

Infection of Children with Covid-19 Virus

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Coronavirus can infected children of all ages (Covid-19). But most children suffer from symptoms are generally not as severe as adults, and some may have no symptoms at all. Children's immune systems may also be interacting with the virus differently from adult immune systems. Children are also less likely to experience long-term health issues like diabetes, high blood pressure, or heart disease.

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Interpretation of the difference of children's reaction to Covid-19

The answer to that is not yet clear. Several researchers note that Covid-19 does not seriously affect children because certain coronaviruses exist in culture and cause other diseases such as colds. Children may develop antibodies that provide some Covid-19 protection since they frequently catch colds (CDC,2019).

Children's immune systems may also be interacting with the virus differently from adult immune systems. Some adults seem to get sick from the virus because their immune systems over-react to it, damaging their bodies even further. This is maybe less common among kids (Puopolo *et al.*,2020)

Additionally, children are less likely to develop chronic medical problems like heart disease, high blood pressure or diabetes. In comparison, people with these conditions are at elevated risk of experiencing extreme symptoms when they get Covid-19 infected. The effects of COVID-19 on children with special needs or long-term medical issues are yet unclear (Zhang *et al.*,2020).

How does COVID-19 influence children?

Although it's uncommon, children under one are more likely to experience severe symptoms if they contract the COVID-19 virus. It is possibly due largely to the immaturity of their

immunity, and that their airways are narrower, making them more susceptible to breathing issues. All during the respiratory virus infection case (Hong *et al.* , 2020).

A study of almost 2,100 children with or suspected of having Covid-19 in China between early December and early February found that slightly under 11% of the children had severe or serious symptoms. By comparison, the rates of severe or severe cases were around 7% for children aged 1 to 5, 4% for children aged 6 to 10, 4% for children aged 11 to 15, and 3% for children aged 16 year or more (Lee *et al.* , 2020).

Covid-19 infection can occur in newborns during labor or as a result of infection transmitted to them after birth by caregivers infected with the virus. If their mothers are discovered to be infected with Covid 19 or are suspected of being contaminated, the American Academy of Pediatrics recommends specific care measures for their neonates. These precautions may include briefly isolating the mother from the child to limit the chance of infection, as well as monitoring the infant for indications of infection using Covid-19. It is advised that the newborn get tested for HIV infection if the test criteria are accessible (Dong *et al.* , 2020).

Depending on the situation, newborns with Covid-19 or infants who cannot be diagnosed because there are insufficient tests may be released from the hospital if they show no symptoms. To protect themselves, doctors advise child care staff to wear face masks and wash their hands. It is critical to maintain continual contact with the child's doctor for 14 days, whether by phone, virtual medical review, or in person at the clinic (Qiu *et al.*, 2020).

Children who have had a negative result upon examination of Covid-19 can leave the hospital home. Until the mother recovers, it is recommended that it limit its contact with the youngster, wear a muzzle, and wash her hands when near him (Dong *et al.* , 2020).

Symptoms of Covid-19 in children

Though children and adults have comparable symptoms when infected with Covid-19, children's symptoms are often mild and similar to cold symptoms. The majority of children recover in 1 to 2 weeks. Fever, runny nose, coughing, tiredness, bodily discomfort, vomiting, and diarrhea are all possible symptoms(CDC,2019).

If your child has covid-19 signs, and you believe he has Covid-19, please call the doctor for your child. Keep your child at home and keep him as far away as possible from others except in situations where medical care is needed. Customize your child's separate bedroom and bathroom from the rest of the family, if possible (Qiu *et al.*, 2020).

The factors used to determine whether your child is going to undergo Covid-19 vary depending on the region in which you live. In the United States, the decision to perform Covid-19 tests depends on the signs and symptoms observed by your child's doctor, and the doctor will also consider whether the child has had contact with someone who has been diagnosed with this disease, or whether he has traveled to one of the areas where the disease has continued to spread or has lived in it for the past 14 days. The child's doctor may decide that the test should be taken if the child is more at risk of developing severe symptoms(CDC,2019).

The doctor takes a sample from the back of the nose with a long swab to test for Covid-19 infection. The sample is subsequently delivered to a lab for analysis. Sputum from the child's cough may also be sent to the lab if it is present (Sinha *et al.* , 2020) .

However, kids can also have Covid-19 without showing any symptoms. 27 children, or around 16% of the participants in a trial of 171 Covid-19 youngsters conducted in China between late January and early february, displayed no signs of illness (Qiu *et al.*, 2020).

In addition, a short study of 36 Covid-19 youngsters conducted in China between January and March discovered that over half of the kids did not have symptoms. Recent research has demonstrated that the virus that causes Covid-19 may spread through toddlers and adults even when they are asymptomatic. This demonstrates the significance of adhering to medical advice intended to stop the spread of COVID-19 (Pei *et al.* , 2020).

Tip for preventing COVID-19

You may take a number of precautions to shield your kid from the virus that causes Covid-19 and to stop them from spreading the sickness if they get infected. Parents and family members are advised to adhere to these guidelines by the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) (Sinha *et al.* , 2020) .

