Original Investigation

Recurrence of Autism Spectrum Disorders in Full- and Half-Siblings and Trends Over Time
A Population-Based Cohort Study

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IMPORTANCE To date, this is the first population-based study to examine the recurrence risk for autism spectrum disorders (ASDs), including time trends, and the first study to consider the ASDs recurrence risk for full- and half-siblings.

OBJECTIVES To estimate the relative recurrence risk for ASDs in a Danish population, including recurrence in full- and half-siblings, and to examine time trends in ASDs relative to the recurrence risk.

DESIGN, SETTING, AND PARTICIPANTS Population-based cohort study in Denmark. All children (about 1.5 million) born in Denmark between January 1, 1980, and December 31, 2004, were identified and followed up to December 31, 2010. We identified a maternal sibling subcohort derived from mothers with at least 2 children and a paternal sibling subcohort derived from fathers with at least 2 children.

EXPOSURES Children having an older sibling with ASDs are compared with children not having an older sibling with ASDs.

MAIN OUTCOMES AND MEASURES The adjusted hazard ratio for ASDs among children having an older sibling with ASDs compared with children not having an older sibling with ASDs.

RESULTS The overall relative recurrence risk for ASDs was 6.9 (95% CI, 6.1-7.8), and it did not change significantly over time; similar risks were observed in maternal and paternal full-siblings. The relative recurrence risks were 2.4 (95% CI, 1.4-4.1) for maternal half-siblings and 1.5 (95% CI, 0.7-3.4) for paternal half-siblings.

CONCLUSIONS AND RELEVANCE Our population-based recurrence risk estimate is lower than the recently reported estimates from clinical samples. Our results demonstrate no time trend in the ASDs recurrence risk as seen in the ASDs prevalence. The difference in the recurrence risk between full- and half-siblings supports the role of genetics in ASDs, while the significant recurrence risk in maternal half-siblings may support the role of factors associated with pregnancy and the maternal intrauterine environment in ASDs.

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