

Royal Berkshire Vein Clinic

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**Specialist treatment of leg and facial veins using
surgery, sclerotherapy and Veinwave**

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**Deep vein Thrombosis
Including Flight advice**

Information for patients, December 2006

Deep Vein Thrombosis

People have become concerned about the risks of deep vein thrombosis (DVT) during long air flights, following reports in the press about occasional deaths due to fatal pulmonary embolism. The aims of this advice are:

- to provide reassurance that the risk for most people is miniscule
- to explain about DVT and pulmonary embolism
- to identify people who may be at increased risk
- to advise on possible precautions to reduce the risk

The advice is similar for all long journeys, whether by air, coach, car, or train.

What are deep vein thrombosis (DVT) and pulmonary embolism?

There are two systems of veins in the legs - the important deep veins (which carry most of the blood up the legs towards the heart) and the less important superficial veins just under the skin (which can form varicose veins).

Deep vein thrombosis (DVT) means thrombosis (clotting) of blood in the deep veins of the legs. It can cause swelling and pain in the leg, but often occurs without giving any symptoms. A DVT may well settle completely, as the thrombosis is dissolved by natural processes.

If a DVT extends up the deep veins, two things can sometimes happen:

- 1.** The thrombosis can become dislodged from the vein, and carried through the main veins and heart to lodge in the lungs. This is called a pulmonary embolism. Small pulmonary emboli may cause chest pain, and sometimes coughing up of blood. Multiple or larger pulmonary emboli may cause breathlessness. A large pulmonary embolus which blocks the main blood vessels to the lungs will be fatal.
- 2.** The thrombosis can cause chronic blockage in the deep veins or damage to their valves, leading to long term swelling and sometimes skin problems at the ankle.

Why does deep vein thrombosis occur?

All the veins in the leg have valves which should direct blood flow upwards, towards the heart. The deep veins lie between the muscles, and muscular activity (moving the legs, walking, or any leg exercise) helps to pump the blood up these veins. When the legs are inactive, and particularly when sitting or standing, blood tends to stagnate in the deep veins. Stagnation of blood can eventually lead to thrombosis. Sitting with the legs bent (as in an aircraft or coach seat) may also restrict flow of blood up the veins in the calf. The longer the period of stagnation, the more likely is thrombosis.

If the blood is unusually ·thick· or ·sticky· then the risk of thrombosis is greater: this can be caused by dehydration and some medical conditions.

Who is at special risk of deep vein thrombosis?

We have no direct evidence about people at special risk of DVT as a result of long journeys, but based on evidence about surgical operations the following increase the risk of thrombosis:

- Having had a DVT or pulmonary embolism before
- Having had a recent major operation
- Pregnancy
- The contraceptive pill or hormone replacement therapy (HRT)
- Malignant disease (cancer)
- Obesity (being overweight)
- Severe heart disease
- Some blood diseases
- Varicose veins

The risks of DVT are probably highest for people with more than one of these risk factors.

How large is the risk?

For people without any of the risk factors listed above the risk of DVT (even on a long haul flight) is miniscule - one in hundreds at the most. For people with risk factors who take no precautions against thrombosis, the risk of DVT detectable on special scans is as high as one in twenty on long haul flights (but many of these thromboses are minor and cause no problems).

Flight Advice

There is now evidence that wearing below knee graduated compression stockings reduces the change of DVT for people with special risk factors¹. Because so few people without risk factors ever develop DVT or pulmonary embolism as a result of long journeys, there is no definite evidence about other measures which reduce the risk. However, based on what is well known about the causes of DVT and the successful methods of prevention used in hospital, the following are sensible precautions, particularly on long haul flights and other journeys lasting several hours:

1. Move your legs.

- Don't sit with your legs bent for hours on end. Stretch your legs out from time to time, and move your feet up and down at the ankles. Stand up to stretch the legs now and then. Stretching and moving the legs stops blood stagnating in the deep veins of the calf, and is the simplest and most effective thing you can do.
- Go for a walk up and down the aisle.

2. Don't get dehydrated.

- Drink plenty of fluid · water is ideal.

- Avoid excessive alcohol, which tends to cause dehydration.

3. Wear compression stockings.

- Graduated compression stockings reduce the risk of DVT. They also help to prevent the ankle swelling which many people experience on long journeys.
- BELOW KNEE stockings are the most comfortable kind, and seem just as effective as full length stockings.
- Medical graduated compression stockings are supplied in three classes: Class 1 or Class 2 stockings are suitable for most people (Class 3 are excessively strong for this purpose).
- Compression stockings can be prescribed by a doctor if there is a medical need. They can be bought at chemists, surgical appliance specialists, and now at some other shops, for example in airports.
- These stockings come in a range of sizes, and your legs will need to be measured to get the right fitting.
- People who have trouble with the arteries of their legs should seek medical advice before using compression stockings.

4. Aspirin.

Taking an aspirin tablet (either a 75mg junior aspirin or half of a normal 300mg aspirin tablet) a few hours before a long journey may provide a small amount of extra protection against DVT.

5. Anticoagulants.

Special anticoagulant drugs (e.g. heparin injections, or warfarin by mouth) may be advisable for a few people who have medical conditions with a particularly high risk for DVT. This kind of treatment will always be on the explicit advice of a doctor.

This information is general in nature. It is for guidance only, your surgeon can advise you on specific information relating to your condition.

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