Deep vein thrombosis and pulmonary embolism in pregnancy
Information for patients
Please read this leaflet carefully. It will give you information about blood clots (also known as venous thromboembolisms) during and after pregnancy.

What is Venous Thromboembolism (VTE)?

*There are two types of VTE:*

- **Deep Vein Thrombosis (DVT):** a DVT is a blood clot that forms in a deep vein, most commonly in your leg or pelvis.
- **Pulmonary Embolism (PE):** if all or part of the DVT breaks free and passes through your blood vessels, it can reach your lungs. This is called a PE.

![Diagram of the vein in the leg with stages of blood flow and clot formation]

**Signs and symptoms of VTE**

**DVT** - Symptoms can include swelling, redness/discolouration, warmth and tenderness/pain of the legs that may be worse when standing or walking. Occasionally there are no symptoms except pain.
PE - Symptoms can include coughing, chest pain/tightness (especially when breathing in), sudden unexplained breathlessness, blood stained phlegm, feeling very unwell and/or collapsing.

If you develop any of these symptoms please get medical advice immediately. Diagnosing and treating a DVT reduces the risk of developing a PE.

Are VTE’s common in pregnancy?
The risk of developing a VTE (blood clot) in pregnancy is approximately five times higher compared to a woman who is not pregnant. However certain risk factors will increase this risk further. These include smoking, a BMI > 30, age > 35, IVF pregnancy etc.

The risk of developing a VTE further increases in the postpartum period. It is highest in the ten days after delivery and remains high for up to six weeks after delivery. For this reason you may be asked to inject blood thinning injections to prevent a VTE for ten days or six weeks after delivery if you are found to be at high risk.

While developing a blood clot has no direct effect on your baby during pregnancy, it remains the highest cause of direct maternal mortality in the UK, hence its prevention and treatment is very important.

A VTE can occur at any time during your pregnancy including the first three months so it is important to see your midwife early in pregnancy.
Are VTE’s serious?
Yes DVT’s are serious because they can result in long term complications such as permanently swollen/discoloured legs, varicose veins and leg ulcers (known as post thrombotic syndrome).

Also part or all of the DVT can break off. If this happens it will travel through your blood vessels and can reach your lungs, this is known as a PE. This is potentially life threatening. Prompt treatment saves lives. While dying from a PE is very rare it remains one of the commonest causes of death in pregnancy in the U.K.

Am I at risk of developing a VTE?
You are at increased risk of VTE if you have any of the following.

**During pregnancy if you:**
- are over 35 years of age
- have already had three or more babies
- have had a previous VTE
- have a parent or sibling who has had a VTE
- have a thrombophilia - an inherited blood clotting disorder that increases the risk of VTE’s
- have a medical condition such as heart disease, lung disease or arthritis - your doctor or midwife will be able to tell you whether any medical condition you have increases your risk of VTE
- have severe varicose veins that are painful or above the knee with redness/swelling
• are a wheelchair user
• are overweight with a body mass index (BMI) of over 30
• are a smoker
• are an intravenous drug user
• are admitted to hospital
• are carrying more than one baby (multiple pregnancy)
• become dehydrated
• are less mobile during pregnancy due to problems such as vomiting or infection
• are immobile for long periods of time, for example after an operation or when travelling for longer than 4 hours (by air, car or train)
• are unwell from fertility treatment (ovarian hyperstimulation syndrome)
• have pre-eclampsia.

**After the birth of your baby if you:**
• have a very long labour (more than 24 hours)
• have a caesarean section (x5 higher risk of a VTE compared to a normal vaginal delivery)
• lose a lot of blood after you have delivered your baby
• receive a blood transfusion.

**How is a VTE diagnosed in pregnancy?**

**DVT**
If you have signs and symptoms of a DVT your doctor will examine your leg and may recommend an ultrasound scan of your leg to see if there is a DVT. If the scan is negative but
you are still experiencing signs and symptoms the ultrasound scan may be repeated a few days later. There are no risks with an ultrasound scan of your leg, it is the same as having an ultrasound of your tummy to see the baby.

**PE**

If you have signs and symptoms of a PE your doctor will examine you. They may then recommend some tests, the tests for a PE include:

- **Chest X-ray** - this can also show other problems which may be the cause of your symptoms, such as a chest infection.
- **CTPA scan** (a specialised X-ray), you will need a drip in your arm and an injection of x-ray dye for this test.
- **Half dose Q scan** (a perfusion scan of your lungs). This also requires a drip in your arm.

**Are there any risks with having the tests?**

Radiation is used in each of the tests. The theoretical risk from radiation used in any diagnostic scan is that it may induce cancer. However we all have a natural background risk of developing cancer. The risk of developing cancer should be balanced against the risk of having a potentially serious PE.

**Risks to your baby:**

- The chest X-ray uses a very small dose of radiation and your baby is covered with a protective sheet, so the risk of childhood cancer is tiny.
- Risk from a half-dose Q scan is approximately 1 case of childhood cancer from 500,000 scans.
- Risk from a CTPA scan is approximately 1 case of childhood cancer from 1,000,000 scans.
The risk is therefore higher from a half dose Q scan but still very small. In comparison to natural background risk of developing cancer neither test will significantly increase your baby’s risk of childhood cancer. Your baby will be exposed to more radiation from the environment during pregnancy than is delivered in a half dose Q scan or CTPA. “Natural” background risk of childhood cancer is 3 in 10,000.

