
Deep vein thrombosis

Summary

- A deep vein thrombosis (DVT) is a blood clot that forms in the veins of the leg.
 - Complications include pulmonary embolism (PE), which can be fatal, phlebitis (inflammation) and leg ulcers.
 - Medication is usually prescribed to prevent further clotting.
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A thrombus is a blood clot. Thrombosis is the formation of a blood clot in any part of the circulatory system. The clot may block a blood vessel, causing potentially serious health effects.

A deep vein thrombosis (DVT) is a blood clot that forms in the deep veins of the leg. A deep vein thrombosis in the thigh carries a risk of pulmonary embolism (PE).

This occurs when the clot loses its attachment to the inside of the vein, leaves the leg and lodges in the pulmonary artery, the main blood vessel to the lungs. If the clot is large enough, it can completely block that artery and cause death.

Blood flow through the leg veins generally requires some mechanical help, since it 'flows' up instead of down. Working calf muscles act as a pump. The contracting muscles compress the veins and force the blood in these veins upwards to the heart. This process is aided by valves in the veins, which direct the flow of blood and counteract the effects of gravity.

Anything that slows the flow of blood through the deep veins can cause DVT. This includes injury, surgery or long periods of sitting or lying.

There is debate over whether or not the confinement of long-distance international flights may contribute to the risk of DVT. This condition is known as 'economy-class syndrome'.

Blood clotting and DVT

Blood contains platelets and compounds called clotting agents. Platelets are sticky and form the basis of the blood's ability to thicken (coagulate).

If a blood vessel is cut, platelets collect at the site of the injury. Together with clotting agents, the platelets produce a web or mesh, which traps platelets and creates a plug to seal off the wound.

The ability of the blood to clot is essential for survival, but it can also lead to the formation of a thrombus.

Risk factors for DVT

Some of the risk factors that may contribute to the formation of a thrombus include:

- coronary heart disease
 - being overweight or obese
 - cigarette smoking
 - pregnancy
 - a high-dose combined oral contraceptive pill
 - a susceptibility to 'stickier' blood and a family history of DVT
 - blood clotting disorders
 - sitting still for long periods of time
 - recent surgery or injury
 - some types of cancer
 - chronic heart failure
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- previous thrombosis
- hormone therapy
- infections
- older age.

Long distance travel and DVT

Long distance travel by air, road or rail for longer than 8–10 hours is associated with an increased risk of DVT in susceptible people. The following may be helpful to reduce the risk of DVT while undertaking long distance travel:

- Wear loose clothes.
- Avoid cigarettes and alcohol.
- Drink plenty of fluids (avoid alcohol).
- Move about whenever possible before, during, and after travelling.
- Don't sit with your legs crossed.
- Perform leg and foot stretches and exercises while seated.
- Consult with your doctor before travelling.

Symptoms of DVT

The symptoms of a DVT may include:

- pain and tenderness in the leg
- pain on extending the foot
- swelling of the lower leg, ankle and foot
- skin that is red and warm.

Complications of DVT

If the DVT remains in the leg vein, it can cause a number of complications, including inflammation (phlebitis) and leg ulcers. However, the real danger occurs if the clot leaves the vein and travels through the circulatory system. A pulmonary embolism means the clot has blocked off the main artery to the lungs or one of its major branches.

It is estimated that around one third of people who experience a major pulmonary embolism will die. Life-saving treatment of pulmonary embolism includes thrombolytic (clot-busting) and anticoagulation (blood thinner) medications that dissolve the clot and restore blood flow.

Diagnosis of DVT

A deep vein thrombosis can easily be mistaken for other disorders, including **lymphoedema** and chronic venous disease. DVT is diagnosed using a number of tests, such as:

- venous ultrasound – a type of scan
- contrast venography – a dye is injected into the foot and x-rays are taken of the leg veins
- blood test – known as a D-dimer test
- other imaging tests – such as MRI and CT scans.

Treatment for DVT

Treatment for DVT can include:

- treatment with anticoagulant (blood thinning) medicines, to prevent further clotting
- blood tests to monitor the 'stickiness' of the blood
- reducing risk factors such as quitting cigarettes or losing excess body fat.

Prevention of DVT

In hospital, graduated compression stockings to increase internal pressure have been found to decrease the risk of post-surgery DVT. The use of preventative anticoagulants in people considered to be at moderate to high-risk of

DVT is also recommended.

If taking anticoagulant medication, check with your doctor or pharmacist before you take any other medication (including over-the-counter medicine).

Other methods to reduce the risk of DVT include treatment for coronary heart disease, reducing excess body fat, quitting cigarettes, exercising regularly and switching to a high-fibre, low-fat diet.

Where to get help

- Your doctor

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Heart Foundation

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