For breastfeeding moms, COVID-19 vaccinations may also protect babies

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Nursing mothers who receive a COVID-19 vaccine may pass protective antibodies to their babies through breast milk for at least 80 days following vaccination, suggests new research from Washington University School of Medicine in St. Louis.

"Our study showed a huge boost in antibodies against the COVID-19 virus in breast milk starting two weeks after the first shot, and this response was sustained for the course of our study, which was almost three months long," said first author Jeannie Kelly, MD, assistant professor of obstetrics and gynecology. "The antibodies levels were still high at the end of our study, so the protection likely extends even longer."

Based on the small study, involving five mothers who provided frozen breast milk samples after receiving the two-dose Pfizer-BioNTech coronavirus vaccine, the research provides some of the first peer-reviewed evidence that breastfeeding confers a long-lasting immune response in the nursing infants and toddlers of vaccinated mothers.

"There is so much vaccine misinformation out there right now—really scary, misleading posts on social media that are designed to scare moms—so we felt like we needed to look at the science," Kelly said. "We know that these types of antibodies coat babies mouths and throats and protect against disease when a baby is drinking breast milk. So, getting vaccinated while breastfeeding not only protects mom, but also could protect the baby, too, and for months."

Published March 30 in the *American Journal of Obstetrics and Gynecology*, the study tracked levels of COVID-19 antibodies in breast milk from a baseline before the mothers' first vaccinations and on a weekly basis for 80 days after those initial vaccinations.

While other recent research has shown that COVID-19 vaccines generate antibodies that are passed to nursing infants through breast milk, this is thought to be the first study to track specific levels of these antibodies in breast milk over an extended time period.

The babies of women included in the study ranged in age from one

month to 24 months old. To gauge immune response in the breast milk, researchers monitored levels of the immunoglobulins IgA and IgG, which are antibodies deployed by the immune system to fight infections in babies.

Findings confirm that breast milk contains elevated levels of the IgA and IgG antibodies immediately following the first dose of vaccination, with both antibodies reaching immune-significant levels within 14 to 20 days of first vaccination in all participants.

"Our study is limited by a small number of participants, but the findings provide encouraging news about the potential immune benefit to breast-feeding infants after vaccination," said study senior author Misty Good, MD, an assistant professor of pediatrics, also at Washington University. "Our paper is the first that has shown COVID-19 antibodies persist in breast milk for months following the mother's vaccination."

The Washington University findings are similar to prior studies on maternal vaccination, which have shown high levels of antibodies in breast milk for up to six months following vaccination for influenza and whooping cough.

While further studies of maternal COVID-19 vaccination are needed to characterize the length of antibody production in breast milk and the effect on infant infection rates, recent research continues to confirm that the COVID-19 vaccine offers real benefits for protecting both mother and child.

"We do know that COVID-19 infection is more severe during pregnancy and the main benefit of vaccination is to provide protection for moms before they become really sick, which can also be dangerous to their fetus," Kelly said. "There have now been almost 70,000 pregnant people vaccinated against COVID 19 with no evidence of harm."

"We're now seeing a cascade of new data that indicate maternal vaccines are also going to help protect babies—both through transfer of antibodies through the placenta during pregnancy and through the breast milk during lactation," Kelly said. "This is information we didn't have a few months ago and it's really helping us better counsel our patients who are considering getting the vaccine. I'm telling my pregnant and breastfeeding moms that I strongly recommend that they get vaccinated as soon as possible."

More information: Jeannie C. KELLY et al, Anti-SARS-CoV-2 antibodies induced in breast milk after Pfizer-BioNTech/BNT162b2 vaccination, *American Journal of Obstetrics and Gynecology* (2021). DOI: 10.1016/j.ajog.2021.03.031

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