

Extra choline may help pregnant women decrease negative effects of COVID-19 on their newborns

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Pregnant women who take extra choline supplements may mitigate the negative impact that viral respiratory infections, including COVID-19,

can have on their babies, according to a new study from researchers in the Departments of Psychiatry and Obstetrics and Gynecology at the University of Colorado Anschutz Medical Campus. Choline is a vitamin B nutrient found in various foods and dietary supplements, and is critical to fetal brain development.

"The Centers for Disease Control and Prevention (CDC) predicts that COVID-19 will impact [fetal brain development](#) like other common corona respiratory viruses," said Robert Freedman, MD, professor of psychiatry at the CU Anschutz Medical Campus and lead researcher.

The new study, published in the *Journal of Psychiatric Research*, specifically looked at whether higher prenatal [choline](#) levels can help protect the fetus's developing brain even if the mother contracts a viral respiratory infection in early pregnancy. The results reveal higher prenatal choline levels mitigate the fetal impact of virus infection.

"It's important for the healthcare community, and soon to be mothers, to be aware that a natural nutrient can be taken during pregnancy, just like folic acid and other prenatal vitamins, to protect fetuses and newborns from brain development issues. Later on in life, these development issues can lead to mental illness," Freedman adds.

In the study, researchers analyzed the effects on [infant behavior](#) if the mother had contracted a respiratory virus by measuring the infant's IBQ-R Regulation dimension—which looks at the development of infant attention and other self-regulatory behaviors. Lower IBQ-R Regulation at one year of age is associated with problems in attention and social behavior in later childhood, including decreased reading readiness at age four years and with problems in concentration, and conscientiousness in children through seven years of age.

The results from the study:

- Infants of mothers who had viral infections and higher choline levels had significantly increased 3-month IBQ-R scores on the Regulation dimension and specifically the Attention scale in the Regulation dimension, compared to infants of mothers who had viral infections and had lower choline levels.
- Choline levels sufficient to protect the fetus often require dietary supplements.
- The increased maternal anxiety and depression in the viral-infected mothers were not associated with their infants' IBQ-R Regulation.

The study highlights that in conjunction with the CDC's current advice on COVID-19's effects in pregnancy, phosphatidylcholine or choline supplements along with other prenatal vitamins may help buffer the fetal brain from the possible detrimental impact of the current pandemic and decrease the risk of the children's future [mental illness](#).

"Previous pandemics have resulted in significantly increased levels of mental illnesses including schizophrenia, [autism spectrum disorder](#) and attention deficit disorder in the offspring," said Camille Hoffman, MD, associate professor of obstetrics and gynecology and a maternal-fetal medicine specialist at the CU Anschutz Medical Campus. "However, since data from COVID-19 itself will not be available for years, we're hoping our study findings will provide valuable information for soon to be mothers on the importance of taking choline supplements daily during pregnancy."

More information: Robert Freedman et al, Maternal choline and respiratory coronavirus effects on fetal brain development, *Journal of Psychiatric Research* (2020). [DOI: 10.1016/j.jpsychires.2020.05.019](https://doi.org/10.1016/j.jpsychires.2020.05.019)

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