



STUDY BRIEFING:

WHAT IS ECHO?

You probably know you and your child are participating in a study to improve the health of Michigan's children. But if you agreed in your consent form, you are also part of a larger study to improve health for children nationwide.

The larger study is called the Environmental Influences on Child Health Outcomes (ECHO) and includes children and teens from all over the nation. Congress created and funded ECHO to understand the many early environmental influences on the health and development of children for generations to come.

CHARM is Michigan's part of the larger study and is among 35 projects funded by the National Institutes of Health under the ECHO program. Eventually ECHO plans to include 50,000 children and families in its research.

Researchers in each of those projects are studying what it takes for a child to have a healthy start, since what happens before a child is born and in early childhood can impact health for a lifetime. That includes birth defects, asthma, obesity, neurological development and other disorders. Their focus is on the non-genetic influences affecting health, including air pollution, family support, stress, sleep habits and diet.

ECHO encompasses more than 180 healthcare institutions in 44 states and some 1,200 researchers, all working to improve the health of children. Each group will share data, so that what one discovers can benefit all others.

As more is learned about what it takes for children to be healthy, we will share that information with you in future CHARM newsletters.

INVESTIGATOR SPOTLIGHT:

DR. DOUGLAS RUDEN

Doctors know a pregnant woman's exposure to lead can adversely affect the health of her child. Scientist Douglas Ruden's research showed the harmful effects can extend from grandmother to grandchild.

He showed that lead exposure altered DNA in a grandmother's genes and those effects were passed down through the generations even when the grandchild was not exposed to lead. That finding is significant, because those genes are involved in a child's brain development, said Ruden, PhD, a professor and director of epigenomics at Wayne State University.

Ruden's work focuses on how environmental exposure to toxins changes the expression of genes, a process known as DNA methylation. Under the ECHO Program, he is leading a study of exposure during pregnancy to phthalates, a chemical found in plastics, adhesives, detergents, soaps, shampoos and many other products. Ruden tested 250 women for phthalates and found it in all 250. "It's everywhere," he said. "Everybody is exposed to it."

Research suggests that exposure to phthalates can adversely affect the brain development of children.

Yet phthalates are not government regulated. "You have to prove something is dangerous to regulate it," Ruden said, adding that chemical manufacturers "don't have to prove it's safe."

His interest in genetics and developmental biology began when he was an undergraduate at the California Institute of Technology. He earned his doctoral degree in biochemistry at Harvard University and joined Wayne State University in 2006. He has studied and written extensively about the health effects of environmental exposure and has received numerous awards and honors for his work.

Studies funded under the ECHO Program are important, he said, "because they measure what mothers are exposed to during pregnancy and how that affects the health of their children" and those adverse health effects, he added, can last a lifetime.



WHAT IS CHARM?

Child Health Advances through Research with Mothers or CHARM is a coalition of researchers and clinicians from Michigan State University, University of Michigan, Wayne State University, Henry Ford Health System, and the Michigan Department of Health and Human Services.

The goal of CHARM is to improve the health of mothers and children in the state of Michigan.

CHARM has produced two study cohorts. The first one began in 2008 primarily in Lansing, MI and is named ARCH (Archive for Research on Child Health). It stopped recruiting in 2016 but continues to follow participating moms and children. The oldest children are approaching 12 years old.

The second study cohort is called MARCH (Michigan Archive for Research on Child Health). It is modeled upon ARCH, but is designed to represent the population of Michigan. MARCH will recruit from different cities including Flint, Traverse City, Ann Arbor, Grand Rapids, Detroit, and others.

Funders for CHARM include the ECHO Program in the National Institutes of Health, Office of the Director and the Michigan Health Endowment Fund.



Are you an ARCH, MARCH, or CHARM participant whose contact information has changed? Please send updated contact information to:

charmstudy@epi.msu.edu
1-866-925-8758

TIPS FOR MOMS:

CORONAVIRUS AND YOUR CHILD

While protecting your children through proper handwashing and social distancing during the coronavirus pandemic, there is something else you can do: talk to them. In addition to the physical threat posed by the virus, children, and many adults, likely feel emotionally stressed. They know their schools are closed, they hear the dire news, they know their lives have changed, and that can instill fear.

The U.S. Centers for Disease Control and Prevention (CDC) urges parents, teachers and other responsible adults to be honest and accurate to minimize children's anxiety that they, their friends and family members could become ill with COVID-19, the disease caused by the coronavirus.

Among the agency's tips:

- Remain calm. Children will react not only to what you say, but how you say it. They are experts at picking up on nonverbal cues.
- Avoid blaming others for the disease.
- Limit the amount of time kids spend watching TV, listening to the radio or reading online about COVID-19. Much information, particularly online, is inaccurate.
- Instead, give them information that is accurate and age-appropriate. Tell them that you, doctors, school officials and others are working hard to keep them safe. Assure them that most who do get sick, especially children, will be ok.
- Remind them to avoid people who are coughing or sneezing, and urge them to use a tissue or their elbow when they cough or sneeze.
- Teach them to wash their hands frequently with soap and water for 20 seconds. Make it a game, telling them to sing "Happy Birthday" twice while washing.

All of this togetherness can be stressful even without the added worry about COVID-19. Think of ways to ease the tension and make it fun. Read to them. Urge them to read. Play games, the kinds that challenge them intellectually and physically. Stay calm and assure them that we will all get through this – together.

<https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/talking-with-children.html>

**MICHIGAN HEALTH
ENDOWMENT FUND**

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Pediatric Cohort

