PEER simplified tool: mask use by the general public and by health care workers

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The purpose of this simplified tool is to share the findings of the PEER (Patients, Experience, Evidence, Research) umbrella systematic review on mask use by Dugré et al.[1] The first page of the simplified tool summarizes findings for mask use by the public (**Figure 1**), and the second page summarizes findings for mask use by health care workers (**Figure 2**). An easy-to-print version of the tool is available from **CFPlus**.*

How was this simplified tool developed?

The content in the simplified tool is derived from the PEER umbrella systematic review of systematic reviews, which evaluates and meta-analyzes randomized controlled trials based on clinical similarities.[1] It focuses on results that are clinically meaningful to patients or health care workers.

Results were evaluated with attention to interpretation of effect estimates and confidence intervals rather than strict statistical significance.[2,3] To do this, the absolute risk of events was calculated by pooling the control event rates from the original trials and applying the cluster-adjusted meta-analyzed risk ratio to obtain the event rate in the treatment group.[1] The absolute risk difference is reported with the 95% confidence interval to explain the range of possible effects.

Context and limitations

An important consideration when interpreting the mask literature is understanding that there are studies that have not yet been done, and that there are limitations of studies that have been done. No randomized controlled trials identified widespread use of masks by the public, as recommended by some countries during the coronavirus disease 2019 (COVID-19) pandemic. The closest studies were done on small clusters of university residence halls during influenza seasons.[1] Randomized controlled trials of mask use by health care workers were limited to hospital settings, with no trials done in primary care settings or other outpatient settings. Our review did not look at mask use during specific high-risk procedures that warrant modification of mask use (eg, intubation). No studies evaluated the effect of mask use on prevention of COVID-19 infections. The trials done to date are limited due to low event rates, variable mask compliance, and high risk of bias. Further limitations are summarized in the simplified tool.

This simplified tool is not a guideline; rather, the information is presented to promote application informed by the best available evidence.

*An easy-to-print version of the **simplified tool** is available at **www.cfp.ca**. Go to the full text of the article online and click on the **CFPlus** tab.

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Competing interests
None declared

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Figure 1

MASKS FOR THE GENERAL PUBLIC

Based on evidence from randomized controlled trials

If I wear a surgical mask while out in public, will it protect me from flu-like illness?

UNIVERSITY RESIDENCE HALLS

2 trials
1683 people

25% versus **21%**

The reduction in flu-like illness may be 4% (range: 0-8%) over 6 weeks.

But no difference in lab-confirmed influenza

What about wearing a surgical mask at home after a household member becomes sick?

Sick person wears mask
2 trials, 903 people

Healthy household members wear masks
1 trial, 290 people

Healthy and sick people wear masks
4 trials, 2750 people

In all three scenarios, wearing a mask did NOT reduce the risk of getting flu-like illness or confirmed influenza.

Masks are only one part of preventing infection.
(for example: physical distancing, hand washing)

Can we trust these results? Some of the limitations include:

- Masks not worn consistently in studies.
- For household studies, people already sick before starting to wear masks.
- Too few people got sick to show a difference in outcomes.
- Definition of flu-like illness inconsistent between trials.

What we do not know yet:

- Do cloth masks work in the community?
- Will use of masks in public prevent others from getting sick?
- Will masks prevent COVID-19 infections?

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Figure 2

MASKS FOR HEALTHCARE WORKERS

Based on evidence from randomized controlled trials

For healthcare workers, is there a difference between masks in protecting against flu-like illness?

Risk of flu-like illness

4 trials, 7607 people
N95 mask: 3.6%
versus
Surgical mask: 4.6%

If there is a difference between groups, it may be about 1% (range: 0-2%) over 4-12 weeks.

No difference in lab-confirmed influenza or lab-confirmed viral respiratory infections.

1 trial, 1149 people
Surgical mask: 0.3%
versus
Cloth mask: 2.3%

The difference in flu-like illness may be 2% over 4 weeks (range: 0-2.3%).

Masks are only one part of preventing infection. Additional personal protective equipment and precautions should be used based on the clinical setting.

Can we trust these results?
Some of the limitations include:

- Masks not worn consistently in studies.
- Too few people got sick to show a difference in outcomes.
- Definition of flu-like illness inconsistent between trials.
- Infection spread outside of work setting may impact studies.
- Interpretation of results sensitive to the statistics used.

What we do not know yet:

There is no research in primary care.

This research does not identify high-risk procedures requiring modification of mask use.

There is no research yet in COVID-19.

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