

Location of body fat affects risk of blood clots in men, women

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The location of extra pounds appears to affect the risk of blood clots in middle-aged people, but affects men and women differently, researchers report in *Circulation: Journal of the American Heart Association*.

In a 10-year prospective study, Danish scientists assessed the relationship between body mass, weight distribution and incidence of blood clots in veins, a condition known as venous thromboembolism (VTE), among 27,178 men and 29,876 women ages 50 to 64 years old at study entry. VTE includes [deep vein thrombosis](#) and pulmonary embolism. During the 10 year study, 641 VTE events occurred according to medical records.

Thromboembolism, an important cause of disease and death in adults, results when a clot breaks free from one blood vessel and blocks another — typically from the legs to the lungs.

The Danish team found statistically significant positive associations between VTE and all measurements of body size, including body weight, body mass index (BMI), total [body fat](#) mass, waist circumference and hip circumference, among both men and women. The associations were the same regardless of the type of VTE.

The researchers observed a direct relationship between VTE and weight distribution in both genders. When adjusted for waist and hip circumference, hip circumference was positively associated with VTE in women but not men, while waist circumference was positively associated with VTE in men but not women.

This relationship was independent of other risk factors, such as smoking, physical activity, height, hypertension, diabetes, cholesterol, and, among women, the use of [hormone replacement therapy](#).

"The BMI is a marker of excess weight and

correlates well with body fat content in adults; however, it fails to consider the distribution of body fat," said Marianne Tang Severinsen, M.D., lead author of the study and researcher in the Department of Clinical Epidemiology at Aarhus University Hospital in Aalborg, Denmark.

"The implications to the public are that all types of obesity increase the risk for VTE, but the location of body fat also plays some unknown role. For health professionals, the implication is that all types of fat distribution should be taken into account when evaluating risk for VTE."

The results, which should help physicians improve risk evaluation, challenge previous research suggesting that large hip circumference might be protective against arterial thrombosis. "Our study clearly shows that this is not the case for venous thrombosis," Severinsen said.

The new findings didn't include differences between types of fat tissue. But the results indicate that there is some distinction between the type of fat distribution in VTE as compared to coronary heart disease. Peripheral obesity measured by hip circumference has not been previously reported in association with coronary heart disease, she said.

"Until now, the importance of fat distribution and VTE risk has not been evaluated," Severinsen said. "Our hypothesis was that fat tissue was a risk factor for VTE, independent of the distribution of the fat, and we established this."

Severinsen said further studies are needed to explain the mechanism underlying the associations.

Limitations of the study include possible weight change of participants during follow-up, particularly obese participants who gained more weight than leaner participants, which could have led researchers to underestimate the effect of obesity.

Source: American Heart Association ([news](#) : [web](#))

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