

The NIH Environmental influences on Child Health Outcomes (ECHO) Program

NIH's Flagship Child Health Research Program

August 2026





**What if every child had the
chance to grow up healthy?**

**A good start to life can
last a lifetime and over
generations**



The Nationwide ECHO Program

Mission

To enhance the health of children for generations to come



addresses what factors affect child health—

observational research,

and ways to enhance it—**intervention research**

5 Key Areas with High Public Health Impact



Pre, Peri, & Postnatal

Preterm birth, maternal depression



Upper & Lower Airway

Asthma, allergies



Obesity

And its consequences



Neurodevelopment

Autism, ADHD, mental health

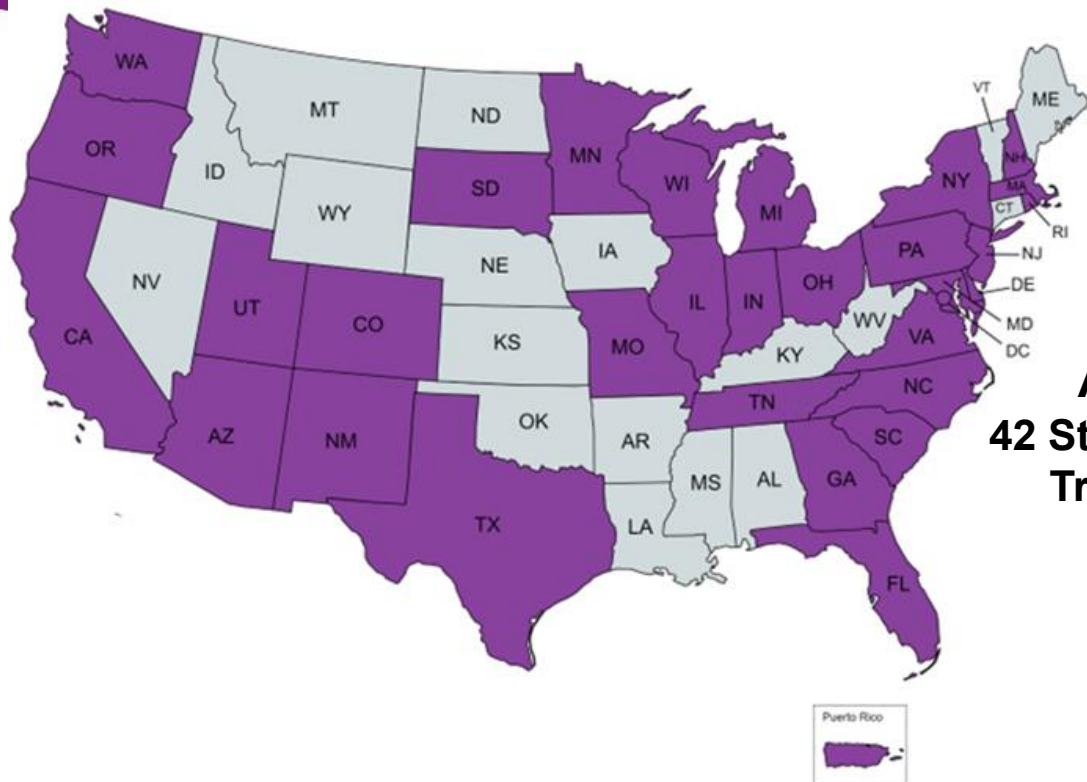


Positive Health

Well-being

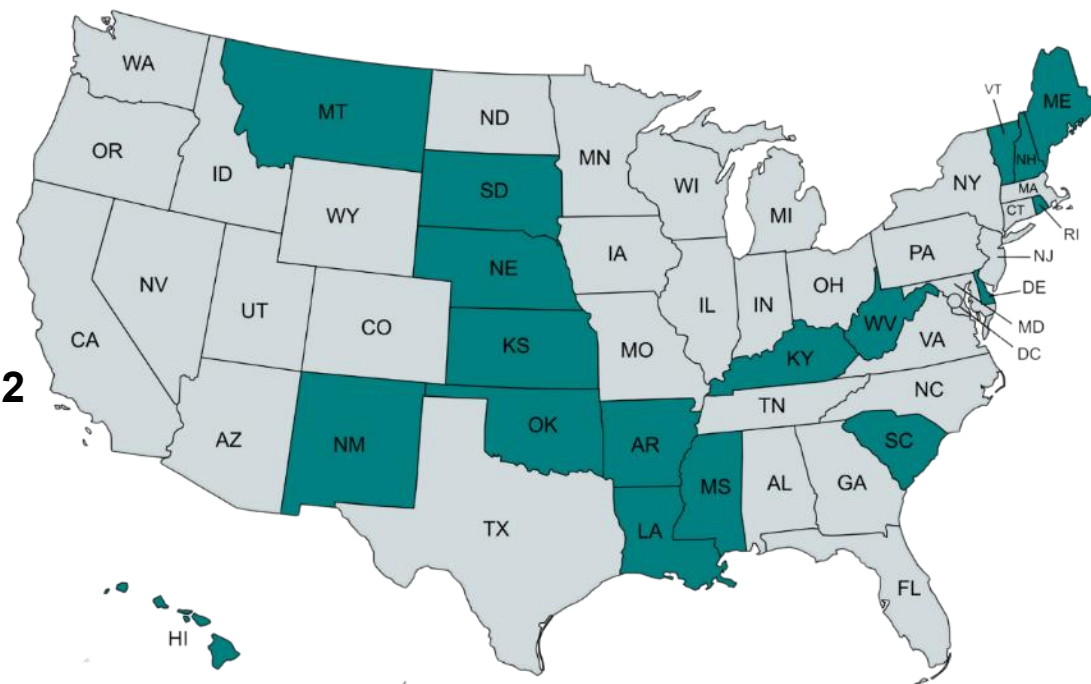
ECHO Observational & Intervention Research

ECHO Cohort



**Awards in
42 States, DC, PR, 2
Tribal Nations**

ECHO IDeA States Pediatric Clinical Trials Network (ISPCTN)



Together, these two ECHO components can answer big questions about child health that no other US research program can address



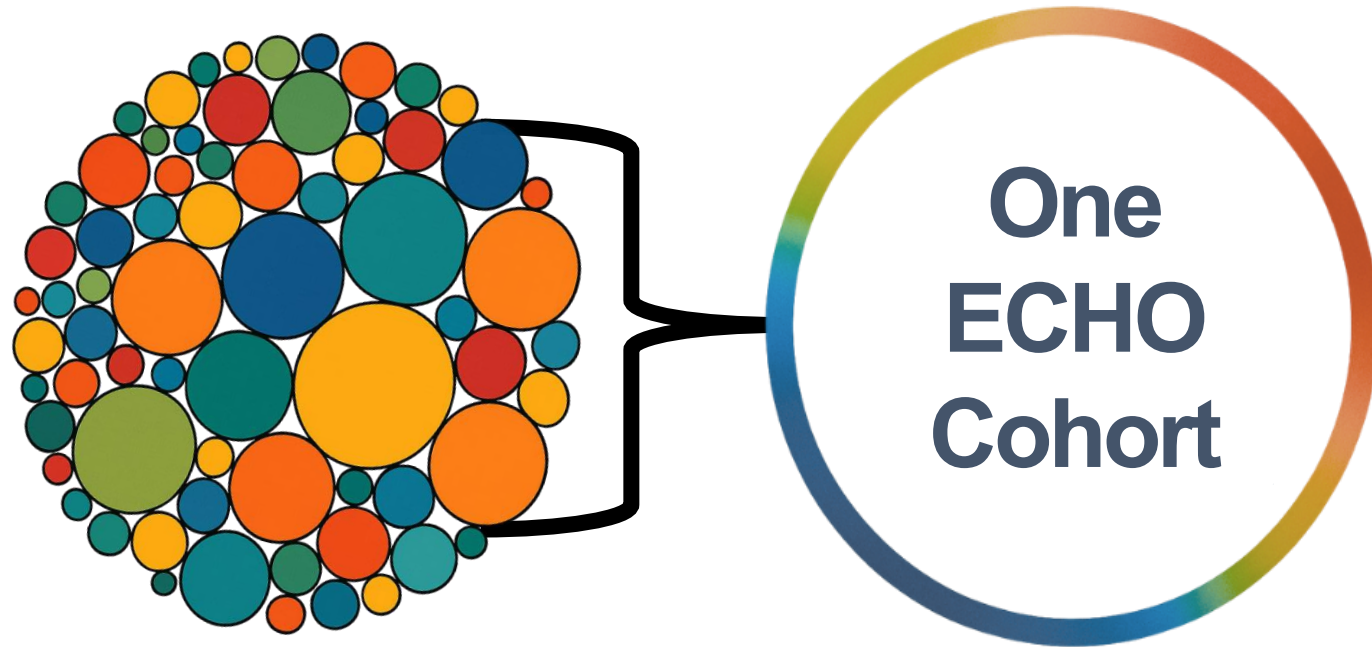
ECHO Cohort

This slide deck focuses on the ECHO Cohort, as ECHO Cohort de-identified data is currently available in the *All of Us* Researcher Workbench



