

# COVID-19

## LITERATURE REPOSITORY

### Do facemasks protect against COVID-19?

**Authors**

David Isaacs, Philip Britton, Annaleise Howard-Jones, Alison Kesson, Ameneh Khatami, Ben Marais, Claire Nayda, Alexander Outhred

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**Department, Hospital**

Departments of Infectious Diseases & Microbiology, Infection Control and Clinical Ethics

**Discussion**

Respiratory viruses like coronaviruses and influenza infect us through inhaling droplets or by touching contaminated surfaces then rubbing our nose, mouth or eyes. Virus can spread further in an aerosol if an infected patient is subjected to an aerosol-generating procedure such as a nebuliser or mechanical ventilation.

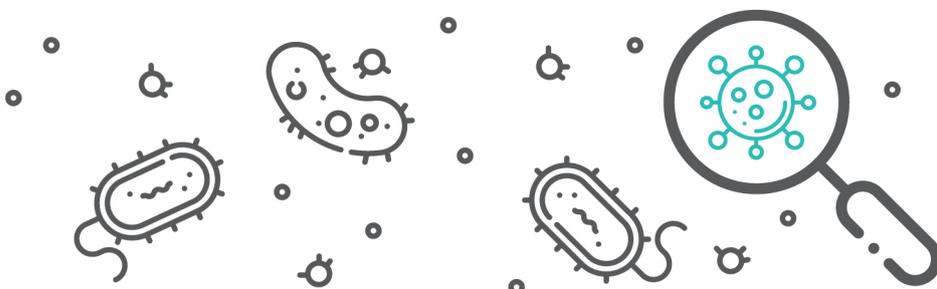
There are two major classes of facemask: medical/surgical masks are loose-fitting, disposable masks that filter out droplets, while tight-fitting N95 or P2 respirator masks are designed to be more effective filters of airborne particles. N95/P2 masks are more expensive. Both surgical and N95 masks may become a scarce resource.

Evidence on the efficacy of masks is confounded by whether or not they are being used in a pandemic; whether by health care workers or the public; and by the concomitant use of hand-washing, social distancing and other personal protective equipment (PPE).

Health care workers: A meta-analysis of randomised controlled trials (RCTs) pre- COVID showed that surgical masks or N95 respirators reduced clinical respiratory illness in health care workers by 41% and influenza-like illness by 66%: they work but are far from perfect.<sup>1</sup> N95 masks were not statistically better than surgical masks in preventing proven influenza,<sup>2</sup> nor than preventing COVID-19, although the latter is based on weak data.<sup>3</sup>

These findings justify the current recommendation that healthcare workers use surgical masks when there is risk of droplet spread and reserve precious N95 masks for healthcare workers performing aerosol-generating procedures.

Some health care and ancillary hospital staff have mooted wearing surgical facemasks all the time to protect themselves and patients.<sup>4</sup> However, given the current low and declining transmission within the Australian community, the risk of inadvertently catching or spreading the infection if not wearing a mask is very low.



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Public: During the 2009 pandemic of H1N1 influenza (swine flu), encouraging the public to wash their hands reduced the incidence of infection significantly whereas wearing facemasks did not.<sup>5</sup> There is no good evidence that facemasks protect the public against respiratory viruses, including COVID-19.<sup>6</sup>

However, absence of proof of evidence is not the same as proof of absence of evidence. During the pandemics caused by swine flu and by the coronaviruses which caused SARS and MERS, many people in Asia and elsewhere walked around wearing surgical or homemade cotton masks. One danger of doing this is the illusion of protection.

Surgical facemasks are designed to be discarded after single use. As they become moist, they become porous and no longer protect. Indeed, experiments have shown that surgical and cotton masks do not trap the SARS-CoV-2 (COVID) virus, which can be detected on the outer surface of the masks for up to 7 days.<sup>7,8</sup>

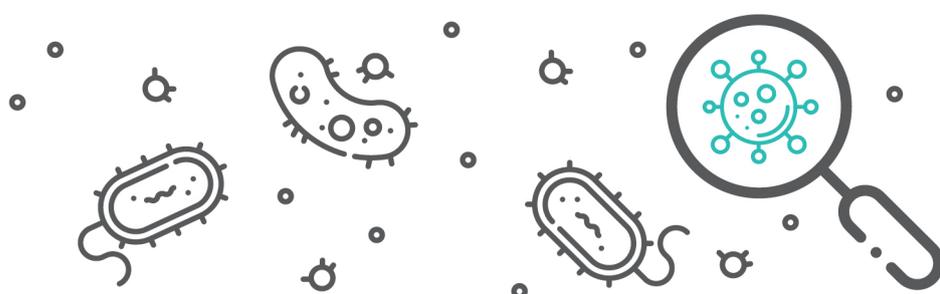
Thus, the inappropriate use of facemasks for long periods without changing them and without washing hands every time you touch them could paradoxically increase the risk of infection. Because the US is in a desperate situation, their Centers for Disease Control has recommended the public wear homemade cloth masks. This was essentially done in an effort to try and reduce community transmission, especially from people who may not perceive themselves to be symptomatic, not to protect the wearer, although the evidence for this is scant. In contrast, the World Health Organization currently recommends against the public routinely wearing facemasks.

## Conclusions

Recommendation: In Australia currently, we feel the questionable benefits do not justify health care staff wearing surgical masks routinely and may impede the normal caring relationship between patients, parents and staff. We counsel against such practice, at least at present.

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