

Child's elevated mental ill-health risk if mother treated for infection during pregnancy

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Risks for autism and depression are higher if one's mother was in hospital with an infection during pregnancy. This is shown by a major

Swedish observational study of nearly 1.8 million children.

"The results indicate that safeguarding against and preventing infection during [pregnancy](#) as far as possible by, for instance, following flu vaccination recommendations, may be called for," says Verena Sengpiel, Associate Professor of Obstetrics and Gynecology at Sahlgrenska Academy, University of Gothenburg, and last author of the study, published in the journal *JAMA Psychiatry*.

Maternal infection with certain [infectious agents](#), such as cytomegalovirus (CMV) or the [herpes virus](#), are already known to be capable of harming fetal brain development and boosting the risk of certain psychiatric disorders.

The findings of the current study, however, also show that infection in general during pregnancy, too—including when the actual infectious agent does not reach the fetal brain—is related to elevated risk of the child developing [autism](#) or depression later in life.

More autism and depression

The study is based on data on all children, totaling almost 1.8 million, born in Sweden during the years 1973–2014. The particulars from the Swedish Medical Birth Register were linked to the national inpatient register, which records whether the mother was treated in hospital with an infection diagnosis during the pregnancy concerned.

Using the inpatient register, the researchers also monitored these children's mental health until 2014, when the oldest were aged 41.

It was found that if, during pregnancy, a mother with an infection diagnosis received hospital treatment, there was a marked rise in the risk of her child needing hospital care later in life, with a diagnosis of either

autism or depression. The increase in risk was 79 percent for autism and 24 percent for depression.

In contrast, there was no association between the [mothers](#) being in hospital with an infection diagnosis during pregnancy and two other psychiatric diagnoses studied in their children: bipolar disorder and psychosis, including schizophrenia.

Increased risk even after mild infection

The pregnant women in the study may have been hospitalized with diagnoses other than infections, but then had infections diagnosed during their stay as well. The elevated risk of mental ill-health in the child was also evident after infections in the [pregnant women](#) that are usually considered mild, such as a common urinary tract infection.

The study, which was observational, provides no answer on how maternal infection during pregnancy affects fetal brain development. However, other studies have shown that an [infection](#) in the mother leads to an inflammatory reaction, and that some inflammatory proteins can affect gene expression in fetal brain cells.

Other research shows that inflammation in the mother boosts production of the neurotransmitter serotonin in the placenta, which may conceivably affect the unborn child's [brain](#) development.

More information: Benjamin J. S. al-Haddad et al. Long-term Risk of Neuropsychiatric Disease After Exposure to Infection In Utero, *JAMA Psychiatry* (2019). [DOI: 10.1001/jamapsychiatry.2019.0029](https://doi.org/10.1001/jamapsychiatry.2019.0029)

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