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Compression Stockings and DVT in Air Travel Passengers

Despite several studies on the frequency of deep venous thrombosis (DVT), little is known about the risk of DVT associated with prolonged air travel. A case-control study indicates that DVT risk may increase only after flights lasting longer than four hours. Many patients with DVT remain asymptomatic, and only small proportions of those who develop symptoms have clinically detectable pulmonary embolism. Scurr and colleagues prospectively studied DVT risk in patients undertaking long airline flights and the efficacy of wearing class-I elastic compression stockings during the flight to prevent DVT formation.

The study authors recruited volunteers from prospective travelers who were older than 50 years and intended to travel coach class on two journeys of at least eight hours of uninterrupted flying time within a six-week period. Exclusions included travelers with a prior history of venous thrombosis, use of anticoagulants or compression stockings, or any serious medical condition, including malignant disease. Two weeks before air travel and again within two days of the start of the first flight, 30 volunteers' legs were examined by duplex ultrasonography. Before the first flight, blood was drawn from all participants for a series of hemostatic tests. Following intake assessment, participants were randomly assigned to compression stocking use or no intervention. All patients were re-examined by ultrasonography within 48 hours of the return flight. At this time, they were also interviewed about duration of air travel, use of the stockings, symptoms in the lower limbs and any illnesses or medications taken during the trip.

Data collection was completed on 100 volunteers in each group. Symptomless DVT was detected in 12 volunteers not using stockings and in none of the 115 volunteers using stockings. Blood tests revealed that 11 volunteers were heterozygous for factor V mutation and four for prothrombin gene mutation. Two of the symptomless DVT volunteers were positive for factor V Leiden. Full blood count, platelet, and other assays were not predictive of DVT.

The authors conclude that about 10 percent of air travel passengers older than 50 years develop symptomless DVT during prolonged flights. In this study, use of elastic compression stockings provided effective prevention of DVT formation.

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Scurr JH, et al. Frequency and prevention of symptomless deep venous thrombosis in long-haul flights: a randomised trial. *Lancet* May 12, 2001;357:1485-9.