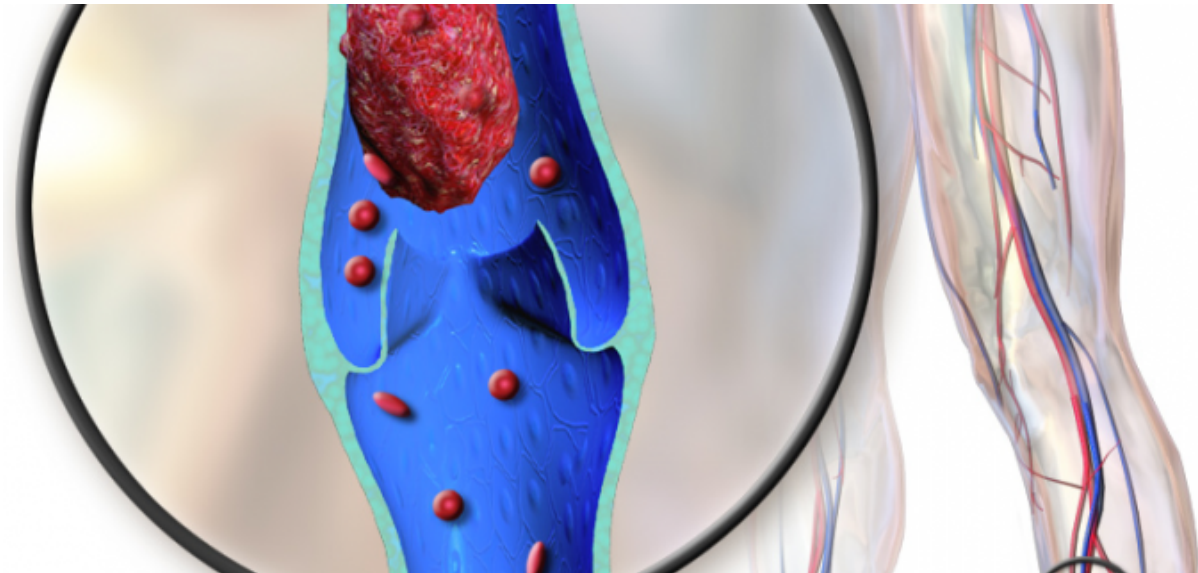


# African ancestry and dangerous blood clots

July 1 2016, by Ricki Lewis

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Credit: PLOS Blogs

Inappropriate blood clotting can be a killer. Each year in the US, 300,000 to 900,000 people suffer a venous thromboembolism (VTE), which includes deep vein thrombosis (DVT) and pulmonary embolism (PE). African Americans have a 30–60% higher incidence of either or both than people of European ancestry.

The [risk factors](#) that come up on the usual [health websites](#) for VTE tend to be the environmental ones that apply to everyone. But mention of genetic factors tend to be those found primarily among people of

European ancestry – even though African Americans are at higher risk.

A new study published in [Molecular Genetics and Genomic Medicine](#) identifies a strong genetic risk factor in African Americans, against the backdrop of the European risk factors being "nearly absent". The findings are from the lab of Russ B. Altman, MD, PhD, from Stanford University, with lead author just-graduated Roxana Daneshjou, MD, PhD.

