

*The* ROYAL MARSDEN  
NHS Foundation Trust

# Blood clot prevention

A guide for patients  
and carers



**NHS**

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## Introduction

Anyone admitted to hospital may be at risk of developing a blood clot during their hospital stay. The aim of this booklet is to explain the risk of developing a blood clot, the signs of a blood clot, who is at risk and how you can reduce your risk of forming a blood clot during your hospital stay.

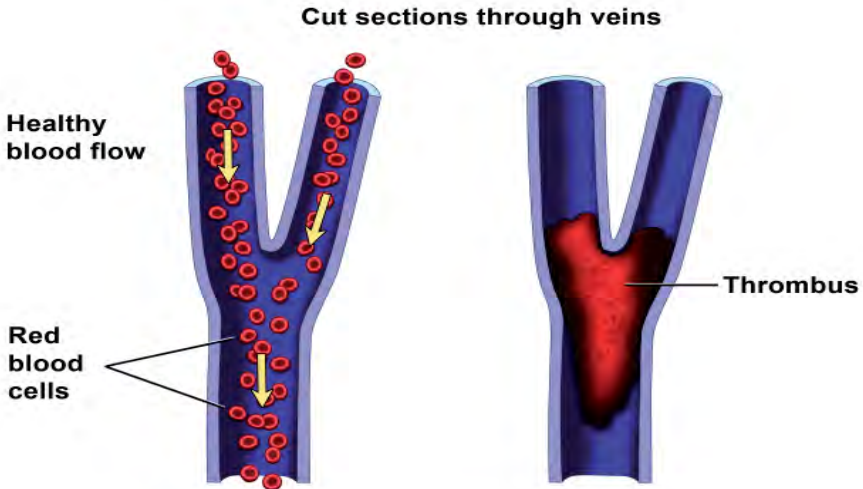
Preventable blood clots in UK hospitals have resulted in more deaths per year than MRSA, AIDS, breast cancer and road traffic accidents all combined. However, it is important to realise that these blood clots are preventable.

## What is a venous thromboembolism (VTE)?

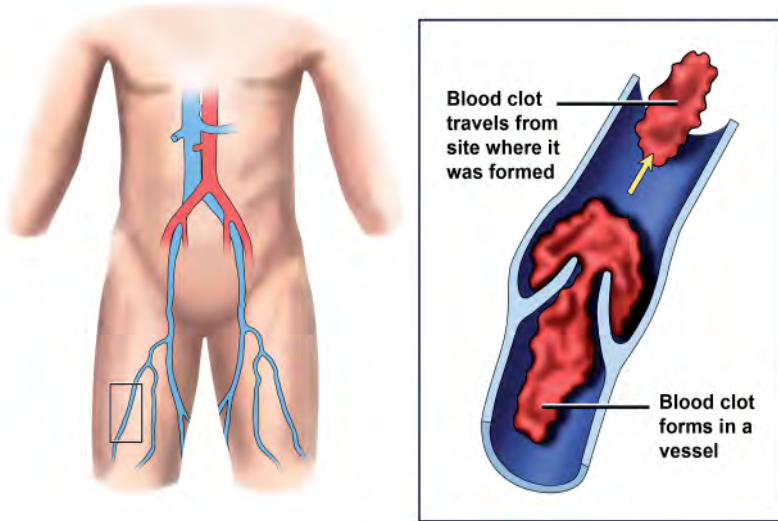
VTE is the collective term for deep vein thrombosis and pulmonary embolism.

## What is deep vein thrombosis (also known as a DVT)?

This is a blood clot which develops in a deep vein, most commonly in the leg or pelvis (less commonly in the deep veins of your arms).



If a blood clot forms in a deep vein in the leg or pelvis it can block the blood flow within the vein. This can result in the leg becoming swollen and painful.

