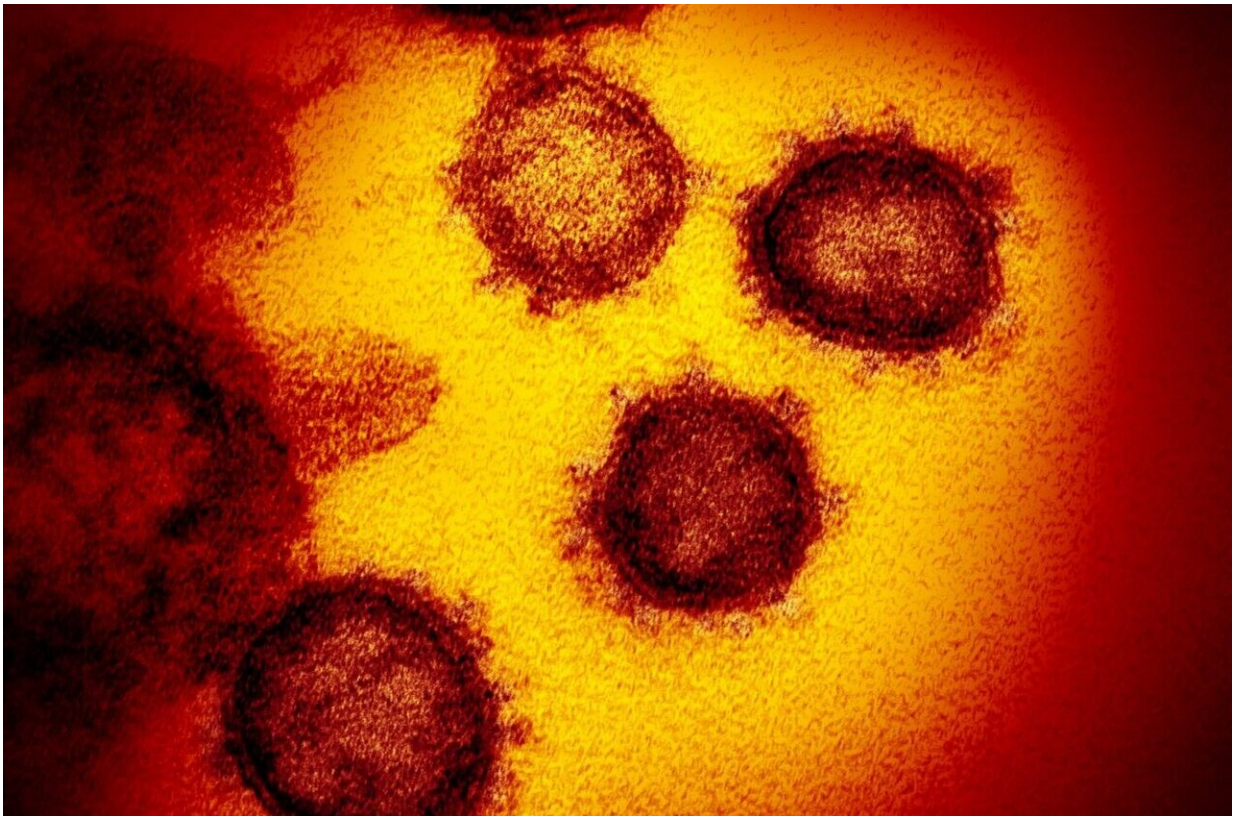


# Stroke risk among older adults highest in first 3 days after COVID-19 diagnosis

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Transmission electron microscope image of SARS-CoV-2, the virus that causes COVID-19, emerging from human cells. Credit: NIAID

The risk of stroke among older adults diagnosed with COVID-19 was highest within the first three days of diagnosis, according to preliminary

research to be presented at the American Stroke Association's International Stroke Conference 2022.

"Stroke following the [diagnosis](#) of COVID-19 is a possible complication of COVID-19 that patients and clinicians should be aware of," said Quanhe Yang, Ph.D., lead study author and senior scientist in the Division for Heart Disease and Stroke Prevention at the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta. "Vaccination and other preventive measures for COVID-19 are important to reduce the risk of infection and complications including stroke."

Previous studies have examined the risk of stroke among adults with COVID-19; however, findings were inconsistent, and few focused specifically on [older adults](#), who are at greater risk of stroke.

This study examined the risk of ischemic stroke, which is a stroke due to a blocked blood vessel, among older adults diagnosed with COVID-19 by examining the health records of 37,379 Medicare beneficiaries ages 65 and older. The patients were diagnosed with COVID-19 between April 1, 2020 through February 28, 2021 and were hospitalized for stroke from January 1, 2019 through February 28, 2021. Stroke hospitalizations could occur before or after the diagnosis of COVID-19, however, those that occurred 7 days before diagnosis or 28 days after diagnosis served as a control period. The participants were, on average, 80 years old when diagnosed with COVID-19, and 57% were women. More than 75% were non-Hispanic white adults; more than 10% were non-Hispanic Black adults; less than 10% were Hispanic adults, and the remainder were adults from other racial or ethnic groups. The study compared stroke risk in the days immediately before and after COVID-19 diagnosis to the risk during the other days of the study, or the control period.

The analysis found:

- The greatest risk of stroke occurred during the first three days after COVID-19 diagnosis—10 times higher than during the control period.
- Following the first three days after COVID-19 diagnosis, the stroke risk quickly declined yet remained higher compared to the control period. Specifically, between days 4-7 the stroke risk was 60% higher, and between days 8-14, the stroke risk was 44% higher compared to the control period. The lowest stroke risk occurred after 15-28 days when the risk of stroke was 9% higher than during the control period.
- A younger subset of participants, those ages 65-74 years old, had a greater risk of stroke after COVID-19 diagnosis, compared to those ages 85 and older, and among those without a history of stroke.
- There were no differences in stroke risk related to sex, or race and ethnicity.

"These findings can inform diagnosis, treatment and care of stroke among patients with COVID-19," Yang said. "Further studies are needed to clarify the age-dependent risk of stroke associated with COVID-19."

The 5<sup>th</sup> leading cause of death in the U.S., stroke is a [medical emergency](#) that occurs when a blood vessel to the brain becomes blocked or bursts, preventing oxygen and nutrients from reaching the brain. Stroke is a major cause of long-term disability. Rapid treatment is critical to prevent brain damage or death, so it is important to recognize the warning signs of stroke and the correct action. The abbreviation [F.A.S.T.](#) stands for face drooping, arm weakness, speech difficulty, time to call 9-1-1.

The American Heart Association and Centers for Disease Control and Prevention support COVID-19 vaccination including boosters as the best way to reduce the risk of COVID-19 infection and to prevent [severe](#)

[disease](#) or death, especially among people with cardiovascular disease or other medical conditions.

The study's limitations include the possibility of misclassification from the use of Medicare real-time preliminary claims, and the dates of COVID-19 diagnosis may be incorrect due to limited test availability, particularly early in the pandemic. Later, COVID-19 testing of hospitalized patients became standard, which may have contributed to the finding of a greater risk of [stroke](#) in the days immediately following a COVID-19 diagnosis. Finally, the study's results may not apply to adults who are not beneficiaries in Medicare's fee-for-service system.

Provided by American Heart Association

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