From Multiple Cohort Studies to One Cohort with Multiple Research Sites

- 2016-2023
 - Pre-existing longitudinal cohorts
 - Spent 5-6 years harmonizing data
 - Semi-standardized data & specimen collection protocol for child follow-up
- 2023-present
 - New pregnancy recruitment in addition to child follow-up
 - Standardized protocol
 - Single IRB
 - Centralized data capture



Observational Research

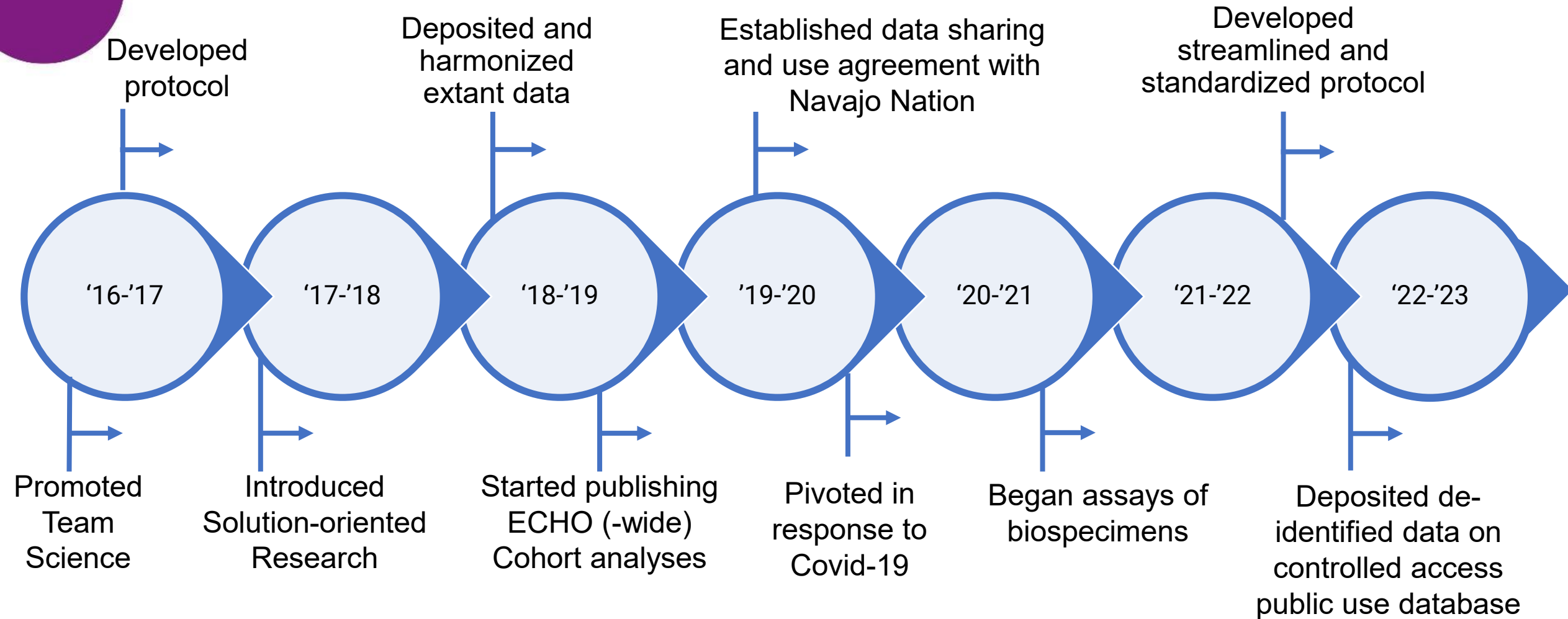
Answer **solution-oriented questions**
about effects of broad range of
early environmental exposures
on
child health and development

-
- A map of the United States with states colored in purple and light gray. The purple states are: WA, OR, CA, NV, UT, AZ, NM, TX, CO, WY, SD, MN, WI, MI, IL, IN, OH, PA, NY, NJ, DE, MD, DC, VA, NC, SC, GA, FL, TN, KY, MO, AR, LA, MS, AL, WV, and ME. The light gray states are: MT, ND, NE, KS, OK, IA, NE, KY, WV, and VT. A legend in the bottom right corner shows a purple rectangle labeled 'Puerto Rico'.