*Risks to you:*
CTPA carries significantly more risk to you than a Q scan. It delivers a large dose of radiation to your breasts, 16 times greater than from a Q scan. This is associated with a 14% increased risk of developing breast cancer.

On balance, the medical team looking after you would reason that the real risk of potential harm to you or your baby if a PE remains undiagnosed outweigh the theoretical risks associated with these tests.

You will have the opportunity to discuss these investigations with your medical team during your admission.

**Breastfeeding advice**

Breastfeeding should be avoided for 12 hours after a Q scan. Milk can be expressed before the scan and stored. Milk can also be expressed and thrown away during the 12 hour period, for breast comfort.

Breastfeeding is safe after a CTPA.

**Which test will I have?**
This is based upon specific guidelines that have been developed at Leeds Teaching Hospitals for the investigation of PE in pregnancy and will depend upon discussions with your
doctor and healthcare team and also on the results of your chest X-ray.

**What is the treatment for VTE?**

If your doctor suspects that you have a VTE, you will be advised to start treatment with a medication called low molecular weight heparin (an anticoagulant) to reduce blood clotting (this is sometimes referred to as “thinning the blood”). The most commonly used heparin in pregnancy is low molecular weight heparin (LMWH).

Low molecular weight heparin is pork derived. It is the safest and most effective drug to prevent and treat blood clots in pregnancy and immediately after. Unfortunately there aren’t any alternatives with the same effectiveness and safety record. Please speak to a doctor if you would like to discuss this further.

*For most women, the benefits of heparin are:*
- it prevents the clot getting bigger so your body can gradually dissolve the clot
- it reduces the risk of another VTE developing
- it reduces the risk of long-term problems.

If you are diagnosed with a DVT you will also be prescribed a graduated compression stocking to wear on the affected leg for two years. This helps to maintain blood flow in your leg veins which in turn helps to reduce the risk of long term damage, such as unsightly veins, discolouration and swelling.

**What does heparin treatment involve?**

Heparin is given as an injection under the skin at approximately the same time every day.
You (or a family member) will be shown how to give the injections. You will be given a supply of needles and syringes which contain heparin, you will be given advice on how to store and dispose of them.

Regular check-ups will be arranged as an outpatient, so you will probably not need to stay in hospital.

**What are the risks of treatment?**

Low molecular weight heparin does not cross the placenta and therefore cannot harm your baby.

You may get some bruising where you inject this usually fades within a few days.

One or two women in every 100 (1% to 2%) will have an allergic reaction, usually a rash. If you notice a rash after injecting heparin, tell your doctor so the type of heparin can be changed.

Women who go into labour and are having heparin injections have a higher risk of bleeding after delivery and of developing a wound haematoma (bruise) after a Caesarean section.

**How long will I need to take heparin?**

Treatment is usually recommended for the remainder of your pregnancy and for at least six weeks after the birth. The minimum treatment time is three months and you may need to continue for longer.
What should I do when labour starts?

If you think you are going into labour, do not have any more injections. Phone your maternity unit straight away and tell them you are on heparin treatment. They will give you advice on what to do.

You will not be able to have an epidural or spinal anaesthetic unless 24 hours have passed from the time of your last heparin injection. Other forms of pain relief will be available.

If the plan is to induce labour you should stop your heparin injections 24 hours before the planned date.

If you are having a planned caesarean section your last heparin injection should be 24 hours before the planned delivery. Heparin will usually be restarted within four hours of the caesarean.

If you need an emergency caesarean section within 24 hours of your last heparin injection you will be unable to have an epidural or spinal injection so will need to have a general anaesthetic.

You may be offered an induction of labour to make plans to stop your heparin injection 24 hours before delivery.

What happens after the birth?

Treatment should continue for at least six weeks after the birth of your baby. Treatment is likely to continue for longer if your VTE was diagnosed late in pregnancy or after the birth.

There is a choice of continuing with heparin injections or switching to warfarin tablets. Your doctor will discuss your options with you.
After the birth, you will usually be offered an appointment with either your obstetrician or haematologist.

At this appointment the doctor will:

- ask about your family history of VTE and discuss tests for a condition that makes VTE’s more likely (thrombophilia);
- discuss options for contraception - you should be advised not to take any contraception with oestrogen in it, for example the ‘combined pill’;
- discuss future pregnancies - you will usually be advised to have heparin during and after your next pregnancy to prevent developing another blood clot.

Can I breastfeed?

Yes – both heparin and warfarin are safe to take when breastfeeding.

As mentioned above, if you are having a Q scan after delivery of your baby, breast feeding should be avoided for 12 hours after the scan. Breast feeding is safe after a CTPA.

Where can I get more information?

Royal college of Obstetrics and Gynaecology

NHS Choices
Venous Thromboembolism in Pregnancy

References


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