

# The differences and similarities between the flu and COVID-19

By Michael Merschel, American Heart Association News



*(Brothers91/E+, Getty Images)*

The viruses that cause the flu and COVID-19 are not the same, and the diseases are different, too. But they have a lot in common, including the ways you can protect yourself.

You can imagine the viruses as different kinds of dangerous animals – but "both can bite you," said Dr. Priya Sampathkumar, head of the infection control program at the Mayo Clinic in Rochester, Minnesota.

More precisely, the flu is caused by several different strains of virus. Influenza A and B are the ones that spur flu season. COVID-19 is caused by a virus called SARS-CoV-2, which was first identified in late 2019.

The [Centers for Disease Control and Prevention](#) says symptoms for both flu and COVID-19 can range from mild to severe. Both illnesses can cause fatigue, body aches, fever, chills, coughing or headache. Shortness of breath, runny nose and loss of taste or smell are more common with COVID-19.

From symptoms alone, "there's really no good way to tell flu apart from COVID infection," Sampathkumar said.

Both spread in similar ways, she said. Both viruses multiply in the upper respiratory tract. When people who are infected cough or speak, virus-laden respiratory droplets are expelled. Someone who breathes in those particles can get sick.

But SARS-CoV-2 is more contagious than the flu viruses, she said, partly because it's new to humans. "Because flu has been around for so long, most of us are partially immune either by vaccination or through previous exposures to flu, which is why the vast majority of us don't get very sick."

Both viruses can be spread by infected people before they have symptoms. The CDC says a person infected with COVID-19 could be contagious about two days before having symptoms compared to one day for most people with the flu. And people with COVID-19 could be contagious longer from the onset of symptoms – at least 10 days as opposed to seven days with the flu.

While both diseases can be deadly, the coronavirus has caused much more devastation since it came on the scene. During the [2018-2019 flu season](#), influenza caused 34,157 deaths in the United States, according to CDC estimates. In 2020, COVID-19 was the underlying cause of 345,323 deaths in the U.S., according to [provisional CDC data](#).

Also, the diseases don't target people equally. "Probably the major difference between flu and COVID is the behavior of the disease in very young children," Sampathkumar said. "Very young children seem to be somewhat less likely to become ill with COVID." Flu, on the other hand, "actually tends to make very young children very sick."

The CDC lists [several underlying conditions](#) that make someone more likely to get severely ill from COVID-19. Heart disease is among them, said Dr. Deborah Kwon, a cardiologist and director of cardiac MRI at Cleveland Clinic.

"There have been multiple studies looking at predictors of those who had severe infection, ICU, hospitalization and death," she said. "And cardiovascular disease was one of the strong independent risk factors for severe complications and mortality related to COVID."

Both viruses also pose a serious risk to the heart and brain. A 2018 study in the [New England Journal of Medicine](#) found the risk of heart attack was six times higher in the week after someone was diagnosed with the flu. With COVID-19, [heart damage](#) can occur. Flu has been associated with a [higher risk of stroke](#), as has COVID-19.

Both the flu and COVID-19 trigger similar reactions in the body, Kwon said. Each illness "sensitizes or revs up the immune system," triggering inflammatory responses as the body's defense mechanisms try to eradicate the invaders.

Both viruses also can cause platelets to become hyperactive, or extra sticky, leading to blood clots, Kwon said.

Luckily, similar measures protect against both diseases. Wearing a mask and physical distancing helps stop the spread of respiratory viruses. So does frequent hand-washing for at least 20 seconds.

And then there are vaccines.

The CDC [recommends a COVID-19 vaccine](#) for everyone 12 and up. [Three vaccines](#) are currently available for different age groups, and the Food and Drug Administration's advisory panel is [scheduled to meet](#) later this month to review data on Pfizer's vaccine in 5- to 11-year-olds. The vaccines help reduce a person's risk of getting sick, especially with the severe illness that can cause hospitalization and death.

The CDC also recommends almost everyone 6 months and older get a flu shot by the end of October. For people with heart disease, the flu vaccine can lower the risk of dying from heart problems and any other cause, according to research published in March in the [Journal of the American Heart Association](#).

Flu strains evolve, so the vaccines are reformulated every year. This year's vaccines are designed to protect against the four flu viruses most likely to spread during the upcoming season.

But confusion persists. According to a [recent online survey](#) of 1,000 U.S. adults conducted for the American Heart Association, 27% incorrectly believed you can get the flu from the vaccine. And 12% thought you can't get both a COVID-19 and flu vaccine at the same time. But you can, the CDC says. And you do need both.

"The COVID-19 vaccine isn't going to give you any cross-protection from the flu, and the flu vaccine isn't going to protect you from COVID at all," Sampathkumar said.

Together, they offer a bonus layer of protection, she said, because "anytime you get one infection, that weakens your body and then makes you more susceptible to other infections. So we want you to be protected against both."

Getting either disease carries much greater risk overall than any of the extremely rare complications from the [COVID-19](#) and [flu](#) vaccines themselves. And they do more than help protect the vaccinated person – they protect the health of those around them.

In that sense, Kwon said, both vaccinations are about "wanting to care for and love our neighbors."

Sampathkumar agreed.

"If you're young and healthy, it's true that you may not get very ill from influenza," she said. "But by getting vaccinated, you reduce the chances that you'll have a mild or asymptomatic infection and pass it on to others." That protects people who might not respond well to vaccines, such as people who are older or immunocompromised.

So, Sampathkumar said, "do it not just for yourself, but also for other people."

*Editor's note: Because of the rapidly evolving events surrounding the coronavirus, the facts and advice presented in this story may have changed since publication. Visit [Heart.org](https://www.heart.org) for the latest coverage, and check with the Centers for Disease Control and Prevention and local health officials for the most recent guidance.*

*If you have questions or comments about this story, please email [editor@heart.org](mailto:editor@heart.org).*

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