

Children with higher BMI at increased risk of developing depression: Study

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Children between ages 12 and 16 with a higher body mass index (BMI) are at an increased risk of developing depression symptoms, new research has found. Associations between a higher BMI and depression were weaker between ages 16 and 21 indicating ages 12–16 is a sensitive

point where preventative methods could be beneficial.

The study, published recently in *Psychological Medicine* by researchers from the Faculty of Life Sciences & Medicine and Institute of Psychiatry, Psychology & Neuroscience, analyzed data from more than 10,000 twins in the Twins Early Development Study (TEDS) and UK Adult Twin Registry (TwinsUK).

In the TEDS [depressive symptoms](#), such as low mood, loneliness and exhaustion, were self-reported in twins born between 1994 and 1996. Researchers looked at the relationship between BMI and [depression](#) at ages 12, 16 and 21.

They found that children between ages 12 and 16 with a higher BMI were at an increased risk of developing depression than between ages 16 and 21. Researchers also found that there was a stronger association for children with a higher BMI at an early age to develop depression at a later age, than children with depression first to have a higher BMI later in childhood.

"Understanding the relationship between mental ill-health and weight in adolescence is vital to provide timely support where needed. This study shows a stronger association between having a higher BMI at age 12 years and subsequent depression symptoms at age 16 years than the reverse," says first author Dr. Ellen Thompson from the School of Life Course & Population Sciences and the School of Mental Health & Psychological Sciences.

Using data from TEDS, the study also shows that the covariation between BMI and depression within each age was mostly explained by [environmental factors](#).

Dr. Thompson added, "This indicates that this relationship is

environmentally mediated and could be due to several factors that adolescents may experience. Our study did not ask questions around the reasons why this effect was seen, but previous research has suggested [body dissatisfaction](#) and weight related stigma from external sources could be a factor. This study identifies a crucial point where intervention might be beneficial."

Previous research found poverty may be a risk factor, however this study adjusted for socio-[economic status](#) and found the relationship between depression symptoms and weight to be unaffected.

This means that ages 12–16 is a sensitive and potentially detrimental time for [young children](#) and preventative measures would be beneficial. Support structures and positive body image messages could be taught in PHSE to counteract depressive symptoms.

"Our findings suggest that the experience of having higher BMI is associated with later depression. This study shows that [early adolescence](#) is a critical point for developing depressive symptoms associated with weight gain. Mental ill-health and obesity are growing concerns for Britain's young people and this study shows how both are intertwined," says co-senior author Professor Thalia Eley, professor of developmental behavioral genetics at the School of Mental Health & Psychological Sciences.

"Working with young teens to support them to have a positive body image using strategies such as focusing on health and well-being rather than weight may be useful in preventing subsequent depression,"

Co-senior author Professor Claire Steves, Professor of Aging and Health at King's College London, added, "Using the TwinsUK cohort, which focuses on older adult twins, our study showed that the relationship between BMI and depression was much weaker in later life. The exact

reasons for these changes over the life course need further investigation."

More information: Ellen J. Thompson et al, The relationship between weight-related indicators and depressive symptoms during adolescence and adulthood: results from two twin studies, *Psychological Medicine* (2023). [DOI: 10.1017/S0033291723002155](https://doi.org/10.1017/S0033291723002155)

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