



ADVICE ON TRAVEL-RELATED DEEP VEIN THROMBOSIS

Introduction

1. A possible link between deep vein thrombosis (DVT) and long haul air travel was first suggested by reports in medical journals in the 1950s. These early reports of DVT and the evidence about the causes of DVT in general pointed to immobility as the common underlying risk factor. Despite this the information is still unclear on

- how common travel-related DVT really is
- what the risk factors are
- how it can be prevented.

2. What is known, however, is that DVT may be associated with any form of long distance travel whether by air, car, coach or train. In particular long-haul air travel (flights lasting longer than five hours) where passengers remain immobile in the seated position for long periods of time, may be associated with an increased risk. This advice summarises what is known about

- travel-related DVT in air passengers
- who may be at risk
- how to reduce the potential risk.

3. The important point to remember is that the vast majority of air passengers do not need to take any medication on long haul flights to prevent DVT. All air passengers, even those at greatest risk can reduce the chances of getting DVT by doing the simple exercises set out in this advice.

4. This advice also refers to other sources of information about DVT and air travel.

What is DVT?

5. DVT is a serious condition where blood clots develop in the deep veins of the legs. It must be distinguished from blood clots in superficial varicose veins in the legs, called phlebitis, which is much less serious. One in every hundred people who develop DVT dies. The cause of death is usually a blood clot, travelling from the legs to the lungs. This is called a pulmonary embolus or PE. When PE is severe it causes the lungs to collapse and heart failure. Treatment of DVT and PE is with blood-thinning drugs or anticoagulants, including warfarin and heparin. Aspirin

in low doses also acts as a blood thinning drug and is used to prevent clotting conditions in the arteries like coronary thrombosis. Its benefit in preventing DVT is debatable. DVT combined with PE or other blood clots is often referred to as Venous Thrombo-Embolicism or VTE.

Who is at risk of DVT?

6. Every year DVT occurs in about 1 in 2000 people in the general population, ranging from less than 1 in 3000 in people under the age of 40 up to 1 in 500 in those over 80.

7. The risk of DVT and PE is greater in people

- over 40 years of age
- who have had blood clots already
- with a family history of blood clots
- suffering from or who have had treatment for cancer
- with certain blood diseases
- being treated for heart failure and circulation problems
- who have had recent surgery especially on the hips or knees
- who have an inherited clotting tendency.

8. DVT is also more common in women who

- are pregnant
- have recently had a baby
- are taking the contraceptive pill
- are on hormone replacement therapy or HRT.

9. These groups make up 90 to 95% of all those who get DVT and/or PE.

The risk of DVT from air travel

10. There is some evidence that long-haul flights, especially when passengers have little or no exercise, may increase the risk of developing DVT. Information on the proportion of people who develop DVT related to air travel is limited, but the experts suggest this is small. Also, it is not easy to decide whether the flight itself caused the DVT/PE or whether these people were at risk for other reasons. This is because

- DVT and PE are relatively common conditions anyway and
- more people than ever now travel by air every year.

11. While it is difficult to be certain what the exact causes of travel-related DVT are, experts agree that lack of exercise or immobility are major underlying risks. They have also identified that people at increased

risk of DVT/PE in general are those more likely to develop travel-related DVT/PE.

What are the signs of DVT

12. You may get swelling, pain, tenderness and redness especially at the back of the leg below the knee. This is different from the mild ankle swelling that many people get during long haul flights and DVT usually though not always affects only one leg. These complaints may develop during the journey but more commonly hours or even days later. The pain may be made worse by bending the foot upward towards the knee. In some cases there may be no signs or symptoms of DVT at all in the legs and problems only become obvious when a pulmonary embolus or PE develops from the clots in the legs. Fortunately PE is rare. PE can cause breathlessness, chest pain and in severe cases, collapse. Both DVT and PE, whatever the cause, are serious conditions and need urgent investigation and treatment.

How to reduce the possible risk of DVT on long haul flights

Before the trip:

13. Consult your doctor if you have

- ever had a DVT or PE
- a family history of clotting conditions
- an inherited tendency to clot (thrombophilia)
- cancer or had treatment for cancer in the past
- undergone major surgery in the last three months
- had hip or knee replacement within the last three months or
- ever suffered from a stroke.

