

Early Years Research Updates

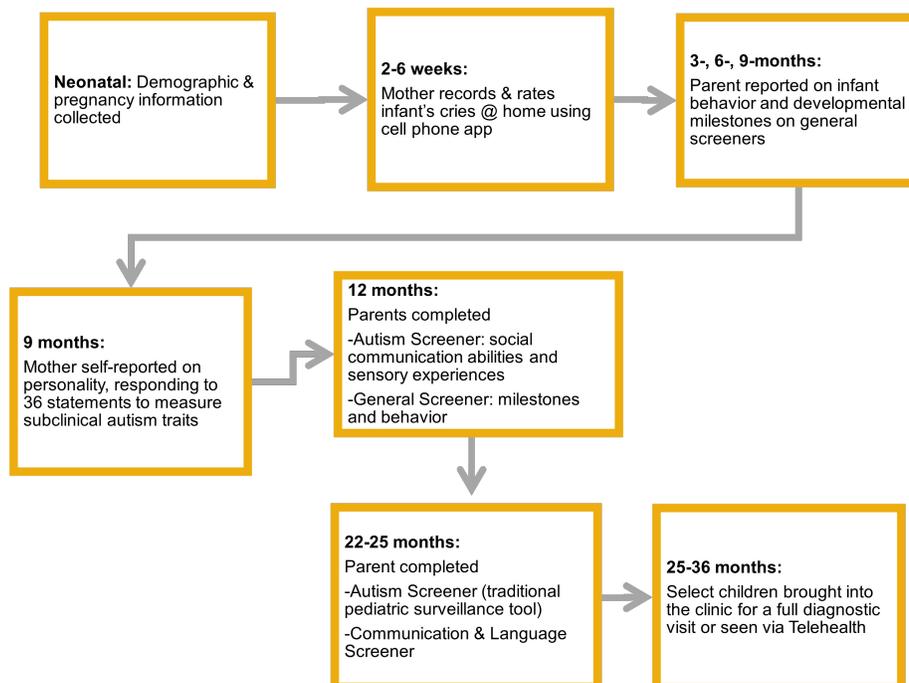
DECEMBER 2025

What is the Early Years Study/RhINOS?

The Early Years Study at the University of Missouri and its partner, Rhode Island Neonatal Observation Study (RhINOS), is a collaborative research effort created to learn more about human development during the first years of life. Over two thousand mothers and their newborns registered for the study at these two locations. Mothers were asked to provide information about their children at multiple ages. This data has helped the Early Years/RhINOS team track developmental milestones in hundreds of children and learn more about the onset and early identification of developmental delays (such as autism spectrum disorder).



Another key part of this study involves examining infants' cries. The research team developed a new way to allow families to share recordings of their infants' cries from home using a smartphone app. Thanks to widespread participation, our team now has one of the largest libraries of infant cry recordings in the world and is incorporating the information from these recordings into our data analyses.



Meet the Early Years Team

The Early Years Study comprises two sites: the Thompson Center for Autism and Neurodevelopment at the University of Missouri in Columbia, Missouri, and the Brown Center for the Study of Children at Risk at Women & Infants Hospital in Providence, Rhode Island.

The University of Missouri team has seven members: Stephen Sheinkopf, PhD (principal investigator) and Nicole Takahashi, MS; Erin Andres, PhD; Jane Manson, BA; Bailey Long, BA; Nick Kanne, BS; and Amanda Moffitt Gunn, MA (research coordinators).

The RHINOS team has two members: Cindy Loncar, PhD (principal investigator) and Italia Camillone, BA (research coordinator).

Thank You!

Our team would like to share our tremendous gratitude to over **2,000** mothers and over **350** coparents who joined our study from across **37 states!** We would not be able to do the work we do without you. It has been a privilege to learn about your child(ren)'s development.

Our team sincerely appreciates every single piece of information submitted by each participant, from data on individual cries to survey assessments. This information has allowed our team to explore new frontiers in our understanding of human development.

