

Medical masks may offer similar effectiveness to N95 respirators for preventing COVID-19 infection

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A study of more than 1,000 health care workers was unable to establish whether medical masks are significantly less effective at preventing

COVID-19 infection than N95 respirators in hospital settings. The findings varied across countries, which were studied during different times in the pandemic, and uncertainty in the estimates of effect limit definitiveness of findings. The study is published in *Annals of Internal Medicine*.

Either medical masks or N95 respirators are recommended by the World Health Organization for routine care, whereas only N95 respirators are recommended by the Centers for Disease Control and Prevention for the routine care of patients with COVID-19. It is uncertain if medical masks offer similar protection against COVID-19 compared with N95 respirators.

Researchers from McMaster University studied 1,009 [healthcare workers](#) who provided direct care to patients with suspected or confirmed COVID-19 in 29 inpatient or long-term care settings in Canada, Israel, Pakistan, and Egypt. Participants were randomly assigned to universal masking with either a medical mask or a fit-tested N95respirator for 10 weeks. The primary outcome was confirmed COVID-19 on reverse transcriptase polymerase chain reaction (RT-PCR) test. The authors found that confirmed COVID-19 occurred in 10.46 percent of the medical mask group versus 9.27 percent in the N95 respirator group, which ruled out a doubling in hazard of RT-PCR–confirmed COVID-19. However, the results varied by country: 6.11 percent versus 2.22 percent in Canada; 35.29 percent versus 23.53 percent in Israel; 3.26 percent versus 2.13 percent in Pakistan; and 13.62 percent versus 14.56 percent in Egypt. This may have been due to differences in vaccine use, the number of people with previous infection, and the type of variant circulating in the study [countries](#) which were enrolled during different times in the pandemic. The authors indicate that while medical masks were found to be not significantly less effective than N95 respirators, and the efficacy estimate was within the noninferiority margin of 2, this margin was wide, and between- country

heterogeneity in an unplanned analysis may limit definitive conclusions about noninferiority.

An accompanying editorial by Roger Chou, MD of Oregon Health & Science University highlights that this trial provides the best evidence to date on comparative effectiveness of mask types in preventing COVID-19 infection in [health care workers](#) providing routine patient care. The results indicate that medical masks may be similar to N95 respirators in Omicron-era settings with high COVID-19 seroprevalence—but would not have met a more stringent noninferiority threshold. Chou notes that decisions about mask types in health care workers should be informed by the uncertainty around the estimates and continue to account for health care worker preferences about potential trade-offs, N95 respirator availability, and resource constraints.

More information: Medical Masks Versus N95 Respirators for Preventing COVID-19 Among Health Care Workers, *Annals of Internal Medicine* (2022). [DOI: 10.7326/M22-1966](https://doi.org/10.7326/M22-1966) , www.acpjournals.org/doi/10.7326/M22-1966

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