

Gene Trawls Haul in New Finds on Autism, MS - NBC News

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A series of DNA studies have found dozens of new genetic mutations that may cause autism as well as autoimmune diseases such as multiple sclerosis. The findings on autism are the biggest batch yet and could shed considerable light on the condition, which affects one in every 68 U.S. children.

It might even lead to a DNA test for autism, says geneticist Evan Eichler of the University of Washington, who worked on one of the studies published in the journal *Nature*. "Recognizing this early on may allow for earlier interventions, such as behavioral therapies, improving outcomes in children," Eichler said.

One study found 33 new genes associated with autism, and researchers think they may eventually find 1,000 mutations. "This makes sense because typical development of brain cells require intricate coordination among thousands of genes and appropriate communication between cells to ensure development of the brain — the most complicated organ in the human body," said Carnegie Mellon University's Kathryn Roeder.

Separately, teams at Yale, the University of California-San Francisco and the Broad Institute of MIT and Harvard found genetic mutations linked to 21 different autoimmune diseases, which are caused when the body's immune cells mistakenly attack healthy tissue. These diseases include type-1 diabetes, MS and Crohn's diseases. Most of the mutations are not in the genes, but in DNA regions that once were called "junk" DNA but are now known to control genes.

"The genetic changes that cause autoimmune diseases are subtle. They rarely alter protein function and, as such, have been difficult to study," said Bradley Bernstein of the Broad Institute, who led the team. One finding: multiple sclerosis may affect the nervous system but its genetic causes appear to clearly lie in immune dysfunction.

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— Maggie Fox