

# **Patterns of fixation during face recognition: Differences in autism across age**

**Jennifer Fedor, Andrew Lynn, William Foran, Jared DiCicco-Bloom, Beatriz Luna and Kirsten O’Hearn**

In typically developing (TD) individuals, face recognition skill is related to patterns of looking at features of the face such as the eyes and mouth; these patterns differ in individuals with autism. Further, we know that difficulties with face recognition increase during the transition from adolescence to adulthood in people with autism. In this study, we examined if increasing difficulties with face recognition in autism are related to differences in the development of the ways in which people with autism look to eyes and mouths. Children, adolescents, and adults (age 7-30 years) with and without autism completed a face recognition test on a computer, while an eye tracker (a device that monitors where people are looking) recorded their gaze on the screen. The average length of, and the number of, fixations (defined as sustained looks that lasted at least 100 ms) that people made to the eyes and mouth of each face image in the task were calculated. Overall, both people with and without autism – across all age groups – fixated more and for longer on eyes than on mouths. However, when asked to memorize the faces, TD children and adults, but not adolescents, made more fixations on eyes than did their peers with autism. When asked to recognize the faces, TD children and adults made shorter fixations on mouths than did their peers with autism; this pattern was reversed in adolescence, with adolescents with autism making more fixations on mouths than TD adolescents. These results suggest that differences in looking at faces between individuals with and without autism change with age. Further, these differences appear to contribute, at least in part, to the face recognition difficulties experienced by people with autism.