

The Science of Masking Kids at School Remains Uncertain

[David Zweig](#) - Aug. 20, 2021

My Week In New York

A week-in-review newsletter from the people who make New York Magazine.

At the end of May, the Centers for Disease Control and Prevention published a notable, yet mostly ignored, [large-scale study of COVID transmission](#) in American schools. A few major news outlets covered its release by briefly reiterating the study's summary: that masking then-unvaccinated teachers and improving ventilation with more fresh air were associated with a lower incidence of the virus in schools. Those are common-sense measures, and the fact that they seem to work is reassuring but not surprising. Other findings of equal importance in the study, however, were absent from the summary and not widely reported. These findings cast doubt on the impact of many of the most common mitigation measures in American schools. Distancing, hybrid models, classroom [barriers](#), HEPA filters, and, most notably, requiring student masking were each found to not have a statistically significant benefit. In other words, these measures could not be said to be effective.

In the realm of science and public-health policy outside the U.S., the implications of these particular findings are not exactly controversial. Many of America's peer nations around the world — including the U.K., Ireland, all of Scandinavia, France, the Netherlands, Switzerland, and Italy — have exempted kids, with varying age cutoffs, from wearing masks in classrooms. Conspicuously, there's no evidence of more outbreaks in schools in those countries relative to schools in the U.S., where the solid majority of kids wore masks for an entire academic year and will continue to do so for the foreseeable future. These countries, along with the World Health Organization, whose child-masking guidance differs substantially from the CDC's recommendations, have explicitly recognized that the decision to mask students carries with it potential academic and social harms for children and may lack a clear benefit. To date, the highly transmissible [Delta variant](#) has not led them to change this calculus. (Many experts I spoke with told me that while the Delta variant represents a major and concerning new development in the Covid pandemic, it probably shouldn't change our thinking on a mask requirement for schools.)

Here in the United States, the message looks different. On July 9, a little more than a month after the study was published, the CDC released updated [guidance](#) for schools, including the recommendation that masks should be worn indoors by all individuals (age 2 and older) who are not fully vaccinated. Ten days later, the American Academy of Pediatrics took the guidance a step further and [said](#) that everyone in school over age 2 should wear masks, regardless of vaccination status. (The CDC later matched the AAP's guidance.)

The extreme political heat around the issue of masks in schools is making it hard to have a coherent conversation about the science. At the risk of generalizing, much of blue-state America is strongly in favor of masks in schools, while much of red-state America is opposed. In [Florida](#), Tennessee, and elsewhere, local school-board meetings are verging on violence as parents and officials fight over the question. But with tens of millions of American kids headed back to school in the fall, their parents and political leaders owe it to them to have a clear-sighted, scientifically rigorous discussion about which anti-COVID measures actually work and which might put an extra burden on vulnerable young people without meaningfully or demonstrably slowing the spread of the virus. In that context, the best practices for mask use in schools — elementary schools in particular — are much less obvious than CDC guidance and news headlines about keeping schools safe might have you believe.

The [study](#) published by the CDC was both ambitious and groundbreaking. It covered more than 90,000 elementary-school students in 169 Georgia schools from November 16 to December 11 and was, according to the CDC, the first of its kind to compare COVID-19 incidence in schools with certain mitigation measures in place to other schools without those measures. Scientists I spoke with believe that the decision not to include the null effects of a student masking requirement (and distancing, hybrid models, etc.) in the summary amounted to “file drawer” these findings, a term researchers use for the practice of burying studies that don't produce statistically significant results. “That a masking requirement of students failed to show independent benefit is a finding of consequence and great interest,” says Vinay Prasad, an associate professor in University

of California, San Francisco's Department of Epidemiology and Biostatistics. "It should have been included in the summary." "The summary gives the impression that only masking of staff was studied," says Tracy Hoeg, an epidemiologist and the senior author of a separate CDC study on COVID-19 transmission in schools, "when in reality there was this additional important detection about a student-masking requirement not having a statistical impact."

After the CDC and the American Academy of Pediatrics issued their student-mask guidance last month, I contacted both organizations asking for the evidence or underlying data upon which they had based their recommendations. The AAP did not respond to multiple requests. The CDC press office replied that since children under 12 cannot be vaccinated, the agency "recommends schools do universal masking" and included links to unrelated materials on vaccines and a recent outbreak among adults. Over the course of several weeks, I also corresponded with many experts — epidemiologists, infectious-disease specialists, an immunologist, pediatricians, and a physician publicly active in matters relating to COVID — asking for the best evidence they were aware of that mask requirements on students were effective. Nobody was able to find a data set as robust as the Georgia results — that is, a large cohort study directly looking at the effects of a mask requirement. (The closest is a [study](#) published in *Science*, based on a Facebook survey, that was suggestive but [not conclusive](#) of a marginal benefit of student masking.)

