

Most people infected with SARS-CoV-2 develop symptoms: study

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A colorized scanning electron micrograph of the SARS-CoV-2 virus. Credit: NIAID

While some people who contract SARS-CoV-2 infections never experience any symptoms, there remains disagreement about what proportion of total infections these cases represent. A new study

published in the open-access journal *PLOS Medicine* by Diana Buitrago-Garcia at the University of Bern, Switzerland and colleagues suggests that true asymptomatic cases of SARS-CoV-2 comprise a minority of infections.

The full spectrum and distribution of the severity of COVID-19 symptoms are not well understood. Some infected people may experience severe infections resulting in viral pneumonia, [respiratory distress syndrome](#), and death, while others remain completely asymptomatic or develop mild, nonspecific symptoms. To better understand the proportion of people who become infected with SARS-CoV-2 and never develop any symptoms, as well as the proportion of people who are asymptomatic at the time of diagnosis but develop symptoms later, researchers systematically reviewed literature using a database of SARS-CoV-2 evidence between March and June, 2020. The authors then analysed 79 studies reporting [empirical data](#) on 6,616 people, 1,287 of whom were defined as asymptomatic, in order to determine the proportion of [infected people](#) who never developed symptoms. While the study was limited by its inability to ascertain the impact of false negatives, the researchers were able to estimate that 20% (95% CI 17-25) of COVID-19 infections remained asymptomatic during follow-up.

Accurate estimations of true asymptomatic and presymptomatic infections are critical to understanding SARS-CoV-2 transmission at the [population level](#) and for populations to adopt appropriately tailored public health strategies. Future research should include prospective longitudinal studies that document symptom status. Improved accuracy of serological tests is also needed to reduce the number of false negatives. Since each person infected with SARS-CoV-2 is initially asymptomatic, the proportion that will go on to develop symptoms is estimated to be around 80%, suggesting that presymptomatic transmission may significantly contribute to overall SARS CoV-2

epidemics.

According to the authors, "The findings of this systematic review of publications early in the pandemic suggests that most SARS-CoV-2 infections are not asymptomatic throughout the course of [infection](#). The contribution of presymptomatic and asymptomatic infections to overall SARS-CoV-2 transmission means that combination prevention measures, with enhanced hand and respiratory hygiene, testing and tracing, and isolation strategies and social distancing, will continue to be needed.

More information: Buitrago-Garcia D, Egli-Gany D, Counotte MJ, Hossmann S, Imeri H, Ipekci AM, et al. (2020) Occurrence and transmission potential of asymptomatic and presymptomatic SARS-CoV-2 infections: A living systematic review and meta-analysis. *PLoS Med* 17(9): e1003346. doi.org/10.1371/journal.pmed.1003346

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