Thanks to the incredible contributions of our participants, our team has compiled a significant amount of data:

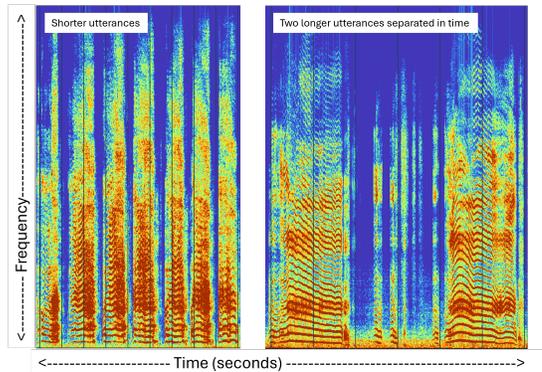
- **Over 3,100 cries**
- **Nearly 9,000 surveys**
- **100 in-person developmental assessments**



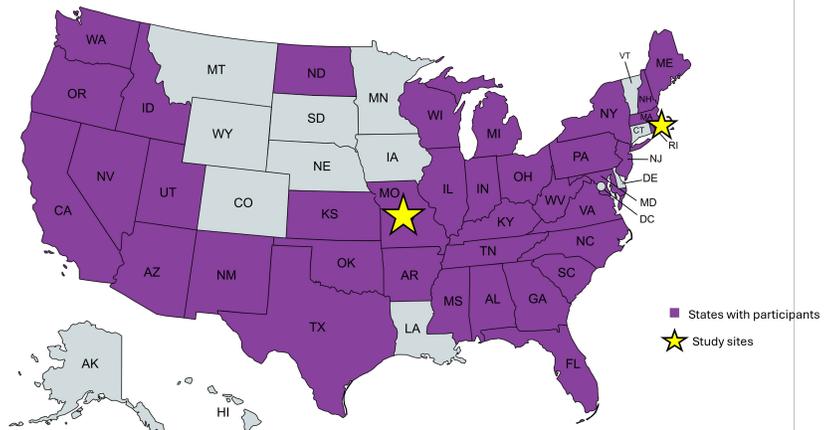
Back from left to right: Stephen Sheinkopf, PhD; Jane Manson, BA; Bailey Long, BA; Nick Kanne, BS
Front from left to right: Nicole Takahashi, MS; Erin Andres, PhD; Amanda Moffitt Gunn, MA



Pictured from left to right: Cindy Loncar, PhD; Italia Camillone, BA



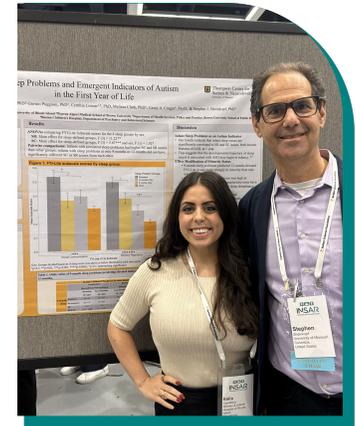
Above is an excerpt of data collected from a newborn's cry



Scientific Community Presentations

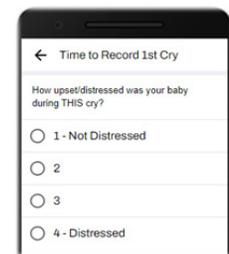
The Early Years research team has presented results of our research to local, national and international audiences and submitted the research for publication:

- Published one research manuscript in a scientific journal
- Presented findings at 14 professional conferences
- Shared four presentations at the University of Missouri and at community events
- Gave seven presentations at other universities Presented at several universities across the nation, including Brown University/Women & Infants Hospital, University of Miami, Children's Mercy Hospital, Washington University, University of Otago (New Zealand), Duke, and the Marcus Autism Center at Emory University and Boys Town National Research Hospital



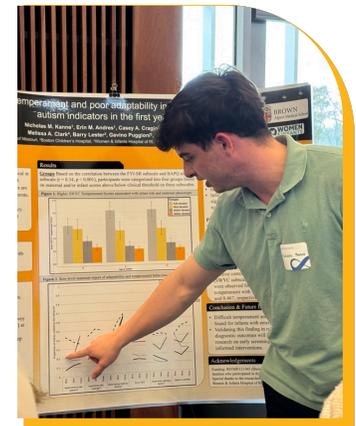
Real-time Cry Rating and Maternal Experience

Malori Chrisman, University of Missouri medical student and summer research fellow for the Early Years Study, shared results at the university's Health Science Research Day. The presentation described the relationship between the way that mothers described their infants' cries and the family's history of autism, as well as whether the infants were the first-born child.



