

Below Knee DVT

Calf vein thrombosis (distal deep vein thrombosis; DVT)

What is a below knee DVT?

This is a clot (thrombosis) in the veins of the calf. The other name for a below knee DVT is calf vein thrombosis, also called a distal DVT, or isolated distal DVT.

What are veins and what is a clot (thrombosis)?

Veins are blood vessels that carry blood back to the heart from the muscles and other body organs (compared to arteries, which carry blood from the heart to the muscles). A clot generally occurs in a vein when there is a slowing down or a blockage to the blood flow in the veins. A clot will develop when blood stops flowing normally.

Why have I got a below knee DVT?

A clot will develop in a vein for a number of reasons. The usual reasons involve a slowing down of blood travelling in the veins. Blood flow in the veins of the legs may slow down for a number of reasons.

- If there is a blockage in the veins above the calf (e.g. a swelling in the knee joint may block the veins above the calf and cause a clot in the veins of the calf).
- Prolonged periods of rest may also lead to blood flow in the veins of the legs slowing down (e.g. a prolonged period in bed, after surgery, or during a long flight).
- There are a number of other reasons why clots may develop in the veins; some people have abnormalities in the blood clotting system which may lead to a blood clot occurring more easily, and active cancer can also increase the risk.

What are the symptoms of a below knee DVT?

Pain and swelling are usually the main symptoms of a below knee DVT. Sometimes the area around a blood clot can feel warmer than the surrounding tissues, or the skin can look slightly red.

How is a blood clot detected?

A blood clot is usually detected by an ultrasound. Ultrasound machines use sound waves to detect blood flow in veins and arteries. A clot can be detected because of the decreased blood flow in the veins. Ultrasounds are painless and do not have any major side effects. A blood test called a D-dimer, along with your symptoms and risk factors, sometimes helps guide how urgently imaging is needed and how the clot should be managed.

What are the main problems with a below knee DVT?

There are three main problems with a blood clot in the veins of the calf.

- Blood clots in the calf are often painful and cause swelling. A number of medications can help with pain, and keeping your leg elevated when resting can help with swelling. Compression stockings can help with comfort and swelling in the short term, though current guidelines note the evidence that they prevent longer-term complications is less certain than once thought — your doctor can advise whether they're likely to help in your situation (see information sheet on Graduated Compression Stockings).



- Blood clots can sometimes grow along the veins of the calf and enter the veins of the thigh, or even break off and travel to the lungs. Current evidence suggests this happens in roughly 1 in 10 (up to about 1 in 7) below knee DVTs that are being monitored, but once a clot reaches the veins in the thigh (“above knee DVT”) the risk of travelling to the lungs is higher (see information sheet on Above Knee DVT).
- Once a vein is blocked with clot, other veins take over its role. This can sometimes cause long-term swelling of the leg, which can lead to skin changes including ulcers — known as Post Thrombotic Syndrome (PTS) (see information sheet on PTS). PTS is uncommon in clots limited to the calf veins.

What can be done about a below knee DVT?

Not every below knee DVT needs blood-thinning medication straight away. Current guidelines base the decision on your individual risk of the clot growing:

- For clots without concerning features (mild symptoms, no major risk factors for growth), a reasonable evidence-based option is close monitoring with a repeat ultrasound after about a week or two, rather than starting medication immediately. If the clot hasn't grown on the repeat scan, it usually doesn't need blood-thinning treatment at all.
- For clots with higher-risk features (more severe symptoms, a large or extensive clot, a clot close to the veins of the thigh, no obvious triggering cause, active cancer, or if you're currently in hospital), blood-thinning medication (anticoagulation) is generally recommended from the outset.
- If a clot is found to be growing on a repeat scan, blood-thinning medication is then recommended.

When blood-thinning medication is used, it works in two ways: it reduces the risk of the clot growing further, and it helps the body's own clot-dissolving system shrink the clot over time, sometimes absorbing it completely. Treatment is usually with a tablet taken at home (rather than injections) for a course of at least 3 months, and your doctor will discuss which option and duration suits your situation, weighing up the benefits against the bleeding risk of the medication.

References

1. Stevens SM, Woller SC, Kreuziger LB, et al. Antithrombotic Therapy for VTE Disease: Second Update of the CHEST Guideline and Expert Panel Report. *Chest*. 2021;160(6):e545-e608.
2. Mazzolai L, Aboyans V, Ageno W, et al. Management of lower-extremity venous thromboembolism: an updated review. *Cleveland Clinic Journal of Medicine*. 2024;91(4):229-238.

Further Questions?

The information presented in this fact sheet is intended as a general guide only.

Patients should seek further advice and information about **Below Knee DVT** and their individual condition from their treating haematologist or doctor.

For additional information about blood disorders and their treatment, or to contact one of our specialist haematologists, visit the Melbourne Haematology website:

www.melbournehaematology.com.au