

Identifying Early Brain Signature of Autism

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As a disorder of brain development, autism spectrum disorder (ASD) affects the brain's growth and function. Yet, the cause and timing of these effects are still unknown. Understanding these mechanisms is critical because it will lead to more accurate diagnosis and intervention, improving the long-term outcomes for people with ASD.

Neuroscientist Inna Fishman conducts imaging studies to identify brain patterns associated with symptoms of autism. Using cutting-edge techniques from anatomical, functional and diffusion MRI, she examines changes in brain organization during the critical developmental window, between the age of first ASD symptoms (18-24 months) and 4-5 years of age when ASD symptoms are at their peak. Dr. Fishman and her team scan toddlers at night, when they are naturally asleep, without sedation or medications.

This research promises to identify early brain markers of risk that may help us develop effective treatments for this life-long disorder.

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- 1** Postdoctoral researcher Dr. Joanne Jao explains the MRI procedure to a child's family, with help of the friendly Coda Bear, the lab's mascot. Photo by: Jiwandeep Kohli
- 2** Natalia Witkowska, an undergraduate research assistant, inspects toddler brain image quality. Photo by: Debbie Brighton
- 3** Dr. Fishman (center) with graduate student Jiwandeep Kohli, postdoctoral fellow Dr. Mikaela Kinnear, joint doctoral program student Lindsay Olson, and undergraduate research assistants; Seraphina Solders and Natalia Witkowska. Photo by: Debbie Brighton