Sleep Difficulties and Early Infant Signs of Possible Autism

In May 2025, Italia Camillone shared a presentation at the International Society for Autism Research in Seattle, WA, that described infants with persistent sleep difficulties at 9 and 12 months of age showing differences in social communication and sensory responses.

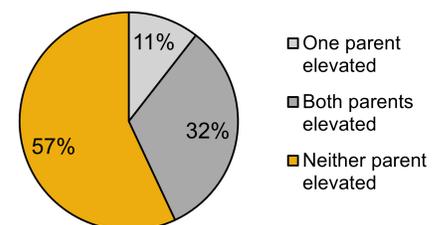


Social Communication Milestones & Temperament Differences

In multiple presentations, researchers described that a slower pace of social communication development and differences in temperament between 6 and 12 months of age were related to autism-related characteristics in infants and caregivers by age 1. These presentations were given by Erin Andres at the International Society for Autism Research in Seattle, WA, in May 2025 and by Nick Kanne at the Autism Across the Lifespan Conference in Kansas City, KS in March 2025.

Parental Characteristics and Autism Indicators in Infancy

In October 2025, Jane Manson shared a presentation at the American Academy of Child & Adolescent Psychiatry in Chicago, IL, describing that infant autism-related characteristics were highest when both parents self-reported elevated subclinical autism traits.



Stability of Autism Screening Results at 12 and 24 months

In May 2025, Stephen Sheinkopf shared a presentation at the International Society for Autism Research in Seattle, WA, describing that autism-related characteristics at 12 months predicted the results of a widely-used autism screening questionnaire at 24 months of age.

Published Work

Findings from the Early Years Study have been featured in multiple publications, including *Pediatric Research* – the official publication of the American Pediatric Society, the European Society for Pediatric Research, and the Society for Pediatric Research – and *Show Me Mizzou*, newsletter of the University of Missouri.

Our team shares several insights within these publications, including the observation that infants who were showing early autism-related behaviors at 12 months of age had differences in development and behavior in the months leading up to their first birthday. For example, we found that the infants with elevated autism indicators were described as being fussier, having more sleep difficulties, and having delays in some developmental milestones.

Next Steps for the Study

Our team continues to analyze data and share the results with the scientific community by presenting the findings at conferences and sharing papers to be published in medical journals. We will be seeking continued funding from the National Institutes of Health and other funding sources to continue this study, which will comprise two areas of focus.

First, we hope to continue following up with families of children who are already enrolled to learn about their development. Second, we are applying for additional funding to expand the study. Additional funding will allow us to invite a new group of families to enroll so that we can use the information from the first phase of the study to identify groups of infants who may benefit from early interventions by 1 to 1 ½ years of age.

Referral Information

As part of the RhINOS study protocol, caregivers completed an autism screener called the Modified Checklist for Autism in Toddlers, Revised (M-CHAT-R) that asks a series of questions about their child's behavior. Children who screen positive on the M-CHAT may benefit from an autism diagnostic assessment. While formal clinical evaluations are not part of the research protocol, families with concern for autism that would like to schedule an appointment can contact Women & Infants Hospital's Center for Children & Families at 401-430-8936.

News Release | Research

New study may help detect early signs of autism in the first year of life

Mizzou researchers hope parent surveys could lead to earlier interventions to help children flourish.

By Brian Consiglio



Researchers Stephen Sheinkopf (left) and Erin Andres (right).



↗ *Show Me Mizzou*



↗ *Pediatric Research*