

## Occupational injury causation: applying evidence-based medicine

### What does evidence-based mean?

Evidence-based medicine is the “conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patients.” (Dr. David Sackett, OC FRSC, Centre for Evidence-Based Medicine).

When determining injury causation in a workers' compensation context, WCB medical consultants strive to provide opinions that are clear, transparent, consistent, and evidence-based.

### How do medical consultants determine the relationship of a condition to a particular injury or exposure (causation analysis)?

The National Institute for Occupational Safety and Health (NIOSH), and the American College of Occupational and Environmental Medicine (ACOEM) have developed a six-step process for assessing causation.

1. Identify evidence of disease (establish a definite diagnosis). You cannot answer the question of whether A causes B unless you know exactly what B is.
2. Obtain and assess the evidence of exposure (e.g., mechanism of injury, type and duration of the work duties). A full description of the work duties, exposures, and time spent performing particular tasks is required.
3. Review and assess the available epidemiologic evidence for a causal relationship; look at the body of available evidence.
4. Consider other relevant factors (e.g., co- morbidities, non-work exposures). Other risk factors such as recreational activities, age, genetics, etc., also need to be considered.
5. Judge the validity of testimony— is the information you have reliable?

6. Form conclusions about the work-relatedness of the disease in the person undergoing evaluation. Consider all of the above to form your own opinion.

**Once a clear diagnosis has been established and a full description of the worker's job demands is available for review, we can look at the evidence for a relationship between the two.**

### How does WCB examine the research evidence on causation?

WCB refers to the AMA Guides to the Evaluation of Disease and Injury Causation, 2nd edition (the Blue Book) as its source of evidence published up to June 30, 2013. The authors completed a thorough search of the peer-reviewed research literature, published in English, at the end of 2013. All papers meeting their criteria for inclusion have been included in the summaries provided.

### How does WCB consider research evidence published after June 30, 2013?

Primary research papers are evaluated using methodology informed by chapter four of the Blue Book.

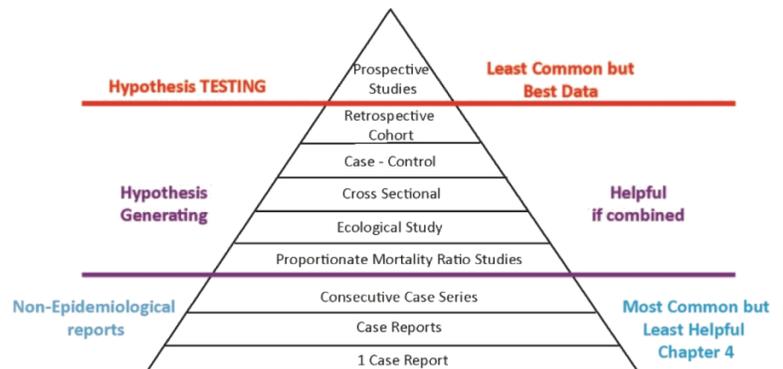
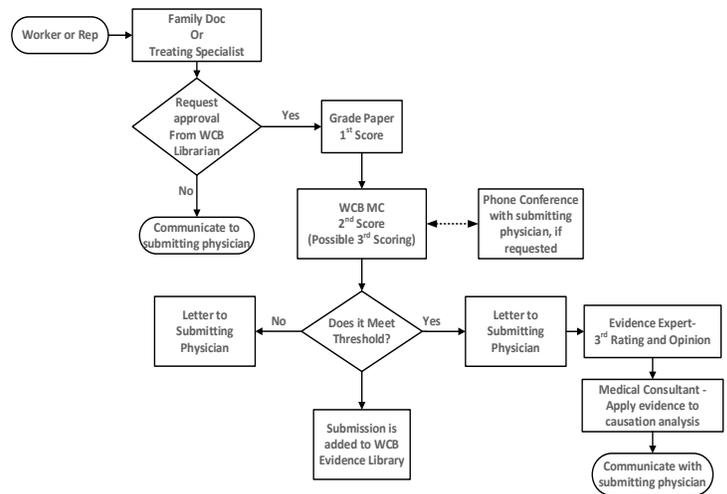
### How can a physician submit a research paper for consideration as new evidence?