Follows ~60,000 kids nationwide from before conception to 21 y

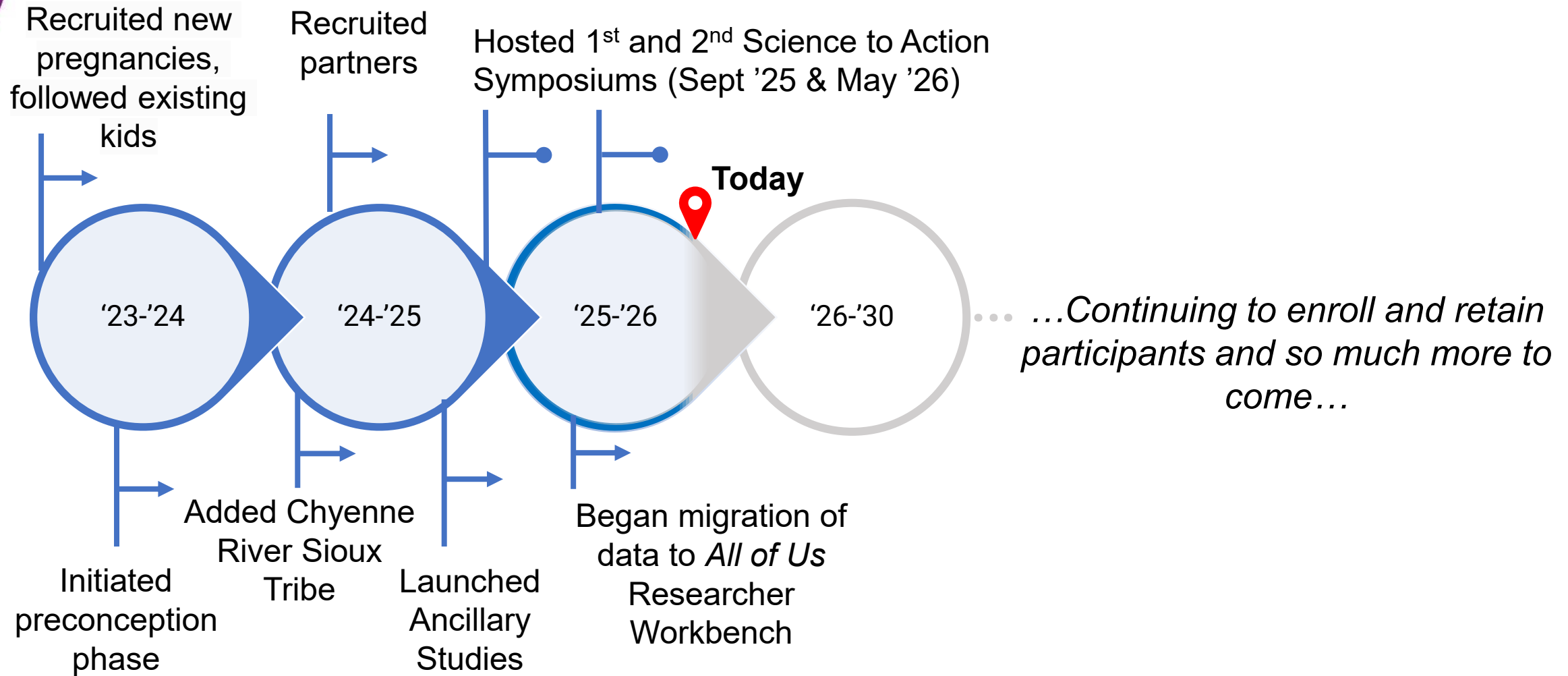
ECHO Cohort – Cycle 1

Weaved together data from ~70 pre-existing cohorts



