

**NEWS**

# Clinical research: Autism risk abates in later-born children

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Birth order: Risk of childhood autism, a subcategory of the disorder in which symptoms appear before age 3, is highest among second-born children.

The risk of certain autism spectrum disorders is highest in firstborn children and declines in each additional sibling born to the same mother, reports a large Finnish study published 28 January in *Paediatric and Perinatal Epidemiology*<sup>1</sup>.

When the researchers looked at **Asperger syndrome**, pervasive developmental disorder—not otherwise specified (PDD-NOS) and childhood autism, in which symptoms appear before the age of 3, as a group, they found that a diagnosis is most common in firstborns. The latter two conditions are now considered part of the **autism diagnosis**.

When they looked at each diagnosis separately, the researchers found that the firstborn effect holds for Asperger and PDD-NOS, while second-born children are at the highest risk for childhood autism.

The relationship between birth order and autism risk is still unclear, with some studies finding the greatest risk among firstborn children<sup>2, 3</sup>, or in the first- and fourth-born siblings<sup>4</sup>. Some of the studies are small, however, or did not factor in whether the relationship changes with family size.

Parsing the results is important because it might give clues to environmental causes of the disorder. For instance, high blood pressure and steroid hormone levels in the mother can change with each pregnancy.

In the new study, the researchers used the **Finnish Prenatal Study of Autism**, a registry of people born from 1987 to 2005, to identify 4,459 people with autism spectrum disorders and 17,130 controls. They relied on the **Finnish Central Population Register** to find siblings who share a biological mother.

The second-born child has about 50 percent higher odds of having childhood autism than the firstborn, the study found. It's possible that pregnant women who already have one child may catch infections from their firstborns, resulting in inflammation. **Increased inflammation** early in pregnancy is associated with autism risk. However, this theory does not explain why later-born children are not at increased risk of childhood autism.

These results from the new study are similar to those of a 2011 *PLoS One* study, which found that autism risk is greatest for **second-born children** in families that have multiple children with the disorder. Unlike the new research, however, the 2011 study found that autism risk increases for later-born children in families that have only one child with autism.

The new study found that the relationship between autism risk and birth order does not change with family size. It also found that autism risk continues to decrease with each birth regardless of intellectual disability.

## References:

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