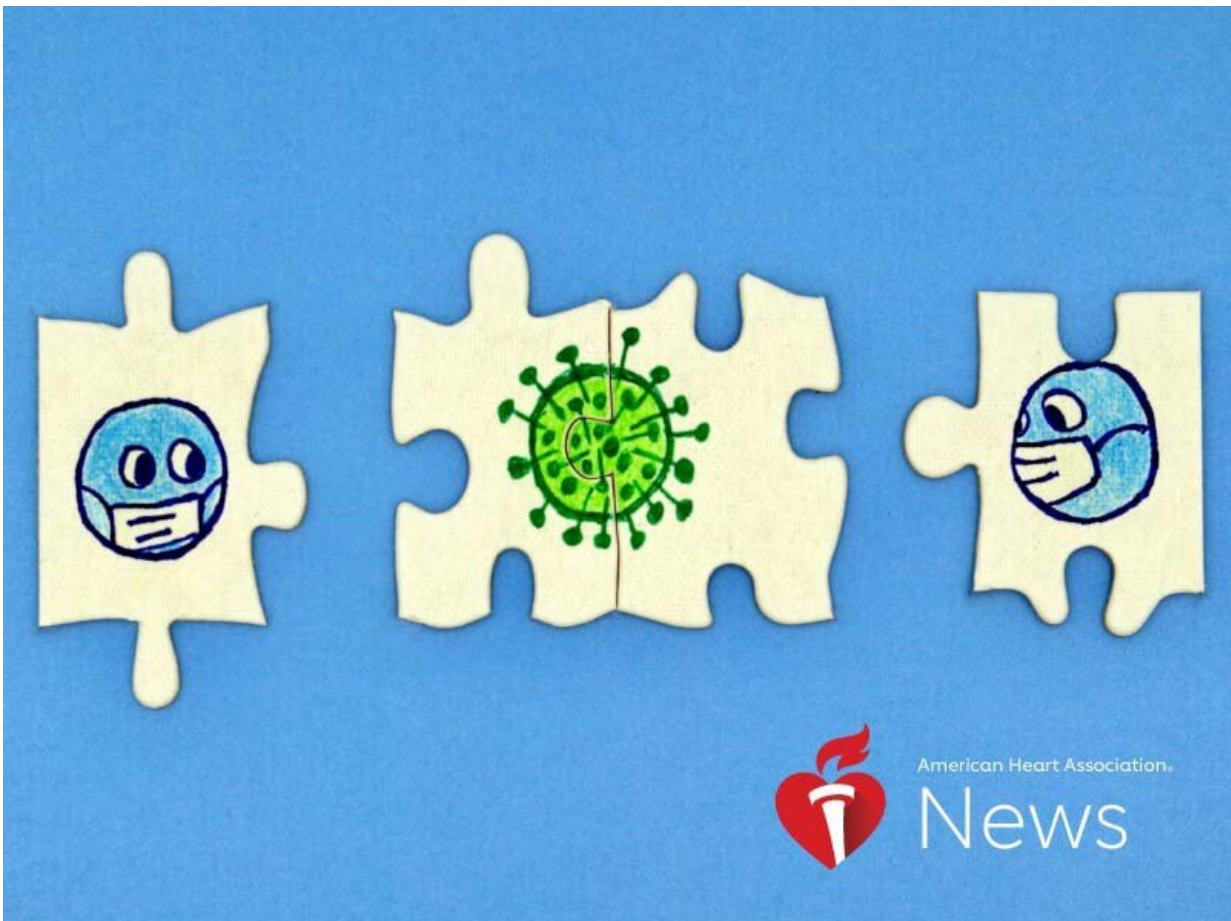


# Flu and COVID-19 are bad enough, but they also can raise stroke risk

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It's flu season. In the middle of a coronavirus pandemic. Is this any time

to be thinking about your risk of stroke?

Yes, researchers say. Having either influenza or the coronavirus seems to increase the odds of having an [ischemic stroke](#)—the type where [blood flow](#) in the brain is blocked. While the number of people affected may be small, understanding the dynamics can help everyone protect themselves.

