



ECHO

Environmental influences
on Child Health Outcomes

A program supported by the NIH

Study Summary

How Can Researchers Investigate the Metabolism of the Placenta?

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Who sponsored this study?

This research was supported by the Environmental influences on Child Health Outcomes (ECHO) program, Office of The Director, National Institutes of Health.

What were the study results?

The results show that metabolic data with similar quality can be obtained from placental tissue samples preserved in methanol at room temperature than from flash-frozen samples—though a greater number of metabolites were typically detected in the methanol-fixed samples and the methanol extract.

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?

The results of this study show that placental tissue preservation in methanol at room temperature may be a suitable alternative method for analysis of placental metabolism. This method is more feasible and cost-effective than flash freezing, especially in community-based hospitals. As such, this study may make it easier for researchers to study the function of placentas and their potential relation to health outcomes.

Why was this study needed?

The placenta is an organ that provides nourishment to a developing fetus before it is born. Understanding metabolism within the placenta—the production and breakdown of molecules that provides energy to the placenta—might help researchers learn more about its function during pregnancy. To date, methods to collect placental samples to measure metabolism are expensive and require specialized equipment. In this study, researchers compared data from placental samples collected at room temperature to samples collected by flash-freezing, the standard method.

Who was involved?

The researchers collected placental samples from mothers within 15 minutes after delivery of the placenta at Henry Ford Health in Detroit, Michigan. All samples were anonymous.

What happened during the study?

The researchers collected pea-sized pieces of placenta tissue using the flash-freezing method and the test method (fixed in a solution of methanol at room temperature) and compared the resulting metabolism data.

What happens next?

More work is needed to describe the placental metabolic data revealed during this study and compare it to data from previous studies. Researchers will also need to repeat this study with a larger number of placentas to confirm the findings.

Where can I learn more?

Access the full journal article titled “Comparison of methanol fixation versus cryopreservation of the placenta for metabolomics analysis” published in [Scientific Reports](#).

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