

**Evidence-Based Practice Group Answers to Clinical
Questions**

**“Personal Protective Equipment (PPE) and
Development of Neck Pain”**

A Rapid Systematic Review

By

WorkSafeBC Evidence-Based Practice Group

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Clinical Services – Worker and Employer Services

About this report

Personal Protective Equipment (PPE) and Development of Neck Pain

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About the Evidence-Based Practice Group

The Evidence-Based Practice Group was established to address the many medical and policy issues that WorkSafeBC officers deal with on a regular basis. Members apply established techniques of critical appraisal and evidence-based review of topics solicited from both WorkSafeBC staff and other interested parties such as surgeons, medical specialists, and rehabilitation providers.

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Objective

To determine whether there is any evidence to support a potential (causal) association between the use of/wearing of personal protective equipment (PPE), such as a half respirator, and the subsequent development of neck pain.

Methods

- A comprehensive, systematic literature search was conducted on September 11, 2020.
- The search was done on commercial medical literature databases, including BIOSIS Previews® (1969 to 2008), Embase® (1974 to 2020 September 10), Medline Epub Ahead of Print®, Medline In-Process & Other Non-Indexed Citations®, Medline Daily Update®, Medline® (1946 to September 09, 2020), JBI EBP Database® - (Current to September 09, 2020), Cochrane Clinical Answers® (August 2020), that are available through the Ovid® platform.
- Combinations of keywords were employed in this literature search. These combinations include:
 1. (neck **ADJ** pain) **AND** ((half **ADJ** facepiece **ADJ** disposable **ADJ** respirator) **OR** (half **ADJ** facepiece **ADJ** reusable **ADJ** respirator))
 2. (neck **ADJ** pain) **AND** ((half **ADJ** facepiece **ADJ** respirator) **OR** (half **ADJ** mask **ADJ** respirator) **OR** (half **ADJ** respirator))
 3. (neck **ADJ** pain) **AND** (facepiece **ADJ** respirator)
 4. (neck **ADJ** pain) **AND** respirator
 5. (neck **ADJ** pain) **AND** (PPE **OR** (personal **ADJ** protective **ADJ** equipment))
- No limitations, such as on the language and date of publication, were implemented in any of these searches.
- A manual search was also conducted on the references of the studies that were retrieved in full.

Results

- Search results:
 - No published study was identified from searches No. 1, 2 and 3.
 - One⁽¹⁾ and four⁽²⁻⁵⁾ published studies were identified from search No. 4 and 5, respectively.

- Upon examination of the titles and abstracts of these five⁽¹⁻⁵⁾ published studies, three⁽²⁻⁴⁾ studies were retrieved in full for further appraisals.
- Of the three⁽²⁻⁴⁾ studies that were retrieved in full, none provided any data that were relevant to the objective of this systematic review.

Summary/Conclusions

- At present, there is no data to support a potential (causal) association between wearing a half respirator, respirator, or PPE in general, with the development of neck pain.

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Appendix 1

WorkSafeBC - Evidence-Based Practice Group Levels of Evidence

(adapted from 1,2,3,4)

1	Evidence from at least 1 properly randomized controlled trial (RCT) or systematic review of RCTs.
2	Evidence from well-designed controlled trials without randomization or systematic reviews of observational studies.
3	Evidence from well-designed cohort or case-control analytic studies, preferably from more than 1 centre or research group.
4	Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled
5	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

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