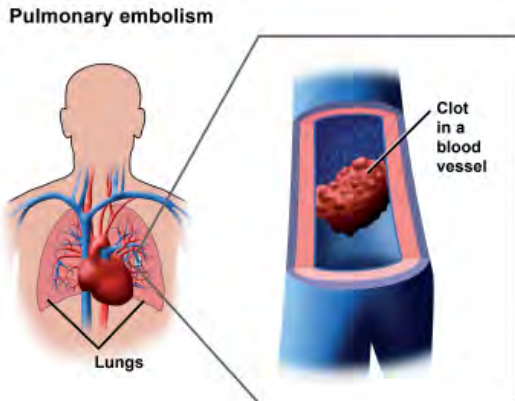


Sometimes a part of the blood clot causing the DVT separates and travels towards the heart and then to the lungs. It can then lodge in one of the blood vessels that supplies the lungs. This is called a pulmonary embolus. A pulmonary embolus is a serious complication of a DVT.

### What is a pulmonary embolism (also known as a PE)?

**A pulmonary embolism** is a blood clot in the blood vessels that supply the lungs. The blood clot forms elsewhere in the body and travels in the bloodstream towards the lungs. This clot often forms in a deep vein in the leg and a piece of this clot breaks off and travels towards the lungs where it becomes lodged in a blood vessel supplying the lungs.

Pulmonary embolism is not common but it can be life threatening and therefore needs urgent medical attention.



### What are the signs and symptoms of a VTE?

If you experience the following problems you may be suffering from a DVT:

- pain, swelling and tenderness in a leg
- redness and difficulty with weight bearing on the affected leg

If you experience the following problems you may be suffering from a PE:

- coughing up small amounts of blood
- chest pain which is made worse when you take a deep breath
- shortness of breath

### What should I do if I think I have a VTE?

VTE needs immediate treatment. If you develop any of the symptoms above in hospital please inform the nursing staff or doctors promptly. If you develop these symptoms once you have left hospital, please seek medical advice immediately either by contacting The Royal Marsden on:

**020 7352 8171      bleep 017 (Sutton)**

**bleep 022 (Chelsea)**

or from your local accident and emergency department.

## Who is at risk of a VTE?

Any patient can be at risk of developing a VTE. However, there are a number of factors that can increase your chance of this happening. Your risk may be increased if you:

- have cancer or are undergoing cancer treatment
- are less mobile than usual for more than three days
- are due to have surgery
- are over 60 years old
- are obese
- have previously had a VTE
- have certain blood conditions such as clotting disorders
- are using an oestrogen-containing contraceptive
- are taking hormone replacement tablets
- are dehydrated
- are pregnant
- have varicose veins

## Will my risk of a VTE be assessed while I am in hospital?

A doctor will assess your risk of developing a VTE on the day of your admission. 24 hours after you have been admitted to hospital you will be re-assessed in case your condition or planned care has altered in any way. If you are coming in for surgery, you may also be assessed at your pre-admission assessment appointment.

Your doctor may ask you to stop some of your medication before your surgery to reduce the likelihood of developing a clot. This will be explained to you at your pre-assessment.

## When I am in hospital what will be done to help prevent a VTE?

- **Stay hydrated** – if you are allowed to do so, drink plenty of fluid. However, if you are not allowed to do this, the doctors will give you fluids via a vein.



- **Move around** – keep mobile as much as you can. The physiotherapist will teach you some appropriate leg exercise.
- **Anti-embolic stockings** – If the doctor decides that you would be suitable for these, the nursing staff will fit you with a pair of stockings.
- **Intermittent calf pumps** - some surgical patients will have a special device which fits like a cuff around each calf (a bit like a blood pressure cuff). This will inflate and deflate alternately. These are designed to help prevent clot formation in the calf. They are not necessary for all surgical patients.
- **Medication (anticoagulants)** – your doctor might consider it necessary to prescribe you an anticoagulant (blood-thinning) drug to reduce your risk of developing a blood clot.

Not all methods mentioned above are appropriate for all patients. Your doctor will assess which methods are most suitable for you as an individual.

If you are already taking blood-thinning medication such as warfarin please tell your doctor.

### What anticoagulant might I be offered?

We usually offer patients a type of heparin injection. This is injected under the skin.

### Are there any side effects associated with the blood-thinning drug?

The possible side effects include:

- skin rash or allergy
- bleeding
- HITS (heparin induced thrombocytopenia) - Very rarely patients can develop this condition which affects the platelet count

If you have kidney failure you may be offered a different type of heparin to protect your kidneys.

