

What COVID-19 is doing to the heart, even after recovery

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A growing number of studies suggest many COVID-19 survivors experience some type of heart damage, even if they didn't have underlying heart disease and weren't sick enough to be hospitalized. This latest twist has health care experts worried about a potential increase in heart failure.

"Very early into the pandemic, it was clear that many patients who were hospitalized were showing evidence of cardiac injury," said Dr. Gregg Fonarow, chief of the division of cardiology at the University of California, Los Angeles. "More recently, there is recognition that even some of those COVID-19 patients not hospitalized are experiencing cardiac injury. This raises concerns that there may be individuals who get through the [initial infection](#), but are left with [cardiovascular damage](#) and complications."

Fonarow said these complications, such as myocarditis, an inflammation of the [heart](#) muscle, could lead to an increase in heart failure down the

road. He's also concerned about people with pre-existing [heart disease](#) who don't have COVID-19 but who avoid coming into the hospital with heart problems out of fear of being exposed to the virus.

"The late consequences of that could be an increase in [heart failure](#)," he said. "It is much safer if having symptoms that could represent heart attack or stroke, to come into the emergency department than to try to ride it out at home."

Nearly one-fourth of those hospitalized with COVID-19 have been diagnosed with cardiovascular complications, which have been shown to contribute to roughly 40% of all COVID-19-related deaths.

But two recent studies suggest heart damage among those infected may be more widespread. In *JAMA Cardiology*, an analysis of autopsies done on 39 COVID-19 patients identified infections in the hearts of patients who had not been diagnosed with cardiovascular issues while they were ill.

Another *JAMA Cardiology* study used cardiac MRIs on 100 people who had recovered from COVID-19 within the past two to three months. Researchers found abnormalities in the hearts of 78% recovered patients and "ongoing myocardial inflammation" in 60%. The same study found high levels of the blood enzyme troponin, an indicator of heart damage, in 76% of patients tested, although heart function appeared to be generally preserved. Most patients in the study had not required hospitalization.

"There's a group of people who seem to be more affected from the cardiac point of view," said Dr. Mina Chung, a cardiologist and professor of medicine at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University.

But, she said, it can be difficult to identify who is at risk, or for those recovering from the virus to know

if they're having heart problems.

"A lot of people end up feeling exhausted for a while. They can't get up to the exertion level they were at before. But it's difficult to tease out whether or not it's the lungs taking a little more time to heal or whether it's a cardiac issue," said Chung, who is leading the coordination of more than a dozen ongoing COVID-19 research studies funded by the American Heart Association.

"If things continue to get better with time, that's a good sign," she said. "It's not unexpected that if you have not been active for a while, you get deconditioned and may have shortness of breath if you push yourself."

Whether screenings to detect cardiovascular damage should become a routine part of follow-up care for COVID-19 patients remains unclear.

"The bottom line is, we don't know," said Fonarow, who co-authored an editorial accompanying the two JAMA Cardiology studies. "Before any recommendations are made for routine cardiac imaging, we need additional studies that help identify the frequency of this occurring and what the risk factors are."

Chung and Fonarow advise those recovering from COVID-19 to watch for the following symptoms—and to consult their physician or a cardiologist if they experience them: increasing or extreme shortness of breath with exertion, chest pain, swelling of the ankles, heart palpitations or an irregular heartbeat, not being able to lie flat without shortness of breath, waking up at night short of breath, lightheadedness or dizzy spells.

"But for someone who has had COVID-19 and recovered with no symptoms of heart trouble," Fonarow said, "it's unknown whether there is a reason to have additional screenings. If there are concerns, they should discuss this with their physicians."

It's also possible that some of the cardiovascular damage researchers are seeing could heal itself, he said.

"We've seen with other viruses where there is inflammation of the heart, there are individuals for whom there is spontaneous recovery," Fonarow said. "And in some people, we can treat this effectively with medication. The question becomes specifically with COVID-19, what is that frequency and does it differ from other viruses that infect the heart."

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