

Individuals are more likely to have obesity in middle age if their parents had obesity, research finds

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Individuals have six times the odds of living with obesity in middle age if both their parents lived with obesity at that age, new research to be

presented at the [European Congress on Obesity](#) (ECO 2024, Venice, 12-15 May), has found. Having one parent living with obesity triples the odds.

"Previous research shows a strong association between [parents'](#) and their children's obesity status but few studies have investigated whether this intergenerational transmission of obesity continues past adolescence and into adulthood," says lead researcher Mari Mikkelsen, of the Department of Community Medicine, UiT Arctic University of Norway, Tromsø, Norway.

"We were interested in how parents' BMI is related to their offspring's BMI when the offspring is well into adulthood and has lived away from home for a long time."

Mikkelsen and colleagues used data from the Tromsø Study, an-ongoing population-based health study.

All individuals who were aged 40-59 years when they participated in the seventh wave of the Tromsø Study (carried out 2015-2016) and whose parents who took part in the fourth wave of the Tromsø Study (1994-1995) when aged 40-59 years were included in the analysis, giving 2,068 parent-offspring trios.

The analysis of height and weight data showed a strong association between parents' BMI in [middle age](#) (40-59 years) and that of their offspring at the same age.

Offspring BMI increased by 0.8 units for every 4-unit increase (one standard deviation) in the mother's BMI and by 0.74 units for every 3.1 unit increase in the father's BMI.

There were also strong links between parents' obesity status in middle

age and that of their offspring at the same age.

When both parents lived with obesity (BMI ≥ 30 kg/m²) in middle age, their offspring had six times higher odds of living with obesity themselves in middle age, than adults with both parents in the normal weight range (BMI 18.5-24.9 kg/m²).

The odds were also raised when only one parent lived with obesity. When only the mother lived with obesity, the offspring had 3.44 times higher odds of living with obesity themselves. The corresponding number for fathers was 3.74.

The results were adjusted for offspring's sex and for parents' and offspring's age, education and physical activity level.

Mikkelsen says, "From previous studies we know that several factors contribute to the shared obesity status between parents and their children. Genes play an important role by affecting our susceptibility to weight gain and influence how we respond to obesogenic environments in which it can be easy to eat unhealthily.

"Some studies also speculate that children tend to develop similar dietary and exercise habits to their parents when they all live together under the same roof, resulting in a similar BMI status. Obesity in childhood, and especially in adolescence, tends to follow the individual into early adulthood and so we suspected it would also follow them into middle age.

"We found that this is indeed the case—children whose parents lived with obesity are much more likely to be in living with obesity themselves when they are in their 40s and 50s, long after they have left home. It can't be established from our analyses whether this is due to genes or environment, but we are most likely looking at a combination of the two.

"Whatever the explanation, our finding that obesity that is transmitted between generations can persist well into adulthood underlines the importance of treating and preventing obesity, a condition that contributes significantly to ill health and premature death. It also lays the foundation for research into factors that influence the intergenerational transmission of obesity and that can be targeted to prevent [offspring](#) from spending their whole life affected by [obesity](#)."

More information: [Tracing obesity from parents to adult offspring: The Tromsø Study 1994-2016 \(2024\)](#)

Provided by European Association for the Study of Obesity

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