



## Preventing blood clots (Venous Thrombo-Embolism-VTE) In patients with reduced mobility due to lower limb injury

### How does a blood clot (VTE) form?

Within the calf muscles there are many veins. As you walk, run, or move your feet, these muscles squeeze the veins and blood is moved towards your heart. This is known as the calf muscle pump. If your leg is held in one position (immobilised) as in a cast or appliance, the calf muscle pump is less effective. This can lead to blood collecting in the veins, which in turn can lead to a blood clot forming. This type of blood clot is known as a Deep Vein Thrombosis or DVT. DVT can cause swelling and pain. In the longer term, DVT can cause painful, longterm swelling and ulcers.

A DVT itself is not necessarily life threatening, but if a part of it breaks off and travels to the lungs leading to a Pulmonary Embolism (PE), this is a serious condition that can be fatal if not treated.

The collective name for DVT and PE is Venous ThromboEmbolism or VTE. VTE diagnosis requires immediate treatment.

### Am I at risk of developing a blood clot?

Anyone can get a blood clot. Having your leg immobilised in a cast or appliance is a risk for VTE. Your risk for blood clots may be increased if:

- You have a past history of blood clots or a close relative has previously had a blood clot
- You are over 60 years old
- You are dehydrated
- You are overweight
- You have active cancer, chronic kidney, heart disease or lung disease,
- You are taking hormone treatment like the combined oral contraceptive pill, hormone replacement therapy (HRT) or tamoxifen
- You have a disorder that makes you blood stickier, a thrombophilia
- You have bad varicose veins causing pain, leg swelling, skin damage or skin ulcers
- You are pregnant or have had a baby in the last six weeks
- You have had a hospital stay or recent surgery (abdomen, hips, knees) in the last four weeks

If you think that you have any of these conditions or are taking any of the medicines, talk to your hospital doctor or nurse.

### How will hospital staff help me reduce my risk?

A doctor or nurse will complete an assessment to work out your individual VTE risk. If treatment is required and there are no contraindications, you may be offered blood thinning medication which helps to reduce the risk of clot formation.

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## **This medication may be:**

### **Low dose heparin injections (enoxaparin)**

Enoxaparin thins the blood and makes clots less likely to form. It is a daily injection that is usually given at approximately 18:00 hours in the evening. The injections go just under the skin into the fatty layer and are usually given into the stomach or thigh. As with all medications, the injection can have side effects. Most people experience some discomfort and bruising around the injection site.

Enoxaparin is of animal origin. If you have any questions or concerns about this, please speak to your nurse, pharmacist, or doctor.

You should not have enoxaparin if you have had a condition called 'heparin-induced thrombocytopenia' (a decrease in the number of platelets in your blood caused by heparin) or if you are allergic to heparin. Your doctor will have told you if you have this.

### **Rivaroxaban**

If you are unhappy with taking enoxaparin, your doctor or nurse will prescribe rivaroxaban. Rivaroxaban is a blood thinning tablet that has been approved to prevent blood clots in other patients, for example after hip or knee replacement surgery. Rivaroxaban has not been approved to prevent blood clots in people with leg injuries. This is called 'off label' or 'unlicensed' use of rivaroxaban. At this hospital, senior doctors and pharmacists have decided that it is safe to use rivaroxaban in this way. If you are pregnant or if you are breastfeeding, you cannot have rivaroxaban.

**You should continue to take your blood thinning medication until you are told by your doctor or nurse to stop. This will usually be until the cast/boot/splint has been removed.**

**At your fracture clinic appointment, you will need to inform your doctor/nurse that you are on a blood thinner. Ask for a prescription if you do not have enough.**

**If you are in doubt about your blood thinning medication, contact the anticoagulant service for advice**

Queen Elizabeth Hospital Birmingham Tel: **0121 627 2000**  
Email: [anticoagulantTeam@uhb.nhs.uk](mailto:anticoagulantTeam@uhb.nhs.uk)

Heartlands, Good Hope and Solihull hospitals  
Tel: **0121 424 1706**

### **What can I do to reduce my risk of developing a blood clot?**

Whether you have been prescribed a medicine to reduce the risk of clots or not, you should take the following precautions:

- Try to keep moving around as much as possible (unless you have been advised otherwise)
- Drink plenty of fluids to avoid dehydration
- Take any medication you have been prescribed
- Carry out the following leg exercise with one or both legs as directed by the nurse or doctor

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- Lying on your back or sitting, bend and straighten your ankles quickly 10 times
- Try and keep your knees straight during the exercise to stretch your calf muscles
- Remember to do this exercise two or three times an hour
- If your leg is in a cast, you can perform this exercise with your noninjured leg
- Video link for VTE prevention exercises: <https://www.youtube.com/watch?v=x32kRLIxaBI>

## **Is there anything I should look out for when I am taking an anticoagulant?**

Anticoagulants thin your blood, and they can make you bleed more easily. If you are at risk of bleeding problems, your doctor may decide not to prescribe this medication. Whilst you are taking an anticoagulant, you must go to hospital straight away if you notice:

- You are bleeding a lot from a wound
- You have swelling around a wound
- You have a sudden very bad headache
- You have a tenderness or swelling in your stomach

## **You should tell a nurse or doctor as soon as possible if you notice:**

- You are bruising more easily than you normally do
- You feel more weak, tired, or short of breath than normal

If you want to know more about the side effects of your blood thinner, you could read the information leaflet in the pack or you can visit

<https://www.medicines.org.uk/emc/product/784/pil#gref> for your enoxaparin injections or <https://www.medicines.org.uk/emc/product/100864/smpc> for your rivaroxaban tablets.

## **How would I know if I have blood clot?**

### **Deep vein thrombosis**

Some amount of swelling is expected initially following injury to your leg and having the plaster cast put on if you have one. If you feel that the swelling is increasing in the affected leg or if you develop swelling in your non-injured leg you should seek medical advice urgently. The same applies if your leg becomes suddenly hot, numb, painful, or discoloured.

### **Pulmonary embolism**

If you experience sudden shortness of breath, chest pain or coughing up blood, you should contact a doctor immediately.

## **Where can I get more information?**

The NHS website ([www.nhs.uk](http://www.nhs.uk)) provides patient information on VTE.

The thrombosis charity also has more information on [www.thrombosis-charity.org.uk](http://www.thrombosis-charity.org.uk)

There are also video and information leaflets on our website:

[www.uhb.nhs.uk/dvt](http://www.uhb.nhs.uk/dvt)

**Please use the space below to write down any questions you may have and bring this with you to your next appointment.**

## Haematology

Queen Elizabeth Hospital Birmingham  
Mindelsohn Way, Edgbaston  
Birmingham, B15 2GW  
Telephone: 0121 627 2000

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