"A year ago, I said, 'Masks are not the end of the world; why not just wear a mask?'" Elissa Schechter-Perkins, the director of Emergency Medicine Infectious Disease Management at Boston Medical Center, told me. "But the world has changed, there are real downsides to masking children for this long, with no known end date, and without any clear upside." She continued, "I'm not aware of any studies that show conclusively that kids wearing masks in schools has any effect on their own morbidity or mortality or on the hospitalization or death rate in the community around them."

Schechter-Perkins is just one of a number of top experts calling for this type of discussion — and raising questions about the CDC's recent recommendations and what has become accepted conventional knowledge. "We lack credible evidence for benefits of masking kids aged 2 to 5, despite what the American Academy of Pediatrics says," Jeffrey Flier, former dean of Harvard Medical School, [wrote](#) recently. While there are models, and simulations on mannequins with masks, "mechanistic studies are incapable of anticipating and tallying the effects that emerge when real people are asked to do real things in the real world," Vinay Prasad of UCSF wrote in a [critique](#) of the CDC's child masking recommendation. "The CDC cannot 'follow the science' because there is no relevant science."

This question of "relevant science" is what makes the Georgia study worth careful consideration. [Over and over](#), studies and reports on children in schools with low transmission rates claim in their summaries that masking students helped keep transmission down. But looking at the underlying data in these studies, masks were always required or widely worn, and implemented in concert with a variety of other interventions, such as increased ventilation. Without a comparison group that didn't require student masking, it's difficult or impossible to isolate the effect of masks. (This is the [error](#) made by Duke University researchers who wrote a report about North Carolina schools, later summarized in a New York *Times* opinion [piece](#).) I reviewed 17 different studies cited by the CDC in its K-12 [guidance](#) as evidence that masks on students are effective, and not one study looked at student mask use in isolation from other mitigation measures, or against a control. Some even demonstrated that no student masking correlated with low transmission.

Children are [less likely to have severe disease](#) from SARS-CoV-2, and when infected less likely to be symptomatic, which correlates with [lower contagiousness](#). Those facts alone may account for part of the reason why the Georgia study found no clear benefit for a masking requirement for kids in schools. Though the CDC says that layered mitigation in schools is effective, without studying each of the layers individually, it cannot know which of those measures work, and to what degree, and which don't. For example, several experts told me, it's entirely possible that open windows or fresh-air ventilation accounts for nearly all the mitigation benefit in a classroom and other "layered" interventions may contribute only a marginal benefit or none at all.

While masks offer some protection for adults in many environments, as the adage in pediatrics goes, [children are not little adults](#). Medicine is littered with examples of adult interventions that don't translate to children. For

many years, kids were given certain migraine medications based on adult studies. It wasn't until 2017, when a trial *with a control group* found that kids on this medication did no better than placebo, that the practice was stopped. A difference between the effectiveness of requiring masks on children in schools and adults in other environments would not be a surprising finding. This may, in part, explain why the CDC's study did not find a statistically significant benefit in elementary-age kids but did see a benefit in unvaccinated teachers, said Prasad of UCSF.

It's also important to underline that just because the Georgia study did not find a statistically significant benefit doesn't mean that a larger, more statistically powerful study might not find one, said Hoeg, the epidemiologist. But since this study had 90,000 students, then the question becomes: If you need 500,000 or 1 million people to find a benefit, how marginal is that benefit?

Many people may surmise that even if there's not conclusive evidence, it's still likely that masking kids in schools helps. But not all masks are created equal. A list of public-health notables, including Michael Osterholm, an epidemiologist and former COVID-19 adviser to Joe Biden, and Scott Gottlieb, the former commissioner of the FDA, have [publicly noted](#) the limited effectiveness of cloth masks. Celine Gounder, an infectious-disease epidemiologist at NYU, who also advised Biden's transition team on COVID-19 policy, recently [tweeted](#) a chart that showed when cloth masks are worn by both the source and receiver they provide just an estimated 27 minutes of protection from an infectious dose of the SARS-CoV-2 virus. Higher-grade N95s, or KN95s, the Chinese equivalent, offer more protection, but are also much harder to tolerate over extended periods of time. Three physicians I talked with considered the idea of children wearing them all day at school — suggested recently by an aerosol scientist in the [Times](#) — “laughable,” “cruel,” and “unrealistic, because most adults can barely handle an N95 for even short durations,” since they are so uncomfortable.

While the protective value of a mask mandate for children in school seems, at best, uncertain, experts have concerns about the potential downsides of them in a learning environment.

