Respirator Device Fit for Individuals With Facial Hair

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Questions or requests for information about this report can be directed to requests@cadth.ca
Key Messages

- Two non-randomized studies were identified regarding facial hair and filtering respirator devices (e.g., N95 masks).
- No recommendations were identified regarding facial hair and filtering respirator devices (e.g., N95 masks).

Research Questions

1. What is the clinical evidence regarding facial hair and filtering respirator devices (e.g., N95 masks)?
2. What are the recommendations regarding facial hair and filtering respirator devices (e.g., N95 masks)?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the international HTA database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were facial hair and masks or COVID-19. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2016 and January 26, 2021. Internet links were provided, where available.

Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings section was based on information available in the abstracts of selected publications. Open-access, full-text versions of evidence-based guidelines were reviewed when abstracts were not available and relevant recommendations were summarized.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
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<tr>
<td>Population</td>
<td>Any individual (health care provider, patient, general public) required to wear respirator devices (e.g., N95 masks, supplied air respirators [excluding standard medical, cloth, or surgical masks]) in any setting</td>
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<tr>
<td>Intervention</td>
<td>Wearing respirator devices with facial hair (e.g., beards, moustaches, stubble)</td>
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<tr>
<td>Comparator</td>
<td>Wearing respirator devices with no facial hair or different styles of facial hair</td>
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| Outcomes         | Q1: Reduced aerosol droplet or particle transmission (e.g., COVID-19 transmission), safety, harms, infection rate, fit of mask  
|                  | Q2: Recommendations regarding facial hair and filtering respiratory devices such as N95 masks |
| Study designs    | Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines |

Results

Two non-randomized studies\(^1,2\) were identified regarding facial hair and filtering respirator devices (e.g., N95 masks). No health technology assessments, systematic reviews, or randomized controlled trials were identified regarding facial hair and filtering respirator devices (e.g., N95 masks). Furthermore, no evidence-based guidelines were identified regarding facial hair and filtering respirator devices (e.g., N95 masks).

Additional references of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Overall Summary of Findings

Two non-randomized studies\(^1,2\) were identified regarding facial hair and filtering respirator devices (e.g., N95 masks). The authors of both studies\(^1,2\) reported that, as beard length increased, the adequacy of respiratory fit decreased significantly. Furthermore, the authors of the first study\(^1\) reported that no full-bearded health care workers achieved a fit with a respirator. The authors of the second study\(^2\) found that as beard length surpassed 0.125 inches, the fit factor decreased significantly. However, the authors did report that fit factor for individuals with a stubble was not significantly different than individuals with a clean shave.\(^2\)

References

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Guidelines and Recommendations

No literature identified.
Appendix 1: References of Potential Interest

Previous CADTH Reports


Non-Randomized Studies

Alternate Intervention, No Comparator


Guidelines and Recommendations

Methodology Not Specified


See: Fit-checking is the minimum standard for each occasion of use of a PFR, p.7


See: Airborne and contact transmission-based precautions, p.10-11


See: Preparing the wearer, p.7

Review Articles

Not Peer-Reviewed

Additional References

