

Industrial Instrument Mechanic and Developing Multiple Myeloma

A Rapid Systematic Review

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About this report

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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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Objectives

- To determine whether there is any evidence to support the (causal) association between occupation as an industrial instrument mechanic and developing multiple myeloma.

Methods

- A comprehensive and systematic literature search was conducted on February 27, 2025.
- The search was done on commercial medical literature databases, including BIOSIS Previews (1969 to 2008), Embase (1974 to 2025 Week 08), Medline and Epub Ahead of Print, Medline In-Process, In-Data-Review & Other Non-Indexed Citations, Medline Daily Update and Medline (1946 to February 26, 2025), Joanna Briggs Institute Evidence Based Practice Database (Current to February 19, 2025), Cochrane Clinical Answers (February 2025), that are available through Ovid platform.
- The search was done by employing a combination of keywords:
 1. ((industrial instrument mechanic*) **OR** (industrial instrument technician*)) **AND** (multiple myeloma)
 2. (industrial instrument) **AND** (multiple myeloma)
 3. (industrial instrument)
- No limitation, such as on the language or date of publication, was implemented in any of these searches.
- A manual search was planned to be done on the references of the articles that were retrieved in full.
- Additional was also conducted on NIOSHTIC-2 database. NIOSHTIC-2 is a searchable bibliographic database of occupational safety and health publications, documents, grant reports, and other communication products supported in whole or in part by the US The National Institute for Occupational Safety and Health (NIOSH). We did a simplified search (on job title only) on NIOSHTIC-2 by employing these keywords.
 4. industrial instrument mechanic **OR** industrial instrument technician

Results

- Search results:
 - No published study was identified from Search #1, Search #2 and Search #4.
 - Eight¹⁻⁸ published studies were identified from Search #3.
- No relevant data/study was identified upon examining the titles and abstracts of the eight¹⁻⁸ identified from a broad search on industrial instrument (search #3).

Summary

- At present, there are no studies/data to support (causal) association between occupation as industrial instrument mechanic and developing multiple myeloma.

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Appendix 1

WorkSafeBC — Evidence-Based Practice Group levels of evidence (adapted from 1-6)

1	Experimental, randomized controlled trial (RCT), systematic review RCTs with or without meta-analysis.
2	Evidence from controlled trials without randomization (quasi-experimental studies) or systematic reviews of observational studies.
3	Evidence from 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 experiments.
5	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees based on scientific evidence.

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