

NEWS

# Prenatal vitamins lower autism risk, Israeli study suggests

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Women who take folic acid or other vitamins before or during pregnancy decrease their chances of having a child with autism, suggests a study published last week<sup>1</sup>. But some experts are skeptical that the vitamins provide this protective effect.

Vitamins — and in particular vitamin B9, or folic acid — are critical for the development of the brain and nervous system, so doctors recommend that pregnant women take them regularly.

The link between **vitamins and autism** risk is less clear. A 2013 study of about 85,000 children in Norway revealed that women who reported taking folic acid before or in early pregnancy **had a decreased risk** of having a child with autism<sup>2</sup>. But in a 2016 study, Danish researchers said they did not find any link between prenatal folic acid or multivitamin supplements and autism risk in about 35,000 children<sup>3</sup>.

The new findings reinforce the idea that prenatal vitamins are associated with a lower risk of autism, says lead investigator **Stephen Levine**, associate professor of community mental health at the University of Haifa in Israel.

However, women who took the supplements one to two years before becoming pregnant also showed this same protective effect.

“This suggests that this is not really a causal association during pregnancy,” says **Brian Lee**, associate professor of epidemiology and biostatistics at Drexel University in Philadelphia, who was not involved in the study. “It kind of leads you to raise an eyebrow about what these associations really mean.”

For instance, he says, women who take vitamin supplements may be health-conscious in other ways that lower their chances of having a child with autism.

Because the study was observational, it cannot be used to draw causal relationships between prenatal vitamins and autism risk. The study, which is based on more than 45,000 children in Israel, was published 3 January in *JAMA Psychiatry*.

## Supplement survey:

Levine and his colleagues surveyed the records of women and children who received medical services from Meuhedet, a large healthcare provider in Israel. (The records indicate which women were prescribed supplements, but do not reveal whether the women actually took the pills.) They focused on 45,300 children born between January 2003 and December 2007; 572 of them, or 1.3 percent, have a diagnosis of autism.

The mothers of 62 children with autism and 11,855 controls took either folic acid alone, a multivitamin supplement or both up to two years before pregnancy. (Most multivitamins in the United States include folic acid, but it's unclear which nutrients these supplements contained.) And the mothers of 108 children with autism and 21,776 controls took the supplements during pregnancy. (There is some overlap between these groups.)

The researchers controlled for differences in the children's sex, birth year and socioeconomic status. They also accounted for the mother's and father's age at childbirth, the number of other children in the family and any history of psychiatric conditions in either parent.

Women who took the supplements at any time before pregnancy had a 61 percent lower chance, and those who took the supplements during pregnancy a 73 percent lower chance, of having a child with autism than women who did not take the vitamins in those time periods.

Women who took the vitamins at least four weeks before conception and up to the eighth week of pregnancy — a key period for the formation of the brain and spinal cord — had a 60 percent lower risk of having a child with autism.

Because Israel does not routinely fortify certain foods with folic acid, the researchers could accurately assess the amount of folic acid the women received.

One strength of the study is its reliance on prescription records rather than asking women to recall vitamin use, as many previous studies have, says **Heather Volk**, assistant professor of mental health at Johns Hopkins University in Baltimore, who was not involved in the study.

However, the researchers could not verify that the women took their supplements as prescribed, and could not rule out whether some women took over-the-counter supplements with unknown ingredients.

#### REFERENCES:

1. Levine S.Z. *et al. JAMA Psychiatry* Epub ahead of print (2018) [PubMed](#)
2. Surén P. *et al. JAMA* **309**, 570-577 (2013) [PubMed](#)
3. Virk J. *et al. Autism* **20**, 710-718 (2016) [PubMed](#)