

# Coronavirus may double severe complications in pregnancy

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A Kaiser Permanente analysis of pregnant patients who tested positive for the coronavirus found more than double the risk of poor outcomes including preterm birth, venous thromboembolism (blood clot), and severe maternal morbidity, which includes conditions such as acute respiratory distress syndrome and sepsis.

The study was published in *JAMA Internal Medicine* on March 21. An analysis of records for 43,886 pregnant individuals during the first year of the COVID-19 pandemic found that the 1,332 who had a [coronavirus infection](#) during pregnancy had more than double the risk of negative outcomes compared with individuals without the virus.

"These findings add to the growing evidence that having COVID-19 during pregnancy raises risks of serious complications," explained lead author Assiamira Ferrara, MD, Ph.D., a senior research scientist and associate director of the women's and children health section in the Kaiser Permanente Division of Research.

"Coupled with the evidence that the COVID-19 vaccines are safe during pregnancy, these findings should aid patients in understanding the risks of perinatal complications and the need for vaccination," said Dr. Ferrara. "This study supports the recommendation for vaccination of pregnant individuals and those planning conception."

She said a strength of the study was that it followed a large group of diverse patients from preconception through their pregnancies to assess possible associations between perinatal complications and infection with the COVID-19 virus, as identified through a PCR test.

Researchers studied pregnant patients of Kaiser Permanente in Northern California who delivered between March 2020 and March 2021. The patient population was racially and ethnically diverse, with 33.8% white, 28.4% Hispanic or Latino, 25.9% Asian or Pacific Islander, 6.5% Black, 0.3% American Indian or Alaska Native, and 5% multiracial or unknown race and ethnicity.

Individuals who tested positive for coronavirus infection were more likely to be younger, Hispanic, have had multiple babies, had obesity, or lived in a neighborhood with high economic deprivation.

The study found twice the risk for preterm birth for those testing positive for coronavirus. These patients were more likely to have a medically indicated preterm birth than a spontaneous one; risk was elevated for both types of [preterm birth](#) and during early, middle, and late terms of the pregnancy. Birth may be induced early when the mother has a condition such as preeclampsia.

Those with coronavirus infection were 3 times more likely to have thromboembolism, or blood clot, and 2.5 times more likely to have a severe maternal morbidity.

"Our study was large, diverse, and supports the need for vaccination by pregnant individuals and those who plan to get pregnant," said co-author Mara Greenberg, MD, a maternal-fetal medicine specialist with The Permanente Medical Group. "The most important thing people can do to protect themselves and their baby is to get vaccinated."

## **Pregnancy and COVID-19 research continues**

The analysis found that 5.7% of patients with a coronavirus infection during pregnancy had a hospitalization related to the [infection](#). That was most likely for Black or Asian/Pacific Islander patients and patients with pregestational diabetes.

The researchers compared patients who gave birth before and after December 2020, when universal COVID-19 testing of pregnant patients began, finding a positive test rate of 1.3% before December 1, 2020, and 7.8% after. The same health risks applied to both groups.

The study team continues to research COVID-19 and pregnancy, focusing on telemedicine and health care delivery during the pandemic. "We are also planning to follow both mothers and children to study possible short- and long-term health effects of coronavirus infections

during [pregnancy](#)," said Monique Hedderson, Ph.D., a study co-author and research scientist with the Division of Research.

**More information:** Perinatal complications in individuals with or without SARS-CoV-2 infection during pregnancy: a population-based cohort study, *JAMA Internal Medicine* (2022).

Provided by Kaiser Permanente

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