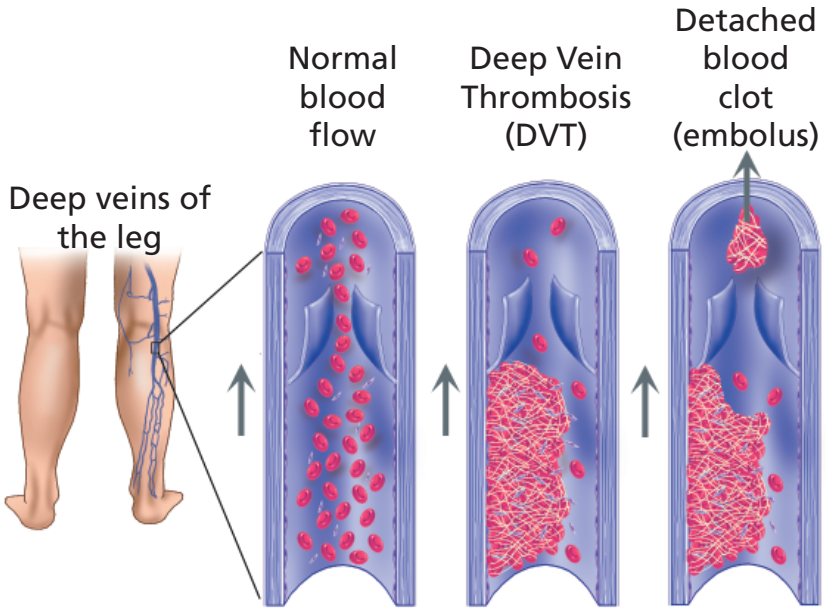
Leicestershire Partnership NHS
NHS Trust

Reducing the risk of getting a blood clot (DVT) while you are in hospital



Patient information leaflet

A guide for adult patients, their family and carers

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Contents

Introduction

This leaflet will explain what blood clots are and why you may be at greater risk of developing them while you are in hospital.

It explains what you can expect from your healthcare team and what you can do yourself to reduce the risk of developing a clot.

Deep vein thrombosis (DVT)

Your blood contains cells called platelets and proteins known as clotting factors. When a blood vessel is cut, the platelets and clotting factors form a solid clot that acts as a plug at the site of the injury to stop the wound bleeding. This is part of the healing process.

However, sometimes a clot can form in the wrong place, within a vein or artery (thrombosis) and restrict the blood flow. When this happens in the deep veins, (most commonly in the leg, but it can also happen in the arm) it is called a 'deep vein thrombosis' or DVT. The vein can be either partially or completely blocked.

Pulmonary embolism (PE)

Sometimes a piece of this clot can break off (embolus) and travel to the other parts of the body including the lungs. This is called a pulmonary embolism or PE.

DVT and pulmonary embolism together are known as venous thromboembolism (VTE).

Your risk of DVT

Each year, one in every 1,000 people in the UK is affected by DVT. Surgery and some medical treatments can increase your risk of developing DVT. It is estimated that 25,000 people who are admitted to hospital, die from preventable blood clots each year.

Anyone can develop DVT but it becomes more common with age. Your risk of developing DVT depends partly on why you have been admitted to hospital and the type of treatment you will have, for example whether you are having an operation.

Some people also have certain 'risk factors' that make them more likely to develop DVT (see page 5).

If you are pregnant or have given birth within the last six weeks you may have special risk factors (see page 6).

If you have been assessed as at risk of DVT, you will also be assessed for your risk of bleeding problems (see page 7).

Your healthcare team will assess your risk of DVT and your risk of bleeding problems when you are admitted to hospital.

During this assessment, they will make sure that any drugs or treatments you are having to help prevent DVT are:

- **suitable for you**
- **being used correctly so that you get the most benefit from them**
- **not causing any problems**

Risk factors for DVT

If you have any one of the following you may be at risk of DVT.

