

Acceptability of N95 Respirators Among Healthcare Workers: An Overview of Systematic Reviews

Ivan Florez, Laura Mora, Silvia Villatoro, Jissel Carolina Diaz Villero, Quenby Mahood, Matthew Muller

Citation

Ivan Florez, Laura Mora, Silvia Villatoro, Jissel Carolina Diaz Villero, Quenby Mahood, Matthew Muller. Acceptability of N95 Respirators Among Healthcare Workers: An Overview of Systematic Reviews. PROSPERO 2026 CRD420261308402. Available from <https://www.crd.york.ac.uk/PROSPERO/view/CRD420261308402>.

REVIEW TITLE AND BASIC DETAILS

Review title

Acceptability of N95 Respirators Among Healthcare Workers: An Overview of Systematic Reviews

Condition or domain being studied

Healthcare Professional ; Respiratory Protective Equipment used; Acceptability of treatment

Population: Healthcare workers

Intervention: N95 respirators

Comparator: NA

Outcome:

1. Acceptability

2. Physical and psychological health

3. Other factors that impact acceptability

Physical factors: Physical factors of interest include headache, facial pain, bruising, skin irritation (including contact dermatitis), heat and humidity buildup, shortness of breath, and fatigue related with the use of N95 respirators.

Psychological well-being: The incidence of stress, mental fatigue, somnolence, reduced morale, communication difficulties, impaired performance, and perceptions of increased workload associated with N95 respirator use.

4. Other factors:

Adherence: refers to the extent to which healthcare workers consistently wear N95 respirators as recommended during patient care activities.

Compliance: is the degree to which healthcare workers follow institutional protocols for N95 use, including correct donning, doffing, and fit checking.

Tolerability: describes the ability of healthcare workers to endure wearing N95 respirators for the required duration without significant physical or psychological distress.

Others: subjective symptoms (e.g., headache, lightheadedness), or other symptoms that can compromise protection and reduce acceptability.

Rationale for the review

N95 respirators have been identified as an effective preventive measure against respiratory infections, and their use has become widespread in medical practice. This review aims to identify the effects of N95 respirators on the physical and psychological health of healthcare workers, as well as the factors influencing their acceptability and associated adverse outcomes. The findings may help inform recommendations for the use of these preventive measures, taking into account potential adverse effects and strategies to prevent them.

Review objectives

What do systematic reviews and meta-analyses report about the effects of N95 respirators on healthcare workers' physical and psychological health, factors that impact acceptability, and adverse outcomes?

Keywords

Health care professionals; Mask acceptance; N95 mask

Country

Canada

ELIGIBILITY CRITERIA

Population

Included

Healthcare workers

Healthcare settings including: acute and long-term care facilities, primary care, dental settings, other healthcare settings

Excluded

General population

Intervention(s) or exposure(s)

Included

Mask

N95 respirators

Comparator(s) or control(s)

This review does not have any comparators

Study design

Both randomized and nonrandomized study types will be included.

Included

Overview: review of systematic reviews

Excluded

Narrative reviews

Context

Healthcare settings including: acute and long-term care facilities, primary care, dental settings, other healthcare settings

TIMELINE OF THE REVIEW

Date of first submission to PROSPERO

13 February 2026

Review timeline

Start date: 2 February 2026. End date: 20 March 2026.

Date of registration in PROSPERO

13 February 2026

AVAILABILITY OF FULL PROTOCOL

Availability of full protocol

A full protocol has been written and uploaded to PROSPERO. The protocol will be made available after the review is completed.

SEARCHING AND SCREENING

Search for unpublished studies

Only unpublished studies will be sought.

Main bibliographic databases that will be searched

The main databases to be searched are *CINAHL - Cumulative Index to Nursing and Allied Health Literature*, *Embase - Embase via Ovid*, *MEDLINE*.

Other important or specialist databases that will be searched

Cochrane Database of Systematic Reviews (OVID)

Search language restrictions

The review will only include studies published in English and French.

Search date restrictions

Databases will be searched for articles published from 1 January 2015, there are no search end date restrictions.

Other methods of identifying studies

No other methods will be used.

Additional information about identifying studies

Grey literature sources

Link to search strategy

A full search strategy has been uploaded to PROSPERO. The PDF may be accessed through this link <https://www.crd.york.ac.uk/PROSPEROFILES/65e41d47796f4c5c1ef9d1ad0274480d.pdf>.

Selection process

Studies will be screened independently by at least two people (or person/machine combination) with a process to resolve differences.

Other relevant information about searching and screening

Search strategies will be developed in collaboration with a researcher experienced in systematic review methodology. Controlled vocabulary (e.g., MeSH and Emtree terms) and free-text terms related to N95 respirators, healthcare workers, and systematic reviews will be combined using Boolean operators. The search will be conducted by one reviewer and independently peer-reviewed for accuracy and completeness prior to execution. No restrictions will be applied based on pathogen or geographic setting.

DATA COLLECTION PROCESS

Data extraction from published articles and reports

Data will be extracted by one person (or a machine) and checked by at least one other person (or machine).

Authors will be asked to provide any required data not available in published reports.

Study risk of bias or quality assessment

Risk of bias will be assessed using: *AMSTAR-2*

Data will be assessed independently by at least two people (or person/machine combination) with a process to resolve differences.

