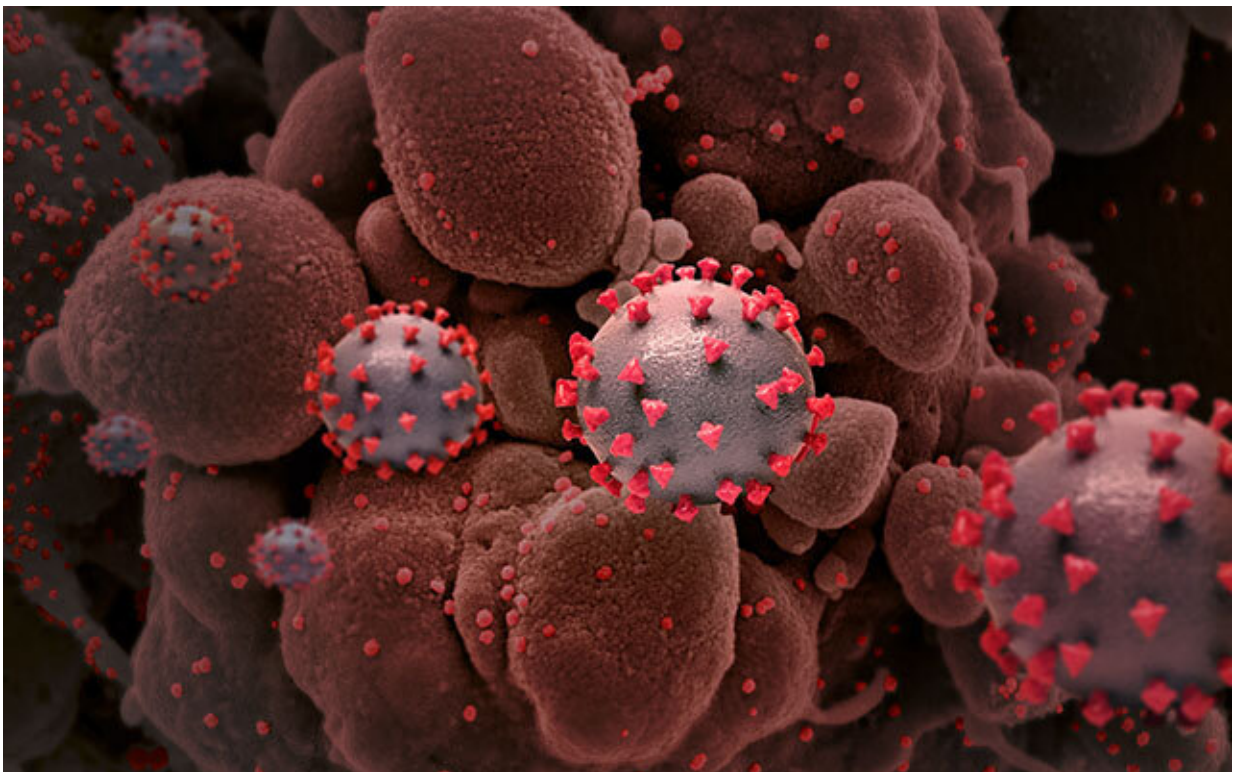


Healthy young adults who had COVID-19 may have long-term impact on blood vessels and heart health

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Creative rendition of SARS-CoV-2 particles (not to scale). Credit: National Institute of Allergy and Infectious Diseases, NIH

New research published in *Experimental Physiology* highlight the possible long term health impacts of COVID-19 on young, relatively

healthy adults who were not hospitalized and who only had minor symptoms due to the virus.

Increased stiffness of arteries in particular was found in young adults, which may impact heart [health](#), and can also be important for other populations who may have had severe cases of the [virus](#). This means that young, [healthy adults](#) with mild COVID-19 symptoms may increase their risk of cardiovascular complications which may continue for some time after COVID-19 infection.

While SARS-CoV-2, the virus known for causing the COVID-19 pandemic, is mainly characterized by respiratory symptoms, other studies have recently shown changes to blood vessel function among young adults 3-4 weeks after being infected with SARS-CoV-2 (Ratchford et al., 2021).

This has also been observed months after infection in older adults as well (Riou et al. *J Clin Med.* 2021).

The research team at Appalachian State University found that the virus may have detrimental effects to arteries throughout the body, including in the [carotid artery](#) which supplies the brain with blood.

This draws comparisons between SARS-CoV-2 and other acute bacterial and viral infections which alter arterial stiffness such as rheumatic fever, Kawasaki disease, pneumonia, H. Pylori, and lupus, all of which may persist long after symptoms have resolved.

The researchers tested young adults 3-4 weeks after being infected with SARS-CoV-2. They used an ultrasound on the carotid artery and took recordings of that image for 10-15 heart beats.

These recordings were analyzed on a computer software to find

measures of carotid stiffness. For the [control group](#), they used data from young healthy adults who were studied prior to the COVID-19 pandemic.

As far as limitations of this study goes, the researchers do not know if the SARS-CoV-2 group had any innate decrements in arterial stiffness prior to contracting the virus.

They also did not control for menstrual cycle or variations in contraceptive use in either group. However, previous research has indicated that contraceptive use and [menstrual cycle](#) fluctuations among young healthy females may not influence the outcome measures they were studying.

The researchers are following these [young adults](#) for 6 months after initial infection with SARS-CoV-2 to observe if and when the arterial health of these individuals is improving.

The results of the longitudinal study will be interesting, as these adults' symptomology may improve, yet their arterial health may not be recovering as quickly, which may have significance for their heart health.

Further investigations should aim to study a more diverse patient population over time, especially [older adults](#) who are more susceptible to the virus and who may have underlying conditions such as heart disease, diabetes, and hypertension.

Dr. Steve Ratchford, the senior author on the paper said: "These findings suggest a potential long-term impact of COVID-19 on young, relatively healthy adults who may otherwise think the virus may not be affecting them."

More information: Rachel E. Szeghy et al, Carotid stiffness, intima media thickness, and aortic augmentation index among adults with SARS-CoV-2, *Experimental Physiology* (2021). [DOI: 10.1113/EP089481](https://doi.org/10.1113/EP089481)

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