‘We Are in Trouble’: Study Raises Alarm about Impacts of Long Covid

A new long-covid study based on the experiences of nearly 100,000 participants provides powerful evidence that **many people do not fully recover months after being infected** with the coronavirus.

The Scottish study found that between six and 18 months after infection, 1 in 20 people had not recovered and 42 percent reported partial recovery. There were some reassuring aspects to the results: **People with asymptomatic infections are unlikely to suffer long-term effects**, and vaccination appears to offer some protection from long covid.

“It’s one more well-conducted, population-level study showing that we should be extremely concerned about the current numbers of acute infections,” said David Putrino, director of rehabilitation innovation for the Mount Sinai Health System in New York. “*We are in trouble.”*

Jill Pell, a professor of public health at the University of Glasgow who led the research, emphasized that the study revealed the wide-ranging impact of long covid on people’s lives. “*There are lots of different impacts going beyond health to quality of life, employment, schooling and the ability to look after yourself*,” she said.

The paper, published Wednesday in Nature Communications, represents the first findings of an ongoing study into long covid — the Long-CISS (Covid in Scotland Study).

The range of reported symptoms and inability to provide a prognosis for patients have perplexed long-covid researchers, even as the breadth of the challenge has become clearer. Between 7 million and 23 million Americans — including **1 million who can no longer work** — are suffering from **the long-term effects of infection with the virus**, according to government estimates. Those numbers are expected to rise as covid becomes an endemic disease.

Previous studies have been challenged by the **nonspecific nature of long-covid symptoms**, including **breathlessness and fatigue**, which are also common in the general population. The Covid in Scotland Study, which included a control group, was able to pinpoint which symptoms were linked to covid, Pell said.
“*Those who had covid were significantly more likely to get 24 of the 26 symptoms studied compared to the never-infected general population*,” she said. For example, those who were infected were 3½ times more likely to be breathless.

Putrino pointed out that between 16 and 31 percent of the control group also suffered those same symptoms — a figure that is similar to the false negative rate of a PCR test, suggesting some of the control group may have been infected. Pell agreed that it is possible that some people with negative tests could have been infected, serving to reinforce the study’s broader findings.
Long hauler symptoms range widely from person to person. In the Scottish study**, the most commonly reported symptoms included breathlessness, palpitations, chest pain and “brain fog,” or reduced mental acuity.**
Symptoms were worst among people who were sick enough to be hospitalized during the acute infection — a *fact that does little to quell experts’ concerns.*
“It has always been the case that those who are sicker are more likely to have long-term sequelae,” Putrino said. “What is frightening is that the mild cases by far outnumber the severe, so even a small percentage of mild cases going on to develop long-term sequelae is a massive public health concern.”

Putrino also warned against assuming that asymptomatic infection is not associated with persistent symptoms.

“*We have seen many patients who had a confirmed asymptomatic case,*” he said. “*It happens. It is statistically less common than those with symptomatic infection.”*

The study found that **the risk of long covid was greater among women, older people** and those who live in economically disadvantaged communities. People who already suffered from physical and mental health problems, such as respiratory disease and depression, were also more prone to long covid.
"*Crucially, this study also identified a sub-cohort of 11 percent who deteriorated over time. This is something seen often in patient groups but has not been discussed enough in the public conversation*," said Hannah Davis, a member of the Patient-Led Research Collaborative, a group of patients who have been engaged in long-covid research.

While the study did not reveal any particular surprises, its nationwide design provides new rigor, Pell said. More than 33,000 people with laboratory-confirmed infections took part, along with 62,957 never-infected individuals. Throughout the pandemic, U.S. experts, including the president's chief medical adviser Anthony S. Fauci, turned regularly to British data because it comes from the nationalized health system and reflects trends across the entire population. Using National Health Service records, researchers sent a text message to every Scottish adult who had a positive PCR test as well as a group of people who tested negative for covid to invite them to participate. Those who chose to enroll answered online survey questions about their health before and after infection.
"Being able to access survey data from that single large cohort is very powerful," said James Harker, an immunologist at Imperial College in London who studies **the long-term impact of the coronavirus on the lungs**. U.S. studies have largely had to rely on smaller numbers or use several studies to create meta-analyses, which have inherent flaws, Harker said.

Among the issues that deserve more exploration is the degree of protection offered by vaccination, according to Putrino. Recent studies show that vaccination reduces the chance of developing long covid, but not as much as previously thought. *"That is one of the most important things we need to understand next*," Putrino said.
The University of Glasgow team led by Pell worked with Public Health Scotland, the National Health Service in Scotland and the Universities of Aberdeen and Edinburgh, and was funded by the Scottish government's Chief Scientist Office and Public Health Scotland.

The researchers plan additional studies, according to Pell. The current study followed up with people at six, 12 and 18 months after infection. Among those who had confirmed covid, 13 percent reported some improvement.
"*We trying to look in more detail at those changes in symptoms over time and what factors are associated with them*," Pell said.