Keeping your hands clean: Hands are often to be washed with soap and water, provided the washing time is not less than 20 seconds. Using a manual sterilizer that includes at least 60 per cent alcohol if soap and water are not available(Bialek *et al.*,2020).

If coughing or sneezing, the mouth and nose should be covered with the forearm or with a tissue. Used tissues should also be disposed of, and then washed by hand. You should avoid touching the eyes, the nose and the mouth (Golberstein *et al.* , 2020).

Parents should remind their children to wash their hands right away after coming home, after using the restroom, and prior to eating or cooking. Young children should be taught how to generate soap foam by rubbing their hands together, slipping some soap between their fingers, and applying it to their fingertips, thumbs, and backs of hands (Pei *et al.* , 2020).

The entire "Sweet Year Ya Jamil" song should be performed twice (for a total of around 20 seconds) in order to get kids to spend the time necessary to wash their hands (Lu &Shi 2020).

Commitment to social estrangement;

It is best to avoid direct contact (within 6 feet or 2 metres) with someone who is ill or has symptoms. Going outside should be kept as small as possible. And if you need to go out we recommend that you leave the kids at home if possible (Bialek *et al.*,2020).

Since the virus can be transmitted from people with no symptoms, even if they are all in good health, the child should be prevented from playing directly with other children. If your child plays outside, be sure to stay within 6 feet of those outside your family (approximately 2 metres) (Su *et al.* ,2020).

To make it easier for your child, this distance can be described as close to the door length or the length of the adult bike. The child should be prohibited from playing games or sports that include common play instruments, such as basketball, or sports where there is no established physical distance between players. It should delay your child's visits to the elderly (Jiao *et al.*,2020).

Instead we suggest empowering the child through phone calls or video chats to stay in contact with peers and loved ones. Experiments worth pursuing include using social media to arrange family banquets remotely, or using technology to make children play online and keep them occupied with their family peers (Kelvin & Halperin 2020).

House cleaning and disinfection:

Every day the focus should be on cleaning the surfaces of frequently touched common areas, such as tables, door handles, furniture, chairs, lighting switches, remote controls, electronics, offices, toilets, and sinks (Van Lancker & Parolin 2020)..

Soap and water will be used to clean the toys that the child puts into his mouth , making care to rinse soap and toys that dry. Parents should at the most appropriate temperature wash the child's mattress and washable stuffed toys, as needed (Mallineni *et al.*, 2020).

Upon washing, those items should be dried absolutely. Parents should also wash their hands immediately after touching the child's objects. If the parents are taking care of a child with Covid-19, they should wash their hands after changing diapers or touching the bed, toys or feeding bottles for the child (Ma *et al.* , 2020).

Wear cloth masks:

The United States Centers for Disease Control and Prevention (CDC) recommends wearing face-coverings in public places, such as grocery stores, where close contact with others is hard to avoid. This recommendation is becoming increasingly important in areas that experience a local disease outbreak. This advice is based on data showing people with Covid-19 being able to transmit the virus. If the child is two years of age or older, it is recommended that the parents wear a cloth muzzle when leaving the house so that Covid-19 is not passed on to others (Ludvigsson *et al.* , 2020).

In addition, parents must adhere to the schedule of childhood vaccines and their regular doctor's appointment. This is especially important for infants and young children under the age of two (Qiu *et al.* , 2020).

Many medical professionals in Covid-19-affected areas employ techniques to distinguish between routine medical exams and sick visits, assessing ill kids in various rooms inside their offices or even in other settings. Parents should discuss safety precautions with their doctor when a child's annual checkup is due. You shouldn't withhold your child's vaccines out of concern that they could get the virus that causes Covid-19. (Yung *et al.*, 2020).

Children in particular can find it difficult to follow the instructions to prevent the spread of the Covid-19 virus. Parents should be patient and set a good example for their children to encourage them to emulate their parents' behavior (Lu *et al.* , 2020).

