

What do heart patients need to know about COVID-19 now?

10 August 2020



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In the months since COVID-19 emerged, medical experts have learned a lot about the threat it poses to people with issues such as high blood pressure, diabetes, obesity or cardiovascular disease.

But much of the essential advice remains the same: Take the [coronavirus](#) seriously. Do all you can to avoid catching it. And never ignore symptoms of a [heart](#) attack, stroke or other condition that should be treated in an emergency room.

More is being learned every day. And not all the news is grim.

For example, "it does not look like cardiovascular disease makes people more likely to get the virus," said Dr. Mitchell Elkind, professor of neurology and epidemiology at Columbia University in New York City. "It's more that it makes the course of it potentially worse."

Data released in June by the Centers for Disease

Control and Prevention shows COVID-19 patients with underlying conditions such as cardiovascular disease are six times more likely to be hospitalized and 12 times more likely to die than patients without any chronic health problems. About 1 in 3 people with COVID-19 has cardiovascular disease, making it the most common underlying health condition.

SARS-CoV-2, the coronavirus that causes COVID-19, is spread through the air when an infected person coughs, sneezes or talks. But it's not just a lung disease, said Elkind, president of the American Heart Association.

"This virus can affect cells throughout the body," he explained. It latches onto cells through an enzyme called ACE2, short for angiotensin-converting enzyme 2. ACE2 is found on all sorts of cell surfaces in the body—including lungs, heart, brain, gastrointestinal tract and the lining of blood vessels—that allows the virus to spread throughout the body. "And that's why we see so many cardiovascular and other manifestations of the disease."

ACE inhibitors and ARBs (angiotensin II receptor blockers) are medications often prescribed to treat conditions such as heart failure, high blood pressure and ischemic heart disease. They can cause overexpression of ACE2, meaning there is more of the enzyme on cell surfaces. Initially, there were theoretical concerns that higher concentrations of ACE2 might make people more susceptible to the coronavirus. On the other hand, ACE2 reduces inflammation and may actually offer lung protection.

"I spent most of my spring talking to cardiac patients about their medications and whether they had to be changed or not," said Dr. Erin Michos, associate professor of cardiology and associate director of preventive cardiology at the Johns Hopkins University School of Medicine in Baltimore.

The good news, according to a June analysis she co-wrote in the *American Journal of Cardiology*, is there's no evidence that ACE inhibitors or ARBs are helpful or harmful in terms of the coronavirus, and patients are advised to continue taking them while research continues.

When someone does catch the virus, the list of potential heart-related problems is lengthy.

A Nature Medicine article in July with more than two dozen contributors (including Elkind) says COVID-19 is thought to contribute to irregular heartbeats, inflammation of the heart muscle, reduced blood flow to the heart and sudden cardiac death.

The virus does damage through two main pathways—by triggering an immune response that sets up "hyperinflammation," and by triggering [blood clots](#), Elkind said.

"We've seen strokes in otherwise relatively young, healthy people, which appear to be caused by spontaneous blood clotting," he said. Fortunately, such strokes tend to be rare.

Michos said such clotting also can lead to heart attacks. Clotting also has been seen in COVID-19 patients with arterial stents.

Overall, for people already in poor health, she likened COVID-19 to "a terrible stress test that many heart patients fail."

So, the best intervention is prevention—trying not to get the infection in the first place.

"People with [cardiovascular disease](#), including [high blood pressure](#), diabetes and obesity, should be particularly careful about ways to avoid catching the virus," Elkind said. "They should be particularly careful to avoid crowds, to socially distance, to wash their hands frequently, to minimize the number of times they need to go out shopping, and so forth."

Masks are necessary, he said. Visitors need to be told to wear them around someone who has heart disease.

Such steps might not offer total protection, but Michos likened it to wearing a seatbelt. "You sure have a lot better chance of not having a serious injury if you wear a seatbelt."

But, she added, "just because we need to be careful about social distancing doesn't mean we need to ignore other cardiovascular health."

That means people with cardiac disease need to keep up with their usual treatment. "All the things that we recommend for cardiovascular prevention—that hasn't gone away," she said.

Heart patients are advised to get flu shots every year because getting influenza with underlying heart [disease](#) increases the risk for flu complications. This year it's even more important, Michos said, because nobody wants the flu, especially in a year when the health care system may already be overwhelmed with COVID-19 patients.

But no matter how busy the system seems, she and Elkind stressed one message that might save a heart patient's life: If you're having symptoms of a heart attack or stroke—call 911.

"The pandemic has been going on now for several months," Elkind said, and hospitals and doctors have learned a lot about how to manage patients and keep them safe. "People shouldn't sit it out and wait for things to get better at home, but seek help. Because the safest place to be if you're having a heart attack or a stroke is in the hospital."

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APA citation: What do heart patients need to know about COVID-19 now? (2020, August 10) retrieved 25 October 2022 from <https://medicalxpress.com/news/2020-08-heart-patients-covid-.html>

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