



## NIH-funded studies focusing on detecting severity, long-term effects of COVID in children

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**Editor's note:** For the latest news on COVID-19, visit <http://bit.ly/AAPNewsCOVID19>.

The National Institute of Child Health and Human Development (NICHD) has [reported initial results](#) of several studies focused on the impacts of COVID-19 in children, results which may help pediatricians predict the long-term effects of the virus and its severity in young patients.

One of the studies looked at the relationship between cytokines in saliva and COVID-19 infection to help predict the severity of infection. A preliminary analysis of saliva samples from 150 children found that levels of two cytokines were higher in those with severe COVID-19 compared to those without severe infection, according to researchers.

“Using saliva to predict severity of the infection is non-invasive and painless,” Usha Sethuraman, M.D., FAAP, of Central Michigan University and DMC Children’s Hospital of Michigan said in a [news release](#). “If proven to be effective, saliva may be a game changer in children in whom obtaining blood is both difficult and distressing. Additionally, early recognition of the severity of COVID-19 can help clinicians institute timely and appropriate treatment, which may help improve outcomes.”

Results of the study were initially presented at the AAP National Conference in October.

The majority of children with COVID-19 infection have had mild illness, however, some children have developed severe complications such as respiratory failure or inflammation of the heart,

the study reported.

The same study identified several microRNAs, also from saliva samples, that correlate with severe infection in children. Further testing and validation of such biomarkers can help predict a child's risk for complications and enable early monitoring and preventive treatment.

Last year, the National Institutes of Health [announced](#) research funding to help identify children at risk for developing Multisystem Inflammatory Syndrome in Children, or MIS-C. Most children who develop MIS-C have unnoticeable or mild symptoms after a SARS-CoV-2 infection or exposure. MIS-C is a severe, sometimes fatal, condition marked by inflammation of two or more organ systems. Researchers now know the effects of MIS-C can linger for months, adding to the list of "long COVID" outcomes. Identifying who is at risk and developing ways to treat the condition are essential as the pandemic continues, NICHD Director Diana W. Bianchi, M.D., [said in an online post](#).

A group led by Jane C. Burns, M.D., and Ben A Croker, Ph.D., of the University of California San Diego School of Medicine, offered key information about a common MIS-C treatment called intravenous immune globulin (IVIG). The team found IVIG [likely works by depleting immune cells](#) called neutrophils. This research promises to aid health care providers as they continue to identify and improve treatments for MIS-C, the NICHD report said.

NICHD also supports the Researching COVID to Enhance Recovery ([RECOVER](#)) Initiative, which launched in September to study the long-term effects of COVID-19 by following participants across the country. The diverse group of participants includes some of NICHD's populations of interest, including pregnant people and children.

As part of RECOVER, the studies are evaluating the long-term effects of COVID-19 in pregnancy by following people who had SARS-CoV-2 infection (asymptomatic and symptomatic) during their pregnancies. Researchers will also evaluate the infants who were exposed to SARS-CoV-2 in utero during the infection for neurologic symptoms and cardiovascular conditions as they grow older.

RECOVER also includes a Collaborative Long-term study of Outcomes of COVID-19 in Kids ([CLOCK](#)) consortium. The \$30 million endeavor will study the long-term and delayed impacts of COVID-19 on children across the United States. The researchers seek to better understand long COVID, identify risk factors, develop treatments, and ultimately prevent the development of this serious condition.

Researchers continue to stress the importance of vaccination as the best prevention. Pregnant women who are vaccinated pass protective antibodies to the developing fetus and nursing mothers who are vaccinated also pass protective antibodies to their infants. Children ages 5 years and older are [now eligible](#) for vaccination.

To find a vaccine location near you, visit [www.vaccines.gov](http://www.vaccines.gov).

## Resources

- AAP Interim guidance, "[Post-COVID-19 Conditions in Children and Adolescents](#)"
- AAP News article, "[Town hall experts describe research, share tips on recognizing long COVID in children](#)"

- *AAP News* article, "[COVID during pregnancy: Studies underscore urgency of prevention strategies](#)"

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