



Covid-19: Physical distancing of at least one metre is linked to large reduction in infection

Elisabeth Mahase

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Physical distancing of at least a metre is associated with a “large reduction” in covid-19 infection, and keeping apart two metres may be even more effective, a study funded by the World Health Organization has found.¹

Researchers from Canada and Lebanon carried out a systematic review and meta-analysis of 172 studies—none of which were randomised controlled trials—to assess the optimum distance for avoiding coronavirus transmission between people and whether face masks and eye protection could also help.

The study, published in the *Lancet*,¹ also noted low certainty evidence that wearing face masks could protect the public against infection and that eye protection could “confer additional benefit.”

“However, no intervention, even when properly used, was associated with complete protection from infection. Other basic measures (eg, hand hygiene) are still needed in addition to physical distancing and use of face masks and eye protection,” the paper said.

Large protective effect

The research team used data on SARS-CoV-2 and the coronaviruses that cause severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). They included 172 observational studies in 16 countries and six continents. This involved 44 comparative studies in healthcare and non-healthcare settings and considered 25 697 patients, 6674 of whom had covid-19.

The researchers reported that transmission of the viruses was lower when people maintained physical distancing of one metre or more, when compared with a distance of less than a metre (odds ratio (aOR) 0.18 (95% confidence interval 0.09 to 0.38); risk difference (RD) –10.2% (–11.5 to –7.5); moderate certainty). This protection increased in line with distance (change in relative risk (RR) 2.02 per metre; Pinteraction=0.041; moderate certainty).

Wearing face masks may also result in a large reduction in risk of infection when compared with not wearing one (aOR 0.15 (0.07 to 0.34), RD –14.3% (–15.9 to –10.7); low certainty). Stronger associations were reported with N95 or similar respirators, when compared with disposable surgical masks or cotton masks (Pinteraction=0.09; posterior probability >95%, low certainty). Meanwhile, eye protection was associated with less infection (aOR 0.22 (0.12 to 0.39), RD –10.6% (–12.5 to –7.7; low certainty).

The authors wrote, “From a policy and public health perspective, current policies of at least one metre physical distancing seem to be strongly associated with a large protective effect, and distances of two metres could be more effective. These data could also facilitate harmonisation of the definition of exposed (eg, within two metres), which has implications for contact tracing.”

They then called on policy makers around the world to “promptly and adequately address” issues affecting access to face masks and eye protection. For healthcare workers and administrators, the authors said that N95 respirators were likely to be better than surgical masks and that eye protection could add “substantial protection.” For the general public they recommended either disposable surgical masks or reusable 12-16 layer cotton face masks.

However, they noted that much of this evidence was based on “mask use within households and among contacts of cases.” The team added that eye protection was under-considered but could be effective in community settings.

Retailers and employers

The authors outlined some study limitations, including that “all studies were non-randomised, not always fully adjusted, and might suffer from recall and measurement bias.” Additionally, many studies did not provide information on “precise distances,” and none of them “quantitatively evaluated whether distances of more than two metres were more effective.”

“Robust randomised trials are needed to better inform the evidence for these interventions,” the paper concluded.

Linda Bauld, professor of public health at the University of Edinburgh, commented, “There have been plenty of complaints that the guidance in the UK on two metres’ distance is excessive because it is more than in other countries. But this review supports it. Maintaining this distance is likely to reduce risk compared to one metre. Thus, where possible, this is the distance that retailers and employers should use as more premises and workplaces reopen in the future.”

She added that, while the certainty of the evidence on eye coverings and masks was low, it did add to the evidence that “we should be asking the public to wear face coverings on public transport, in retail outlets, and other indoor spaces even when physical distancing is in place.”

Meanwhile, Simon Clarke, associate professor in cellular microbiology at the University of Reading, warned against using this research to ease lockdown measures.

He said, “Where there is limited evidence for their effectiveness, the paper also notes that any protective coverings for eyes or face are only an extra layer of protection, and suggestions that they are the answer to lifting lockdown restrictions misrepresent a robust review of evidence. It remains the case that your front door is the most effective measure you have to protect yourself against covid-19.”

- 1 Chu DK, Akl EA, Duda S, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet* 2020 Jun. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31142-9/fulltext#seccestitle10](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext#seccestitle10).

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