

Health Advice for Air Travel - Prevention of Deep Venous Thrombosis:

Introduction:

The risk of Deep Venous Thrombosis (DVT) due to long haul flights has recently been much publicised in the media. Although there is a wealth of anecdotal evidence, further research has been commissioned to establish whether there is a direct link between DVT and air travel.

What is Deep Venous Thrombosis?

It is a condition in which a small blood clot or thrombus forms mainly in the deep veins of the legs. Such clots can present without signs or symptoms, but may give rise to swelling of the affected leg, sometimes accompanied by pain (particularly when the foot is flexed hard upwards) and local tenderness. Such swelling is not to be confused with the commonly experienced swelling of both lower legs during and after a long flight, which is due to inactivity and soon disappears after leaving the aircraft.

DVT can lead to serious complications, when the blood clot breaks away from the wall of the vein and is carried along with the flow of blood. If it cannot pass through a blood vessel, it will block it. The blockage is called embolism and can occur in the lungs, leading to breathing difficulties and possibly death.

What causes DVT?

Prolonged immobility, cramped seating (passive compression of the lower leg muscles) and dehydration are known to be causative factors for DVT in susceptible individuals. It is a matter of fact that these conditions are readily experienced in the aircraft cabin. It is however a misconception to suggest that the possibility of DVT need not concern business and first class travellers - or those using other forms of long-distance transport.

It is also generally agreed that the following constitute other risk factors

- Increasing age above 40 years
- Pregnancy
- Former or current malignant disease
- Blood disorders leading to increased clotting tendency
- Inherited or acquired impairment of blood clotting mechanisms
- Some types of cardiovascular disease or insufficiency
- Personal or family history of DVT
- Recent major surgery or injury, especially to lower limbs or abdomen
- Oestrogen hormone therapy, including oral contraception
- Immobilisation for a day or more
- Depletion of body fluids causing increased blood viscosity

It has also been suggested that varicose veins, obesity and current tobacco smoking can also contribute to the development of DVT. Further information on postulated risk factors for DVT specifically associated with long distance travel is available.

The Occupational Health Unit would recommend that all University air travellers adopt the following advice to prevent the risk of developing DVT.

How can you prevent DVT when flying?

Some people will be at a higher risk of developing DVT. However, to prevent DVT all individuals travelling on flights of more than 3 hours duration should follow the current advice:

- Move around in seat and in cabin as much as practicable
- Exercise calf muscles whilst seated by half-hourly flexing and rotating of ankles for a few minutes
- Avoid excess of alcohol and caffeine-containing drinks, both before and during flight
- Drink only water or non-caffeinated soft drinks or juices when thirsty or feeling dry
- Observe and act on advice given in in-flight media.

Those at minor risk - i.e. meeting one or more of the following conditions

- aged over 40
- very tall, very short, or obese
- previous or current leg swelling from any cause
- recent minor leg injury or minor body surgery
- extensive varicose veins

As above plus the following:

- Avoid leg discomfort whilst seated
- Avoid alcohol and caffeine-containing drinks, both before and during flight
- Take only short periods of sleep, unless normal sleeping position can be attained
- Do not take sleeping pills
- Consider the need to wear support stockings

Those at moderate risk- i.e. meeting one or more of the following conditions

- recent heart disease
- pregnant or on any hormone medication - particularly the contraceptive pill and HRT

All the above plus the following:

- Take professional medical advice about the risks involved

- Take 1/2 an adult aspirin (150 mg) before the flight and a quarter (75 mg) each flying day unless contra-indicated. Ulcer disease is only a contraindication if active. If in doubt take aspirin with food.
- Wear compression stockings

Those at substantial risk - i.e. meeting one or more of the following conditions:

- previous or current DVT
- known clotting tendency
- recent major surgery or stroke
- current malignant disease or chemotherapy
- paralysed lower limb(s)

Consider avoiding or postponing flight, taking medical advice if unsure

If travelling, follow all the above advice but have low molecular weight heparin prescribed instead of aspirin.

REFERENCE

House of Lords Select Committee on Science and Technology on Air travel and Health, printed on 15th November 2000. ISBN 0 10 444200 X