

Requirement for adults to wear masks in schools has major impact on COVID-19 transmissions, study finds

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Adults wearing masks may decrease COVID-19 outbreaks at schools and preschools, shows a new study published in *Frontiers in Public Health*.

The study found that the first identified cases (index cases) in schools were predominantly children, but outbreak events were more severe when an adult was the index case. Wearing a mask significantly lowered secondary cases. The researchers recommend obligatory mask wearing for adults working at schools and preschools to help prevent outbreaks.

As of December 2021, 270m worldwide cases of COVID-19 have been recorded.

The role of children and adolescents in the spread of COVID-19 remains unclear, yet closures of schools and preschools have become a common approach to try to prevent outbreaks.

But closing schools has [adverse effects](#) on the well-being of children and adolescents. It can lead to [social isolation](#), challenge their learning and development, and has economic consequences for the parents and guardians.

"To avoid [school](#) closures at high incidence levels, it is important to identify factors contributing to the spread of COVID-19 infections in schools and preschools," said corresponding author Dr. Anika Kästner, of the University Medicine Greifswald, Germany.

First author Dr. Martine Sombetzki, from the University Hospital Rostock, Germany, and her colleagues investigated the dynamics of COVID-19 infections in schools and preschools related to changes in hygiene measures and studied the influence of these measures on the extent of outbreaks.

"Our study was designed to provide further insight into the effectiveness of specific hygiene measures in schools and preschools."

The source of infections at schools

The researchers analyzed routine surveillance data of Mecklenburg-Western Pomerania, Germany, between August 2020 and May 2021 in relation to COVID-19 infection events in schools and preschools. They analyzed [outbreak](#) events considering changes in infection control measures over time. To do so, they defined four temporal phases, whereby schools and preschools were open in 'phase one' (no mask obligation), closed in 'phase two' (lockdown in Germany), gradually opened in 'phase three' (with mask obligation in schools), and only emergency care was offered in 'phase four' (lockdown in Germany).

In schools, most often the children were the index cases, but outbreak events were more severe when an adult was the index case. In phase one, adult index cases caused on average 4.5 secondary cases and children index cases caused on average 0.3 secondary cases. In phase three, index adults caused 0.5 and children 0.3 secondary cases.

In preschools, where there was only a mask recommendation for adults, index adults caused on average 0.6 secondary cases in phase one and 2.8 secondary cases in phase three. For both phase one and three, children caused 0.5 secondary cases.

"The reason for this difference between phases could be the increasing prevalence of the delta variant, which causes more frequent infections in children," explained Sombetzki.

Obligatory masking to prevent outbreaks

Wearing [masks](#) in schools and preschools is not an easy task, especially for younger children. However, the results suggest that masks can prevent infection outbreaks.

"Our results show that mandatory masking of teachers and caregivers

and children at schools in the 2020 to 2021 school year each resulted in a significant reduction in the number of COVID-19 transmissions."

But the study has some limitations. Vaccinations are not systematically registered in Germany, so the influence of vaccines could not be accounted for. The researchers also base their results on the assumption that the hygiene measures were fully implemented and adhered to in the studied schools.

Nevertheless, the study shows that wearing masks works in the fight against coronavirus. "In a model analysis, mask obligation, for adults in particular, was shown to be effective in reducing secondary cases. We can therefore recommend all-time mandatory masking in schools for both [children](#) and adults. In preschools, mask wearing could also reduce secondary cases," concluded Kästner.

More information: Martina Sombetzki et al, Impact of Changes in Infection Control Measures on the Dynamics of COVID-19 Infections in Schools and Pre-schools, *Frontiers in Public Health* (2021). [DOI: 10.3389/fpubh.2021.780039](#)

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