“Mask-wearing among children is generally considered a low-risk mitigation strategy; however, the negatives are not zero, especially for young children,” said Lloyd Fisher, the president of the Massachusetts chapter of the American Academy of Pediatrics. “It is important for children to see facial expressions of their peers and the adults around them in order to learn social cues and understand how to read emotions.” Some children with special needs, for example those with articulation delays, may be most affected, he suggested. Fisher stressed his opinions are not to be perceived as contradicting AAP's stance for universal masking of students but said he wanted to discuss some of the potential harms and the importance of using evidence and data to drive decisions on when to eliminate mask usage.

“There are very good reasons that the World Health Organization has repeatedly affirmed their guidance for children under 6 to not wear masks,” said a pediatrician who has both state and national leadership roles in the AAP but who wished to remain anonymous because they did not want to jeopardize their roles in the organization. “Reading faces is critical for social emotional learning. And all children are actively learning language the first five years of life, for which seeing faces is foundational,” the pediatrician said.

One troubling aspect of the CDC and AAP's guidance for masking children in school, nearly every expert I interviewed said, is that it has no endpoint or specific metrics. When asked when kids can remove masks in school, CDC director Rochelle Walensky [said](#), “If our children are vaccinated, we have full vaccination in schools, we have full vaccination in teachers, we have disease rates that are low — I think then we can start thinking about how we can loosen up.” In practical terms, this seems to translate to the distant future. Likely a percentage of teachers will not get vaccinated. And estimates are that the vaccine for kids ages 5 to 11 may not be approved for emergency use until the winter or later. When an EUA does come, a significant percentage of parents won't vaccinate their kids. By Walensky's criteria, children may be in masks for years at school.

Several doctors I spoke with pointed out that the best way to shield children from COVID-19 exposure is through adult vaccination. “Our most effective way of protecting everyone, students and school staff alike, is by vaccinating the adults around them,” said Westyn Branch-Elliman, an infectious-diseases specialist at Harvard Medical School. Ashish Jha, the dean of Brown University School of Public Health, posted a [thread](#) on Twitter explaining that the vaccination rate among children under 12 is the same across the country, which is zero, of

course. Yet pediatric infection rates right now vary wildly, correlating with how many adults in their area are vaccinated. And [evidence suggests](#) that staff-to-staff transmission is more common than transmission from students to staff, staff to student, or student to student.

COVID, of course, is also a disease that tends to have much milder effects on children. “We know that the risk to kids from COVID is vanishingly low. Yes, we’re seeing it, but it’s rare,” said Schecter-Perkins, the emergency-medicine infectious-diseases expert. Out of more than 600,000 American deaths attributed to COVID-19, [361](#) were for kids and adolescents under age 18. In the much-shorter 2018-2019 flu season, there were [477](#) pediatric deaths. “We didn’t have mask mandates then,” Schecter-Perkins noted. And “now we’re in a post-vaxx world where adults have had the opportunity to protect themselves, and vaccines prevent severe COVID.”

While concerns about pediatric long COVID are real, evidence from studies that have a control group is reassuring. A large British [study](#) found “almost all children had symptom resolution by eight weeks,” and of the small number of children with longer-term symptoms, most were vague and common, such as fatigue and headaches, which were also found in the group of children who tested negative for COVID. A study in Germany, now in [pre-print](#), of 1,560 adolescents, found “no statistical difference comparing the reported symptoms between seropositive students and seronegative students.”

A common argument right now is that the emergence of the Delta variant changes everything. Currently, some regions of the U.S. are seeing a surge of infections and hospitalizations among young people. But [the numbers](#) coming out of Britain continue to [suggest](#) that Delta is not more virulent — that is, it does not cause more severe illness on an individual basis to unvaccinated people — despite being more contagious. A pediatric immunologist at a major university hospital who was not authorized to speak publicly said, “It is not biologically plausible that the same variant somehow is more dangerous for kids in the U.S. than it is in the U.K.”

More broadly, Schecter-Perkins said, “I don’t think that Delta changes the calculus because it still seems clear that it doesn’t cause more severe disease, so it still doesn’t change the fundamental question of ‘What are we trying to achieve by masking kids when they are still extremely unlikely to suffer from severe illness or death if infected?’ And the adults in their lives have the opportunity to be vaccinated and also protected so we don’t need to worry about transmission.” The pediatric immunologist said, “Even with a new variant, the onus is on those who recommend masking kids to robustly demonstrate a meaningful benefit, especially when the pre-Delta study of the Georgia schools did not find one, and when there are obvious socio-emotional and educational harms from masking children for this unprecedented duration of time.”

Several of the experts I spoke with said that given the lack of evidence of a substantial benefit from a student-masking requirement, it’s not at all clear this measure will be effective against a more transmissible variant. One of the costs of an intervention that lacks clear benefit, said the immunologist, is distraction from the tools that we know protect people — in the case of schools, vaccination and ventilation.

<https://nymag.com/intelligencer/2021/08/the-science-of-masking-kids-at-school-remains-uncertain.html>