

NEWS

# Network analysis gives clues to other ailments in autism

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25 OCTOBER 2016



Genes linked to autism are associated with a variety of other ailments, including cancer, heart disease, autoimmune disorders and gut problems. The findings, presented today at the **2015 Society for Neuroscience annual meeting** in Chicago, highlight the importance of recognizing

autism as more than a brain-based disorder.

“I think it’s an important reminder that there’s so much more going on,” says Alexis Stevenson, a medical student in **Pat Levitt’s** lab at Children’s Hospital Los Angeles, who presented the findings.

Stevenson and her colleagues looked at [208] genes linked to [six categories of] brain disorders: autism, [autism-related syndromes,] schizophrenia, depression, bipolar disorder and attention-deficit hyperactivity disorder. The genes on their list, which includes [49] linked to autism [and 53 tied to autism-related syndromes], are all known to be expressed in the human brain and are tied to the conditions by multiple lines of evidence.

The researchers searched public databases for evidence connecting each gene to other health problems. They looked at scientific papers published since 1995 and in online catalogs of human genes.

[More than] one-quarter, or [60], of the [208] genes are linked to intellectual disability, which often co-occurs in people with autism. An additional [14] genes have ties to cancer, and [35] to **epilepsy**.

When the researchers looked at only those genes associated with autism and mapped their links to other health issues, several trends emerged. Of the [49] genes, [8 are associated] with gastrointestinal issues. Several other genes are linked to [cancer, epilepsy,] autoimmune disorders, craniofacial abnormalities and kidney and heart problems. The findings jibe with those from a study earlier this year indicating that people with autism are at **increased risk** for a variety of medical problems.

## Venn diagnoses:

Genes associated with schizophrenia, too, show ties to cancer, autoimmune disorders and kidney- and heart-related conditions, as well as to problems with vision and metabolism. Stevenson says researchers and clinicians have long noted heart problems in people with schizophrenia, but these were often chalked up to side effects of the drugs used to treat the disorder.

“Maybe it is not only the medication increasing the risk; maybe there’s a genetic predisposition to sensitivity in those areas and organ systems,” Stevenson says.

As a medical student preparing for a career in pediatrics, Stevenson says, she had not thought of autism or the other brain disorders as being linked to so many parts of the body. “If we know that going in, it can help us look out for things and help prepare people for what is up ahead,” she says. “It helps us reframe these disorders.”

Rethinking brain disorders as whole-body disorders may also help to minimize the stigma

associated with mental illness, Stevenson says.

“People think, ‘Oh, you can control it because it’s a mental disorder, or it’s a lack of willpower,’” she says. “It is something that we should not sideline.”

*For more reports from the 2015 Society for Neuroscience annual meeting, please [click here](#).*

**REFERENCES:**

1. Plummer J.T. *et al. Front. Psychiatry* **7**, 142 (2016) [PubMed](#)