

Impact of Overweight on Cancer Risk May Be Significantly Underestimated

Being overweight and obesity may contribute to significantly more cancer cases than previously thought. This is the conclusion reached by researchers at the German Cancer Research Center (DKFZ). Their analysis shows that when more accurate measures of body fat and methodological biases are considered, more than 10 percent of all cancer cases can be attributed to increased body weight - nearly twice as many as previous estimates suggested.

Overweight and, in particular, obesity are known cancer risk factors. Previous studies have estimated that they account for about two to eight percent of all cancer cases. However, Hermann Brenner, an epidemiologist at the DKFZ, has long suspected that this risk proportion may have been underestimated due to methodological biases. Together with his team, he therefore analyzed data from 458,543 women and men stored in the UK Biobank to investigate the links between being overweight and cancer.

The participants were followed for a median of nearly twelve years. During this period, more than 50,000 new cancer cases occurred.

Weight and height alone are not enough

Most studies on obesity and cancer have relied on the body mass index (BMI), which is calculated from weight and height. However, BMI does not distinguish between fat and muscle mass and provides no information about where fat accumulates in the body. Yet abdominal fat, in particular, is considered to be especially metabolically active and is closely linked to inflammatory processes and other mechanisms that can promote cancer.

The DKFZ researchers therefore compared not only BMI but also waist circumference and the waist-to-hip ratio as measures of fat distribution. These parameters proved to be significantly more informative regarding cancer risk.

Methodological Bias: Cancer Often Leads to Weight Loss Even Before Diagnosis

In their current study, Brenner and his team also addressed a previously underestimated methodological issue: Many tumors cause unintentional weight loss years before they are diagnosed. As a result, patients appear slimmer at the time of their actual diagnosis, which weakens the statistical link between obesity and cancer.

To avoid potential biases caused by weight loss prior to diagnosis, the researchers gradually excluded the first few years following the participants' enrollment in the study. This actually made the association much clearer. The explanation: A significant proportion of the cancers diagnosed during the first few years of follow-up were likely already present at the start of the study and had already led to weight loss in those affected.

More than 10 percent of all cancer cases could be preventable

In summary, the new analyses yielded significantly higher figures for the proportion of all cancer cases attributable to obesity. Taking into account all methodological improvements in the analyses, the estimated proportion of cancer cases caused by excess weight rose from about 5.5 percent to as high as 11.5 percent. This means that more than one in ten cancer cases could be linked to excess body fat.

Women appear to be more affected

The analyses also suggest that the proportion of cancer cases caused by obesity may be higher among women than among men. Body fat may also tend to play a greater role among younger adults under the age of 60.

According to Hermann Brenner, the results underscore the urgency of taking decisive action to counter the global rise in obesity. "Since the prevalence of obesity continues to rise in most countries and the population is aging at the same time, the number of cancer cases caused by obesity is likely to continue to rise significantly in the future. Effective strategies for the prevention and treatment of obesity could therefore make a much greater contribution to cancer prevention than previously assumed," says Brenner, summarizing the significance of the new findings.

Publication:

Luna Kiran Adhikari; Fatemeh Safizadeh; Marko Mandic; Hermann Brenner: Excess Weight May Account for More than Ten Percent of all Cancers: The Underestimated Impact of the Obesity Epidemic.
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Further information

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