

NEWS

Clinical acumen key in discerning autism, attention deficit

BY ANN GRISWOLD

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A widely used diagnostic test for autism can reliably distinguish **the condition from attention deficit hyperactivity disorder (ADHD)**, but not always. Relying solely on the test results can send clinicians down the wrong path, warns a new study.

The findings highlight **key differences in social behavior** that distinguish ADHD from autism, and underscore the importance of keen clinical judgment in separating the **seemingly similar conditions**.

Pediatricians cannot usually identify autism with certainty during a regular office visit. As a result, they typically flag more children than actually have the disorder, referring them to specialists. A specialist then uses a pair of **one- to two-hour assessments** to arrive at a **definitive diagnosis**.

Still, more than one in five children who have ADHD — but not autism — meet the criteria for autism on these assessments, the new study shows. The results appeared 19 January in *Molecular Autism*¹.

“The minute that we diagnose blindly based on score, we’re going to misplace a lot of kids into categories,” says lead researcher **Somer Bishop**, assistant professor of psychiatry at the University of California, San Francisco. “These instruments were designed to assist in clinical decision-making, but they are not a replacement for a clinical brain.”

An accurate diagnosis is critical to finding appropriate treatment. Although interventions for ADHD and autism are similar, their effectiveness depends on their ability to target the distinct motivations that drive features such as impulsivity in each condition.

“The paper highlights not only the similarities between the two conditions, but the difficulty in arriving at clear distinctions, even for specialists,” says **Amir Miodovnik**, a pediatrician at the Infants and Children’s Hospital at Maimonides Medical Center in New York, who was not involved in the work.

Examination error:

Bishop and her colleagues used the **Autism Diagnostic Observation Schedule (ADOS)** to record social and **repetitive behaviors** in 212 children aged 4 to 18 years while they interacted with toys and doctors. The researchers also used the **Autism Diagnostic Interview-Revised (ADI-R)** to gather information from parents and caregivers about a child’s behavior at home.

The children all had social or behavioral problems but strong cognitive and language skills, making it particularly hard to distinguish ADHD from autism in this group.

The researchers combined the tests with information from parents and teachers, along with an expert clinical evaluation by a child psychologist, to diagnose 164 children with autism alone and 48 with ADHD alone. They then looked to see how many children with ADHD met the diagnostic cutoffs for autism on the tests despite not having the condition.

Of the 48 children diagnosed with ADHD alone, 21 percent met the cutoff score for autism on the

ADOS and 30 percent met the cutoff on the ADI-R.

“It shows that clinical judgment — the ability of the clinician to think critically about the information they’re obtaining, including the actual scores — is really important,” Bishop says.

Motivation matters:

The ADOS works well when the behavioral differences are quantifiable or can be observed directly. Compared with children who have ADHD, those with autism tend to make less frequent eye contact with clinicians, avoid social interactions, display fewer facial expressions and have more difficulty combining basic aspects of communication to get another person’s attention. These four differences distinguished most children with autism from those with ADHD on the ADOS, but none of the ADI-R items offered a consistent way to tell the groups apart.

And neither test can pick up on what drives the behaviors, which can be critical in some cases. Children with ADHD who meet the ADOS cutoff for autism may display the same traits as those with autism — just for different reasons, says **Catherine Lord**, director of the Center for Autism and the Developing Brain at New York-Presbyterian Hospital, who developed both tests.

For instance, a child with ADHD might avoid an adult’s gaze because he thinks he has done something wrong, rather than because of a social deficit. Or, a child’s face might be unexpressive because she is bored or distracted, not because she is less expressive in general.

Clinicians can only catch these subtle distinctions if they pay close attention to a child’s motivations, says Lord. They also need to interpret test scores in the context of reports from parents, teachers, psychologists and experts in child development.

“I think it’s just a reminder that if you’re really trying to figure out what’s going on with a child, you have to look at all the sources of information,” Lord says.

REFERENCES:

1. Grzadzinski R. *et al. Mol. Autism* 7, 7 (2016) [Pubmed](#)