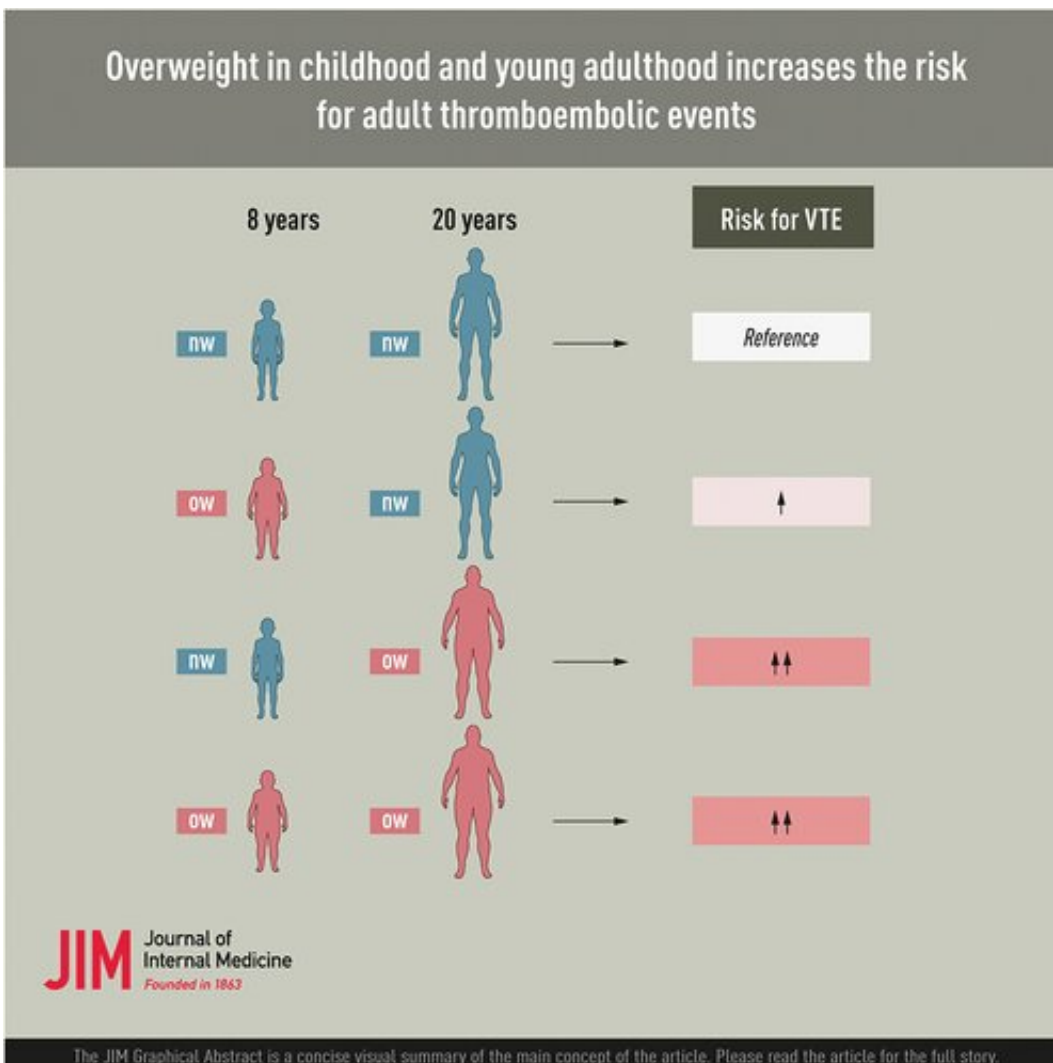


Study: Being overweight in childhood is a risk factor for blood clots as an adult

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Graphical abstract. Credit: *Journal of Internal Medicine* (2023). DOI: 10.1111/joim.13617

Being overweight in childhood and in early adulthood are discrete risk factors for blood clots later in life, a University of Gothenburg study shows. The study is based on the early BMI history of more than 37,000 men and information about their thrombi, if any, in adulthood.

The association between obesity and blood clots is already established. However, to date it has been unclear how much influence a raised BMI in childhood and puberty exerts. The purpose of the study was to clarify the links between BMI in [early life](#) and subsequent [thrombi](#).

Thrombi usually arise in the legs, often starting in a blood vessel in the calf. Swelling, pain and redness are common symptoms. Treated early, clots are seldom dangerous. However, if one breaks loose, is borne to the lungs in the bloodstream, and adheres to the vessel wall there, the resulting "pulmonary embolism" may be life-threatening.

The present study comprises 37,672 men in Sweden, born between 1945 and 1961. It is based on information about height, weight, and BMI from the men's records, first from school health care services (at the age of 8 years) and, second, from medical examinations on enrollment in the Armed Services (at age 20), along with register data on any blood clots up to age 62 on average.

Distinctly elevated thrombus risk

It emerges from the results, now published in the *Journal of Internal Medicine*, that BMI at both ages 8 and 20, independently of each other, can be linked to venous blood clots. These may occur in, for example, the leg ([deep vein thrombosis](#), DVT) or the lung (pulmonary embolism).

In [adulthood](#), two groups were found to be at a significantly increased risk of venous thrombi. The first was individuals who had been overweight both as children and as [young adults](#), while the second was

composed of those whose weight in childhood was normal and who became overweight only in early adulthood.

Moreover, being overweight in both childhood and young adulthood was found to raise the risk of arterial thrombi—that is, clots resulting from constricted [blood vessels](#) with fatty deposits and inflammation. Since there were few cases of arterial blood clots in the study, however, further studies are needed to confirm these findings. All comparisons in the study were made with the [control group](#), whose weight was normal at both eight and 20 years of age.

The first and corresponding author of the study is Lina Lilja, a doctoral student at Sahlgrenska Academy, University of Gothenburg, and pediatrician. At the time of the study, she worked at the Kungshöjd pediatric clinic in Gothenburg. Today, she is a senior physician in child health care in Region Västra Götaland.

"Our study shows that both overweight in [childhood](#) and overweight in young adulthood increase the risk of venous [blood clots](#) later in life. The latter, overweight when the men were young adults, proved to be a more influential factor than overweight when they were children," Lilja notes.

Professor and senior physician Claes Ohlsson and associate professor and senior physician Jenny Kindblom, both of Sahlgrenska Academy at the University of Gothenburg and Sahlgrenska University Hospital, were senior authors of the study.

"Obesity and overweight during puberty seem to have a marked impact on a person's future risks of venous thrombi," Kindblom concludes.

More information: Lina Lilja et al, Overweight in childhood and young adulthood increases the risk for adult thromboembolic events, *Journal of Internal Medicine* (2023). [DOI: 10.1111/joim.13617](https://doi.org/10.1111/joim.13617)

Provided by University of Gothenburg

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