- You are having an operation that takes longer than 90 minutes, or 60 minutes if the operation is on your leg, hip or abdomen.
- You are having an operation for an inflammatory or abdominal condition such as appendicitis.
- For at least three days you are confined to bed, or are unable to walk without help, or spend a large part of the day in bed or in a chair.
- You are much less active than usual, or you are having an operation, or you have a serious injury as well as having one of the following conditions:
  - you are having treatment for cancer
  - you are aged over 60
  - you are dehydrated
  - you have thrombophilia (a disorder that makes your blood more likely to clot) or Hughes syndrome (when your blood becomes abnormally "sticky"
  - you are seriously overweight (your body mass index is 30 or more)
  - you have a medical condition such as a heart or lung problem, an infectious disease such as hepatitis or an inflammatory condition such as rheumatoid arthritis
  - you or a close relative has had DVT before
  - you are taking an oestrogen-containing contraceptive pill (the 'combined pill')
  - you are having hormone replacement therapy (HRT)
  - you have varicose veins with phlebitis (pain and swelling).

If you are pregnant or have given birth within the past 6 weeks

You may be at risk of DVT should any of the following conditions apply to you.

- You are confined to bed for at least three days, or are unable to walk without help, or spend a large part of the day in bed or in a chair.
- You are having treatment for cancer.
- You are aged over 35.
- You are dehydrated.
- You have lost a lot of blood or have had a blood transfusion.
- You have thrombophilia (a disorder that makes your blood more likely to clot).
- You are seriously overweight (your body mass index was 30 or more before you became pregnant or during the early part of your pregnancy).
- You have a medical condition such as heart or lung disease, an infectious disease such as hepatitis or an inflammatory condition such as rheumatoid arthritis.
- You or a close relative has had DVT before.
- You have problems with your pregnancy such as pre-eclampsia.
- You are expecting or have given birth to more than one baby in this pregnancy.
- You have phlebitis (pain and swelling).
- You are having an operation (including caesarean section).

Risk factors for bleeding problems

If you are at risk of DVT, your risk of bleeding will be assessed before any drug treatment is offered to make sure you are given the treatment most suitable for you.

- You have a condition that causes problems with the blood, such as liver failure.
- You are already taking a drug that thins the blood and is known to increase the risk of bleeding (for example, warfarin).
- You have had a lumbar puncture, an epidural or an anaesthetic in your spine within the past 4 hours, or are planned to have one of these within the next 12 hours.
- You have recently had a stroke.
- You have a blood condition called thrombocytopenia (low platelet count) that makes the blood less able to clot and increases the risk of bleeding.
- You have very high uncontrolled blood pressure.
- You have an untreated inherited blood problem, such as haemophilia or von Willebrand's disease, which makes the blood less able to clot and increases the risk of bleeding.

Precautions while you are in hospital

Anaesthetic

There is less risk of DVT when you have a local/regional (numbs a particular area of the body) rather than a general (puts you to sleep) anaesthetic. If you are having surgery and it is possible for you to have a local anaesthetic, your healthcare team will discuss this with you.

What you can do

Whether you have come into hospital for surgery or not, there are a number of things you can do to help reduce your risk of DVT.

- **Drink -** drink lots of water unless advised otherwise. This helps to keep your blood flowing freely.
- **If you are unable to get out of bed -** keep moving your legs, this stops your blood from slowing down and clotting. If this is difficult, exercise your ankles. The more you do this, the better.
- **Walk around -** on the advice of your healthcare team, make sure you start to move around as soon as you are able.

There is no evidence supporting taking aspirin to reduce your risk of developing DVT.

What your healthcare team can do

Your healthcare team may not need to do anything more than encourage you to do the things listed above. If you are more at risk, they may decide to offer you treatment to help prevent DVT. You may need to continue any treatment at home after you leave hospital.

- **Anticoagulant drugs (help prevent blood clots forming)** Depending on your risk factors, your healthcare team may offer you a heparin type of drug such as dalteparin which is given by injection.

Compression stockings also known as anti-embolism stockings (help keep the blood in your legs circulating)

Compression stockings are tight stockings specially designed to reduce the risk of DVT. The stockings squeeze your feet, lower legs and thighs, helping your blood to circulate around your legs more quickly. Your healthcare team will measure your legs before fitting stockings to make sure you are given the right size. If your legs become swollen they will be measured again and new stockings fitted.

