



Coronavirus COVID-19

BC Centre for Disease Control | BC Ministry of Health



HOW YOU CAN SLOW THE SPREAD OF COVID-19

Take care of others by taking care of yourself.

Wash your hands, don't touch your face, and stay home if you are sick.

Stay at Home and Physically Distance

Stay at home whenever you can. Maintain 2 meters distance from those outside of your household.

Caring for Children with COVID-19

April 3, 2020

By Sarah Silverberg (MD) and Laura Sauvé (MD, MPH, FRCPC)

Key Points

- COVID-19 virus has a very low infection rate in children estimated at 1-5% worldwide.
- The majority of cases in children are the result of a household transmission by droplet spread from another family member with symptoms of COVID-19.
- Children who are infected with the virus and develop COVID-19 have milder symptoms if any, and very few become critically ill.
- Children with COVID-19 illness typically have a fever, dry cough and fatigue. Some may also experience nausea, vomiting, abdominal pain and diarrhea.
- Unlike adults the rates of transmission are unknown. There is no documented evidence of child-to-adult transmission. There are no documented cases of children bringing an infection into the home, from school or otherwise. This is likely the result of the limited number of cases and the mild symptoms in those who do have COVID illness.
- There is no conclusive evidence that children who are asymptomatic pose a risk to other children or to adults.
- There is no evidence indicating children of HCWs are at increased risk of COVID-19 infection than children of non-HCWs. This is likely due to the careful monitoring of HCWs for symptoms and follow-up of their household contacts.
- Like adults, children with any common cold, influenza or COVID-19 like symptoms should stay home and isolate for 10 days following onset of symptoms and until symptoms resolve.
- More research is needed to fully characterize infection, transmission and COVID-19 disease in children.

COVID-19 Illness in Children

1. Case counts of SARS-CoV2 infection and COVID-19 illness in children are low, representing only 1-5% of confirmed cases worldwide.
2. The severity of disease in children appears to be lower, with only a few documented cases of severe illness and/or death. Younger infants (those <1 year of age) have the highest rates of severe or critical illness.
3. Children are more likely to have few, if any symptoms. Up to 32% of children have been asymptomatic with presumed or confirmed COVID-19.
4. Typically, children with COVID-19 have a fever, dry cough and fatigue. In rare cases, dyspnea and respiratory compromise appear after a week of disease progression. These are associated with systemic symptoms including malaise, restlessness, and poor appetite.



Ministry of Health



BC Centre for Disease Control

If you have fever, a new cough, or are having difficulty breathing, call 8-1-1.

Non-medical inquiries (ex. travel, physical distancing): 1-888-COVID19 (1888-268-4319) or text 604-630-0300



5. Some children experience GI symptoms, including abdominal discomfort, nausea, vomiting, abdominal pain and diarrhea.

Children and Infectivity

1. The majority of children with COVID-19 have a positive household contact.
2. The incubation period in children is approximately two days, with a range of 2-10 days (similar to adults). The mean incubation period between household exposure and pediatric symptom onset is approximately 1 day longer than observed in adult cases.
3. Children typically have negative swabs within 6-22 days of symptom onset, but often not until 2 weeks' time. Children have been found to have high viral loads despite mild symptoms, with prolonged shedding in nasal secretions.
4. As a result of the lower symptom burden, the rates of asymptomatic transmission or transmission with mild symptoms are unknown.
5. There is no documented evidence of child-to-adult transmission of SARS-CoV2. This is different than outbreaks of other viruses such as Influenza where children have been found to have a high rate of infection outside of the household and significant inter-generational transmission.
6. It is unlikely the children of health care workers have more frequent COVID-19 than other children, however, no evidence is available.

Recommendations for care for children with suspected or confirmed cases of COVID-19

1. Children are at a lower risk of developing COVID-19, including developing severe disease. Most children who have COVID-19 can be cared for at home, with supportive care performed by their parents.
2. Children under 1 year of age and those who are immunocompromised or have pre-existing pulmonary conditions are at a higher risk of severe disease.
3. As for all members of the community at this time, children should physically distance themselves as much as possible outside of the family unit.
4. Children, and particularly young children, who develop fever, cough or shortness of breath should be evaluated, as influenza as well as other viral illnesses are still circulating in B.C. Symptomatic children should be cared for using droplet and contact precautions (with airborne precautions if aerosol generating medical procedures are needed).
5. While evidence is limited at this time, children with COVID-19 may shed the virus for longer than adults.