14. Some experts advise that people who have had hip or knee replacements should postpone long haul flights for three months after surgery. If you have had this kind of surgery, talk to your family doctor, travel clinic staff or a member of the surgical team.

15. You may need advice on in-seat exercises, especially leg exercises to keep the circulation active and reduce the risk of developing a DVT. Some information is provided below. More information is available in literature provided by travel agents, and in the in-flight leaflets magazines and videos now produced by many airlines.

16. You may also need to discuss treatment with blood-thinning drugs or the use of elastic stockings if you are in a high-risk group. While there is some evidence that elastic stockings may be useful there is no

evidence that aspirin is effective in preventing travel-related DVT or PE. Elastic stockings are widely available from pharmacies and pharmacists can provide advice on use and fitting. Because aspirin can have serious side effects like bruising, bleeding from the gut and allergies you should consult your doctor before deciding to take this drug. People taking aspirin already should **not** increase the dose.

17. Women taking the 'pill' or on hormone replacement therapy (HRT) should do the exercises described in this advice to help reduce the risk. They should also discuss the use of elastic stockings with their community pharmacist. Women who are pregnant, or have recently had a baby should seek advice from the antenatal team or the health visitor.

18. Make sure you have good medical insurance for your trip. If you are travelling within the European Economic Area, you may be eligible for an E111 form. This is available from Post Offices or using the application form in the Department of Health leaflet, *Health Advice for Travellers*. This entitles you to free or reduced-cost emergency treatment only, and therefore you **must** also be insured.

19. During the trip:

- be comfortable in your seat
- bending and straightening your legs, feet and toes while seated every half-hour or so during the flight is advised
- pressing the balls of your feet down hard against the floor or foot-rest will also help increase the blood flow in your legs and reduce clotting
- upper body and breathing exercises can further improve circulation
- take occasional short walks, when in-flight advice suggests this is safe
- take advantage of refuelling stopovers where it may be possible to get off the plane and walk about
- drink plenty of water
- be sensible about alcohol, which in excess leads to dehydration and immobility
- avoid taking sleeping pills, which also cause immobility.

20. After the trip: For the vast majority of air passengers there will be no problem. If, however, you do develop swollen painful legs especially where one is more affected than the other, or breathing difficulties see a local doctor urgently or go to the nearest Accident and Emergency Department.

Research into travel-related DVT

21. More good research is needed to find out the real connection between DVT and air travel, what the scale of the problem is, and how it can be prevented. The Department of Health and the Department for Transport, Local Government and the Regions have set up the Aviation Health Working Group to oversee this research and to provide advice to air travellers and the airline industry. The group will help to ensure that further research ties in with that being developed by the World Health Organisation, supported by the aviation industry.

24. Further information on travel related DVT

Advice on travel related DVT: This advice is also available on the Internet at www.doh.gov.uk/dvt or www.doh.gov.uk clicking on the public health icon.

Health Advice to Travellers: This booklet (T6) is available free from the Health Literature Line on 0800 555 777. It also contains an application for an E111 form, which is required for free medical treatment by UK citizens travelling in the EU. The information is also available on the Internet at www.doh.gov.uk/hat and on CEEFAX pages 460-464.

Health Information for Overseas Travel: This booklet is aimed mainly at providing travel information for doctors and healthcare workers so that they can advise patients and clients on all health aspects of travelling. It is available from The Stationery Office and other good bookshops. The Internet site is <http://www.the-stationery-office.co.uk/doh/hinfo/index.htm> Access to this website and linked documents is password protected using the following information: User name: healthinfo and Password: overseas

NHS Direct: The advice is available from NHS Direct Online at www.nhsdirect.nhs.uk

Foreign and Commonwealth Office: www.fco.gov.uk/knowbeforeyougo

25. Other publications:

1. House of Lords' Session 1999-2000: 5th report:
Select Committee on Science and Technology
Air Travel and Health 15th November 2000
2. Thrombosis and Air Travel: Paul Giangrande
Journal of Travel Medicine Vol., 7 pp 149-154. 2000
3. **Most airline leaflets and in-flight information.**