

National study confirms that mRNA vaccines protect against serious COVID-19 during pregnancy

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The first large, real-world study of the effectiveness of mRNA COVID-19 vaccines during pregnancy found these vaccines, especially

two initial doses followed by a booster, are effective in protecting against serious disease in expectant mothers whether the shots are administered before or during pregnancy.

Pregnant women were excluded from COVID-19 mRNA vaccine clinical trials, so this new study fills a significant knowledge gap, providing strong evidence that vaccinating women who are or might become pregnant protects against hospitalization for the disease during [pregnancy](#).

"That two doses plus a booster are known to be safe and demonstrate protection against [severe disease](#) in pregnant women is reassuring, given growing evidence of increased risk of poor maternal outcomes associated with COVID-19 infection during pregnancy," said study co-author Brian Dixon, Ph.D., MPA, director of public health informatics for Regenstrief Institute and Indiana University Richard M. Fairbanks School of Public Health.

"This strongly suggests that, along with other [preventive measures](#) that [expectant mothers](#) or women who are considering getting pregnant can take to promote a healthy pregnancy, getting vaccinated and boosted against COVID should be high on the list." Dr. Dixon is also the interim director of the Regenstrief Center for Biomedical Informatics.

The researchers found that mRNA COVID-19 vaccination protects pregnant women against [emergency department](#) (E.D.) or urgent care center visits and protects even more strongly against hospitalizations for COVID-19, three venues for receipt of medical attention for the disease. As with other evaluations of mRNA COVID-19 vaccines in adults, a lower effectiveness in protecting against E.D. and urgent care visits than for hospitalizations was seen in pregnant women, most significantly in the Omicron period among those receiving only two vaccine doses.

Also, similar to findings among non-pregnant adults, two-dose protection waned over time (after four months) and vaccine effectiveness was highest among pregnant women with three doses (initial two vaccinations plus a booster shot).

Data on a total of 3,445 E.D. or urgent care visits and 781 hospitalizations among pregnant women with COVID-19 confirmed by molecular testing was extracted from [electronic medical records](#) from 306 hospitals and 164 E.D. and urgent care facilities in eight health systems across 10 U.S. states.

"This study indicates that pregnancy doesn't diminish mRNA vaccine performance in protecting against severe COVID-19 despite immune differences between pregnant and non-pregnant women," said study co-author Shaun Grannis, M.D., M.S., vice president for data and analytics at Regenstrief Institute, Regenstrief Professor of Medical Informatics and professor of family medicine at Indiana University School of Medicine.

"Vaccine utilization among expectant mothers remains low compared to similarly aged non-pregnant individuals for both the first two vaccines and a booster dose. Hopefully this study will provide pregnant women with the evidence they need to get vaccinated and boosted."

Current guidance from the Centers for Disease Control and Prevention and the American College of Obstetricians and Gynecologists recommends that all [pregnant women](#) receive two [vaccine](#) doses and a booster dose, with a preference for mRNA vaccines.

"Estimation of COVID-19 mRNA Vaccine Effectiveness Against Medically Attended COVID-19 in Pregnancy During Periods of Delta and Omicron Variant Predominance in the United States" is published in *JAMA Network Open*.

More information: Stephanie J. Schrag et al, Estimation of COVID-19 mRNA Vaccine Effectiveness Against Medically Attended COVID-19 in Pregnancy During Periods of Delta and Omicron Variant Predominance in the United States, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.33273](https://doi.org/10.1001/jamanetworkopen.2022.33273)

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