When a [stroke](#) hits someone with the flu or COVID-19, it can be the culmination of a long process, said Dr. Mitchell Elkind, professor of neurology and epidemiology at Columbia University in New York City.

"Long-term risk factors include [high blood pressure](#), diabetes, smoking, cholesterol levels, failure to exercise and poor diet," said Elkind, president of the American Heart Association. Such factors can set the stage for a blood vessel to be blocked by a clot or the fatty buildup called plaque.

Then a sudden event can push the system over the edge and cause the actual stroke, said Dr. Babak Navi, chief of the Division of Stroke and Hospital Neurology at Weill Cornell Medicine in New York. Such an event is called a trigger. "And infections are well-known triggers."

Elkind published some of the earliest papers on the links between stroke and infection. Recently, he contributed to studies showing that people who had a flu-like illness were at higher risk for a stroke in the days afterward. In one preliminary study from 2019, having a flu-like illness appeared to increase the odds of having a stroke by 40% within 15 days.

Navi was co-author of a study published in July in JAMA Neurology showing that among people who came to an emergency room or were hospitalized, having COVID-19 was associated with a more than seven times increased risk of stroke compared to those treated for the flu.

It's important to keep those numbers in perspective, Navi said. Only 0.2% of flu patients in his study had a stroke, compared to 1.6% of COVID-19 patients. "Most people who get COVID-19, including most people who are so sick that they come to the hospital and are admitted to the ICU, don't develop a stroke."

Exactly how the flu or the coronavirus could trigger a stroke isn't fully understood. But inflammation—which is part of the body's immune response to an infection—appears to be a common link.

"We know that inflammation in general is a risk factor for stroke," Navi said. "And it appears that the more inflammation you have, the more likely you are to have a stroke."

There's also a close link between the immune system and the blood-clotting system, Elkind explained. White blood cells are well-known protectors against infection. But the clot-forming cells known as platelets also attack and engulf viruses as part of the immune response.

Other factors are at play with the flu. A disease like the flu also can lead to someone being dehydrated, Elkind said, which could also lead to a higher risk of stroke or heart attack.

Elkind and colleagues have found that flu appears to be more of a trigger in younger people. Older people will do worse in terms of the absolute numbers of strokes, he said, but because people younger than 45 don't have as many other risk factors, the effect stands out.

On top of all that, "the coronavirus seems to have some additional tricks up its sleeves," he said. It can bind to the cells that line the [blood vessels](#) and provoke blood clots throughout the body, including the brain.

Researchers are continuing to gather data on the links between the

coronavirus and stroke. But given the known risks—bolstered by an August study from the Centers for Disease Control and Prevention that found about 1 in 8 adults hospitalized with the flu had a heart complication—it's no surprise that experts are emphasizing flu shots this year.

The AHA has long recommended the [flu vaccine](#) to protect against cardiovascular disease complications, Elkind said. This year, the nonprofit is launching a public awareness campaign to promote flu shots and to encourage employers to adopt policies that encourage them, such as paid time off and drive-through vaccination stations at worksites.

The CDC says getting a flu vaccine is more important than ever this year, not just for your own protection but to help reduce the strain on health care systems responding to the COVID-19 pandemic.

In addition to a flu shot, Elkind said, everyone should know the warning signs of a stroke. (Remember the acronym FAST: "F" for face drooping; "A" for arm weakness; "S" for speech difficulty; and "T" for time to call 911.)

And, he said, everyone should keep following the rules on COVID-19 prevention.

"The best way to protect yourself against a stroke from the coronavirus is to protect yourself against the coronavirus in the first place," he said. Avoid crowds. Wear a mask. Wash your hands. Keep your distance. "All the things that we've been taught over the last few months." covers heart and brain health. Not all views expressed in this story reflect the official position of the American Heart Association. Copyright is owned or held by the American Heart Association, Inc., and all rights are reserved. If you have questions or comments about this story, please email [editor@heart.org](mailto:editor@heart.org).

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