

Remaining increase in cancer risk after high childhood BMI

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Men who had a high body mass index (BMI) as children are at an elevated risk of obesity-related cancer later in life, even if their weight was normal in young adulthood, according to a new study from

University of Gothenburg.

Obesity-related cancers include a significant group of tumor diseases, many of which are on the rise in industrialized countries. They include cancer of the mouth, liver, gallbladder, pancreas, colon, and thyroid, skin (malignant melanoma) and blood.

The association between high BMI in adulthood and an increased risk of obesity-related cancer was already known, but the risk associated with high BMI during childhood and puberty has not been detailed before.

The new results, now published in the journal *Cancer Communications*, are based on the BMI Epidemiology Study Gothenburg, a population-based cohort including BMI during development and diagnostic data from high-quality Swedish registers on 36,565 men born between 1945 and 1961.

Remaining cancer risk

The scientists analyzed BMI of the included individuals at the age of eight years and again at 20 and followed up their cancer diagnoses from age 20 and approximately 40 years thereafter. This long follow-up period was crucial to the study since most cases of obesity-related cancer occur in upper middle age.

The study shows that the group of boys with overweight at age eight had an increased risk of obesity-related cancer in adulthood. This applied particularly to those whose overweight remained at age 20. However, an increased risk also remained when BMI had become normal by the of 20.

"Alarmingly, a near 40% excess relative risk remained even for the group of boys who were overweight at age eight but had a [normal weight](#)

at age 20, compared to the group with normal weight at both ages," says Jimmy Celind, researcher at Sahlgrenska Academy's Institute of Medicine at the University. He is also a pediatrician at the Queen Silvia Children's Hospital and the study's first author.

"Overweight in childhood followed by normal weight in young adulthood thus resulted in a persistently increased risk of adult obesity-related cancer, which this study is the first to show."

More early measures

The authors behind the study emphasize that the results are not applicable to individual risk. "The increased risk for the individual over a [life course](#) is minor. However, in a population like the Swedish where one in five children are overweight, these findings point towards significant negative impact on future populational health."

"The results show that [preventive measures](#) against obesity-related [cancer](#) should start early in childhood. If decision makers responsible for [public health](#) at country or even global level are serious about every child's right to a healthy start in life, they need to step up the actions taken in early years," Jimmy Celind says.

More information: Jimmy Cé Lind et al, Childhood overweight and risk of obesity-related adult cancer in men, *Cancer Communications* (2022). [DOI: 10.1002/cac2.12286](https://doi.org/10.1002/cac2.12286)

Provided by University of Gothenburg

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