Future obesity may be predicted at 3.5 years of age

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Researchers can predict which children are most likely to become obese by examining their mothers' behaviour around their birth, according to a recent University of Montreal study published in the Archives of Pediatric and Adolescent Medicine. “Although behaviour is extremely hard to change and is also influenced by a complex tangle of influencing factors in the environment, I hope these findings will help improve the social and medical services we offer to mothers and infants,” said lead author Laura Pryor, a PhD candidate at the university's Department of Social and Preventive Medicine. The findings come as the province of Quebec, like other societies, grapples with a surge in childhood obesity over the last generation.

Pryor and her research team analyzed data drawn from the Quebec Longitudinal Study of Child Development which ran from 1998 to 2002. Quebec is rare in that it is able to offer scientists this kind of data, enabling them to look at how a situation evolves over time. Scientists studying this kind of phenomena in other areas must typically rely on cross-sectional studies that are based on data collected at a specific time for a specific purpose. The team focused on 1,957 children whose height and weight measurements had been taken at various points in their lives, from the age of five months to eight years old, and recorded in a database. This information enabled the team to look at the development of the children's body mass index (BMI). BMI is calculated as weight in kilograms divided by height in meters squared. The researchers identified three trajectory groups: children with low but stable BMI, children with moderate BMI, and children whose BMI was elevated and rising, called high-rising BMI.

"We discovered the trajectories of all three groups were similar until the children were about two and a half," Pryor said. "Around that point the BMIs of the high-rising group of children began to take off. By the time these children moved into middle childhood, more than 50 per cent of them were obese." Researchers found two factors that may explain this: the mothers' weight around the time they gave birth and whether the mothers smoked. A child with a mother who was overweight or who smoked during pregnancy was significantly more likely to be in the high-rising group. These two factors were found to be much more important than the other criteria that were studied, such as household income.

More research will be required to determine how these early-life factors and others are correlated with childhood obesity. "We know that these factors definitely increase the likelihood of obesity, and that the children were distinguishable from those in the other groups as early as three-and-a-half years old,” Pryor said. “I would like to conduct further studies to find out what happens to these kids once they reach adolescence, and I hope that my research will help in the development of strategies to combat this serious public health issue."

About this study

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Links:

- Cited study
- University of Montreal's Department of Social and Preventive Medicine
- Research Unit on Children's Psychosocial Maladjustment

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