It is important to wear the stockings for as much of the time as possible, day and night, whether in hospital or afterwards at home, until you are back to your usual level of activity. Your healthcare team will show you how to use them, and check that you are getting the most benefit from them. Special care needs to be taken if you have ulcers or wounds on your legs.

Your stockings will need to be removed every day to allow the area to be cleaned and checked. If you have pain or discomfort, bruising or blisters, or areas where your skin has changed colour, your healthcare team will make sure you stop using the stockings.

You will not be offered compression stockings if you have:

- recently had a stroke
- peripheral arterial disease (narrowing of the arteries leading to your legs)
- peripheral neuropathy (damage to the sensory nerves)
- gangrene or a recent skin graft
- eczema or fragile skin on your legs
- fluid on the lungs caused by heart failure
- an allergy to the stocking material
- your legs are very swollen or a good stocking fit cannot be achieved.

How to tell if you might have DVT or PE

In some cases of DVT there may be no symptoms, but it is important to be aware of the signs and risk factors of thrombosis and tell your healthcare team as soon as possible if you think you may have a blood clot. You should seek help immediately if you experience any of the following in the days or weeks after your treatment.

- You have pain or swelling in your leg.
- The skin on your leg feels hot or is discoloured (red, purple or blue), other than bruising around the area where you have had an operation.
- The veins near the surface of your legs appear larger than normal or you notice them more.

DVT usually (although not always) affects one leg. The pain may be made worse by bending your foot upward towards your knee.

If DVT is not treated, a pulmonary embolism (PE) may occur. If you have a pulmonary embolism, you may experience more serious symptoms such as:

- breathlessness, which may come on gradually or suddenly
- chest pain, or pain in your upper back, which may become worse when you breathe in
- you cough up blood
- sudden collapse

Both DVT and pulmonary embolism are serious conditions that require urgent investigation and treatment.

How is DVT is diagnosed?

It can be difficult to diagnose DVT from symptoms alone, so if DVT is suspected, your healthcare team may recommend one of the following tests which may be carried out at another hospital:

D-dimer test - A specialised blood test, known as the D-dimer test, is used to detect pieces of blood clot that have been broken down and are loose in your bloodstream. The larger the number of fragments found, the more likely it is that you have a blood clot in your vein.

Ultrasound scan - An ultrasound scan can be used to detect clots in your veins. A special type of ultrasound, known as a Doppler ultrasound, can also be used to find out how fast the blood is flowing through a blood vessel. This helps doctors to identify when blood flow is slowed or blocked, which could be caused by a blood clot.

Venogram - If the results of a D-dimer test and ultrasound scan cannot confirm a diagnosis of DVT, a venogram might be used.

A special dye is injected into a vein in your foot, which travels up the blood vessels of your leg. An X-ray is taken to see the dye. If there is a blood clot in your leg, the dye will not be able to flow round it and will show up as a gap in your blood vessel.

Doppler study - A Doppler study is used to measure the supply of blood to each of your legs, which is then compared with a measurement of the blood pressure in your arm.

When the measurements are compared, they can show whether the blood supply in your legs is reduced.

How can DVT be treated?

If you have DVT you will need to take a medicine called an anticoagulant.

Anticoagulant medicines prevent a blood clot from getting bigger. They can also help stop part of the blood clot from breaking off and becoming lodged in another part of your bloodstream (an embolism).

Although they are often referred to as "blood-thinning" medicines, anticoagulants do not actually thin the blood. They alter chemicals within it, which prevents clots forming so easily.

Two different types of anticoagulants are used to treat DVT:

Heparin - usually prescribed first, because it works immediately to prevent further clotting. After this initial treatment you may also need to take warfarin to prevent another blood clot forming. Heparin can be injected either into a vein or under the skin, or by an intravenous infusion - when a continuous drip of heparin is fed through a narrow tube into a vein in your arm.

You may need to stay in hospital for five to 10 days and have frequent blood tests to ensure you receive the right dose.