Additional information will **not** be sought from study investigators if required information is unclear or unavailable in the study publications/reports.

Reporting bias assessment

Risk of bias due to missing results will not be assessed

Certainty assessment

Certainty of findings will not be assessed

OUTCOMES TO BE ANALYSED

Main outcomes

1. Acceptability
2. Physical and psychological health
3. Other factors that impact acceptability

For the purposes of this review, acceptability refers to a multi-faceted construct reflecting the extent to which HCWs consider the intervention (use of N95s) to be appropriate, based on anticipated or experiential cognitive, emotional, and physical responses to the intervention.

Physical factors: Physical factors of interest include headache, facial pain, bruising, Skin reaction/skin irritation (including contact dermatitis), heat and humidity buildup, shortness of breath, and fatigue related with the use of N95 respirators.

Psychological well-being: The incidence of stress, mental fatigue, somnolence, reduced morale, communication difficulties, impaired performance, and perceptions of increased workload associated with N95 respirator use.

Additional outcomes

4. Other factors:

Adherence: refers to the extent to which healthcare workers consistently wear N95 respirators as recommended during patient care activities.

Compliance: is the degree to which healthcare workers follow institutional protocols for N95 use, including correct donning, doffing, and fit checking.

Tolerability: describes the ability of healthcare workers to endure wearing N95 respirators for the required duration without significant physical or psychological distress.

Others: subjective symptoms (e.g., headache, lightheadedness), or other symptoms that can compromise protection and reduce acceptability.

PLANNED DATA SYNTHESIS

Strategy for data synthesis

No formal data synthesis is planned - data will be described but not combined.

CURRENT REVIEW STAGE

Stage of the review at this submission

Review stage	Started	Completed
Pilot work	✓	
Formal searching/study identification	✓	
Screening search results against inclusion criteria	✓	
Data extraction or receipt of IPD		
Risk of bias/quality assessment		
Data synthesis		

Review status

The review is currently planned or ongoing.

Publication of review results

Results of the review will be published in English.

REVIEW AFFILIATION, FUNDING AND PEER REVIEW

Review team members

Ivan Florez (review guarantor and contact) University of Antioquia. Colombia.

No conflict of interest declared.

Miss Laura Mora. London School of Hygiene and Tropical Medicine. England.

No conflict of interest declared.

Miss Silvia Villatoro. University of Antioquia. Colombia.

No conflict of interest declared.

Miss Jissel Carolina Diaz Villero. ORCID: 0009-0004-7980-3582. Universidad de Antioquia. Colombia.

No conflict of interest declared.

Miss Quenby Mahood. Unity Health Toronto. Canada.

No conflict of interest declared.

Dr Matthew Muller. Unity Health Toronto. Canada.

No conflict of interest declared.

Named contact

Ivan Florez (ivan.florez@udea.edu.co). University of Antioquia. Colombia.

Review affiliation

Unity Health Toronto

Evidence and Deliberation Unit for Decision Making, Faculty of Medicine - University of Antioquia

Funding source

Public Health Agency of Canada.

Peer review

There has been no peer review of this planned review.

ADDITIONAL INFORMATION

Additional information

The purpose of this overview is to inform policy and practice by addressing an important clinical and public health question regarding the use of personal protective equipment. Findings will be disseminated through multiple channels, including peer-reviewed publication, presentations to national advisory and guideline committees, conference presentations, and targeted knowledge translation products for relevant stakeholders.

Review conflict of interest

Declared individual interests are recorded under team member details.. No additional interests are recorded for this review.

Medical Subject Headings

N95 Respirators; Health Personnel; Psychological Distress; Psychological Well-Being; Communication; Dermatitis, Contact; Dizziness; Dyspnea; Facial Pain; Headache; Humidity; Mental Fatigue; Workload

SIMILAR REVIEWS

Check for similar records already in PROSPERO

PROSPERO identified a number of existing PROSPERO records that were similar to this one (last check made on 13 February 2026). These are shown below along with the reasons given by that

the review team for the reviews being different and/or proceeding.

- Effectiveness of N95 respirators versus surgical masks in protecting health care workers from influenza virus infection: systematic review [published 27 April 2020] [CRD42020168282]. The review was judged **not to be similar**
- Extended Use and Reuse Protocols of N95 Respirators: Maintenance of Structural Integrity, Filtration Efficiency, and Fit Compared to New N95 Respirators - A Systematic Review for Occupational Safety in Healthcare [published 18 August 2024] [CRD42024574896]. The review was judged **not to be similar**
- Safety on decontamination of surgical masks and N95 Filtering facepiece respirators: a systematic review [published 4 July 2020] [CRD42020185605]. The review was judged **not to be similar**

PROSPERO version history

- [Version 1.0, published 13 Feb 2026](#)

Disclaimer

The content of this record displays the information provided by the review team. PROSPERO does not peer review registration records or endorse their content.

PROSPERO accepts and posts the information provided in good faith; responsibility for record content rests with the review team. The guarantor for this record has affirmed that the information provided is truthful and that they understand that deliberate provision of inaccurate information may be construed as scientific misconduct.

PROSPERO does not accept any liability for the content provided in this record or for its use. Readers use the information provided in this record at their own risk.

Any enquiries about the record should be referred to the named review contact