Breastfeeding after COVID-19 booster can give babies antibodies, research finds

March 4 2024, by Meredith Bauer

Credit: Pixabay/CC0 Public Domain

Lactating mothers who get the COVID-19 booster pass along the antibodies to their children via their breast milk—and potentially protect babies too young to receive the vaccine, a study from the University of

Florida Institute of Food and Agricultural Sciences (UF/IFAS) and the UF College of Medicine has found.

The study is the third in a series that looks at antibody protection being transferred via breast milk from mothers who received their first two COVID-19 vaccinations, and now the booster shot. The second publication reported the same antibody transfer via breast milk.

"We think that breast milk may play an important role in protecting the infants during the first six months of life from COVID," said Dr. Vivian Valcarce, a former UF College of Medicine researcher who worked on this study. She now is an assistant professor at the University of Alabama at Birmingham. "We continue to see babies being hospitalized from COVID-19 infections."

The study is published in *Frontiers in Nutrition*.

The study looked at how breast milk antibody protection changed when a mother received their first COVID-19 booster shot, said Joseph Larkin, UF/IFAS associate professor of microbiology and cell science and part of UF's Emerging Pathogens Institute. Researchers looked at the antibody response and antibody functionality in breast milk and tested to see if antibodies were present after the babies drank breast milk with COVID-19 antibodies.

Larkin said this study suggests that breastfeeding can provide COVID-19 antibodies for infants too young to receive a vaccination—and that the antibodies wane in people's bodies over time, so getting a booster can provide prolonged protection to babies that drink breast milk.

"When babies are born, they have an immature immune system, so they rely heavily on mom's immune system," he said. "Breastfeeding can serve as a gap in between while babies are building their own immune

system."

Larkin said some antibodies are transferred to fetuses through the placenta, as well, but that initial protection also lessens over time.

In this study, 14 lactating mothers and their babies were followed from before they received their COVID-19 booster until after they received their booster shots, Larkin said. Researchers tested the mothers' blood to confirm their bodies made COVID-19 antibodies after a booster shot, tested breast milk to confirm the milk had antibodies in it and tested babies' stools to confirm antibodies were present in the babies' bodies.

To see if the breast milk's antibodies worked against COVID-19, breast milk was placed in a 96-well plate with a lab-safe COVID virus strain, and researchers found these antibodies from the mother disable the virus, said Lauren Stafford, a UF/IFAS graduate research assistant and Ph.D. candidate in microbiology and cell science.

The study was a collaboration between UF/IFAS and the UF College of Medicine and included Dr. Josef Neu, professor of pediatrics within the division of neonatology at the UF College of Medicine.

"This shows how important breast milk and breastfeeding is for infant health during a pandemic," Valcarce said.

More information: Vivian Valcarce et al, COVID-19 booster enhances IgG mediated viral neutralization by human milk in vitro, *Frontiers in Nutrition* (2024). DOI: 10.3389/fnut.2024.1289413

Provided by University of Florida