



# ECHO

Environmental influences  
on Child Health Outcomes

A program supported by the NIH

## Study Summary

### ***Can a short questionnaire reliably evaluate autism-related traits in children?***

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#### Who sponsored this study?

The Environmental influences on Child Health Outcomes (ECHO) Program, Office of the Director, National Institutes of Health supported this research.

#### Why was this study needed?

Prior research has developed and examined shortened versions of the SRS questionnaire, but this has been mostly done with school-age participants with autism and their family members. Researchers haven't been able to evaluate the reliability of shortened versions of the SRS for capturing broader traits in the general population or for preschool-age participants. In addition, prior studies have not developed a shortened version of the questionnaire that uses computer-adaptive testing to select relevant questions based on a participant's existing answers.

#### What were the study results?

The Social Responsiveness Scale (SRS) is frequently used to measure autism-related traits and social impairments. The full 65-question SRS can create more burden for participants, so many researchers have attempted to shorten the questionnaire. In this study, ECHO researchers evaluated the SRS questionnaire across two different versions for preschool and school-age groups, comparing the questions used on each and developing a comparable scoring method for both forms. They then used computer-adaptive testing, where a computer program tailors the questionnaire in real-time to each participant, and found that a median of 14 questions was sufficient to reach a reliable score.

#### What was the study's impact?

The results of this work suggest opportunities to reduce the amount of time participants spend completing questionnaires like the SRS without sacrificing accuracy. Additionally, the results suggest computer-adaptive questionnaires can be used to evaluate autism-related traits in a way that is comparable to standard fixed questionnaires, improving testing efficiency and reducing participant burden.

#### Who was involved?

This study included 7,030 children from multiple ECHO research sites and other large studies across the United States. Participants included children ranging from ages 2.5-18 years, most of whom did not have an autism diagnosis.

#### What happened during the study?

The researchers collected data on the preschool and school-age SRS forms from multiple different sources. They then conducted several analyses to assess a variety of factors that may affect how the full SRS and shortened versions of the SRS are scored. The researchers then used these data to simulate how computer-adaptive testing would score each individual after completing the minimum number of questions required to reach a comparable result.

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 happens next?

The researchers' follow-up analyses to this work compared the computerized version developed in this study to other versions of the questionnaire. Future research is needed to examine how these different questionnaires perform in different groups of people, and if results differ when captured according to self vs parent report.

### Where can I learn more?

Access the full journal article, titled "Modifying the Social Responsiveness Scale for Adaptive Administration," in [Quality of Life Research](#).

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