Warfarin - taken as a tablet. You may need to take it after an initial heparin treatment to prevent further blood clots occurring. Your doctor may recommend that you take warfarin for three to six months. In some cases, warfarin may need to be taken for longer, even for life.

When you first start taking warfarin, you may need to have regular blood tests until your regular dose is decided.

Compression stockings

Compression stockings help prevent calf pain and swelling and lower the risk of ulcers developing after having a DVT. They can also help prevent post-thrombotic syndrome – damage to the tissue of your calf caused by the increase in blood pressure that occurs when a vein is blocked (by a clot) and blood is diverted to the outer veins.

After having a DVT, stockings should be worn every day for at least two years because symptoms of post-thrombotic syndrome may develop several months, or even years, after having DVT.

Compression stockings should be fitted professionally. They need to be worn all day, but can be taken off before going to bed or in the evening while you rest with your leg raised.

Raising your leg

As well as wearing compression stockings, you might be advised to raise your leg whenever you are resting. This helps to relieve the pressure in the veins of the calf and stops blood and fluid pooling in the calf itself.

When raising your leg, make sure that your foot is higher than your hip. This will help the returning blood flow from your calf. Putting a cushion underneath your leg while you are lying down should help raise your leg above the level of your hip.

You can also slightly raise the end of your bed to ensure that your foot and calf are slightly higher than your hip.

Possible complications

There are two main complications of DVT:

Pulmonary embolism (PE) - as described on page 2.
If the pulmonary embolism is small, it might not cause any symptoms. If it is medium-sized, it can cause breathing difficulties and chest pain. A large pulmonary embolus can cause the lungs to collapse and result in heart failure.

About one in 10 people with an untreated DVT develops a pulmonary embolism severe enough to cause these severe symptoms or even death.

Post-thrombotic syndrome - If you have had a DVT, you may develop long-term symptoms in your calf, known as post-thrombotic syndrome. This commonly affects people with a history of DVT.

If you have DVT, the blood clot in the vein of your calf can divert the flow of blood to other veins, causing an increase in pressure that can affect the tissues of your calf. Symptoms include:

- calf pain
- swelling
- a rash
- ulcers on the calf (in severe cases)

When a DVT develops in your thigh vein, there is an increased risk of post-thrombotic syndrome occurring. It is also more likely to occur if you are overweight or if you have had more than one DVT in the same leg.

When you leave hospital

You may need to continue treatment with compression stockings or an anticoagulant medicine when you leave hospital. Before you leave, your healthcare team will advise you on how to use your treatment, how long it should continue for, and who to contact if you are having any problems.

Smoking and diet

You can reduce your risk of DVT by making changes to your lifestyle, such as:

- not smoking
- eating a healthy balanced diet
- getting regular exercise
- maintaining a healthy weight or losing weight if you are obese

DVT can be a very serious condition and it is important that you get medical help as soon as possible. Prompt treatment of DVT will help to minimise the risk of complications.

More information

The organisations below can provide more information and support for people in hospital who may be at risk of DVT. Leicestershire Partnership NHS Trust is not responsible for the quality or accuracy of any information or advice provided by these organisations.

Anticoagulation Europe
Tel: 020 8289 6875
www.anticoagulationeurope.org

British Heart Foundation
Heart HelpLine: 0300 330 3311
www.bhf.org.uk

H.E.A.R.T. UK – The Cholesterol Charity
Helpline: 0845 450 5988
www.heartuk.org.uk

Lifeblood: The Thrombosis Charity
0207 633 9937
www.thrombosis-charity.org.uk

NHS Choices
www.nhs.uk

If you need help to understand this leaflet or would like it in a different language or format (such as large print, Braille or audio) please ask a member of staff.

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References

NHS Choices: http://www.nhs.uk/conditions/deep-vein-thrombosis/pages/introduction.aspx [25.03.2010]
NICE: Reducing the risk of deep vein thrombosis (DVT) for patients in hospital - Information about NICE clinical guideline 92 http://guidance.nice.org.uk/nicemedia/live/12695/47199/47199.doc [Jan 2010]