



Study Summary

ECHO Study Suggests No Association Between Maternal Stress in the First Year After Birth and Childhood BMI

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Who sponsored this study?

The Environmental influences on Child Health Outcomes (ECHO) Program, Office of the Director, National Institutes of Health supported this research.

Why was this study needed?

Obesity affects millions of adults, adolescents, and children in the United States. Many children in the United States enter their school years with obesity, and children with obesity at 3 years of age have a 90% probability of having overweight or obesity as an adolescent.

While existing literature suggests a relationship between parental stress and childhood body mass index (BMI), the exact way in which parental stress might affect BMI in children isn't fully understood. There has been some disagreement in what types of stress and at what time points during childhood stress is related to child BMI. This study allowed researchers to look at a large, diverse sample of mothers and children over time to evaluate how maternal stress might be associated with the child's BMI.

What were the study results?

This study suggests that there is no association between stress of mothers during the first year after birth and the risk of their child having obesity between ages 2 and 4.

While the study did not find an association between maternal stress levels and childhood obesity, it did reveal other information about both maternal stress and childhood BMI. In this study, the researchers found that higher stress levels were more likely among Hispanic and Black mothers, and less likely among mothers with private health insurance. Higher child BMI was more likely among Hispanic mothers, when the mothers' BMI before birth was higher, and when the child's birth weight was higher.

Footnote: Results reported here are for a single study. Other or future studies may provide new information or different results. You should not make changes to your health without first consulting your healthcare professional.

What was the study's impact?

Doctors and researchers are working to identify opportunities to prevent childhood obesity. There are many factors in the first year of life that are related to higher weight gain and earlier obesity in children, but this study's results suggest that the level of a mother's stress in the first year of life does not appear

to be a risk factor for higher obesity risk in very young children. This may be because other factors are stronger predictors of differences in childhood BMI.

Who was involved?

The study included 1,694 mothers and their children from across the United States.

What happened during the study?

ECHO researchers analyzed data from single pregnancies where maternal stress was measured in the child's first year of life and a child's weight and height were measured between 2 and 4 years of age.

In addition to examining maternal stress levels and childhood BMI, researchers analyzed information including a mother's BMI before pregnancy, the baby's birthweight, a mother's race, ethnicity, and age at the time of the child's birth, and the type of health insurance they had. They also looked at the number of children a mother had and her education level.

What happens next?

Future studies may look into additional factors that can influence children's risk for increased BMI such as BMI later in childhood, other periods or types of stress, and parent- or caregiver-measured stress.

Where can I learn more?

Access the full journal article, titled "Maternal stress and early childhood BMI among US children from the Environmental influences on Child Health Outcomes (ECHO) program," in [Pediatric Research](#).

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