

UPDATE ALERT

Update Alert 4: Masks for Prevention of Respiratory Virus Infections, Including SARS-CoV-2, in Health Care and Community Settings

This is the fourth update alert for a living rapid review on the use of masks for prevention of respiratory virus infections, including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), in health care and community settings (1). The first 3 updates were monthly, and the interval was switched to bimonthly for this and subsequent updates. Update searches were done from 3 October to 2 December 2020 using the same search strategies as the original review. The update searches identified 739 citations. One study (2) on the use of masks and the prevention of SARS-CoV-2 infection in a community setting and 2 studies (3, 4) in health care settings were added for this update (Supplement Tables 1 to 4).

The evidence on any mask use versus no use and surgical mask use versus no use in community settings and risk for SARS-CoV-2 infection were previously assessed as insufficient on the basis of 2 (any mask use) or 1 (surgical mask use) observational studies with methodological limitations (5, 6). A new, good-quality, open-label trial of 6024 community-dwelling adults in Denmark evaluated the effects of wearing a surgical mask outside of the house, at a time when mask wearing in the community was neither recommended nor common (2). The incidence of SARS-CoV-2 infection among participants (based on a positive IgM or IgG antibody result, a positive reverse transcriptase polymerase chain reaction test result, or an infection diagnosed in a health care setting) was 2.0%. Mask use versus no mask use was associated with a small, nonstatistically significant reduction in risk for SARS-CoV-2 infection (odds ratio [OR], 0.82 [95% CI, 0.54 to 1.23]). Results were consistent in demographic subgroups and when accounting for mask adherence, which was suboptimal. The trial was not designed to assess the effects of mask use as source control; in addition, high adherence to other infection control measures (for example, physical distancing and handwashing) could have attenuated potential benefits. For any mask use versus no use and for surgical use versus no use in community settings, the strength of evidence was changed from insufficient to low for a small reduction in risk for SARS-CoV-2 infection (Supplement Table 5).

The evidence on mask use in health care settings and risk for SARS-CoV-2 infection were also previously assessed as insufficient on the basis of 3 studies with methodological limitations (7-9). Two new cohort studies, both done in the United States, reported on mask use in health care settings (3, 4). One study of 16397 health care workers and first responders (86% health care workers) found that use of an N95 or surgical mask all of the time versus not all of the time was associated with a decreased risk for infection (adjusted OR, 0.83 [CI, 0.72 to 0.95] and 0.86 [CI, 0.75 to 0.98], respectively) (3). In the second study, done in 20614 asymptomatic health care workers, risk for infection was reduced with any mask use versus no mask use (OR, 0.58 [CI, 0.50 to 0.66]) (4). Findings were consistent when the analysis was stratified by mask type (N95: OR, 0.54 [CI, 0.47 to 0.62] vs. surgical masks: OR, 0.71 [CI, 0.58 to 0.86]). An N95 mask was associated with decreased risk versus a surgical mask (OR, 0.76 [CI, 0.63 to 0.92]). Both studies had methodological limitations, including potential recall bias. One study (3) did not

adjust for confounders. The other study (4) adjusted only for age, and some inconsistency was present. Therefore, evidence for various comparisons about mask use in health care settings and risk for SARS-CoV-2 remains insufficient (Supplement Table 5).

As with prior updates, no new studies evaluated the effects of mask use and risk for SARS-CoV-1 infection, Middle East respiratory syndrome-CoV infection, or influenza or influenza-like illness, and there were no new studies on the effectiveness and safety of mask reuse or extended use.

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