

NEWS

Sex differences among people with autism may be minimal

BY LEVI GADYE

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Autism looks similar in girls and boys, suggest results from a large study of medical records¹.

Girls with the condition score slightly better than boys on some measures of social function and language ability. But boys and girls show no differences in autism severity, cognitive ability or age at diagnosis, the study suggests.

The effort is the latest to probe **sex differences in autism**, which is diagnosed in **four boys for every girl**. Many clinicians say social difficulties are **subtler in girls** than in boys with autism.

The new findings, published 13 February in *Autism*, counter the commonly held assumption that there are **distinct sex differences** in the nature of autism, says lead researcher **Joanna Mussey**, clinical assistant professor of psychiatry at the University of North Carolina at Chapel Hill.

The researchers may have failed to capture some disparities, however. For instance, the results relied on tests that do not score **repetitive behaviors** — a core feature of autism thought to be particularly prominent in boys.

Experts increasingly recognize that sex differences in autism can be subtle, and say that studies such as this one testify to the need for fine-grained approaches for scoring sex differences.

“I do think there probably is something different about the girls, but boy, the research doesn't show it very easily,” says **Catherine Lord**, director of the Center for Autism and the Developing Brain at New York-Presbyterian Hospital in New York City, who was not involved in the study.

Similar smarts:

Mussey and her team reviewed medical records for 566 boys and men, and 113 girls and women,

diagnosed with autism at clinics in North Carolina between 2001 and 2013. The participants ranged in age from 21 months to 56 years at the time of diagnosis.

The records included scores on the Autism Diagnostic Observation Schedule-Generic (ADOS-G) and the Childhood Autism Rating Scale (CARS). The tests quantify the severity of autism features based on clinical observations and, in the case of CARS, parent reports. The documents also contained intelligence test scores.

Results from CARS suggest that girls exhibit slightly more severe autism features than boys do. By contrast, ADOS-G measures of language and social skills indicate less impairment in girls. It is unclear whether these small, opposing differences hold any clinical significance, Mussey says.

Girls and boys with autism do not score differently on verbal and nonverbal intelligence tests. This result contradicts findings suggesting girls with autism are **more likely than boys to have intellectual disability**.

The new data are “showing that this difference is not as big as we thought it was,” says **Donna Werling**, a postdoctoral researcher in **Matthew State**’s lab at the University of California, San Francisco.

Complex relationships:

The medical records of the children include scores on now-outdated versions of the ADOS and CARS that do not reflect restricted interests or repetitive behaviors in their overall score. Studies have indicated that boys with autism are more likely than girls **to have restricted interests** — such as an obsession with trains or train schedules — or show repetitive movements, such as hand-flapping².

“The study was somewhat limited in the behaviors that it looked at,” says **Christine Wu Nordahl**, assistant professor of psychiatry at the University of California, Davis MIND Institute, who was not involved in the study. “Ultimately, you’re constrained by the data.”

Future studies of sex differences in autism should examine complex social behaviors, such as the ability to maintain friendships over time, says **Marisela Huerta**, associate professor of psychology at Weill Cornell Medical College in New York.

Researchers should also home in on periods of development, such as adolescence, in which these complex social behaviors are important, says **Rene Jamison**, clinical associate professor at the Pediatric Center for Child Health and Development at the University of Kansas Medical Center.

“We’re finding that females have greater impairment as they enter adolescence,” Jamison says. “Our field needs to shift to more socially valid measures that may pick up those more specific [age-

dependent] characteristics or differences.”

Mussey plans to repeat her study using newer medical records.

REFERENCES:

1. Mussey J.L. et al. Autism Epub ahead of print (2017) [Abstract](#)
2. Frazier T.W. et al. J. Am. Acad. Child Adolesc. Psychiatry 53, 329-340 (2014) [PubMed](#)