National Institutes of Health
Environmental influences on Child Health Outcomes (ECHO)

ECHO



ENHANCING THE HEALTH OF CHILDREN FOR GENERATIONS TO COME

The NIH ECHO Program studies the effects of early environmental influences—including biological, behavioral, psychosocial, medical, chemical, physical, and societal factors—on child health and development.

ECHO RESEARCH FOCUSES ON...

5 CHILD HEALTH OUTCOME AREAS

- PRE-, PERI, AND POSTNATAL
- UPPER AND LOWER AIRWAY
- OBESITY
- NEURO-DEVELOPMENT
- POSITIVE HEALTH

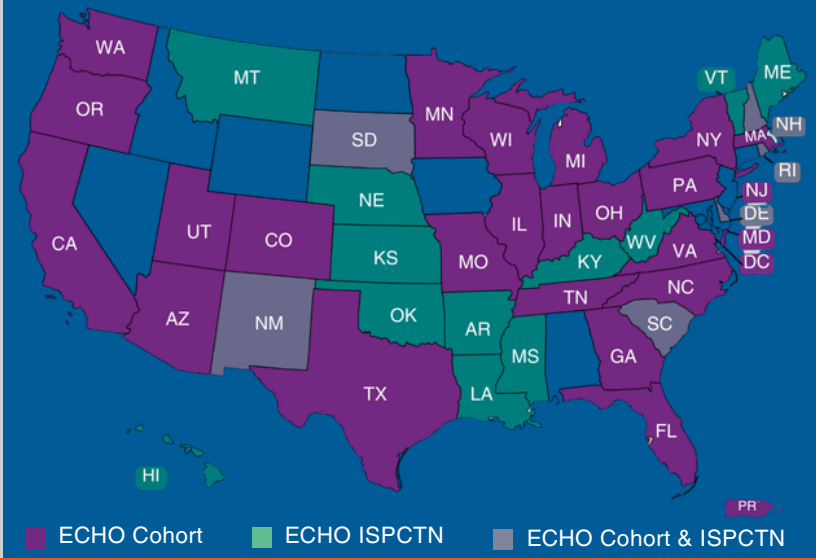
Because ECHO scientists have broad areas of expertise, research can look at the whole child, not just one disease or outcome.

The ECHO *Advantage*

The **ECHO Cohort**—for observational research—is the largest longitudinal child health study in the United States. Data from a diverse population of more than 170,000 participants, including 60,000 in active follow up, give the ECHO Cohort strong statistical power.

The ECHO IDeA States Pediatric Clinical Trials Network (ISPCTN)—for intervention research— is the only NIH clinical trial network focused on children from rural or underserved communities.

Together, these two unique research components are helping to answer ECHO is dedicated to both learning what factors affect child health **—observational research—**and finding ways to enhance it**—intervention research.**



ESTABLISHED 2016

MORE THAN 170,000 RESEARCH PARTICIPANTS

BASED IN 42 STATES DC, PR + 2 TRIBAL NATIONS

Scan for more information

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ECHO RESEARCH ON PLASTICS AND PLASTICIZERS

The ECHO Program's uniquely varied, nationwide cohort includes harmonized data from 170,000+ participants. It allows researchers to investigate how plastics and plasticizers are associated with growth and development during pregnancy and childhood.

The ECHO Program studies how chemicals in our environment affect children's health, including a focus on plastics and plasticizers. Many everyday items—such as food packaging, personal care products, toys, and household materials—contain chemicals that come from plastics.

Research supported by ECHO looks at how plastics may affect children's growth, behavior, learning, and overall health.

Since its launch, the ECHO Program has published more than 2,000 research articles on a wide range of child health topics. Within this body of work, many studies have examined exposures to plastics.

ECHO Research highlights on plastics and plasticizers include:

Exposure to Certain Flame-retardant Chemicals During Pregnancy May Be Linked with Decreased Cognitive Function in Young Children, *Feb. 2026*
When pregnant women had higher urine levels of diphenyl phosphate, a compound produced during the breakdown of certain organophosphate esters in the human body, their children tended to have slightly lower scores on tests of mental skills at ages 4–6.

Prenatal Exposure to Phthalates, But Not Phthalate Replacements, Linked to Children's Behavior, *Aug. 2025*
Higher prenatal levels of certain phthalates were linked to small increases in aggression and attention problems in young children, with effects varying by sex and neighborhood, while other phthalates and replacements showed no clear associations.

Young Children May Be Exposed to a Variety of Emerging Chemicals Found in Some Consumer Products, *Jun. 2025*
Testing for 111 different chemicals revealed that some were present in nearly all urine samples, with young children showing higher levels of certain substances than their mothers during pregnancy.

Prenatal Phthalate Exposure Associated with Preterm Birth, Feb. *2024*
Prenatal exposure to certain phthalates was associated with increased risk of preterm birth. Researchers estimated that the number of premature births in the U.S. that could be linked to phthalate exposure in 2018 was between 24,000 and 120,000, potentially costing between $1.6 billion and $8.1 billion in medical expenses over the lifetime of the children.

Read More ECHO Research Related to Our Environment