT, or another medical problem.

Follow-up reviews symptoms, bleeding, medicine use, and how long anticoagulation should continue. A clot linked to a temporary factor may need a different treatment period from an unprovoked or repeated clot. Active cancer and ongoing risks also affect this decision.

Some people have lasting swelling, aching, or heaviness, especially after standing. This does not automatically mean another clot has formed, but new or clearly worsening symptoms need assessment.

DVT can return. Knowing the signs, staying active when possible, and following treatment can help manage the risk. Most people can return to work, exercise, and travel, although timing depends on symptoms, treatment, and why the clot developed.

When to get medical help

Seek urgent same-day medical assessment for new one-sided leg or arm swelling, pain, warmth, or skin colour changes, especially after surgery, immobility, pregnancy, or a previous clot. DVT cannot be safely confirmed or excluded at home.

Call emergency services if you have:

While taking an anticoagulant, seek emergency help for uncontrolled bleeding, vomiting blood, black or bloody stools, a sudden severe headache, or a significant head injury. Persistent bleeding or unusually heavy menstrual bleeding also needs prompt medical advice.

Routine follow-up is appropriate for gradually improving swelling, questions about activity or travel, medicine reviews, and discussion about treatment duration. Contact your care team sooner if symptoms worsen, doses are missed, or side effects make the medicine difficult to take.

- Sudden or unexplained shortness of breath
- Chest pain, especially pain that worsens when breathing in
- Coughing up blood
- Fainting, collapse, confusion, or severe light-headedness
- Severe breathing difficulty or a very fast heartbeat

Common questions

Can a DVT go away on its own?

The body may gradually break down a clot, but an untreated DVT can grow or travel to the lungs. Suspected DVT needs urgent assessment rather than waiting for symptoms to settle.

Can I walk with a DVT?

Gentle walking is often encouraged after anticoagulant treatment has started and symptoms are stable. Build up gradually and follow any different advice given after a procedure or severe clot.

How long does DVT treatment last?

Many people take an anticoagulant for at least several months. Longer treatment may be considered after an unprovoked or repeated DVT, or when risk factors continue. Follow-up weighs clot prevention against bleeding risk.

Can I fly after a DVT?

Air travel may be possible, but timing depends on how recent the clot is, whether treatment is established, and whether symptoms are stable. Get individual advice before booking or taking

a long journey.

Will my leg always stay swollen?

Swelling often improves over weeks or months. Some people have lasting or intermittent swelling because the vein and its valves were damaged. New or rapidly worsening swelling needs reassessment.

Can DVT come back?

Yes. Recurrence is more likely after a previous clot or when risk factors remain. Taking treatment as directed and attending follow-up help manage this risk.

Sources

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