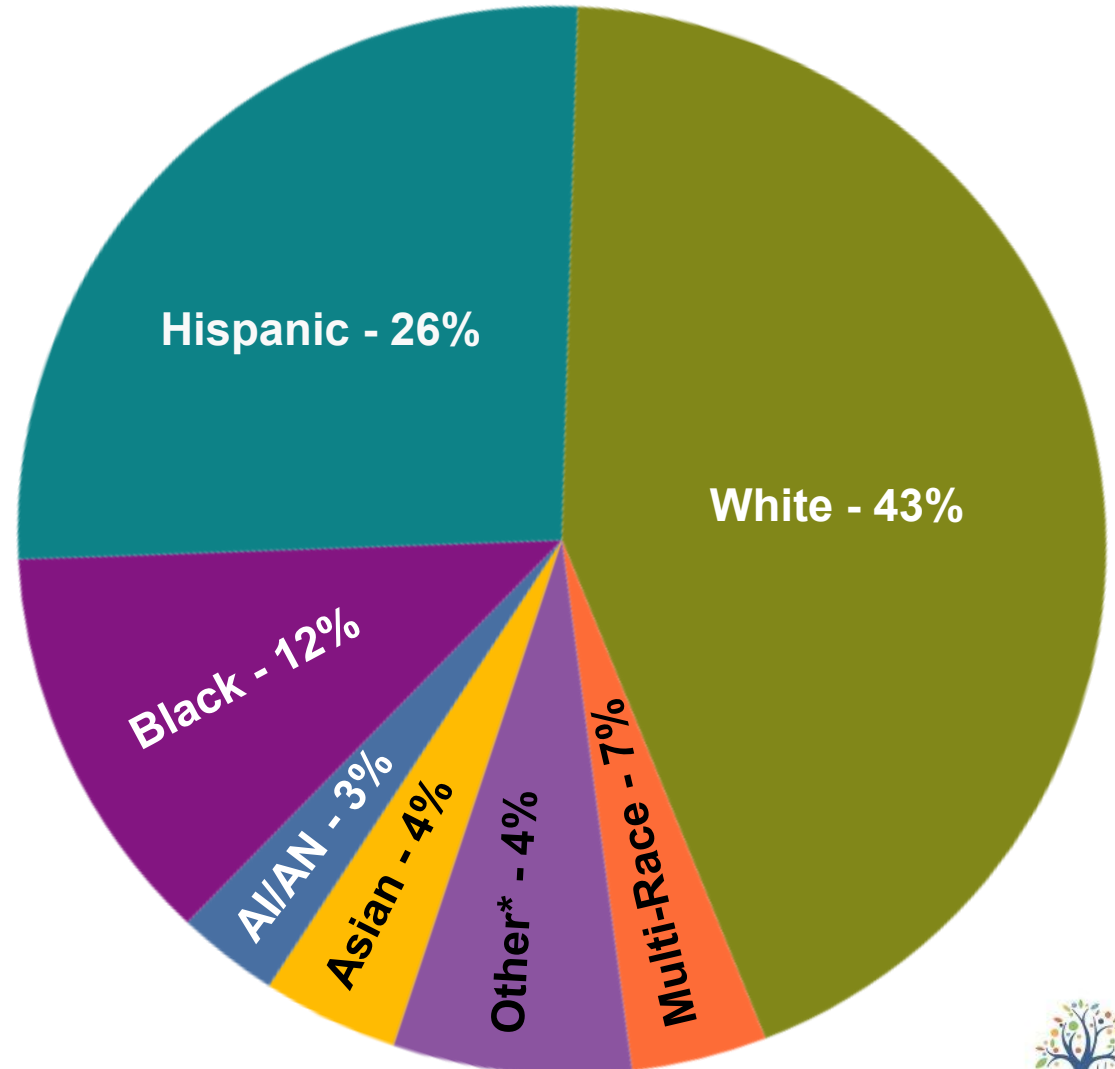
ECHO Cohort – Cycle 2

Transitioned to One ECHO Cohort



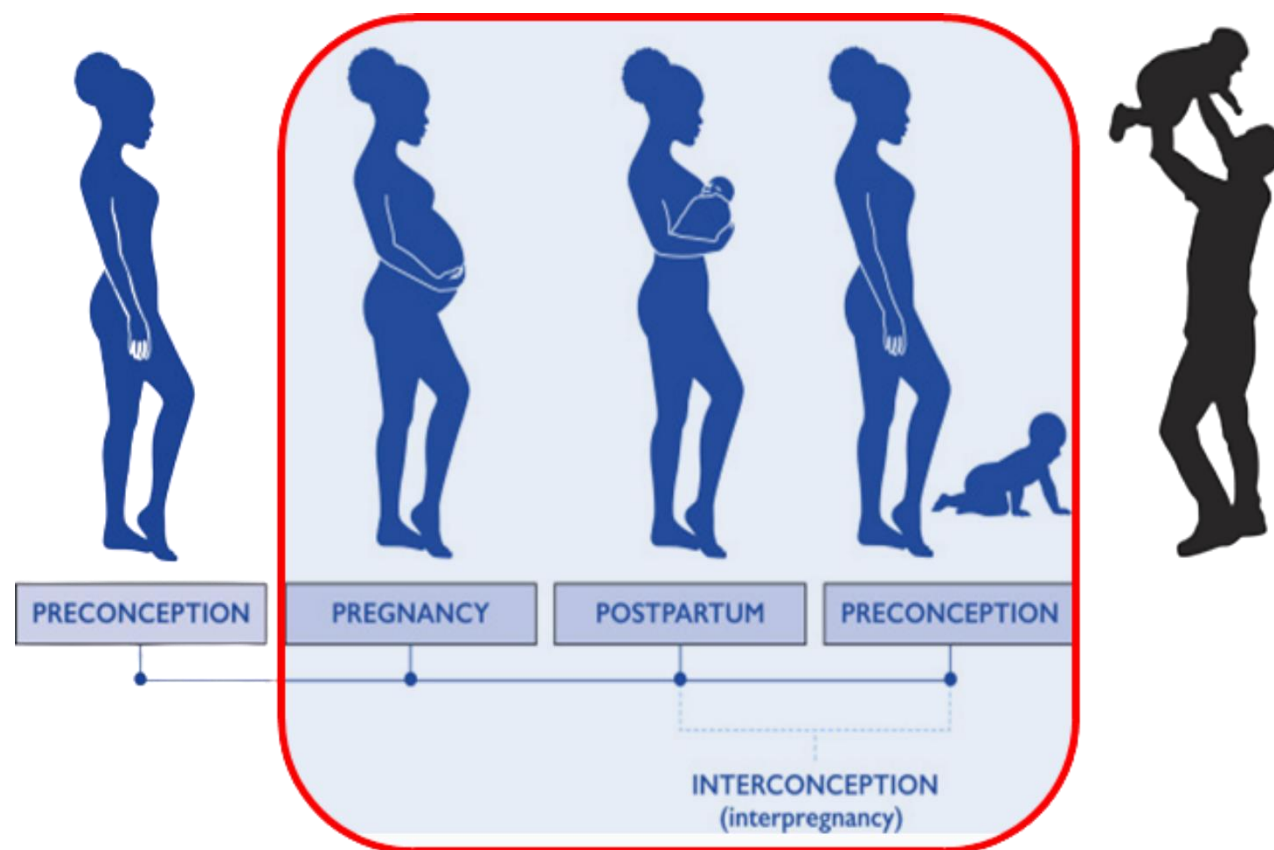
ECHO Cohort Participant Enrollment

