How early should children be screened for autism? How do girls with autism spectrum disorder differ from boys? The National Institutes of Health have awarded $100 million to nine research projects designed to answer those and other questions about the development disorder, characterized by behavioral, communication and social challenges.

The five-year grants are a continuation of the NIH's Autism Centers of Excellence, a nationwide research program working to find better screening, differentiation, and treatments for autism spectrum disorders, which affect 1 in 68 children nationwide. The new grants will support five research centers and four networks of scholars.

Several of the projects focus on early identification. While the American Academy of Pediatrics recommends that pediatricians screen and monitor early signs of autism and other developmental disorders at 18 months and 24 months, only 1 in 5 children's doctors follow the screening schedule. That's one reason children with autism are still on average older than 4 when they are identified, even though Drexel University researcher Diana Robins said parents often start to see warning signs by age 2.

"Parents are very good at noticing when something is not quite right, but pinpointing the cause of that really requires the help of a professional," Robins said.

In one of the NIH projects, Robins, who developed a common checklist for parents and caregivers to identify early signs of autism, will lead a randomized control trial of screening schedules for 8,000 toddlers across urban, suburban and rural communities in California, Connecticut, and Pennsylvania. Robins and her colleagues will track children randomly assigned to be screened for early signs of autism at either 18 months or 4 years old—the age a child might reasonably be identified in school if he was not identified by a pediatrician earlier.

Toddlers at either screening age who are identified as having signs of autism will be given a year-long behavioral intervention, and Robins and her colleagues will test all of the children at age 5 for kindergarten readiness and other developmental benchmarks. Though the children will receive the same intervention regardless of when they are identified, Robins said she believes "the earlier [children with autism] start their treatment, the more time they have to work on their skills before kindergarten."

In a separate project, Ami Klin, director of the Marcus Autism Center at Emory University, will observe hundreds of infants, including those considered at high risk of developing autism spectrum disorders, from birth to 2 1/2 years old, to identify signs of autism in early social interactions. For example, in prior research, Klin and his colleagues found that as early as age 2, children with autism are less likely to meet the eyes of adults during games. Klin's grant continues prior research on how autism spectrum disorders develop across infancy and early childhood.

Other projects include:

**Interventions:** Florida State University researcher Amy Wetherby will evaluate a test a two-stage intervention designed to help parents understand and support their children with autism, while Duke University researchers Geraldine Dawson and Scott Kollins plan to test whether stimulants used to treat attention deficit hyperactivity disorder also improves symptoms of autism in the 40 to 60 percent of children with autism who also have ADHD.

**Variations:** George Washington University researcher Kevin Pelphrey will continue a project to compare symptoms and treatments for boys and girls with autism, while David Amaral of the University of California-Davis will continue a project to classify different types of autism spectrum disorders based on behavior and genetic differences.