

# Body mass index during childhood linked with risk of anorexia nervosa and bulimia nervosa in later life

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New research being presented at the European Congress on Obesity (ECO) held online this year, suggests that among girls a low body mass index (BMI) during childhood indicates a higher risk of developing anorexia nervosa as young adults, whereas a high BMI or overweight in childhood indicates a higher risk of bulimia nervosa.

"By examining the records of thousands of girls over their lifetime in national health registers, we have discovered early warning profiles that could signal girls at risk for [anorexia](#) nervosa and [bulimia](#) nervosa", says lead author Dr. Britt Wang Jensen from Bispebjerg and Frederiksberg Hospital, Copenhagen, Denmark. "The difference in childhood BMI of girls who later developed eating disorders started to emerge at an early age. These results highlight the importance of regularly monitoring weight and height during childhood to identify these patterns as early as possible."

In the UK, the annual number of new cases of anorexia nervosa among 8 to 12-year-olds doubled from 1.5/100,000 in 2006 to 2019 to 3.2/100,000. Whether premorbid (pre-illness) BMI is associated with anorexia nervosa and bulimia nervosa is unclear. So far, studies have reported conflicting findings, with some suggesting that a high BMI precedes both diseases, whereas others suggest that a low BMI precedes anorexia nervosa and a high BMI precedes bulimia nervosa.

To explore this further in a population-based cohort, Danish researchers analysed data for 66,576 girls from the Copenhagen School Health Records Register born between 1960 and 1996 who had information on height and weight measured at annual school health examinations from ages 7 to 13 years. Cases of anorexia nervosa and bulimia nervosa were identified by linking with the Danish National Patient Register and the Danish Psychiatric Central Research Register. The girls were followed from ages 10 to 50 years.

During the study, 514 women were diagnosed with anorexia nervosa at an average age of 20 years, and 315 women were diagnosed with bulimia nervosa at an average age of 23 years.

The analyses suggest significant "inverse associations" between childhood BMI and the risk of anorexia nervosa in later life, which means that the risk of anorexia nervosa fell as BMI increased. For example, when comparing two 7-year-old girls with an average height and one z-score difference in BMI (equivalent to 2.4 kg), the girl with the higher BMI had a 14% lower risk of developing anorexia nervosa than the girl with the lower BMI; at age 13 years the risk was 28% lower.

In contrast, significant and positive associations were observed between childhood BMI and the risk of bulimia nervosa. For example, when comparing two 7-year-old girls with an average height and one z-score difference in BMI (equivalent to 2.4 kg), the heaviest girl had a 50% higher risk of bulimia nervosa than the leaner child in later life; at age 13 years the risk was 33% higher.

In addition, compared to girls with normal weight at age 7 years, girls with overweight had twice the risk of developing bulimia nervosa in later life; at age 13 years the risk remained but was lower. The associations did not vary by age at diagnosis.

The authors say that further studies are needed to uncover the mechanisms underlying these associations. They acknowledge that the findings are associations only, and point to several limitations, including that diagnoses in this study may be more severe cases as they are based on hospital admissions and contacts, which may limit the generalisability of these findings to less severe forms of these eating disorders. Moreover, the analyses were restricted to [girls](#) as there were too few cases to analyse among boys.

**More information:** This article is based on oral presentation AD07.04 European Congress on Obesity (ECO).

Provided by European Association for the Study of Obesity

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