

Immune system, not COVID virus, may pose greatest risk to pregnant women

April 22 2021



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For reasons not yet clear, pregnant women infected with the virus that causes COVID-19 are more likely to experience preterm births, pre-eclampsia, and other neonatal problems than non-infected women.

A team of Yale scientists decided to investigate whether the virus could be affecting placental tissue of infected [expectant mothers](#). Their analysis found that while evidence of the virus in the placenta is rare, the placenta in infected mothers tended to exhibit a much higher level of immune system activity than those of non-infected [pregnant women](#), they report April 22 in the journal *Med*.

"The good news is the placenta is mounting a robust defense against an infection that is far distant, in lungs or nasal tissue," said Shelli Farhadian, assistant professor of internal medicine ([infectious diseases](#)) and neurology at Yale and co-corresponding author. "On the other hand, the high level of immune system activity might be leading to other deleterious effects on the pregnancy."

The team headed by Farhadian and Akiko Iwasaki, the Waldemar Von Zedtwitz Professor of Immunobiology at Yale, analyzed blood and placental tissue in 39 infected as well as COVID-free expectant mothers at different stages of pregnancy. While they found evidence of the virus in only two samples of placental tissue, they did find ACE2 receptors—which the SARS-CoV-2 [virus](#) uses to enter cells—in the placentas of most women during the first trimester of pregnancy. Those receptors had largely disappeared in healthy women at later stages of pregnancy.

"It is very important to closely monitor expectant mothers who become infected early in pregnancy," Farhadian said.

Immune system activity in the placenta during infections like COVID-19 has not been extensively studied and it is not known whether other types of infections would behave similarly to SARS-CoV-2, she said.

More information: *Med*, [DOI: 10.1016/j.medj.2021.04.016](https://doi.org/10.1016/j.medj.2021.04.016) , [www.cell.com/med/fulltext/S2666-6340\(21\)00165-3](https://www.cell.com/med/fulltext/S2666-6340(21)00165-3)

Provided by Yale University

Citation: Immune system, not COVID virus, may pose greatest risk to pregnant women (2021, April 22) retrieved 23 April 2024 from <https://medicalxpress.com/news/2021-04-immune-covid-virus-pose-greatest.html>

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