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Long-term effects

Children with long covid

Almost half of children who contract covid-19 may have lasting symptoms, which should factor into decisions on reopening schools, reports **Helen Thomson**

A SERIOUS picture is emerging about the long-term health effects of covid-19 in some children, with UK politicians calling the lack of acknowledgment of the problem a “national scandal”.

Children seem to be fairly well-protected from the most severe symptoms of covid-19. According to the European Centre for Disease Prevention and Control, the majority of children don't develop symptoms when infected with the coronavirus, or their symptoms are very mild.

However, it is becoming increasingly apparent that a large number of children with symptomatic and asymptomatic covid-19 are experiencing long-term effects, many months after the initial infection.

Long-term symptoms

Symptoms of “long covid” were first thought to include fatigue, muscle and joint pain, headache, insomnia, respiratory problems and heart palpitations. Now, support groups and researchers say there may be up to 100 other symptoms, including gastrointestinal problems, nausea, dizziness, seizures, hallucinations and testicular pain.

Most long covid research is based on adults. There is less information about under-18s, in part because it takes longer to get ethical approval to study children, says Natalie Lambert at Indiana University School of Medicine.

A recent study found that 13.3 per cent of adults with symptomatic covid-19 have symptoms lasting more than 28 days ([medRxiv, doi.org/ghgdsv](https://doi.org/medRxiv/2021/01/27/20210127000000)). Long-lasting symptoms were more likely to occur with increasing age and BMI, and were more likely in women than men, although it isn't clear why.



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A man helps his daughter with a covid-19 test in Chicago, Illinois

Experiencing more than five symptoms in the first week post-infection was associated with a greater likelihood of having symptoms further down the line.

Evidence from the first study of long covid in children suggests that more than half of children aged between 6 and 16 years old who contract the virus have at least one symptom lasting more than 120 days, with 42.6 per cent impaired by these symptoms during daily activities. These interim results are based on periodic assessments of 129 children in Italy who were diagnosed with covid-19 between March and November 2020 at the Gemelli University Hospital

in Rome ([medRxiv, doi.org/fv9t](https://doi.org/medRxiv/2021/01/27/20210127000000)).

The UK Office for National Statistics's latest report estimates that 12.9 per cent of UK children aged 2 to 11, and 14.5 per cent of children aged 12 to 16, still have symptoms five weeks after their first infection. Almost 500,000 UK children have tested positive for covid-19 since March 2020.

Most medical bodies say it normally takes a few days or weeks to recover from covid-19, and that most will make a full recovery within 12 weeks.

UK advocacy group Long Covid Kids says that it currently has details of 1200 children with long covid from 890 families in England. “And that number has been rising quickly,” says founder Sammie McFarland. “Not one has returned to their previous health, and most are unable

to do their normal activities.”

The consequences of long covid in children can be debilitating. At a UK parliamentary briefing on 26 January, McFarland described how her 14-year-old daughter started to become vacant, weak and unresponsive after catching

“She went very floppy and almost couldn't make it back to bed. She stayed there for seven months”

covid-19 in March 2020. After three weeks in bed, she did some gentle exercise in the garden and clutched her chest, complaining of heart pain. “She went very floppy and almost couldn't make it back into the house to bed,” says McFarland. “And she pretty much stayed there [in bed] for the next seven months.”



Since August 2020, McFarland says there have been times where her daughter would feel better and they would go out of the house for a picnic, but they soon realised that every trip out triggered a long period of relapse, an issue that seems to be common in adults with long covid too.

Other cases seem to present very differently. Charlie Mountford-Hill has five children, all of whom have long covid after contracting the virus in the early stages of the pandemic. Almost a year after catching covid-19, her 4-year-old still has a sore neck, lethargy, stomach problems and headaches. Her 10-year-old has fatigue and gastric problems with pain around his heart. "Although they have bad periods and better periods, they are never well," says Mountford-Hill.

Seeking long-covid care

A common frustration among parents is the lack of support from doctors. McFarland says they can dismiss the symptoms as not being related to covid-19 because they are so varied. Often, blood tests and scans also fail to supply any answers. "The majority of people known to Long Covid Kids have been unable to get support," she says. The group is now working with NHS England to try to get access to care.

Several parents gave evidence at the parliamentary briefing on long covid in children, run by MP Layla Moran. She told *New Scientist* that the "lack of support, acknowledgement and treatment of long covid in children is a national scandal". In a letter to the Prime Minister that was shown to *New Scientist*, several MPs refer to the situation as a crisis that needs to be taken more seriously.

The lack of information on long covid in children is especially pertinent to decisions around schools reopening, as they are due to do in parts of the UK and the US in the coming weeks.

"We certainly don't have enough data on the long-term impacts of covid in children to make good policy decisions right now," says Lambert, who is director of research for Survivor Corps, the largest covid-19 advocacy group in the world. On 18 February, the UK's National Institute for Health Research awarded £1.4 million for a study to assess risk factors and prevalence of long covid in children.

Nurseries have been allowed to stay open in England while primary and secondary schools have remained shut since 5 January. When asked on 5 February whether the impact of long covid in children has been considered in relation to the reopening of schools, the UK Department for Education gave no reply.

Sending thousands of children back to school is "insane", says McFarland. "Sending children back to school seems to be inviting the possibility of giving a whole generation long-term chronic health issues. Why take the risk of opening schools before

500,000

Children in the UK who have tested positive for covid-19

12.9%

Percentage of UK children aged 2 to 11 who still have covid-19 symptoms five weeks after initial infection

14.5%

Percentage of UK children aged 12 to 16 who still have covid-19 symptoms five weeks after initial infection

children have been vaccinated?"

So far, no coronavirus vaccines have been approved for use in children, although CanSino Biologics in China is testing one in 6 to 12-year-olds, according to data revealed at a recent New York Academy of Science meeting. CEO Xuefeng Yu says that preliminary data will be analysed soon. US company Codagenix is also planning to test a nasal vaccine in children.

The good news is that evidence suggests children don't easily pass covid-19 to each other in the classroom. In one study, a 9-year-old in France with flu and covid-19 was found to have exposed more than 80 other children at three different schools. However, no one became infected with covid-19 as a result, despite numerous flu infections within the schools, suggesting that although the environment was conducive to transmitting respiratory viruses, covid-19 wasn't passed on as easily.

More recently, a study of children between 5 months and 4 years old in nurseries in France has shown low levels of infection and transmission of covid-19. The study also shows that staff weren't at greater risk of infection than a control group of adults. The results suggest that children are more likely to get covid-19 from family members than from their peers or teachers at nursery, although more evidence is needed, say the study's authors, because the study happened when strict measures were in place to control the virus, and before fast-spreading variants appeared.

Until now, the focus of the pandemic has been on preventing severe disease and deaths in the older generations, but McFarland says thoughts need to turn to the legacy the virus is leaving on children. ■

Students in Glasgow, UK, returned to schools on 22 February



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