

## DGReview

### Increased Risk of Venous Thrombosis after Long Airplane Flights

A DGReview of : "[Venous Thrombosis After Long-haul Flights](#)"  
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More venous thrombotic events were detected by ultrasound in people who had taken an 8-hour or longer flight than in those who had not travelled, according to a prospective study. All events occurred in people who had pre-existing risk factors for thrombosis.

An increased risk of venous thrombosis after long-haul flights has been suggested by case reports, retrospective analyses and case-control studies. However, these studies have been criticised for their inadequate design and small sample size.

The World Health Organization has recognised a potential link, but has also noted that insufficient data are available and further study is needed.

Thomas Schwarz, MD, and colleagues at the University Hospital of Dresden Medical School, Germany, therefore conducted a prospective, controlled study to evaluate the incidence of venous thrombosis after long-haul flights.

The study included 964 passengers who had travelled on a  $\geq 8$  hour flight and 1,213 control subjects who had not travelled. Passengers were encouraged to stretch lower limbs, walk, and drink non-alcoholic beverages during the flight. D-dimer test and venous compression ultrasonography were performed 1 week before departure and 48 hours after arrival.

Travellers had a significantly greater incidence of isolated calf muscle venous thrombosis as compared to non-travellers, 2.1% versus 0.8% ( $P = .01$ ; risk ratio, 2.52). Moreover, 19 of 20 travellers and all controls were asymptomatic.

Furthermore, a greater number of travellers were diagnosed with deep venous thrombosis (DVT) as compared to controls. Specifically, 0.7% of the travellers and 0.2% of the control subjects were diagnosed with DVT ( $P = .04$ ; RR, 4.40).

Common risk factors were present in travellers diagnosed with DVT. All were of older age, 6 had elevated BMI, 4 had increased factor VIII levels, 2 were taking hormone therapy and 2 had a family history of DVT.

Overall, 2.8% of travellers and 1.0% of controls were diagnosed with a venous thrombotic event at second examination (RR, 2.83). Baseline ultrasonography did not detect thrombosis in any participant.

Notably, in this cohort there were significantly more women and a higher incidence of varicose veins in the control group. Furthermore, there was a significantly shorter duration between visits in the control group, 25 versus 27 days.

None of the participants were taking anticoagulant drugs and none used compression stockings.

The authors conclude that "this study supports the World Health Organization statement that that there is an increased risk for venous thromboembolic events after long-haul flights."

They add that "the relative risk is in the lower range of established transient risk factors and that this applies only to individual with pre-existing permanent risk factors."