

Heritability of autism spectrum disorder studied in UK twins

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Quinn, an autistic boy, and the line of toys he made before falling asleep. Repeatedly stacking or lining up objects is a behavior commonly associated with autism. Credit: Wikipedia.

Substantial genetic and moderate environmental influences were associated with risk of autism spectrum disorder (ASD) and broader autism traits in a study of twins in the United Kingdom, according to an article published online by *JAMA Psychiatry*.

Much of the evidence to date highlights the importance of genetic influences on the risk of autism and related traits. But most of these findings are drawn from samples of individuals which may miss people with more subtle manifestations and may not represent the broader population, according to the study background.

Beata Tick, M.Sc., of King's College London, and coauthors examined genetic and environmental factors for risk of ASD and related traits from a population-based sample of all the twin pairs born in England and Wales from 1994 through 1996. The [twins](#) were assessed using several screening instruments: the Childhood Autism Spectrum Test (6,423 pairs), the Development and Well-being Assessment (359 pairs), the Autism Diagnostic Observation Schedule (203 pairs), the Autism Diagnostic Interview-Revised (205 pairs), and a best-estimate diagnosis (207 pairs). The study included twins with high subclinical levels of autism traits and low-risk twins, as well as those diagnosed with ASD.

The authors found that on all ASD measures, associations among monozygotic (identical) twins were higher than those for dizygotic (fraternal) twins, resulting in heritability estimates of 56 percent to 95 percent. The analyses highlight the importance of genetic factors in the cause of ASD along with moderate nonshared (different experiences among children in the same families) [environmental influences](#), according to the study.

"We conclude that liability to ASD and a more broadly defined high-level [autism](#) trait phenotype in U.K. twins 8 years or older derives from substantial genetic and moderate nonshared environmental influences," the study concludes.

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