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## Covid-19: One in eight adults develops long covid symptoms, study suggests

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One in eight covid-19 patients (12.7%) is likely to experience long term symptoms, a study from the Netherlands has reported.<sup>1</sup>

Using digital questionnaires, researchers collected data on the frequency of 23 symptoms commonly associated with covid in an uninfected population and in people who had had a covid diagnosis.

The findings, published in the *Lancet*,<sup>1</sup> found that 21.4% (381/1782) of adults who had had covid experienced at least one new or severely increased symptom three to five months after infection when compared with before. This compared with only 8.7% (361/4130) of uninfected people followed over the same period.

The core long covid symptoms highlighted by the researchers include chest pain, difficulties breathing, pain when breathing, painful muscles, loss of taste and smell, tingling extremities, lump in throat, feeling hot and cold, heavy arms or legs, and general tiredness.

The questionnaire was sent out 24 times to the same people from March 2020 to August 2021. During this period people would have been infected with alpha or an earlier variant, and most people were unvaccinated.

Over 76 000 participants completed a total of 883 973 questionnaires, the average age of respondents was 54, and 61% were female. A group of 4231 (5.5%) participants who had covid were then matched to 8462 controls who did not, taking into account sex, age, and the time of covid diagnosis.

Aranka Ballering, study author and a PhD candidate at the University of Groningen, Netherlands, said, “By looking at symptoms in an uninfected control group and in individuals both before and after SARS-CoV-2 infection, we were able to account for symptoms which may have been a result of non-infectious disease health aspects of the pandemic, such as stress caused by restrictions and uncertainty.

“Post-covid-19 condition is an urgent problem with a mounting human toll. Understanding the core symptoms and the prevalence of post-covid-19 in the general population represents a major step forward for our ability to design studies that can ultimately inform successful healthcare responses to the long term symptoms of covid-19.”

The authors acknowledged some limitations to the study, including that it did not include an ethnically diverse population and that because of asymptomatic infection they may have underestimated the true prevalence of covid-19. Additionally, some symptoms that have been highlighted as potentially relevant to long covid, such as brain fog, were not considered during the study.

<sup>1</sup> Ballering AV, van Zon SKR, olde Hartman TC, et al. Persistence of somatic symptoms after covid-19 in the Netherlands: an observational cohort study. *Lancet* 2022;400:452-61. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(22\)01214-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01214-4/fulltext)

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