

NEWS

Hospitalization during pregnancy boosts risk of difficulties in child

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Children of women who are hospitalized for health problems during pregnancy may develop poor physical, social, cognitive or emotional skills, a large study of children in Australia suggests¹. These traits are common among children with autism.

The results jibe with mounting evidence that prenatal exposure to infections or other health complications increases the risk of autism. Unlike previous work, however, the new study looks at specific behavioral traits rather than overall diagnoses.

The traits studied in the new work are also common among individuals who go on to be diagnosed with schizophrenia or bipolar disorder, for example.

The maternal conditions are likely to be generalized risk factors for many psychiatric problems, says lead investigator **Melissa Green**, associate professor of psychiatry at the University of New South Wales in Sydney. “So at the moment, we’re really thinking that none of this is going to be specific to any particular disorder.”

The women in the study were hospitalized for any of a broad array of health conditions, including infections. It is not clear whether these conditions lead to the child’s developmental difficulties.

“It points to the need for additional studies to understand what can mitigate the risk,” says **Mady Hornig**, director of translational research at Columbia University’s Center for Infection and Immunity, who was not involved in the study.

Trauma tie:

Green and her team analyzed school records of 66,045 children in the New South Wales state of Australia, along with the medical records of their mothers.

They reviewed a child development survey that teachers filled out when the children were about 5 years old. The teachers rated each child’s physical health, social competence, emotional maturity, cognitive abilities and communication skills.

Children who score in the lowest 10 percent of the national population on any domain are classified as developmentally vulnerable for that domain. Between about 3,500 and 5,500 of the children, or 5.3 to 8.3 percent, scored in the vulnerable range on each domain.

The medical records indicate that 1,764 of the women were hospitalized with an infection — and another 9,844 with a noninfectious condition — during pregnancy. The noninfectious conditions include preeclampsia, false labor, abnormal blood sugar levels and bleeding from the genital tract.

The researchers controlled for the children’s sex, socioeconomic status and native language. They also accounted for the mother’s age at the child’s birth, and whether she smoked during pregnancy.

The women who were hospitalized for an infection were 37 to 45 percent more likely than those not hospitalized to have a child who scored in the vulnerable range on physical, social, emotional or

cognitive skills. The children of women who were hospitalized for a noninfectious condition had an 18 to 22 percent increased risk of one of these difficulties.

“It’s not specifically an infection-related immune reaction; any type of trauma during the pregnancy period is having a negative effect,” Green says.

Genetic connection:

The researchers also found that 7,485 of the women had a diagnosis of a psychiatric condition, such as depression, anxiety or bipolar disorder. These women are at an increased risk of having a child with poor skills in any domain, consistent with the idea that the risk of brain and behavioral conditions is heritable.

Still, some experts are not convinced that the study’s results are meaningful.

“It’s well known that health events during pregnancy and early life can have developmental consequences, so the findings are no surprise,” says **Brian Lee**, associate professor of epidemiology and biostatistics at Drexel University in Philadelphia, who was not involved in the study.

“But lumping all maternal mental health, infectious and noninfectious conditions together hampers our ability to extract any meaningful mechanistic insight about how a particular health condition might influence a particular developmental outcome,” Lee says.

The study appeared in December in the *Journal of Child Psychology and Psychiatry*.

Green’s team is continuing to follow the children in the study to find out which ones go on to receive an autism or other diagnosis. They are also looking at whether particular prenatal exposures are linked to autism or other psychiatric conditions.

REFERENCES:

1. Green M.J. *et al. J. Child Psychol. Psychiatry* Epub ahead of print (2017) [PubMed](#)