References

1. Brodin, P. (2020). Why is COVID-19 so mild in children?. *Acta Paediatrica*, 109(6), 1082-1083.
2. Bialek, S., Gierke, R., Hughes, M., ... & Skoff, T. (2020). Coronavirus Disease 2019 in Children—United States, February 12–April 2, 2020. *Morbidity and Mortality Weekly Report*, 69(14), 422.
3. Centers for Disease Control and Prevention .Coronavirus disease 2019 (COVID-19): Caring for children. U.S.. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life>
4. Bialek, S., Gierke, R., Hughes, M., ... & Skoff, T. (2020). Coronavirus Disease 2019 in Children—United States, February 12–April 2, 2020. *Morbidity and Mortality Weekly Report*, 69(14), 422.
5. Dong, Y., Mo, X., Hu, Y., Qi, X., Jiang, F., Jiang, Z., & Tong, S. (2020). Epidemiology of COVID-19 among children in China. *Pediatrics*, 145(6).
6. Golberstein, E., Wen, H., & Miller, B. F. (2020). Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents. *JAMA pediatrics*.
7. Hong, H., Wang, Y., Chung, H. T., & Chen, C. J. (2020). Clinical characteristics of novel coronavirus disease 2019 (COVID-19) in newborns, infants and children. *Pediatrics & Neonatology*, 61(2), 131-132.
8. Jiao, W. Y., Wang, L. N., Liu, J., Fang, S. F., Jiao, F. Y., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and emotional disorders in children during the COVID-19 epidemic. *The journal of Pediatrics*, 221, 264.
9. Kelvin, A. A., & Halperin, S. (2020). COVID-19 in children: the link in the transmission chain. *The Lancet Infectious Diseases*.
10. Lee, P. I., Hu, Y. L., Chen, P. Y., Huang, Y. C., & Hsueh, P. R. (2020). Are children less susceptible to COVID-19?. *Journal of Microbiology, Immunology, and Infection*.
11. Liu, W., Zhang, Q., Chen, J., Xiang, R., Song, H., Shu, S., ... & Wu, P. (2020). Detection of Covid-19 in children in early January 2020 in Wuhan, China. *New England Journal of Medicine*, 382(14), 1370-1371.
12. Lu, Q., & Shi, Y. (2020). Coronavirus disease (COVID-19) and neonate: What neonatologist need to know. *Journal of medical virology*, 92(6), 564-567.
13. Cruz, A. T., & Zeichner, S. L. (2020). COVID-19 in children: initial characterization of the pediatric disease. *Pediatrics*, 145(6).
14. Lu, X., Zhang, L., Du, H., Zhang, J., Li, Y. Y., Qu, J., ... & Wu, C. (2020). SARS-CoV-2 infection in children. *New England Journal of Medicine*, 382(17), 1663-1665.
15. Ludvigsson, J. F. (2020). Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatrica*, 109(6), 1088-1095.
16. Ma, H., Hu, J., Tian, J., Zhou, X., Li, H., Laws, M. T., ... & Xia, J. (2020). Visualizing the Novel Coronavirus (COVID-19) in Children: What We Learn from Patients at Wuhan Children's Hospital. *Available at SSRN 3556676*.
17. Mallineni, S. K., Innes, N. P., Raggio, D. P., Araujo, M. P., Robertson, M. D., & Jayaraman, J. (2020). Coronavirus disease (COVID-19): Characteristics in children and

- considerations for dentists providing their care. *International Journal of Paediatric Dentistry*, 30(3), 245-250.
17. Pei, Y., Liu, W., Bilal Masokano, I., Li, F., Xie, S., Zhou, G., ... & Li, W. (2020). COVID-19: Children Comparison with Adults Based on the Latest Data. Available at SSRN 3550063.
 18. Puopolo, K. M., Hudak, M. L., Kimberlin, D. W., & Cummings, J. (2020). Initial guidance: management of infants born to mothers with COVID-19. *Elk Grove Village: American Academy of Pediatrics Committee on Fetus and Newborn, Section on Neonatal Perinatal Medicine, and Committee on Infectious Disease*.
 19. Qiu, H., Wu, J., Hong, L., Luo, Y., Song, Q., & Chen, D. (2020). Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study. *The Lancet Infectious Diseases*.
 20. Sinha, I. P., Harwood, R., Semple, M. G., Hawcutt, D. B., Thursfield, R., Narayan, O., ... & Southern, K. W. (2020). COVID-19 infection in children. *The Lancet Respiratory Medicine*, 8(5), 446-447.
 21. Su, L., Ma, X., Yu, H., Zhang, Z., Bian, P., Han, Y., ... & Zhang, Z. (2020). The different clinical characteristics of corona virus disease cases between children and their families in China—the character of children with COVID-19. *Emerging microbes & infections*, 9(1), 707-713.
 22. Tagarro, A., Epalza, C., Santos, M., Sanz-Santaeufemia, F. J., Otheo, E., Moraleda, C., & Calvo, C. (2020). Screening and severity of coronavirus disease 2019 (COVID-19) in children in Madrid, Spain. *JAMA pediatrics*.
 23. Van Lancker, W., & Parolin, Z. (2020). COVID-19, school closures, and child poverty: a social crisis in the making. *The Lancet Public Health*, 5(5), e243-e244.
 24. Yung, C. F., Kam, K. Q., Wong, M. S., Maiwald, M., Tan, Y. K., Tan, B. H., & Thoon, K. C. (2020). Environment and personal protective equipment tests for SARS-CoV-2 in the isolation room of an infant with infection. *Annals of Internal Medicine*.
 25. Zhang, T., Cui, X., Zhao, X., Wang, J., Zheng, J., Zheng, G., ... & Xu, Y. (2020). Detectable SARS-CoV-2 viral RNA in feces of three children during recovery period of COVID-19 pneumonia. *Journal of medical virology*.
 26. Zimmermann, P., & Curtis, N. (2020). Coronavirus infections in children including COVID-19: an overview of the epidemiology, clinical features, diagnosis, treatment and prevention options in children. *The Pediatric infectious disease journal*, 39(5), 355.