

What happens when kids get long COVID?

November 4 2021, by Kathy Katella



Credit: Unsplash/CC0 Public Domain

Doctors are working to understand why some children and adolescents who get COVID-19 make a clean recovery, while others go on to develop long COVID, a condition marked by new, returning, or ongoing symptoms such as brain fog and chronic fatigue. The question of why some kids (just like some adults) wrestle with health problems for weeks

or months is one of the pandemic's biggest mysteries—and one that causes worry for parents.

With long COVID, many kids suddenly find themselves struggling to keep up with their schoolwork or skipping sports. Others can't sleep or have difficulty walking, while yet others struggle with aches and pains, breathlessness, dizziness, and other troubling symptoms.

Yale Medicine doctors are treating [children](#) with long COVID, as well as studying the causes and potential solutions for it, in the Children's Post-COVID Comprehensive Care Program, offered in the Pediatric Specialty Clinic in Yale New Haven Children's Hospital. The program, which opened in June of this year, is one of a handful in the country specializing in treating pediatric long COVID patients. They've seen patients from infancy through the teenage years.

Severity of symptoms has ranged widely. Some of these patients didn't even know they had COVID until their long COVID symptoms developed. Others had been diagnosed with Multisystem Inflammatory Syndrome in Children (MIS-C), a rare, but serious condition that affects multiple organs. Then, there are children who struggle with a long list of post-COVID-19 symptoms that include lingering physical, neurological, and mental problems.

Treatment for pediatric long COVID is a work in progress, but doctors have already learned a great deal about how to help these patients. Here are some common questions parents are asking about the condition and some answers, based on the most current knowledge.

How common is long COVID in kids?

As of the end of October, nearly 6.4 million children had been diagnosed with COVID-19, according to the American Academy of Pediatrics

(AAP)—but studies quantifying the number of cases of long COVID in kids have varied widely. Geography is one factor. "Different studies have shown different results, depending on what parts of the world or which parts of the country you're looking at," says Carlos Oliveira, MD, a pediatric infectious diseases specialist.

Another issue is the lack of a clear definition—or even a consistent name—for the disease. It has been called long-haul COVID, post-acute COVID-19, and post-acute sequelae of SARS-CoV-2 infection (PASC), the latter being a research term ("sequelae" means, simply, a medical condition that results from a prior disease). "If you include every child who has been hospitalized with MIS-C, [by definition a complication of acute COVID], you'll come up with a higher prevalence," Dr. Oliveira says. As of October 4, there had been more than 5,210 cases of MIS-C and 46 deaths, according to the Centers for Disease Control and Prevention (CDC).

Only a fraction of children with long COVID seek medical attention, which makes tracking its incidence very challenging, he adds. Also, because infants and toddlers can't always verbalize what they are feeling, it makes matters more complicated. Symptoms like fatigue, for instance, can manifest in [young children](#) as hyperactivity rather than sluggishness, making it difficult for parents to detect the problem. "As a result, we are likely only identifying the adolescents who can self-report their symptoms," he says.

Are post-COVID symptoms different in kids than in adults?

Dr. Oliveira says that kids often display different symptoms than adults, with no single standout [symptom](#) that makes a case easy to identify. The AAP reports that children and adolescents have experienced chest pain,

cough, exercise-induced dyspnea (or labored breathing), as well as changes to smell or taste (although this is more common in adolescents), among other things. Affected children and teens have reported fatigue, brain fog, anxiety, joint pain, headache, and sore throat, among other symptoms—all varying in intensity and duration, in some cases lasting for months.

Ian Ferguson, MD, a Yale Medicine rheumatologist has been caring for pediatric patients with long COVID who have joint and bone pain.

"What I tend to see is a generalized achiness and a decrease in physical conditioning," Dr. Ferguson says. "They might say, "I just feel achy. I don't feel right." An otherwise healthy child may say, "I don't feel like I should get out of bed in the morning." Or they say, "I used to be on the high school cross country team. And now I can barely make it down the street before I have to take a break.'"

Some children experience subtle symptoms but, when diagnostic testing is done, no abnormalities are found, Dr. Oliveira says. For example, a child may have pain, fatigue, or trouble concentrating, but their imaging and bloodwork come back normal. "Often, we call these symptoms 'medically unexplained," but they are still obviously very significant to the patient's health," he says. "The child may not be able to go to school or may not be able to walk, and we can't find a reason why."

A very small percentage of children even develop serious complications, since COVID-19 can affect organs including the brain, heart, kidneys, and liver—and any of those organs can be damaged if the child doesn't receive proper care. "The post-COVID clinic is meant to identify these symptoms caused by residual organ damage and treat them," Dr. Oliveira says.

Is inflammation a cause of post-COVID symptoms in

children?

Experts are still trying to figure out what causes long COVID in kids. "The main hypothesis—I say hypothesis because we don't yet know—is that there's some continual trigger of inflammation," Dr. Oliveira says.

