



**MSFC**

HEALTH INFORMATION

# Newsletter

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National Aeronautics and  
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This newsletter is for information only.

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## Traveler Health

### Flight-related Deep Vein Thrombosis (DVT)

**ILLNESS:** There is increasing evidence that immobilization for long periods of time on any form of transportation especially airline flights puts people at risk for deep vein thrombosis (DVT). DVT, blood clots inside veins found deep in extremities or body cavities, is a common disorder. A venous thrombus is a clump of blood cells, platelets, and fibrin (clot) which attaches to the inside walls of veins, can grow in size, and break off to travel downstream from the clot. If the clot stays localized, it can cause swelling and vein irritation. If part of it breaks off, then it can cause blockage downstream, may travel to the lungs (pulmonary embolus) and result in serious illness or even death. In some circumstances, deep vein thrombosis may also contribute to other serious medical problems such as heart attack and stroke.

**SYMPTOMS:** While superficial venous thrombosis usually is accompanied by redness and tenderness along the course of the involved vein, deep venous thrombosis may not be accompanied by any symptoms at all. Symptoms of DVT, if present, usually include swelling of the involved extremity with local tenderness deep within the muscles in the area. If the DVT occurs in veins such as those in the pelvis there may be no symptoms. In these cases the first sign of DVT may be on of the complications mentioned above such as pulmonary embolus. Therefore, preventing DVT is key to saving injuries and lives. Prevention is especially important since DVT during long flights may not allow early medical intervention.

**SUSCEPTIBILITY:** The risk increases with age and there is an increased risk in persons over 40 years old. DVT occurs more commonly in women than men.

**External Risk Factors:** Immobilization (bed rest, long trips, etc.); Smoking; Cramped seating in some new aircraft; Obesity; Recent trauma from an accident or surgery (especially to legs); Decreased oxygen, Oral contraceptives or hormonal replacement.

**Medical Risk Factors:** Previous DVT; History of malignancy; Recent surgery; History of Inflammatory Bowel Disease (this disorder is associated with higher risk of DVT); Oral

contraceptives or hormonal replacement Familial/Hereditary Risk Factors: Occurrence of DVT, especially under age 35.

*These risks are not simply additive, and the risk of DVT can more than double with 2 risk factors.*

#### **PREVENTION/RECOMMENDATIONS:**

1. During Travel:
  - Check for in-flight exercise information
  - Avoid crossing legs or prolonged awkward hip or knee positions wherever seated
  - Stand up and walk around at least hourly
  - Exercise your calf muscles by going up on tiptoes several times while standing
  - Drink adequate fluids-at least 1 liter per 5 hours of flight
  - Avoid alcohol as it increases the stickiness of platelets and promotes fluid loss
  - Wear loose fitting clothing when traveling.
2. Stop Smoking
3. Lose Weight
4. Discuss with your doctor family and personal history that might pre-dispose you to Deep Vein Thrombosis (DVT) and increase your risk during travel.
  - Discuss whether folic acid supplementation may be helpful in preventing DVT
  - Discuss whether therapeutic compression stocking, and/or an anticoagulant would be helpful in preventing DVT.
5. The effectiveness of aspirin as a preventive measure for DVT is controversial
6. Elevate your legs when possible.

For additional information check these websites:

- Qantas Airlines: [Qantas Airlines Website](#) and type DVT in the Search box
- American Airlines: [Personal Health](#)
- Mayo Clinic: [Thrombophlebitis Overview](#)