

Antiepileptic drug exposure in pregnancy and neurodevelopmental disorder risk

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Children born to mothers who took the antiepileptic drug sodium valproate during pregnancy may have a four to five-fold increased risk of developing neurodevelopmental disorders in early childhood, according to a study in *Scientific Reports*. Fifty of the 991 French children (5%) who were exposed to sodium valproate were diagnosed with neurodevelopmental disorders in their first five years, compared to 15,270 of 1,710,441 children (0.89%) not exposed to any antiepileptic drugs.

Rosemary Dray-Spira and colleagues investigated the incidence of [neurodevelopmental disorders](#) in young [children](#) using anonymized [medical records](#) from 1,721,990 children born in France between January 2011 and December 2014.

11,549 of mothers had been treated with one of several common [antiepileptic drugs](#) during pregnancy and 15,458 (0.9%) children were identified as having neurodevelopmental disorders by the end of 2016. Overall, children exposed to sodium valproate before birth had a higher risk of developing neurodevelopmental disorders in childhood than those not exposed to antiepileptic

drugs, including a 5.1 times higher likelihood of intellectual disability, a 4.7 times higher likelihood of language, learning and motor disorders and a 4.6 times higher risk of autism spectrum disorders. Increased risk was not observed in children exposed to sodium valproate during the first trimester only and the risk was lower among children exposed to lower doses of the drug, than among those exposed to higher doses.

Children born to mothers treated with the antiepileptic drugs lamotrigine, carbamazepine and pregabalin were 1.6 times, 1.9 times and 1.5 times more at risk of developing neurodevelopmental disorders, respectively. No increased risk of neurodevelopmental disorders was observed in children born to mothers treated with the antiepileptic drugs clonazepam, gabapentin, levetiracetam or oxcarbazepine.

The findings indicate that exposure to sodium valproate, especially beyond the first trimester of pregnancy, may be associated with an increased risk of neurodevelopmental disorders in [early childhood](#). The risk of neurodevelopmental disorders associated with exposure to other antiepileptic drugs appears to be much lower, according to the authors.

More information: Risk of early neurodevelopmental disorders associated with in utero exposure to valproate and other antiepileptic drugs: a nationwide cohort study in France , *Scientific Reports* (2020). DOI: [10.1038/s41598-020-74409-x](https://doi.org/10.1038/s41598-020-74409-x) , www.nature.com/articles/s41598-020-74409-x

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