

# New study shows half of children with autism can be accurately diagnosed at close to 1 year of age

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In a study published today in the Archives of General Psychiatry, researchers from the Kennedy Krieger Institute in Baltimore, Maryland found that autism can be diagnosed at close to one year of age, which is the earliest the disorder has ever been diagnosed. The study, which evaluated social and communication development in autism spectrum disorders (ASD) from 14 to 36 months of age, revealed that approximately half of all children with autism can be diagnosed around the first birthday.

The remaining half will be diagnosed later, and their development may unfold very differently than children whose ASD is diagnosable around the first birthday. Early diagnosis of the disorder allows for early intervention, which can make a major difference in helping children with autism reach their full potential.

Researchers examined social and communication development in infants at high and low risk for ASD starting at 14 months of age and ending at 30 or 36 months (a small minority of the children exited the study at 30 months). Half of the children with a final diagnosis of ASD made at 30 or 36 months of age had been diagnosed with the disorder at 14 months, and the other half were diagnosed after 14 months. Through repeated observation and the use of standardized tests of development, researchers identified, for the first time, disruptions in social, communication and play development that were indicative of ASD in 14-month olds. Multiple signs indicating these developmental disruptions appear simultaneously in children with the disorder.

Dr. Rebecca Landa, lead study author and director of Kennedy Krieger's Center for Autism and Related Disorders, and her colleagues identified the following signs of developmental disruptions for

which parents and pediatricians should be watching:

- Abnormalities in initiating communication with others: Rather than requesting help to open a jar of bubbles through gestures and vocalizations paired with eye contact, a child with ASD may struggle to open it themselves or fuss, often without looking at the nearby person.
  - Compromised ability to initiate and respond to opportunities to share experiences with others: Children with ASD infrequently monitor other people's focus of attention. Therefore, a child with ASD will miss cues that are important for shared engagement with others, and miss opportunities for learning as well as for initiating communication about a shared topic of interest. For example, if a parent looks at a stuffed animal across the room, the child with ASD often does not follow the gaze and also look at the stuffed animal. Nor does this child often initiate communication with others. In contrast, children with typical development would observe the parent's shift in gaze, look at the same object, and share in an exchange with the parent about the object of mutual focus. During engagement, children have many prolonged opportunities to learn new words and new ways to play with toys while having an emotionally satisfying experience with their parent.
- Irregularities when playing

with toys: Instead of using a toy as it is meant to be used, such as picking up a toy fork and pretending to eat with it, children with ASD may repeatedly pick the fork up and drop it down, tap it on the table, or perform another unusual act with the toy.

- Significantly reduced variety of sounds, words and gestures used to communicate: Compared to typically developing children, children with ASD have a much smaller inventory of sounds, words and gestures that they use to communicate with others.

“For a toddler with autism, only a limited set of circumstances – like when they see a favorite toy, or when they are tossed in the air – will lead to fleeting social engagement,” said Landa. “The fact that we can identify this at such a young age is extremely exciting, because it gives us an opportunity to diagnose children with ASD very early on when intervention may have a great impact on development.”

The current study reveals that autism

often involves a progression, with the disorder claiming or presenting itself between 14 and 24 months of age. Some children with only mild delays at 14 months of age could go on to be diagnosed with ASD. Landa and her colleagues observed distinct differences in the developmental paths, or trajectories, of children with early versus later diagnosis of ASD. While some children developed very slowly and displayed social and communication abnormalities associated with ASD at 14 months of age, others showed only mild delays with a gradual onset of autism symptoms, culminating in the diagnosis of ASD by 36 months.

If parents suspect something is wrong with their child's development, or that their child is losing skills during their first few years of life, they should talk to their pediatrician or another developmental expert. This and other autism studies suggest that the “wait and see”

method, which is often recommended to concerned parents, could lead to missed opportunities for early intervention during this time period.

"What's most exciting about these important advancements in autism diagnosis is that ongoing intervention research leads us to believe it is most effective and least costly when provided to younger children," said Dr. Gary Goldstein, President and CEO of the Kennedy Krieger Institute. "When a child goes undiagnosed until five or six years old, there is a tremendous loss of potential for intervention that can make a marked difference in that child's outcome."

While there are currently no standardized, published criteria for diagnosing children with autism at or around one year of age, Landa's goal is to develop these criteria based on this and other autism studies currently underway at the Kennedy Krieger

Institute. Landa and her colleagues at the Institute plan on releasing preliminary diagnostic criteria for very young children with autism in an upcoming report.

Participants in the current study included infants at high risk for ASD (siblings of children with autism, n=107) and low risk for ASD (no family history of autism, n=18). Standardized tests of development and play-based assessment tools were used to evaluate social interaction, communication and play behaviors in both groups at 14, 18 and 24 months of age. Researchers assigned diagnostic impressions at every age, indicating whether there were clinically significant signs of delay or impairment. After their last evaluation at 30 or 36 months, each participant was then given a final diagnostic classification of ASD, non-ASD impairment, or no impairment. The ASD group was further divided into an Early ASD diagnosis group and a Later ASD

diagnosis group  
based on whether  
they were given a  
diagnosis of ASD at  
14 or 24 months.

Source: Kennedy  
Krieger Institute

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