## How do compression stockings help?

Compression stockings provide support to the muscles in your leg to help the flow of blood in your veins.

## Types of compression stockings

These can vary and the doctor will advise you of the most suitable stockings for you. The stockings available are:

- below knee stockings
- thigh length stockings



Below knee stockings



Thigh length stockings

## How do I apply my stockings?

1. Turn the stocking inside out down to the foot
2. Slip your foot into the foot part
3. Check the stocking heel is in the correct position
4. Pull the stocking up your leg without twisting it
5. If the stocking has been pulled up above your knee/thigh, gently ease it down your leg (do not roll the stocking over)
6. Make sure the heel is still in the correct position and that there are no creases

## How long will I need to wear these stockings for?

You will need to wear your stockings day and night for the duration of your stay in hospital.

## Wearing instructions

- If you have difficulty putting the stockings on please ask your nurse to help you.
- The stockings should feel firm but should also be comfortable.
- If they feel too tight or too loose please tell your nurse.
- They should be wrinkle free and worn throughout the day and night.
- Do not roll the stockings down as this could restrict blood flow.
- You should remove your stockings daily for up to 30 minutes. During this time you can wash and moisturize your legs with cream (if you have an existing skin condition please ask your doctor as to which is the most appropriate moisturiser to use).
- During the time your stockings are removed you should check the condition of your skin.
- If you are experiencing any of the following please inform your nurse immediately: pain, numbness, leg swelling or skin problems such as rashes, blistering or discolouration.

## Looking after your compression stockings

- One pair of stockings should be worn daily for three months and then discarded.
- The stockings should be washed regularly to renew the compression and remove skin flakes and sweat.
- The stockings should be washed by hand or on a delicate wash cycle (40°C) in a washing machine.
- Hang them up to dry.
- Do not tumble dry as the heat will damage the stockings.

- Do not dry them directly on a radiator as this will damage the fabric and reduce its useful wear time.

### **What are the risks of wearing anti-embolism stockings?**

If the stockings are too tight they may limit the blood flow within your legs. If they are too tight you may experience one or more of the following symptoms:

- blistering
- skin discolouration
- skin markings
- numbness
- pins and needles
- soreness

If you have any of these symptoms you must report them immediately to your nurse.

- If the stockings are too loose they will not exert enough pressure to be effective and therefore will not reduce the risk of a DVT occurring.
- If you develop a rash you may be allergic to the materials in the stockings

### **How long should I continue to wear my stockings after I leave hospital?**

It may be necessary for you to wear the stockings after you have left hospital. If so, your doctor or nurse will tell you for how long. This will normally be until you regain your previous level of mobility.

### **If I am taking a blood-thinning drug how long should I continue to take it?**

Your doctor will assess whether or not you will need to continue with the blood-thinning medicine or injections after you leave hospital. This depends on an assessment of “how at risk you are

from developing a clot”. If you had surgery, continuation of the medication will depend on the nature and extent of your surgery.

If you are to continue with the medication we will give the appropriate amount of medicine/injections to continue at home. If you have to continue with injections for a longer period of time these can be obtained from your GP. We will send your GP a letter with specific instructions about this and other aspects of your care.

### **Who do I contact if I have any problems with the stockings or blood-thinning drug?**

If you have any concerns you should speak to a member of your medical or surgical team or your Clinical Nurse Specialist.

**Out of normal office hours** you can contact the Site Nurse Practitioner at The Royal Marsden on:

**020 7352 8171      bleep 017 (Sutton)**  
**bleep 022 (Chelsea)**

If you experience severe symptoms you should visit your **local accident and emergency department**.

### **Resources**

Useful websites:    *www.anticoagulationeurope.org*  
                                 *www.stoptheclot.com*  
                                 *www.thrombosis-charity.org.uk*

### **References**

This booklet is evidence based wherever the appropriate evidence is available and represents an accumulation of expert opinion and professional interpretation.

Details of the references used in writing this booklet are available on request from:

The Royal Marsden Help Centre  
Freephone: 0800 783 7176  
Email: *patientcentre@rmh.nhs.uk*.