Varied Sex, Age, SES, Geography, Race/Ethnicity



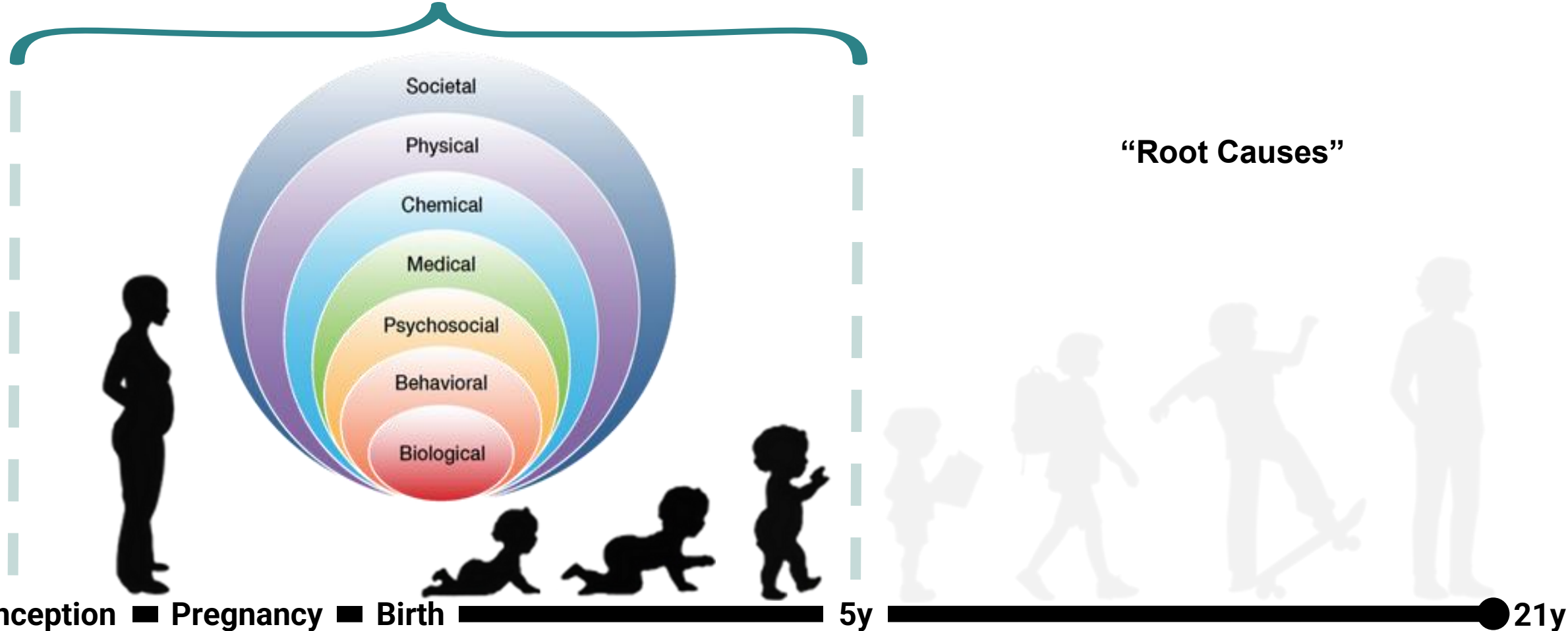
ECHO's Innovative Approach to Address *Preconceptional* Influences on Child Health

