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## Covid-19: Even mild infections can cause long term heart problems, large study finds

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Infection with SARS-CoV-2 can cause cardiovascular problems for up to a year, not just during the acute phase, a large study has found.<sup>1</sup>

The authors from Washington University and the Veterans Administration Health Care System in St Louis, Missouri, reported in *Nature Medicine* that one year after covid-19 infection people were at higher risk of cardiovascular disease, including cerebrovascular disorders, dysrhythmias, ischaemic and non-ischaemic heart disease, pericarditis, myocarditis, heart failure, and thromboembolic disease. Even those who had not been admitted to hospital with covid-19 were at risk of these problems, but the risk increased with the severity of the infection, from people not admitted to hospital to those admitted to intensive care.

Those who had had covid-19 had a 72% increased risk of heart failure, 63% increased risk of heart attack, and 52% increased risk of stroke compared with controls.

The researchers wrote that the increased risks “were evident regardless of age, race, sex, and other cardiovascular risk factors, including obesity, hypertension, diabetes, chronic kidney disease, and hyperlipidemia; they were also evident in people without any cardiovascular disease before exposure to covid-19, providing evidence that these risks might manifest even in people at low risk of cardiovascular disease.” However, the way covid-19 infection might cause cardiovascular problems remains unclear, they said.

The researchers used national healthcare databases from the US Department of Veterans Affairs to build a cohort of 153 760 people who had survived the first 30 days of covid-19 infection between March 2020 and January 2021. As controls, they created a cohort of 5 637 647 people as contemporary controls and a cohort of 5 859 411 people as historical controls to estimate risks and one year burdens of a set of pre-specified incident cardiovascular outcomes. The veteran population tends to be older, white, and male. The researchers statistically compensated for the scarcity of women and people of colour.

Lead author Ziyad Al-Aly, a clinical epidemiologist at Washington University, said he and his colleagues were surprised to see the spectrum of people affected by covid-19 cardiovascular problems. “We realised it was evident in all subgroups, including younger adults, older adults, Black people, white people, and people with obesity and those without. The risk was everywhere,” he told NBC News.<sup>2</sup>

The researchers said that the risk of cardiovascular disease in people who have had covid-19 is substantial. While the best way to prevent

cardiovascular problems is to prevent infection in the first place, governments and health systems must prepare to deal with possible big problems in future. In the US more than 72 million people have been infected with covid-19, more than 16 million in the UK, and more than 355 million globally. The cardiovascular problems seen in some people who have had covid-19 are chronic and may have long lasting consequences for the individual and for health systems, economic productivity, and life expectancy, the researchers say.

While there is evidence of long term heart and vascular damage, “Similar things could be happening in the brain and other organs, resulting in symptoms characteristic of long covid, including brain fog,” Al-Aly told *Science*.<sup>3</sup>

- 1 Xie Y, Xu E, Bowe B, Al-Aly Z. Long-term cardiovascular outcomes of COVID-19. *Nat Med* 2022;(February). doi: 10.1038/s41591-022-01689-3. pmid: 35132265
- 2 Edwards E, Lewis R. After covid, risks of heart problems remain elevated for up to a year. NBC News. 12 February 2022. <https://nbc-news.com/health/news/covid-risks-heart-problems-remain-elevated-year-rcna15608>.
- 3 Wadman M. Covid-19 takes serious toll on heart health—a full year after recovery. 9 February 2022. [www.science.org/content/article/covid-19-takes-serious-toll-heart-health-full-year-after-recovery](http://www.science.org/content/article/covid-19-takes-serious-toll-heart-health-full-year-after-recovery).

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