

# Young infants produce strong immune response to SARS-CoV-2, study finds

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Young infants show strong immune responses to SARS-CoV-2, new research has found. In particular, compared with adults, young infants produce relatively high levels of antibodies and immune cells that can

specifically protect against COVID-19.

The study led by academics and pediatricians at the University of Bristol and Bristol Royal Hospital for Children is published in *Cell Reports Medicine*.

During the pandemic, children have been much less likely to become seriously ill with COVID-19, which is unexpected, especially in young [infants](#) who are known to be vulnerable to severe disease from other respiratory viruses, such as RSV (respiratory syncytial virus) and flu.

Early in the pandemic, it became evident young infants with COVID-19 who were being cared for by pediatricians at the Bristol Royal Hospital for Children were only mildly affected by the disease.

With very little data published on the immune response to SARS-CoV-2 in young babies, the research team set out to examine antibody and cellular immune responses to SARS-CoV-2 in young infants compared with adults.

The research team evaluated convalescent immune responses in four infants under three months old with confirmed COVID-19 who presented in March 2020 with mild febrile illness, alongside their parents, and adult controls who had recovered from confirmed COVID-19.

The researchers found young infants produce relatively high levels of [antibodies](#) and [immune cells](#) that can specifically protect against COVID-19, compared with adults.

The findings could help explain why young infants appear protected from severe COVID-19, at a period of their life when they could be more vulnerable.

Dr. Anu Goenka, Clinical Lecturer in Pediatric Infectious Diseases and Immunology at the University of Bristol and Bristol Royal Hospital for Children, said: "By conducting a detailed study on young infants who are relatively protected from severe COVID-19, we have shown what protective immunity looks like, in terms of the make-up of specific antibodies and immune [cells](#) directed against SARS-CoV-2.

"This is very useful information for the design of future COVID-19 vaccines that could seek to induce and mimic the signature of this protective immunity."

The research team would like to confirm their findings in a larger cohort of infants, as well as compare infant vs adult [immune response](#) during COVID-19 during and at several timepoints after their infection.

**More information:** Anu Goenka et al, Young infants exhibit robust functional antibody responses and restrained IFN- $\gamma$  production to SARS-CoV-2, *Cell Reports Medicine* (2021). [DOI: 10.1016/j.xcrm.2021.100327](https://doi.org/10.1016/j.xcrm.2021.100327)

Provided by University of Bristol

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