



## Study Summary

### ***ECHO Cohort Study Finds No Significant Associations Between Prenatal Dietary Patterns and ASD Diagnosis***

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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?

Diet during pregnancy plays a major role in fetal development. Prior research has shown associations between several dietary factors and certain neurodevelopmental conditions in children, including autism spectrum disorder (ASD). ASD is a neurodevelopmental condition that affects social communication and behaviors, and presents in a wide variety of behaviors, abilities, and challenges.

This study helped to fill gaps in understanding the relationship between maternal dietary patterns during pregnancy and ASD-related outcomes in children. Most previous studies examining links between prenatal diet and ASD and other neurodevelopmental outcomes have focused on individual foods or nutrients, rather than overall dietary patterns. Dietary patterns may be useful to examine because they summarize the usual intake of a wide range of foods and may capture combined effects across many nutrients. Dietary patterns that capture the intake of recommended foods may also help to provide clearer communication than summaries across individual nutrients. This study therefore aimed to provide a comprehensive assessment by examining several established dietary patterns and their associations with ASD-related traits and diagnoses.

#### What were the study results?

Dietary patterns examined in this study included the [Healthy Eating Index](#) (HEI) and the Alternative Healthy Eating Index modified for Pregnancy (AHEI-P), as well as the Empirical Dietary Inflammatory Index (EDIP). Both the HEI and AHEI-P are validated dietary patterns that are measures of overall diet quality. Higher scores on these patterns indicate better adherence to dietary guidelines. In contrast, higher scores on the EDIP indicate a more pro-inflammatory diet.

The study found that higher prenatal scores on the HEI the AHEI-P were associated with modest decreases in ASD-related traits. However, there were no significant associations between prenatal intake of these dietary patterns and ASD diagnosis. The findings suggest that while there may not be strong associations between prenatal dietary patterns and ASD diagnosis itself, there may be subtle associations with broader traits like social communication difficulties that warrant further investigation.

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?

This study contributes to the understanding of how prenatal diet may relate to ASD-related characteristics in children. It also highlights the need to further study the potential mechanisms linking prenatal diet to ASD-related traits and to consider broader dietary patterns in addition to individual nutrients and foods.

### Who was involved?

The study included 6,084 mother-child pairs from 14 ECHO Cohort Study Sites. The participants were socioeconomically and demographically diverse, drawn from a large U.S.-wide sample, including general population sites and sites with a higher chance of ASD occurring in families.

### What happened during the study?

Researchers collected data from individual sites that used Food Frequency Questionnaires to assess diet during pregnancy and enable the calculation of dietary patterns. The study examined associations between three dietary patterns and ASD-related outcomes while adjusting for potential confounding factors such as maternal age, pre-pregnancy BMI, sociodemographic factors, and child characteristics.

### What happens next?

Future studies could help researchers confirm the results of this study and explore the subtle associations between prenatal diet and ASD-related traits. Further research could also examine multiple ASD-related outcomes, using larger and more diverse samples, and investigate potential mechanisms linking prenatal diet to ASD-related traits.

### Where can I learn more?

Access the full journal article, titled "Maternal Dietary Patterns During Pregnancy and Child Autism-Related Traits in the Environmental Influences on Child Health Outcomes Consortium," in [Nutrients](#).

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