

Eye-tracking reveals variability in successful social strategies for children with autism

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In a study published in the March 2012 issue of the *Journal of the American Academy of Child and Adolescent Psychiatry*, Katherine Rice and colleagues, from the Marcus Autism Center, Children's Healthcare of Atlanta, and Emory University School of Medicine, used eye-tracking technology to measure the relationship between cognitive and social disability in children with autism spectrum disorders (ASD) and the ability of children with ASD to pay attention to social interactions.

The study is the largest to date to observe children with [ASD](#) watching scenes of [social interaction](#); 135 children, 109 with ASD and 26 without, all approximately 10 years old, participated. The children were shown movie scenes of school-age children in age-appropriate social situations. One set of analyses focused on the differences between children with ASD and typically-developing children, by closely matching a subset of those with ASD to typically-developing peers on IQ, gender, and age. A second set of analyses focused on measures that quantify the [broad spectrum](#) of adaptive and maladaptive behavior in ASD by analyzing variation across all 109 ASD participants.

Results indicated that children with ASD were less likely than typically-developing peers to look at other people's eyes and faces, and were more likely to fixate on bodies and inanimate objects. The results also revealed the varying ways in which children with ASD use the information they observe. For the entire group of children with ASD, increased observation of inanimate objects rather than people was associated with more severe social disability. However, for some subsets

of the autism spectrum, such as highly verbal children with ASD, whose verbal IQs were larger than their nonverbal IQs, increased looking at others people's mouths was associated with less disability.

"These results help us tease apart some of the vast heterogeneity of the autism spectrum," said Rice. "For some children, atypical looking patterns may be serving as a compensatory strategy; but for others, these patterns are clearly associated with maladaptive behaviors. Objective, quantitative measures of social disability help us to identify these subsets in a data-driven manner."

More information: The article "Parsing Heterogeneity in Autism Spectrum Disorders: Visual Scanning of Dynamic Social Scenes in School-Aged Children" by Katherine Rice, Jennifer M. Moriuchi, Warren Jones, Ami Klin, ([doi:10.1016/j.jaac.2011.12.017](https://doi.org/10.1016/j.jaac.2011.12.017)) appears in the *Journal of the American Academy of Child and Adolescent Psychiatry*, Volume 51, Issue 3 (March 2012)

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