## DVT and PE

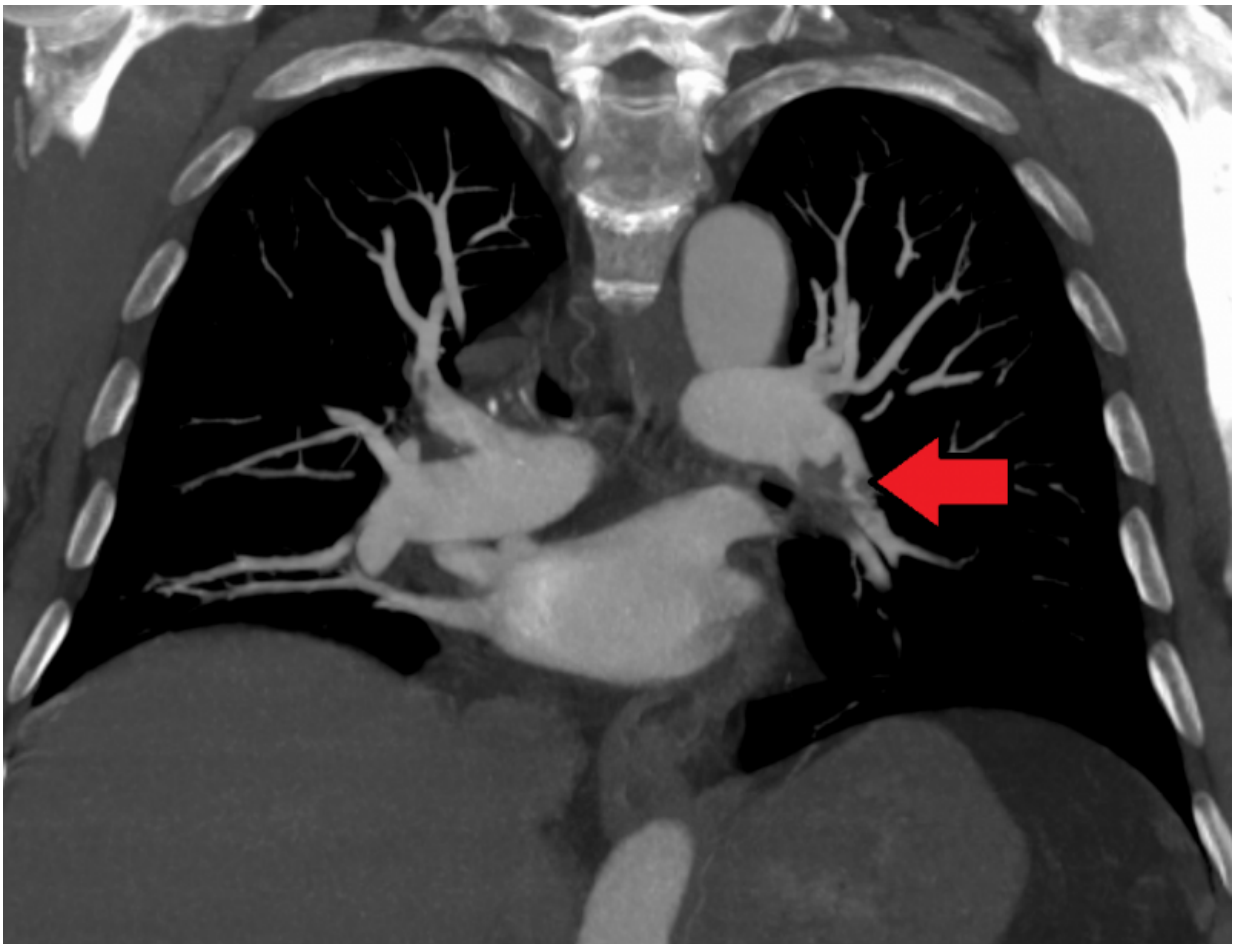
DVT is the reason airline passengers are encouraged to move their feet, to keep blood from pooling and triggering clot formation. Symptoms, if any, are leg swelling, unexpected bruises, or a stabbing pain in an arm, leg, or the chest.

PE causes sudden death when a clot, perhaps dislodged from a sleeping foot, gets stuck in an artery in a lung. That's what happened to NBC correspondent David Bloom on April 6, 2003, while squished in a vehicle for several days covering the war in Iraq. It also happened to the husband of a good friend of mine after a long flight.

VTE is devastating, but somewhat [preventable](#) with awareness of risk, movement, wearing compression stockings, and medication.

Environmental risk factors for DVT and PE include any situation that decreases blood flow, such as remaining still during travel or confined to bed following surgery. Extra weight, smoking, taking hormones for birth control or postmenopausal symptoms, certain cancer treatments, and pregnancy and recently giving birth are other risk factors that don't evoke ancestry. Athletes aren't immune and in fact may be at elevated risk if they travel to sporting events, or become injured or dehydrated and attribute symptoms to the event, not DVT.

A personal or family history of DVT or other cardiovascular condition also raises risk. It's the identification of genetic risk factors that has been so Eurocentric. For them, mutation in the coagulation factor 5 gene hikes risk 3-5 fold, and in factor 2, 2-3 fold.



Pulmonary embolism. Credit: PLOS Blogs

### **A Mother and Two Grown Daughters Inspire the Study**

The new study grew out of a larger one. The researchers were

sequencing exomes (the

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