

## Q&A: Long COVID in kids—what can exercise reveal?

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After an initial COVID infection, some adults may develop lingering symptoms that can last for weeks, months, or even years. There are many different types of symptoms people can experience, including fatigue and brain fog, which are commonly referred to as "long COVID."

There is still much to be learned about this complex condition in adults, but in children, long COVID is even less understood. The number of children who develop long COVID, and the cause of their symptoms remains unknown.

To uncover the long-term effects of COVID in children, a team of Columbia researchers was selected by the NIH [RECOVER](#) Initiative to help develop and conduct heart and lung testing for some children enrolled in the nationwide observational study.

We spoke to Aimee Layton, Ph.D., assistant professor of applied physiology (in pediatrics) at Columbia University Irving Medical Center, who is leading the team at Columbia charged with interpreting and analyzing results for a specific test called Cardiopulmonary Exercise Testing (CPET). CPET is a test to carefully learn how the lungs, heart, blood vessels, and muscles perform during activity.

## **How is RECOVER working to help us understand long COVID in children?**

The RECOVER observational studies involve a wide range of participants who are categorized into three groups called "cohorts," which include adults, pregnant people, and children.

As part of the [RECOVER pediatric cohort protocol](#), children and young adults take part in a number of tests. Some of these participants have long COVID and some do not. These tests help researchers learn how COVID may or may not affect this group.

At Columbia specifically, we are focused on interpreting the tests related to heart, lung, and muscle function (cardiopulmonary) in children. Over the next few months, we will work with RECOVER to develop standard

procedures for such testing, train sites performing these tests, conduct quality assessment of test performance, and interpret tests performed at sites for consistency.

## **Why is exploring cardiopulmonary function in children important in understanding long COVID?**

We know that in many cases, movement can help uncover issues the body may be having that do not exist while in a resting state.

Conducting tests of this nature will allow us to learn how the heart, lungs, and muscles of children with Long COVID respond to movement and how this may differ in children without the condition.

Many children with long COVID express an inability to run and play with their friends or even take part in gym class. Understanding why this is happening will help us learn how we can help them.

## **How will the study data help us understand long COVID in children?**

There is a lot to uncover about long COVID, especially in children. The first step in helping them is to identify how the condition is affecting their bodies. Conducting this specialized testing in some children from this study may give us new information that we can link to how they are feeling. These data on how they are feeling enable us to better understand what may be causing their symptoms. With this knowledge, we can hopefully help find effective solutions.

## **How will the researchers ensure that children in this study are not harmed by the testing?**

This is important. A symptom for long COVID is exercise intolerance. However, some may experience post-exertional malaise (PEM)—a worsening of symptoms following even minor physical or mental exertion. For those who either have PEM or are at risk for it, physical activity is not recommended. Supervised movement is one of the specialized tests already included in the pediatric cohort protocol, but no participant is ever required to participate in this testing.

Heart and lung testing, like other specialized tests in RECOVER, requires an additional consent form to be signed. Before this research begins, our team will work with community partners and RECOVER representatives to ensure the consent form properly reflects concerns about post-exertional malaise. In research, the safety and comfort of patients is of utmost importance.

*Correction note: This article has been revised for accuracy. The original version of this article did not completely describe the nature of the pediatric protocol developed for the RECOVER Initiative and inaccurately referred to this planned research as a clinical trial.*

Provided by Columbia University Irving Medical Center

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