He explains that some of the different ways that COVID manifests in children may contribute to a greater likelihood of ongoing inflammation. For instance, when a child gets COVID, the virus is more apt to concentrate in the gut than in the lungs, making symptoms more likely to be gastrointestinal than respiratory. It may also take longer to clear the virus from a child's system than it does for an adult, he adds. "We don't fully understand why, but we know that with kids, if we were to test their stool three or four months post-infection, for many of them, we would still find noninfectious remnants of the virus. It may be nonviable virus, but the remnants are still there."

And those pieces of remnant virus can continually trigger inflammation. "The [immune system](#) will attack those pieces of remnant virus and cause inflammation, because it can't distinguish between a live virus and the remnants of one. The immune system just sees viral antigens [the molecular structures on the surface of the virus] and wants to get rid of them," Dr. Oliveira says.

The hypothesis is that there may be continual exposure of viral antigens to the immune system in some children with long COVID, triggering persistent or intermittent inflammation, albeit at a milder level since the remnant virus is not able to make copies of itself, he says. "This kind of inflammation is more like a 'slow burn' for a long period of time, rather than the acute inflammation of MIS-C," he adds. Treatment with anti-inflammatories may be helpful in this situation, he says, but studies are still ongoing.

There is support for the "slow burn" theory in that some long COVID symptoms tend to improve after patients receive a COVID-19 vaccine, which triggers a boost in antibodies that presumably clears the viral antigens more effectively.

What is the treatment for kids with long COVID?

There is no typical case of long COVID in kids, and no one-size-fits-all treatment. Young patients who visit the Yale program come in with any combination of symptoms.

Typically, after a full evaluation, patients are referred to one or more subspecialists with expertise in a particular area. Long COVID can affect different organs and parts of the body, so in addition to pediatric infectious diseases specialists, the team can include cardiologists, neurologists, pulmonologists, rheumatologists, psychologists, and others.

Treatment tends to be most effective when it addresses each symptom individually. A child with chest pain and decreasing physical conditioning will be referred for a cardiac evaluation, for instance, while one with cognitive challenges will be seen by a neurologist.

Treatment strategies can also draw from those used for other illnesses that bring lingering symptoms, such as the prolonged fatigue after mononucleosis (or 'mono'). "In rheumatology, we see a lot of unexplained achiness, which provides us with a fairly reasonable framework," says Dr. Ferguson. "You can look at the lab tests or at the imaging studies, and they're really not showing anything. That doesn't necessarily mean that the immune system didn't ramp up at some point and cause those symptoms. Therefore, many of our recommendations are framed as, "Let's figure out how to build this child's health back up.""

So, for example, once a cardiologist says a patient's heart is fine and a

breathing test shows their oxygen exchange is good, doctors may tell them to gradually increase their physical conditioning by adding aerobic and muscular exercise over time. "Physical therapy is a great resource because the physical therapists not only observe patients in the clinic, they give patients a home exercise program that will help them build back up over time," Dr. Ferguson says. "We anticipate most people will be able to regain their conditioning—albeit on a timeline that we really can't dictate."

What helps when children with long COVID have mental health symptoms?

It's common for children with long COVID to face mental health challenges as well—although whether that's a direct result of COVID-19 is still unclear. "There is a worldwide increase in children's behavioral health needs, especially around anxiety and depression, and that's not only in children who have had COVID," says Linda Mayes, MD, chair of the Yale Child Study Center (CSC), which participates in treating patients in the post-COVID treatment program. "We just don't really know yet how COVID impacts basic psychological development overall."

But there are ways doctors can help, regardless of the cause, she adds. For children who have learning needs or challenges, or problems paying attention, CSC specialists might work with the child's school to help adjust curriculum or educational approaches for that child. If there are behavioral health needs, they provide psychotherapy and medications, as needed, and work directly with parents and families. "None of this is COVID-specific," Dr. Mayes says. "It's what we do every day. Over time, what will be important to know is, are those issues greater among children who have had COVID-19?"

In addition, CSC counselors provide strategies to help children in the program manage unexplained medical symptoms, including chronic pain. Biofeedback, cognitive behavioral therapy, and mindfulness techniques can all help, Dr. Mayes says. "Regardless of the origin, if a problem is related to COVID or anxiety, we have well-tested, evidence-based approaches," she says.

How long do children with long COVID need treatment?

It's impossible to predict a long-term recovery timeline for children with long COVID, since doctors have only had a year and a half of experience with it. But the good news is that, so far, the children treated in the program are doing well, Dr. Oliveira says. "By numbers, relative to the adults, kids usually recover faster, within a few months."

That said, he notes that some patients may continue to need monitoring for cardiac issues, and cardiologists may restrict their activities until they are confident that a child's heart function is back to normal.

The doctors encourage pediatricians and parents to contact Yale's pediatric post-COVID program if they have any serious physical or mental concerns about a child that could be related to having had COVID-19.

Even if they aren't sure the child has had the illness, there may be some unknown association that is worth investigating. "Sometimes the expectation from a parent is that their pediatrician will know everything about this, and be able to diagnose it and treat it, just as they would with an ear infection," Dr. Oliveira says. "But this is a new disease, and doctors are still learning."

Provided by Yale University

Citation: What happens when kids get long COVID? (2021, November 4) retrieved 11 May 2024 from <https://medicalxpress.com/news/2021-11-kids-covid.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.