

Coronavirus: is it safe for children to return to school?

May 28 2020, by Stéphane Paulus and Else Bijker



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In England, the phased reopening of schools [is due to begin on June 1](#). But [a recent poll of parents](#) has revealed that around half are unconvinced that their children are safe to return.

Fortunately, there is an increasing body of evidence that we can consider. In light of the widespread concern, we've reviewed the risks posed to children by COVID-19 and answered the most pressing questions.

Are children less likely to catch coronavirus?

To answer this, we can look at two important sources. The first is data from widespread community testing. In Iceland, [6% of the population was screened early on in the pandemic \(22,279 people\)](#). In the targeted testing group (which tested people either with symptoms, from high-risk areas or who had come into contact with someone with COVID-19), 6.7% of children under 10 tested positive, compared with 13.7% of people aged 10 or over. In the random population screening group, all under-10s tested negative, while 0.8% of persons 10 years or older tested positive.

And, in the municipality of Vo' in northern Italy, [86% of the population \(2,812 people\) were tested](#) after a resident died early on in the epidemic. All 217 children aged 10 or under tested negative. Out of the 250 young people aged 11-20 who were screened, 1.2% were positive, compared with 3% for those 21 years and older.

The second useful source is detailed track-and-trace data linked to demographic information. A [Chinese study](#) analysed whether 105 COVID-19 patients transmitted the virus to their 392 household contacts. It revealed the risk of a child acquiring the virus from a positive household member was only 4%, compared with 17.1% for adults. Similarly, [contact tracing data](#) from Hunan province in February showed that 6.2% of children aged 0-14 who had been in contact with a COVID-19 patient caught the virus, compared with 10.4% of older people.

Thus, accumulating evidence from various places indicates that children are significantly less susceptible to infection than adults.

Do children fall ill if infected?

Young infants are generally more susceptible to picking up infections and falling ill. But for COVID-19 the evidence suggests it's the other way around. [Public Health England data](#) up to May 22 showed that only 1.6% of all COVID-19 cases had been in children (aged 0-19), despite them making up 23.4% of the population.

Of course, this data is influenced by many factors, including testing strategy. For example, very young children may not be tested in the community, while testing in hospitals is likely to include more seriously ill patients, who tend to be adults. But reports from other countries consistently show low numbers of cases among children, with milder disease compared to adults.

Data from [China](#) and the [U.S.](#) and a [review](#) of studies published up to May 1 show that the illness in children is either asymptomatic, mild or moderate in 88-97% of cases. Only about 0.6-2% of children are admitted to intensive care and 0-0.18% of cases are associated with a fatal outcome.

This compares with a case fatality rate of 3.5-3.6% for those in their 60s, 8.0-12.8% for those in their 70s and 14.8-20.2% for those 80 or over, as reported in [Chinese and Italian cohorts](#). Why children are less affected remains unclear, although [several hypotheses](#) have been raised.

A [novel syndrome](#) in children (called the paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 infection, or PIMS-TS) has gained increasing attention recently. This condition remains rare, with about 230 suspected cases across Europe

and two fatalities reported. A British Paediatric Surveillance Unit study is underway to gain further insight into the condition.

Do children transmit coronavirus to others?

It is difficult to formally quantify the extent to which children contribute to transmission of the coronavirus. There is, however, increasing circumstantial evidence suggesting that their contribution is limited and that children are far from being the "super-spreaders" that they can be with seasonal flu.

An [analysis](#) of 31 household transmission clusters found that in only three was the index case a child. And a [systematic review](#) on children and coronavirus transmission found that, although able to transmit it like any other individual, children seem much less likely to do so.

In the Netherlands, the tracing of more than 700 contacts of patients with COVID-19 has shown [different infection rates depending on the patient's age](#). For patients aged 18 and under, none of their contacts tested positive. In patients 19 years or older, however, 9% of their contacts were positive.

Is it safe for schools to reopen?

Denmark was the first country to reopen schools in Europe, and others such as Norway, Germany, France and the Netherlands have followed. In Denmark, the virus's [reproduction number](#) rose from 0.6 to 1.0 after opening schools, but came down again within a week. As of May 12 there were no reports of outbreaks in Swedish schools, which have remained open during the pandemic.

In [New South Wales](#) in Australia, schools have remained open. Analysis

of 18 cases that occurred in 15 schools showed that, out of 735 children who had close contact, only two (0.3%) were infected. None of the 128 staff who had close contact were infected.

The available evidence would suggest that the risks posed by children returning to [school](#) is small. The potential for transmission of coronavirus within schools can be reduced by adequate infection control measures, such as pupils physically distancing from staff whenever possible, frequent handwashing, and prompt testing and isolation of individuals with possible COVID-19 symptoms. Additional measures such as children remaining within a small peer group ("social bubble") and increasing the time spent outdoors should also be considered.

School plays a critical role in the [wellbeing of children](#). It is not only a place to learn, but to socialise and exercise, and for some children to simply be safe. While some schools provide effective online learning, this is far from universal, and children from more disadvantaged backgrounds are increasingly deprived of crucial education by school closures.

We therefore conclude, [like other colleagues have also recently done](#), that a progressive return of [children](#) back to school, supported by adequate preventive measures and an effective test, track and isolate strategy, is now advisable.

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