

Evidence grows that children may play a larger role in transmission than previously believed

Latest study is small but shows that kids' rates of infection and viral loads may make them silent spreaders.

By **Ariana Eunjung Cha**

August 20, 2020 at 5:08 a.m. AKDT

PLEASE NOTE

The Washington Post is providing this important information about the coronavirus for free. For more, [sign up for our daily Coronavirus Updates newsletter](#) where all stories are free to read. To support this work, please [subscribe to the Post](#).

As schools reopen in parts of the United States, a study published Thursday found that some children have high levels of virus in their airways during the first three days of infection despite having mild symptoms or none at all — suggesting their role in community spread may be larger than previously believed.

One of the study's authors, Alessio Fasano, a physician at MassGeneral Hospital for Children, said that because children tend to exhibit few if any symptoms, they were largely ignored in the early part of the outbreak and not tested. But they may have been acting as silent spreaders all along.

"Some people thought that children might be protected," Fasano said. "This is incorrect. They may be as susceptible as adults — but just not visible."

The study in [the Journal of Pediatrics](#) comes on the heels of two others that offer insights about children and coronavirus transmission. On July 30, researchers reported in [JAMA Pediatrics](#) that children younger than 5 with mild or moderate illness have much higher levels of virus in the nose, compared with older children and adults. Shortly before that, investigators in [South Korea](#) published a household study that some believed implied older children could spread the virus as readily as adults, while younger children less so. But researchers later clarified that it was unclear whether the transmission came from the older children or from contacts that they shared with other family members.

All three studies were small and contradicted one another in some details, so researchers said they could not draw any definitive conclusions based on any one of them alone. But taken together, they paint a worrisome new picture of children's role in the pandemic.

The newest study reported that the viral loads of the children were significantly higher than those of severely ill adults in the hospital. However, the children and adults were not in the same stage of illness — the children's levels were

Read The Post's coronavirus coverage for free as vaccines begin to roll out

Sign Up



side analysis is needed to compare viral loads over time in adults versus kids.

“But the point is, when you consider the ICU ... there are many many precautions in place to protect health care workers from contracting the virus,” Yonker said. “Kids, mildly symptomatic and early in the infection, are walking around in the community, and we need to minimize the potential of these children to spread virus.”

Since the virus first appeared on Dec. 31, its impact on children has been among the most baffling. Time has confirmed that most children appear to have mild disease or no symptoms, but why that is remains a mystery.

The new study provides one of the most detailed looks at the immune reaction in children exposed to the coronavirus. Of the 192 pediatric patients seen at Boston’s Massachusetts General Hospital and Mass General Hospital for Children, 49 were diagnosed with acute infection and an additional 18 with MIS-C, the multi-inflammatory syndrome linked to the virus. The mean age of the children in the study was 10 years. The percentage of children who tested positive for the virus was about 25 percent, Fasano said, as compared with about 20 percent for adults.

Among the other preliminary findings: Age did not affect viral load (or amount of virus present); and that viral load appeared especially high about two days into the infection.

Another eye-opening finding involves immune receptors known as ACE2 that the virus uses to invade the body. Scientists had hypothesized that because children may have lower numbers of the receptors, they may be less likely to be infected or to transmit the virus. The data confirmed that younger children do have lower numbers of receptors than older children and adults — but that this did not seem to be related to viral load.

A separate study out this month from Children’s National Hospital in Washington, D.C., of 177 children and young adults with SARS-CoV-2 infections between March 15 and April 30 found that the youngest and oldest children were more likely to be hospitalized and the oldest were most likely to require critical care.

Roberta DeBiasi, an infectious-disease expert, and her co-authors noted that asthma was the most common underlying diagnosis in the children infected — but that they were not overrepresented in those who were hospitalized or critically ill.

“This suggests that although children and young adults with asthma may commonly experience exacerbation in response to SARS-CoV-2 infection, asthma exacerbation is not the primary determinant of more severe disease requiring hospitalization,” they wrote.

Bill Kapogiannis, a National Institutes of Health researcher in pediatric infectious diseases who was not involved in Fasano’s study, called those findings “potentially concerning” but said further investigation is needed to understand some of the signals.

“It’s interesting, but we need a bigger cohort to make strong conclusions,” he said.

Several such efforts are in the works. NIH has pledged as much as \$20 million over four years to study biomarkers and other indicators that will characterize how the disease progresses in children and be able to predict severe illness in children.

“The central question is: Why is it that so many more children have milder illness, compared to adults?” Kapogiannis said. “There is valuable information that we could learn and harness that could be used to treat this in all of us.”

Read The Post’s coronavirus coverage for free as vaccines begin to roll out

Sign Up



samples from children. They are looking at numerous aspects of serious illness, such as the mix of antibodies present and how they change over time, and genetic sequencing of different types of patients.

Most important, Randolph said, “these teams are taking a deeper dive into trying to understand therapies and overcoming covid.”

So far most of the treatment regimens have been formulated on the fly through experimentation and word-of-mouth. But it is hoped that this work will be able to quantify the treatments and outcomes.

The most important lesson she said pediatric specialists have learned over the past eight months is that “this disease never stops surprising us.”

“I think we shouldn’t make any assumptions that minimize the virus,” Randolph said.

This story has been updated.

Read more:

[Teens and the virus: Evidence is emerging that young children and teens do not seem to react to covid-19 in the same way](#)

[Forty percent of people with coronavirus infections have no symptoms. Might they be the key to ending the pandemic?](#)

[‘Superspreading’ events, triggered by people who may not even know they are infected, propel coronavirus pandemic](#)

Updated February 24, 2021

Coronavirus: What you need to read

The Washington Post is providing some coronavirus coverage free, including:

Coronavirus maps: Cases and deaths in the U.S. | Cases and deaths worldwide

Coronavirus variants: What you need to know

Vaccine tracker: See how many people have received one or both doses in your state

What you need to know: Vaccines FAQ | Covid-19 symptoms guide | Masks FAQ | Your life at home | Personal finance guide | Follow all of our coverage and sign up for our free newsletter

Got a pandemic question? We answer one every day in our coronavirus newsletter

How to help: Your community | Seniors | Restaurants | Keep at-risk people in mind

Read The Post’s coronavirus coverage for free as vaccines begin to roll out

[Sign Up](#)

