# Country examples on in-person schooling and COVID-19 transmission

*Note: This is not an exhaustive list but a selection of countries who have prioritized reopening their schools.*

## Multi-country studies:

### Global

A global study that tracked school closures and subsequent re-openings data in 191 countries showed no association between school status and COVID-19 infection rates in the community.[1] The main findings of the study are:

- "No consistent pattern emerges between school status and COVID-19 infection rates.
- "Most countries in a second COVID-19 wave have opened schools again.
- "How to stay open is now the priority for many countries, with new approaches implemented to deal with COVID-19 in the classroom.
- "Nearly all countries keeping doors closed to students are still in their first wave of the pandemic and tend to be lower-income countries."

A systematic literature review of more than 700 scientific papers covering 47 countries on COVID-19 transmission by children concluded that children are unlikely to be the main drivers of the pandemic. It further states that opening schools is unlikely to impact COVID-19 mortality rates in older people, mainly due to low viral loads among children which should decrease the risk of transmission from a child.[2]

### European Union

A study based on monitoring of infection levels and school status in 32 European countries by the European Centre for Disease Prevention and Control (ECDC) found that "the evidence from contact tracing in schools, and observational data from a number of EU countries suggest that re-opening schools has not been associated with significant increases in community transmission." **The paper concluded that student-to-student transmission was uncommon and not the primary cause of infection in children**.[3]

[1] Insights for Education, 2020 (https://blobby.wsimg.com/go/104fc727-3bad-4ff5-944f-c281d3ceda7f/20201001_Covid19%20and%20Schools%20Six%20Month%20Report.pdf)
[2] Ludvigsson, 2020 (https://pubmed.ncbi.nlm.nih.gov/32202343/)
[3] European center for disease control, 2020 (https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-schools-transmission-August%202020.pdf)

# Country level studies

## Australia

A contact tracing study based on the identification of nine student cases in 15 schools (primary and secondary) found no evidence of any transmission to the 128 adult close contacts in the school setting.[4]A further contact tracing study in New South Wales education settings found that "**children and teachers did not contribute significantly to COVID-19 transmission via attendance in educational settings**." This was in the context lower than usual school attendance and mitigation measures in place[5].

## France

An epidemiological survey conducted in April 2020 for 1,340 people linked to primary schools in Crépy-en-Valois, France found that children did not spread COVID-19 to other students or staff at the schools, most of the children were infected by family member.[6]

## Germany

A quasi-experimental design study in Germany found that there is **no evidence of a decline in infection rates when schools close and no evidence of spikes when they re-open**. This is one of the rare studies (so far) that have applied statistical tools and used the staggered nature of school closures and re-openings (between different German states) as a natural experiment.

They "show that neither the summer closures nor the closures in the fall have had any significant containing effect on the spread of SARS-CoV-2 among children or any spill-over effect on older generations. We also do not find any evidence that the return to school at full capacity after the summer holidays increased infections among children or adults. Instead, we find the number of children infected increased during the last weeks of the summer holiday and decreased in the first weeks after schools reopen, a pattern we attribute to travel returnees and increased testing."[7]

## Ireland

Transmission within schools was investigated prior to school closures and **no evidence of secondary transmission within the school setting was found**. Among the 924 child contacts and 101 adult contacts of the six cases (three children, three adults) in the school setting, there were no confirmed cases identified during the 14- day follow-up period. It is important to note that this study did not consider asymptomatic infections. 101 adult contacts in the school setting of three SARS-CoV-2 positive children resulted in no additional cases.[8]

## Scotland

**The national surveillance system in Scotland also found little to no evidence of transmission risks for students in school settings**. According to the report, "there is no current direct evidence that transmission within schools plays a significant contributory role in driving increased rates of infection among children. ONS (Office of National Statistics) data show no difference between the test positivity rates of pre-school,

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[4] Australian National Centre for Immunisation Research and Surveillance (NCIRS), April 2020 (http://ncirs.org.au/sites/default/files/2020-04/NCIRS%20NSW%20Schools%20COVID_Summary_FINAL%20public_26%20April%202020.pdf)

[5] Macartney, et al. August, 2020 (https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(20)30251-0/fulltext)

[6] Fontanet, et al, 2020 (https://www.pasteur.fr/fr/file/35404/download)

