The Effects of COVID-19 Infections on Children

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As we head into the start of the second year of the COVID pandemic in the United States, it is important to better understand the short- and long-term effects of COVID-19 on children. While the rate of infection in children is much lower than in adults, children are not immune to the disease and are suffering from both short- and longterm complications.

According to the American Academy of Pediatrics and the Children's Hospital Association, more than 3 million children and young adults tested positive for COVID in the U.S. as of February 2021. Most of these kids experience

mild, if any, symptoms. There are probably many more who have been infected, but because they are asymptomatic, testing has not been done. I have seen many families whose parents tested positive but since their children did not have symptoms, they were not tested. Thankfully, most children and teens usually do very well, even when infected with COVID-19.

Although very rare, some children will develop what is called multisystem inflammatory syndrome in children, also known as MISC, about 4 - 6 weeks after they are infected with virus. There have been about 2,000 cases so far in the U.S. We have seen one child in our practice here in Los Alamitos develop this complication. These children can be very ill and end up in the hospital and even in the ICU, needing long-term follow-up. Many will have continuing cardiac problems. These children become very ill abruptly and tend to have high fevers, respiratory symptoms, rashes and more. The earlier these children are seen and diagnosed, the better the outcome for the child. As a result, it is of utmost importance to contact your pediatrician right away if your child has any of these symptoms. The quicker we get them to the hospital and the correct specialist, the quicker they can be treated to minimize the lasting problems.

What is really alarming are the large number of children who we have seen with either no or mild COVID-19 symptoms, but are now complaining of fatigue, shortness of breath, loss of smell or taste, or brain fog weeks to months after they were infected. It is particularly concerning that these symptoms don't seem to go away. In our office, we have seen a few teens and young adults with these symptoms. One example is a 19-year-old softball player who had a college softball scholarship and developed COVID-19 in November 2020. She had a mild cough and runny nose, but otherwise experienced a benign course like most young adults do. She finished her quarantine at college and came home for winter break. When I saw her about 6 weeks later, she was complaining of fatigue, mild shortness of breath and decreased exercise tolerance. She could not work out with her team when she went back to college. I referred her to a specialist for a thorough cardiac and pulmonary evaluation.

We are lucky to have excellent cardiac and pulmonary specialists in our area. A full work up for this patient showed no cardiac problems but mild lung disease. After seeing the correct specialist, she was treated and has been able to start exercising again. She is still not where she was before she got ill, but is getting there. The virus also affected her ability to study, concentrate and do her college

No one knows how often children/teens develop these symptoms, or how many already have these symptoms. We know that many adults have had this syndrome and it is now called Long Haulers Syndrome. As we, as pediatricians, and our children's hospitals see more of these children we will learn more as to how to treat them. Multi-specialty clinics are being developed to care for their physical and emotional symptoms. Many of the new centers include areas for medical, psychological, physical therapy, and acupuncture for both evaluation

and treatment. The challenge is getting these children seen early and making the

Many people doubt that these symptoms are actual physical illnesses, but instead are just an emotional problem, which makes evaluation and treatment more difficult. It is important to differentiate these Long Haulers symptoms associated with post COVID-19 infections from anxiety and depression that we are seeing in increased numbers of teens and young adults during this pandemic.

As we more readily recognize this syndrome, we will be able to get more data and begin to effectively treat these children and young adults. At this time in our pediatric office, we have been referring all teens and young adults who have had COVID-19 to cardiologists for evaluation before they are cleared to go back to their sports. They have picked up a few abnormalities that are either treated or just observed with the hope of improvement. Being a new disease, we are all still



learning. There's another wrinkle that often comes with the uncertainties about this Syndrome. Physicians will likely run a battery of tests, recommend referrals to specialists, or perform a variety of procedures that could potentially cost their families a significant sum, which may not be fully covered by their health insurance policy. If you add on the time lost from work or school, you can see how devastating this Syndrome can be.

Long Hauler patients may continue to have long-term problems, affecting their families, our health care system and society. We must not underestimate what COVID-19 can do. I have seen many families who all had a very benign course of the virus, so they think it is not a big deal. They have been lucky.

If you or someone you know is exhibiting some of the symptoms described above, see your doctor as soon as you are able. Continue to wear a mask, keep your distance, avoid large indoor crowds, wash your hands and get vaccinated by any of the vaccines out there. We are all in this together and must be vigilant and try to protect each other. This pandemic has already done too much damage to our society, loved ones, and economy. Let's work together to decrease the damage it is causing, and get back to a more normal life.



