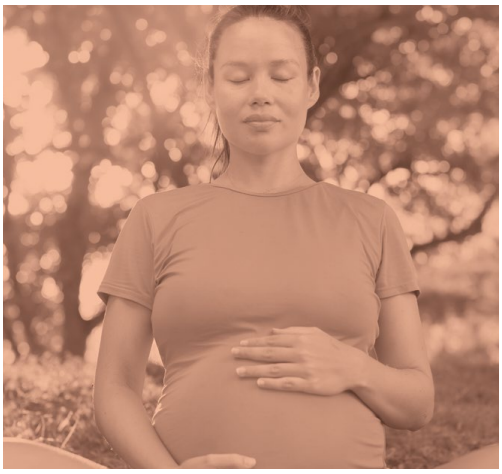
ECHO Insights

Winter 2026



Vitamin D During Pregnancy May Play a Role in Child Brain Development

WHY WAS THIS STUDY NEEDED?

Lack of enough vitamin D is very common, particularly among Black people whose skin pigment makes it harder for them to produce vitamin D from sunlight. ECHO researchers wanted to understand how lack of vitamin D during pregnancy affects child brain development.

WHAT HAPPENED?

912 mother-child pairs from ECHO research sites across the U.S. were included in the study. Researchers measured vitamin D levels in the mothers' blood during pregnancy or in their babies' cord blood at birth. Later, they evaluated the child's ability to problem solve, process new information, and learn when they were 7 to 12 years old.

WHAT WERE THE RESULTS?

Children whose mothers had higher levels of vitamin D during pregnancy tended to do better on tests assessing their ability to problem solve and process new information. The link between vitamin D and thinking skills was stronger in children of Black mothers compared to other racial groups. The largest effects on child brain development were linked to vitamin D levels in early pregnancy.

WHAT ACTION COULD I TAKE AFTER READING THIS INFORMATION?

Early pregnancy may be a critical period when vitamin D has the greatest potential to support brain development. Talk with your doctor about checking your vitamin D levels before and during pregnancy.

Read the summary:
Prenatal Vitamin D Levels Associated with Children's Brain Development, ECHO Study Suggests

Read more research results on the website:
echochildren.org/research-summaries/

ECHO
Environmental influences on Child Health Outcomes
A program supported by the NIH

Pregnancy Diets Lower in Whole Grains May Be Linked to Lower Birthweight and Preterm Birth

Why was this study needed?

ECHO scientists wanted to understand how pregnancy diet, especially in relation to blood sugar levels, affects birth outcomes—like the baby's weight and whether the baby is born early. In the U.S., Hispanic pregnant individuals are at higher risk for these adverse birth outcomes. So, ECHO researchers wanted to evaluate how dietary patterns may vary across racial and ethnic groups to uncover more precise links between diet and birth outcomes.

What happened?

420 Hispanic and 564 non-Hispanic White pregnant participants from two ECHO Cohort study sites were included in the study. Participants shared details about what they ate over a 24-hour period. Researchers evaluated these diets and each mother's fasting blood sugar levels in relation to their later birth outcomes, such as birthweight and preterm birth.

What were the results?

Pregnant participants who ate more refined grains (e.g., white bread, white rice) had higher blood sugar and higher risk of low birthweight or preterm birth. Whole grains (e.g., oatmeal, brown rice, whole-wheat bread) improved blood sugar control in non-Hispanic White participants. Fruit raised blood sugar levels for Hispanic participants, while solid fats and nuts lowered blood sugar in both groups.

What action could I take after reading this information?

Studies like this can help us develop a more precise understanding of how pregnancy diet affects birth outcomes within different racial and ethnic groups.

Read the summary:
A Diet High in Refined Grains and Low in Whole Grains in Pregnancy Linked to Lower Birthweights and Preterm Births

Healthier Diets During Pregnancy May Be Associated with Better Infant Growth Patterns

Why was this study needed?

Nearly a third of children in the U.S. are overweight or have obesity. Early infant growth patterns can be strong predictors of later childhood obesity risk. ECHO researchers wanted to understand how pregnancy diet might influence infant birthweight and growth over time.

What happened?

2,854 mother-child pairs from ECHO research sites across the U.S. were included in the study. The researchers collected information on mothers' diets during pregnancy. Later, they used the infants' medical records to track birthweight and growth up to 24 months.

What were the results?

Pregnant participants who had higher Healthy Eating Index (HEI) scores, which measure how well a diet aligns with U.S. Dietary Guidelines, were more likely to have babies with a healthy birthweight. Their babies also had a lower chance of gaining weight more quickly, with respect to their age and length, from birth to 6 months and from birth to 24 months.

What action could I take after reading this information?

Talk with your doctor about ways to improve your diet during pregnancy.

Read the summary:
ECHO Study Investigates Nutrition During Pregnancy and Infant Growth Outcomes

Read more research results on the website:
echochildren.org/research-summaries/

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ECHO
Environmental influences on Child Health Outcomes
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