



Pediatric COVID-19 Update

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We hope that you are doing well in these trying times. The following information is provided to give you the latest update about the science behind this novel viral pandemic, along with references for those more academically inclined. The information from our original [3/16/20](#) and [4/1/20](#) handouts are still mostly accurate and pertinent. Stay tuned, as new information keeps coming.

Transmission

We are still learning about SARS-CoV-2 transmission, but the evidence points predominantly to droplet spread both before a person gets symptoms and during the time of symptoms, with most transmission from coughing.¹⁻² Droplet spread without coughing can occur with sneezing, talking loudly, and to a small extent, with just breathing.³⁻⁴ We know that getting infected from contaminated surfaces probably occurs,² but the extent of this form of SARS-CoV-2 transmission has yet to be determined. Infected people who never develop symptoms can also be contagious, but how much transmission occurs this way is also questionable.⁵ Likewise, people may get infected by aerosols (that unlike most droplets, hang in the air),^{2,6} but that is still not nearly as likely as from larger droplets.⁷⁻⁸

The main test to detect the SARS-CoV-2 virus, which causes COVID-19, is a sensitive polymerase chain reaction (PCR) test, but false negative tests may occur relatively frequently.⁹ Hence, someone who tests negative, but the test took more than a few days to process, may still have the disease. In the research setting, PCR measurements of the virus' genetic material, ribonucleic acid (RNA), have found the greatest amounts in the first week of symptoms,¹⁰⁻¹¹ and more in coughed up sputum (phlegm) than in throat or nose swabs.¹² Viral culture, which better represents actual infectivity, has been limited, but has been positive in saliva.^{4,10} Viral RNA by PCR has been frequently found in stool, sometimes weeks after symptoms,¹³⁻¹⁴ but limited attempts to grow the virus from stool samples have failed.¹⁰ It remains to be determined if the RNA presence in stool means that the virus can be readily transmitted like a stomach bug, but it is prudent to continue good surface and hand sanitizing.

Masks have been found to be helpful in reducing spread, mostly from an infected individual.¹⁵⁻¹⁶ Face shields have great potential for limiting droplet spread, but have not been sufficiently studied. As social distancing relaxation and return to more normal routines occurs, it will be very helpful for everyone to wear a facial barrier in public although this may be more difficult to achieve with very young children.

Pediatric COVID-19

Babies whose moms have COVID-19 at the time of birth generally do well, although some have had symptoms of fever or cough.¹⁶ The relatively few babies who do get infected generally recover quickly and don't shed the virus very long. Breast milk generally has not been found to contain the virus.¹⁷⁻¹⁸

Children are relatively protected from severe disease, but infants under 1 year of age are at higher risk than older children.¹⁹⁻²⁰ Children with underlying conditions such as asthma, cardiovascular disease, and immunosuppression have been more likely to be hospitalized.²⁰ US data reveals less fever (56% vs. 71%) and cough (54% vs. 80%) in COVID 19 positive children under 18 years of age compared to COVID 19 positive adults aged 18-64-years-old.²⁰

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