

FACT SHEET

Post-acute Sequelae of SARS-CoV-2 Infection (PASC)

Recovery from infection with SARS-CoV-2, the virus that causes COVID-19, can vary from person to person. Most patients seem to recover quickly and completely, while others report symptoms that persist for weeks or even months after the acute phase of illness has passed (a condition often referred to as "Long COVID"). In other cases, new symptoms and findings emerge after the acute infection, including when the acute phase was asymptomatic. Collectively, these long-term effects of the virus are called **post-acute sequelae of SARS-CoV-2 infection (PASC)**.

What are the symptoms of PASC, and who is affected?

Symptoms range from mild to incapacitating and may involve multiple organs and systems. Some of the more common symptoms include fatigue, shortness of breath, cognitive difficulties or "brain fog," sleep problems, fever, anxiety, and depression. PASC includes multisystem inflammatory syndrome in children and adults (MIS-C and MIS-A), which are rare but severe immune responses to SARS-CoV-2 that often involve cardiovascular complications.

Some people, especially those who were severely ill, have lingering lung problems. In one study, about half of patients who needed ventilation for acute COVID-19 had lower than normal blood oxygenation capacity six months later¹. Another study found that a significant percentage of patients continued to have shortness of breath four months after being hospitalized with COVID-19². There is also potential for cardiac complications down the line among a portion of COVID-19 patients³.

The public health impact of PASC is unknown, but it could potentially be very large, given the number of adults and children who have been or will be infected with SARS-CoV-2.

¹ <https://pubmed.ncbi.nlm.nih.gov/33428867/>

² <https://pubmed.ncbi.nlm.nih.gov/33729425/>

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7385689/>



What is NIH doing to address PASC?

In February 2021, NIH announced the establishment of the PASC initiative⁴ to support research that will help us better understand PASC and identify effective treatments and potential ways for preventing it. To ensure our research efforts are informed by the patient experience, the PASC initiative will engage patient voices throughout multiple stages and levels.

At the heart of the PASC initiative is a SARS-CoV-2 Recovery Cohort that includes diverse populations of both adults and children. This meta-cohort will include patients from Long COVID clinics, from NIH-supported COVID-19 studies and networks, and from previously established NIH-supported longitudinal cohort studies such as those focused on age-related heart and lung disease. Investigators leading Recovery Cohort studies will collaborate in a multi-disciplinary consortium to determine a core set of information that will be collected and tests that will be done on all Recovery Cohort participants.

A data science core will support analysis of data gleaned from clinical exams, health records, and mobile devices, and a biobank will collect tissue samples that can be used to analyze the tissue and organ injury caused by SARS-CoV-2 infection.

Some of the initial underlying questions that the PASC initiative hopes to answer are:

- What does the spectrum of recovery from SARS-CoV-2 infection look like across populations?
- How many people experience PASC?
- What is the underlying biological cause of these long-term effects?
- What makes some people vulnerable to PASC but not others?
- Does SARS-CoV-2 infection trigger changes in the body that increase the risk of other conditions, such as chronic heart or brain disorders?

⁴<https://www.nih.gov/about-nih/who-we-are/nih-director/statements/nih-launches-new-initiative-study-long-covid>

How will the PASC initiative evolve?

Calls for other kinds of research are expected over the next few months, specifically opportunities focused on clinical trials to test strategies for treating long-term effects and promoting recovery. Data will also be shared with the broader research community to facilitate new analyses. In addition, a key feature of the Initiative will be long-term follow-up of patients and adaptive research strategies as our understanding of PASC evolves.

In addition to addressing the immediate public health impact of SARS-CoV-2 infection, the PASC initiative also has the potential to enhance our basic knowledge of how humans recover from viral infections in general. It also is likely to improve understanding of other chronic post-viral syndromes and autoimmune diseases.

To keep up to date on the PASC initiative, visit: recoverCOVID.org