

Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS-CoV-2 Infection in Danish Mask Wearers

A Randomized Controlled Trial

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Ann Intern Med. doi:10.7326/M20-6817

Annals.org

For author, article, and disclosure information, see end of text.

This article was published at Annals.org on 18 November 2020.

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Alberto Donzelli Scientific Committee of Foundation “Allineare Sanità e Salute” – Milan - Italy. 14 December 2020

The effectiveness of mask recommendation (mainly outdoors) is questionable, for overlooked reasons

The DANMASK-19 (1) conclude: “The recommendation to wear surgical masks to supplement other public health measures did not reduce the SARS-CoV-2 infection rate among wearers... The difference was not statistically significant, the 95% CIs are compatible with a 46% reduction to a 23% increase in infection.”

Two editorialists (2) state: “Across all analyses odds ratios were approximately 0.8, consistent with a 20% reduction in incident SARS-CoV-2 infection if masks are recommended. The sample size was insufficient to determine the statistical significance of a 20% reduction”. However, 52 participants in the mask group and 39 control participants reported COVID-19 in their household, that might be considered as randomized clusters. Assuming the same (or proportional) numbers of Covid-19 and similar households’ denominators, summing the Sars-CoV-2 infections of each group with the COVID-19 of its households, the mask group plus households experienced more infections/diseases than the control group plus households. Moreover, 40% of face mask group reduced physical activity (1).

The criticism that “the antibody-positive results in both intervention and control groups could have been false positives” (2), biasing the findings towards the null, does not apply to the reported households’ COVID-19.

The criticism that “only 46% of those in the intervention group reported adherence” (2) exactly as instructed, weakens the editorialists’ thesis indeed, because infection, the primary outcome, occurred in 2.0% of “adherents”, further approaching the control group’s 2.1%.

The editorialists point that the intervention group females had less infections (odds ratio, 0.65; 0.38-1.12 [please note: males 1.12; 0.59-2.12]), because women “may be more likely to adhere” (2). Inconsistently, their citation (3) shows that women indeed are more compliant than men with each of ten restraining measures, and significantly so in three, including handwashing and distancing, but *not* with wearing face masks.

The mechanistic evidence that masks reduce wearer exposure and block his/her respiratory droplets implies specularly that microorganisms eventually multiplying in the infected persons’ airways are in turn blocked at each exhalation and partially re-inhaled, increasing the cumulative viral load and the infection, and contagiousness (4). This overlooked mechanism works in the opposite direction to the protective one: only well-designed trials can establish which net effect prevails at the community level. In the Hajj pilgrims trial (5) the net effect outdoors shifted towards an excess of respiratory infections in mask wearers (and perhaps in pilgrims sharing tents with others in the mask group). Wearing masks long and everywhere is not evidence-based.

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Disclosures:

There are no conflicts of interest to disclose.