[7] Von Bismarck-Osten, et al., November 2020 (https://www.cream-migration.org/publ_uploads/CDP_22_20.pdf)

[8] Heavey L, et al. May 2020 (https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.21.2000903)

primary and secondary school teachers and staff, relative to other worker groups of a similar age. The proportion of positive test cases from people aged 18+ who reported they were employed, and their occupation was "education/childcare" has remained largely constant since late August at between 3 and 7%."[9]

## Sweden

Schools for children younger than 16 years remained open in Sweden and when the Public Health Authority analysed occupational groups within the school**, they found that teachers were at no higher risk of COVID19 than the general public**. Recommendations for Swedish schools were that everyone with mild symptoms remain at home, to practise physical distancing, to cancel mass gatherings within the school setting, and to practise hand hygiene while in the school setting.[10]

## United Kingdom

A British government report based on a national surveillance system found that following limited school re-openings in the summer, **the infection rates among students did not increase over the existing population rate**. Where a SARS-CoV-2 positive case was identified, no additional cases within the household, class bubble or wider education setting when tested. It is important to note that the studies of the summer term re-openings in the UK were based on very limited secondary school re-openings. Recent reporting from the UK government shows a slight uptick in infection rates among children, especially in the 12-18-year-old population.[11]

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[9] COVID-19 Advisory sub-group on education and children's issues, November 2020 (https://www.gov.scot/publications/coronavirus-covid-19-evidence-on-children-schools-early-learning-and-childcare-settings-and-transmission-from-covid-19---summary-report/)

[10] Folkhälsomyndigheten, October 2020 (https://www.folkhalsomyndigheten.se/publicerat-material/publikationsarkiv/f/forekomst-av-covid-19-i-olika-yrkesgrupper-inom-skolan/#:~:text=13%20mars%202020%20%E2%80%93%2019%20oktober%202020&text=F%C3%B6r%20att%20f%C3%A5%20kunskap%20om,register%20%C3%B6ver%20yrkesklassificering%20vid%20SCB.)

[11] Ladhani, September 2020 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/914700/sKIDs_Phase1Report_01sep2020.pdf) Ismail, et al., Aug 2020 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911267/School_Outbreaks_Analysis.pdf) Scientific Advisory Group on Emergencies (SAGE), Government of the United Kingdom, 2020 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935125/tfc-covid-19-children-transmission-s0860-041120.pdf

The following are studies with inconclusive findings:

## Chile[12]

A study documenting an apparent school outbreak of 50 people in Chile describes an index case, a teacher, participating in multiple parent conferences about five days prior to the peak of the outbreak. However, the TECHNICAL REPORT COVID-19 in children and the role of school settings in COVID-19 transmission 13 designation of the index case is based on testing as a result of symptoms and might therefore have missed asymptomatic children. Serology results 8–10 weeks after the outbreak suggest comparable levels of infections among children and adults at the school, but these infections might have occurred outside of the school setting, as the school in question was closed rapidly after the index case was detected.[13]

## Finland

A 12 year old student was identified as an index case who then went on to have 121 contacts with others who attended school at the same time as the index case. Contact tracing and testing of 89 of those contacts found no secondary cases. Similarly, following exposure to an infected teacher, seven out of 42 exposed students developed antibodies or were PCR positive, however the results were inconclusive as to whether they were infected at household or community level or at school.[14]

## Israel

A first large school outbreak emerged ten days after re-opening all schools with requirement for daily health reports, hygiene, face masks, social distancing and minimal interaction between classes. The first two cases were registered on 26 May and 27 May, having no epidemiological link. Testing of the complete school community revealed 153 students (attack rate: 13.2%) and 25 staff members (attack rate: 16.6%) who were COVID-19 positive. Overall, some 260 persons were infected (students, staff members, relatives and friends). The ages of the index cases were not specified, making identification of adult-to-student transmission within the school setting impossible without further information.[15]

[12] (https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-schools-transmission-August%202020.pdf)

13Torres JP, et al. July 2020 (https://pubmed.ncbi.nlm.nih.gov/32649743/)

14 Dub T, et al. July 2020 (https://www.medrxiv.org/content/10.1101/2020.07.20.20156018v1)

15 Stein-Zamir C, et al. May 2020 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7384285/)