

# Breastfeeding mothers produce COVID-19 antibodies capable of neutralizing virus

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Breastfeeding women with COVID-19 do not pass along the SARS-CoV-2 virus in their milk but do transfer milk-borne antibodies that are able to neutralize the virus, a multi-institutional team of researchers led by the University of Idaho reported.

The team analyzed 37 [milk](#) samples submitted by 18 women diagnosed with COVID-19. None of the milk samples were found to contain the [virus](#), but nearly two-thirds of the samples did contain two antibodies specific to the virus.

"Taken together, our data do not support maternal-to-infant transmission of SARS-CoV-2 via milk," the researchers reported Tuesday in the journal *mBio* published by the American Society for Microbiology. "These results support recommendations to continue breastfeeding during mild-to-moderate maternal COVID-19 illness."

U of I researchers Michelle "Shelley" McGuire and Mark A. McGuire led the work funded by the Bill and Melinda Gates Foundation. Shelley is a nutrition researcher focused on human milk and directs U of I's Margaret Ritchie School of Family

and Consumer Sciences. Mark is a lactation physiologist and directs the Idaho Agricultural Experiment Station. Both are on the faculty of the College of Agricultural and Life Sciences. Their research is featured on the CALS website, The Vandal Theory podcast and in U of I presentations.

The research team also includes scientists from the University of Rochester School of Medicine and Dentistry; Brigham and Women's Hospital and Harvard Medical School; University of Rochester Medical Center; and Washington State University. The team now has enrolled nearly 50 women who were diagnosed with COVID-19 and has followed their progress with the disease for as long as two months.

The initial study published in *mBio* reported on the first group of 18 women who submitted milk samples. Results from the larger study funded by both the Gates Foundation and the National Science Foundation are forthcoming, but the researchers are confident that they will support, expand and confirm the initial findings, Shelley said.

Earlier, the McGuires and their colleagues published a related review of scientific studies focused on coronaviruses in human milk and found that scant evidence exists about their presence or absence.

That work, published in *Maternal & Child Nutrition* in May, found only one study that tested human milk for the SARS [coronavirus](#) after that virus was detected in 2003. The review found no efforts to detect the subsequent and deadlier MERS (Middle East Respiratory Syndrome) coronavirus in human milk.

The dearth of knowledge spurred this multi-university effort, which is informing national and global guidance related to COVID-19 and breastfeeding, Shelley said.

**More information:** Ryan M. Pace et al.  
Characterization of SARS-CoV-2 RNA, Antibodies,  
and Neutralizing Capacity in Milk Produced by  
Women with COVID-19, *mBio* (2021). DOI:  
[10.1128/mBio.03192-20](https://doi.org/10.1128/mBio.03192-20)

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milk: What is the evidence?, *Maternal & Child  
Nutrition* (2020). DOI: [10.1111/mcn.13032](https://doi.org/10.1111/mcn.13032)

Provided by University of Idaho

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