References

1. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA*. 2020.
2. Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatr*. 2020.
3. Mizumoto K, Omori R, Nishiura H. Age specificity of cases and attack rate of novel coronavirus disease (COVID-19). 2020.
4. Bitnun A, Allen U, Heurter H, King SM, Opavsky MA, Ford-Jones EL, et al. Children hospitalized with severe acute respiratory syndrome-related illness in Toronto. *Pediatrics*. 2003;112(4):e261.
5. Chen ZM, Fu JF, Shu Q, Chen YH, Hua CZ, Li FB, et al. Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus. *World J Pediatr*. 2020.
6. Sun D, Li H, Lu XX, Xiao H, Ren J, Zhang FR, et al. Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study. *World J Pediatr*. 2020.
7. Dong Y, Mo X, Hu Y, Qi X, Jiang F, Jiang Z, et al. Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China. *Pediatrics*. 2020.
8. Su L, Ma X, Yu H, Zhang Z, Bian P, Han Y, et al. The different clinical characteristics of corona virus disease cases between children and their families in China - the character of children with COVID-19. *Emerg Microbes Infect*. 2020;9(1):707-13.
9. Zheng F, Liao C, Fan Q, Chen H, Zhao X, Xie Z, et al. Clinical Characteristics of Children with Coronavirus Disease 2019 in Hubei, China. *Current Medical Science*. 2020;40(2):1-6.
10. Cai JH, Wang XS, Ge YL, Xia AM, Chang HL, Tian H, et al. [First case of 2019 novel coronavirus infection in children in Shanghai]. *Zhonghua Er Ke Za Zhi*. 2020;58(2):86-7.
11. Cruz A, Zeichner S. COVID-19 in Children: Initial Characterization of the Pediatric Disease. *Pediatrics*. 2020.
12. Ogimi C, Englund JA, Bradford MC, Qin X, Boeckh M, Waghmare A. Characteristics and Outcomes of Coronavirus Infection in Children: The Role of Viral Factors and an Immunocompromised State. *J Pediatric Infect Dis Soc*. 2019;8(1):21-8.
13. Cai J, Xu J, Lin D, Yang Z, Xu L, Qu Z, et al. A Case Series of children with 2019 novel coronavirus infection: clinical and epidemiological features. *Clin Infect Dis*. 2020.
14. Xing Y, Ni W, Wu Q, Li W, Li G, Tong J, et al. Prolonged presence of SARS-CoV-2 in feces of pediatric patients during the convalescent phase. 2020.
15. Ma X, Su L, Zhang Y, Zhang X, Gai Z, Zhang Z. Do children need a longer time to shed SARS-CoV-2 in stool than adults? *Journal of Microbiology, Immunology and Infection*. 2020.
16. Gu J, Han B, Wang J. COVID-19: Gastrointestinal manifestations and potential fecal-oral transmission. *Gastroenterology*. 2020.
17. Yeo C, Kaushal S, Yeo D. Enteric involvement of coronaviruses: is faecal-oral transmission of SARS-CoV-2 possible? *The Lancet Gastroenterology & Hepatology*. 2020;5(4):335-7.
18. Chan JF-W, Yuan S, Kok K-H, To KK-W, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *The Lancet*. 2020;395(10223):514-23.
19. Kam KQ, Yung CF, Cui L, Lin Tzer Pin R, Mak TM, Maiwald M, et al. A Well Infant with Coronavirus Disease 2019 (COVID-19) with High Viral Load. *Clin Infect Dis*. 2020.
20. Cao Q, Chen YC, Chen CL, Chiu CH. SARS-CoV-2 infection in children: Transmission dynamics and clinical characteristics. *J Formos Med Assoc*. 2020;119(3):670-3.
21. Li Y, Guo F, Cao Y, Li L, Guo Y. Insight into COVID-2019 for pediatricians. *Pediatr Pulmonol*. 2020.



22. Endo A, Uchida M, Kucharski AJ, Funk S. Fine-scale family structure shapes influenza transmission risk in households: Insights from primary schools in Matsumoto city, 2014/15. *PLoS Comput Biol.* 2019;15(12):e1007589.
23. Fong MW, Leung NHL, Xiao J, Chu DKW, Cheng SMS, So HC, et al. Presence of influenza virus on touch-surfaces in kindergartens and primary schools. *J Infect Dis.* 2020.
24. El Guerche-Seblain C, Moureau A, Schiffler C, Dupuy M, Pepin S, Samson SI, et al. Epidemiology and burden of influenza in healthy children aged 6 to 35 months: analysis of data from the placebo arm of a phase III efficacy trial. *BMC Infect Dis.* 2019;19(1):308.
25. Antonova EN, Rycroft CE, Ambrose CS, Heikkinen T, Principi N. Burden of paediatric influenza in Western Europe: a systematic review. *BMC Public Health.* 2012;12(968).

April 3, 2020
Caring for Children with COVID-19 by Dr. S. Silverberg & Dr. L. Sauvé

