



# ECHO

Environmental influences  
on Child Health Outcomes

A program supported by the NIH

## Study Summary

### ***ECHO Study Evaluates Influence of Neighborhood-Level Poverty and Food Insecurity During Pregnancy on Birthweight***

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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?

Previous studies have shown that diet during pregnancy can impact the physical and mental health of the pregnant person. However, less is known about how food insecurity affects health outcomes for newborns. For this study, ECHO researchers analyzed data to understand what connections might exist between where a pregnant person lives, their access to food, and birth outcomes.

#### What were the study results?

The study found that living in neighborhoods where residents have lower incomes, limited food access, or limited vehicle access was associated with lower birthweights and an increased risk of babies born small for gestational age. However, researchers didn't find any association between individual experiences of food insecurity and birth outcomes.

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?

Given the long-term effects of adverse birth outcomes on later cardiovascular disease risk and other conditions, more research is needed to evaluate whether interventions and policies that improve food access during pregnancy would be effective in improving birth outcomes and promoting child health. A variety of strategies could be effective at improving birth outcomes, including strategies to increase neighborhood food access, improve food affordability in neighborhoods with low food access, or directly provide healthy foods to individuals during pregnancy.

#### Who was involved?

This study included 22,206 pregnant people enrolled in 53 ECHO research sites that collected information on neighborhood-level food access data and birth outcomes. Of these participants, 24% lived in a low-income neighborhood where a third or more residents lived over one mile from a grocery

store (or more than 10 miles in rural areas). About 14% of the participants in this study lived in neighborhoods with high poverty rates where more than 100 households had no access to a vehicle and lived more than half a mile from the nearest grocery store.

### What happened during the study?

To conduct this study, researchers matched pregnant individuals' home addresses with information about nearby food availability from the [U.S. Food Access Research Atlas](#), which provided data on household income, the availability of a household vehicle, and where people can access food in different neighborhoods. Researchers also assessed individual-level food insecurity during pregnancy using the Crisis in Family Systems-Revised questionnaire.

### What happens next?

Additional studies are needed to examine how health habits, chemical exposures, and other related factors may also influence birth outcomes.

### Where can I learn more?

Access the full journal article, titled "Birth Outcomes in Relation to Neighborhood Food Access and Individual Food Insecurity During Pregnancy in the Environmental influences on Child Health Outcomes (ECHO)-Wide Cohort Study," in [American Journal of Clinical Nutrition](#).

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