

Speaks.

Previously, researchers had identified 65 genes associated with ASD. Buxbaum said his team was able to find more, in part, because of the study size: It involved over 35,000 people, including nearly 12,000 with ASD; the rest were their parents, unaffected siblings or other individuals without ASD.

Using newer analytic techniques, Buxbaum said, the researchers were able to zero in on 102 genes associated with ASD.

Some genes, he explained, are "high risk" and carry outright mutations. Most people with ASD—possibly 80%—would not harbor those, according to Buxbaum. Instead, they would carry "tiny, tiny changes across multiple genes," he said.

More research is needed to understand precisely what all these genes do. But most risk genes are active early in brain development, and have roles in regulating the activity of other genes or communication among brain cells, the investigators found.

The risk genes are also active in both "excitatory" and "inhibitory" neurons (nerve cells). That, Buxbaum said, shows that autism is not only related to one major type of brain cell—but involves "many disruptions" in brain cell function.

The findings were published online Jan. 23 in the journal *Cell*.

Dr. Andrew Adesman is chief of developmental and behavioral pediatrics at Cohen Children's Medical Center, in New Hyde Park, N.Y. He said, "This study represents yet another major advance in our understanding of some of the underlying genetic causes for ASD."

At this point, though, he noted, it's not possible to root out the genetic cause in most children diagnosed with ASD.

Hartley agreed that the latest findings could eventually lead to new therapies. "This study importantly confirms previous biological pathways

in autism, but has identified new biological processes possibly involved," he added. "These pathways are important for finding new targets for treatment and more personalized health care."

The hunt for ASD-related genes is not over, however. Buxbaum said he expects a "couple hundred more" will be found.

More information: The U.S. National Institute of Neurological Disorders and Stroke has more on [autism spectrum disorder](#).

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