

# Autism susceptibility genes identified

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Two genes have been associated with autistic spectrum disorders (ASD) in a new study of 661 families. Researchers writing in BioMed Central's journal *Molecular Autism* found that variations in the genes for two brain proteins, LRRN3 and LRRTM3, were significantly associated with susceptibility to ASD.

Anthony Monaco from the Wellcome Trust Centre for [Human Genetics](#), University of Oxford, UK, worked with an international team of researchers to study four candidate genes in families from the UK, the Netherlands, Italy and Germany.

He said, "To our knowledge, this is one of the most comprehensive genetic analyses of association between these important genes in brain connections and ASD risk". The proteins encoded by these two genes have been implicated in [brain development](#), which is often impaired in autistic individuals. In particular, LRRN3 is thought to play a role in the development and maintenance of the nervous system, while LRRTM3 is part of a family of proteins thought to organize synaptic connections.

According to Monaco, "A focused candidate gene study was carried out using association approaches to identify common variants in the UK cohort and in additional European populations. This study covered four brain-enriched leucine-rich repeat candidates and taken together, there is converging evidence that common genetic variants in LRRTM3 and LRRN3 confer susceptibility to ASD. Future studies of these genes and their function will provide valuable insights into their role in ASD [pathogenesis](#)".

**More information:** Polymorphisms in leucine-rich repeat genes are associated with autism spectrum disorder susceptibility in populations of European ancestry, Inês Sousa, Taane G Clark, Richard Holt, Alistair T Pagnamenta, Erik J Mulder, Ruud B Minderaa, Anthony J Bailey, Agatino Battaglia, Sabine M Klauck, Fritz Poustka, Anthony P Monaco and International Molecular Genetic Study of Autism Consortium, *Molecular Autism* 2010, 1:7, [doi:10.1186/2040-2392-1-7](https://doi.org/10.1186/2040-2392-1-7)

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