- **Pregnancy may be too late**
 - What happens even before pregnancy that affects child health?
- **Novel method to capture preconception (pre-pregnancy) information in general population**
 - Recruit in interpregnancy interval
- **Timeline**
 - Started with moms in 2024
 - Partners in 2025
 - Data in 2026



Early Exposures from Society to Biology

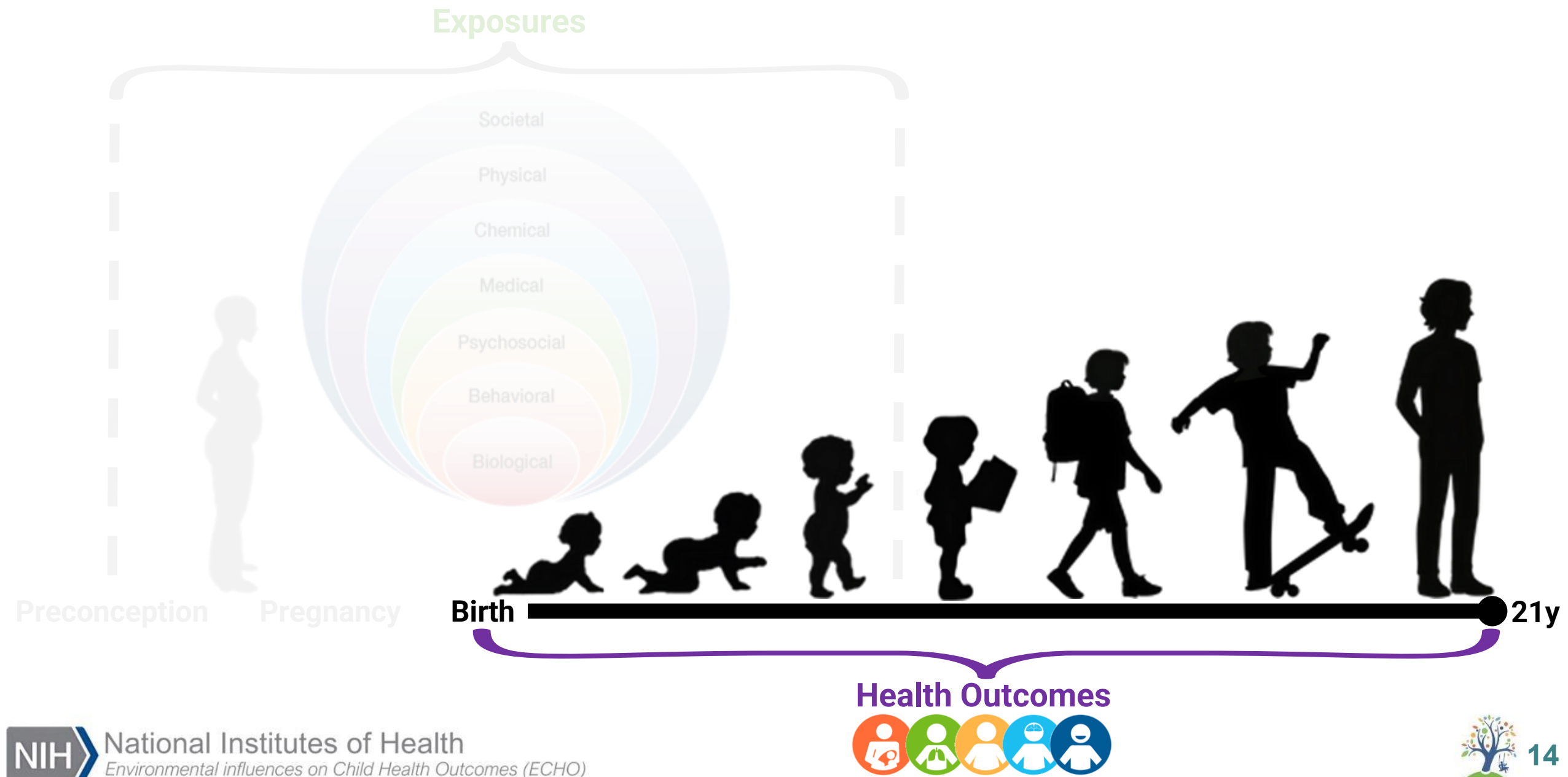
Exposures



Health Outcomes



ECHO Cohort Outcomes—Birth to 21y



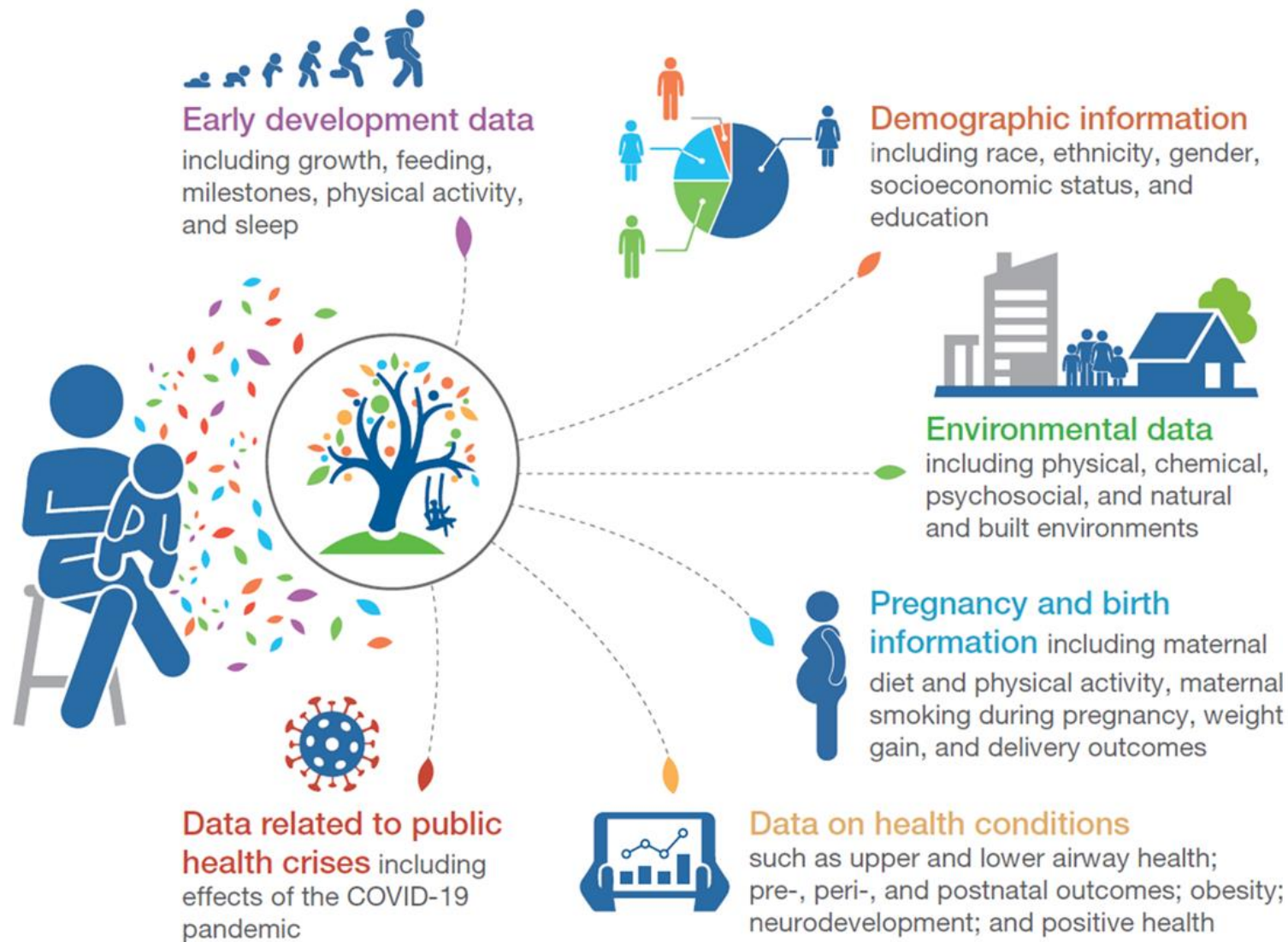


ECHO as a National Research Resource



ECHO Data in *All of Us* Research Workbench

- De-identified public-use data from more than 80,000 ECHO Cohort participants
 - Including about 40,000 pregnancies



ECHO Data in *All of Us* Researcher Workbench

- Researchers can access ECHO Cohort data such as
 - Demographic and socioeconomic characteristics
 - Environmental exposure data
 - Pregnancy and birth information
 - Child health and developmental measures
 - Biospecimen assay results, including measurements of environmental chemicals such as flame retardants, metals and metalloids, tobacco metabolites, fungicides and herbicides, and other analytes





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