A good quality primary research paper, endorsed by the treating physician, may be submitted for review by WCB as follows:

- Please contact the WCB librarian at 780-498-3908 or [MedEvidence@wcb.ab.ca](mailto:MedEvidence@wcb.ab.ca) to confirm that your paper has not already been rated and for approval to invoice WCB for your rating. Approval will be valid for 30 calendar days.



- All papers need to be scored by the worker's physician prior to being submitted (First physician review). WCB will only consider those submitted by a treating physician. A medical consultant can assist you with this step.
- The submission form can be accessed by emailing [MedEvidence@wcb.ab.ca](mailto:MedEvidence@wcb.ab.ca) to have a link sent to you automatically.
- Papers must be primary research.
- Score the paper using the methodology from the Blue Book. Each paper is given a quality score out of a possible 140 points.
- The threshold for considering papers further is a quality score of 70, out of a possible 140.
- The quality score is then multiplied by a weight factor to obtain the final impact rating. The weight factors are based on the hierarchy of evidence (see Figure 1. Study design pyramid), with prospective studies considered higher quality than retrospective or qualitative studies.
- Submit the paper along with a copy of your scoring form.
- These can be faxed to 780-498-4039 or emailed to [MedEvidence@wcb.ab.ca](mailto:MedEvidence@wcb.ab.ca)
- Papers submitted will also be scored by a medical consultant with training in this scoring method (Second physician review).
- Where there is disagreement over whether the paper's score meets the threshold of 70, a third physician review will be done to break the tie.
- Papers that earn a quality score of 70 or higher from two physician reviews will then be sent to an external evidence-based expert who will provide an opinion on whether the evidence is sufficient to impact the current understanding of the issue/body of evidence.
- WCB will maintain a library of all papers reviewed, and the reviewers' findings, for future reference.



Study design pyramid. (Absent randomized controlled trials, the highest quality study is the prospective study. Higher quality studies trump lower quality studies; provided, that they have no major flaws). Adapted from Hegmann KT, Oostema SJ. Casual associations and determination of work-relatedness. In: Melhorn JM, Ackermann WE III, eds. Guides to the Evaluation of Disease and Injury Causation, Chicago, IL: AMA Press; 2008.



## How to avoid “predatory journals”

Perceptions of what the term “predatory” means vary widely. A good starting point from Shamseer et al is that predatory journals “actively solicit manuscripts and charge publication fees without providing robust peer review and editorial services.”

<https://www.elsevier.com/connect/predatory-vs-trustworthy-journals-what-do-they-mean-for-the-integrity-of-science>

You may want to check these sites before spending time rating a paper:

<https://libguides.bgsu.edu/predatoryjournals>

<https://beallist.weebly.com/standalone-journals.html>

Or this site for journals that have been approved as legitimate by the Directory of Open Access Journals (DOAJ):

<https://doaj.org/publishers#seal>

Quackwatch is another resource that lists authors who have been associated with promoting questionable health products or services.

<https://www.quackwatch.org/11Ind/index.html>

## How to bill for your time

Remember to get approval from the WCB librarian prior to submitting. You can bill it as time spent providing a summary of medical information with opinion.

### Summary of medical information with opinion

General practitioner (first 30 minutes)	\$164.65	RF06
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General practitioner (additional 15-minute increments)	\$54.90	RF06
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Specialist (first 30 minutes)	\$211.68	RF06
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Specialist (additional 15-minute increments)	\$54.90	RF08
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Copies of specified documents or reports from a chart are requested by the WCB and are part of a summary of medical information (RF05/RF06).	49¢/page	RF08
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**Maximum billing time two hours.**

