

## Commentary

# Peer-Reviewing for the *Canadian Journal of Neurological Sciences*

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## Introduction

Peer review is a cornerstone of academia. The *Canadian Journal of Neurological Sciences* (CJNS) is grateful to our network of peer reviewers for upholding CJNS to a high academic standard. We recognize that reviewing articles takes time; we strive to recognize peer reviewers through acknowledgment on Web of Science, awarding an Annual Reviewer of the Year (<https://www.cnsf.org/journal/reviewer-of-the-year/>) and inviting our prolific reviewers to join the CJNS Editorial Board.

The approach to scientific peer review is rarely incorporated into medical or graduate training. As a result, many qualified reviewers hesitate to accept review requests. Likewise, trainees frequently demonstrate interest in learning how to carry out effective peer review, but few formal training programs exist.

In this article, we provide a general approach to peer review. Our focus is primarily on clinical research of the type most commonly submitted to CJNS. We additionally provide guidance for how to review different CJNS manuscript categories: (1) Original Article, (2) Brief Communication, (3) Letter to the Editor: New Observations and (4) Review Articles.

The guidelines below are geared toward trainees and beginning reviewers wanting to get involved with CJNS but will also serve as a useful refresher for experienced reviewers.

### *I received an invitation to review an article: should I accept it?*

- Do you have the necessary content and/or methodological expertise? In general, it is reasonable to accept an invitation even if you have expertise in only part of the submitted work: you will still be able to provide an overall impression and can focus your detailed comments on specific areas of the manuscript. CJNS editors typically invite at least two reviewers per manuscript and have access to dedicated statistical reviewers, in order to provide a comprehensive evaluation of submitted work.
- Are there any conflicts of interest? These may include personal or professional relationships with the authors (such as a close collaborator, mentor/mentee or a history of conflict/dispute), having a similar manuscript under preparation or financial competing interests.<sup>1</sup> If you have concerns about conflicts of

interest, please communicate directly with the handling associate editor or the editor-in-chief. Reviewing is often possible if potential conflicts are declared and managed. Reviewers will find it useful to read the *Ethics in Peer Review* page on our publisher's (Cambridge University Press) website at <https://www.cambridge.org/core/services/peer-review/ethics-in-peer-review>.

- Can you complete the review in a timely fashion? CJNS requests that reviews be completed within 14 days of invitation acceptance. Co-reviewing a manuscript with a trainee is also encouraged at CJNS. If you are unable to accept the review, please reject the invitation promptly so that the editors know they need to send an invitation to another reviewer. Identifying suitable reviewers is a challenging part of the editors' role; we always appreciate suggestions of alternative potential reviewers if possible.

### *Conducting the review: a comprehensive framework*

A quality review starts with reading the manuscript in full, including tables, figures and supplemental files, to form an overall impression. A subsequent second or third pass is needed for a detailed critical appraisal. Key points to consider while reading a manuscript are summarized in Figure 1. Research manuscripts will generally be submitted to the CJNS under the "Original Articles" or "Brief Communications" manuscript categories. While both categories report results of high-quality original research, Brief Communications are shorter and may include preliminary novel observations.

### *Title and abstract*

- Careful review of the title and abstract is critical; if an article is published, many viewers will not read beyond the abstract. Are the key messages of the manuscript correctly represented? It may be helpful to re-read and evaluate these after you have reviewed the full manuscript.

### *Introduction*

- Is sufficient background information presented concisely on the topic addressed by the manuscript?
- Is the rationale for the study clear and logically explained?

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Peer Review Checklist	
<b>Title &amp; Abstract</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Title descriptive &amp; appropriate</li> <li><input type="checkbox"/> Key messages correctly represented</li> </ul>	<b>Results</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Participant characteristics described</li> <li><input type="checkbox"/> Methods and results consistent</li> <li><input type="checkbox"/> Appropriate summary statistics &amp; measures of precision presented</li> <li><input type="checkbox"/> Results of statistical tests reported</li> <li><input type="checkbox"/> All figures and tables are necessary</li> <li><input type="checkbox"/> Tables and figures clear &amp; well-labeled</li> </ul>
<b>Introduction</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Background information sufficient</li> <li><input type="checkbox"/> Rationale discussed</li> <li><input type="checkbox"/> Objective &amp; hypothesis clearly stated</li> </ul>	<b>Discussion &amp; Conclusions</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Results summarized &amp; interpreted</li> <li><input type="checkbox"/> Study hypothesis addressed</li> <li><input type="checkbox"/> Results discussed in context of existing literature</li> <li><input type="checkbox"/> Limitations of study described</li> <li><input type="checkbox"/> Clinical relevance of results discussed</li> <li><input type="checkbox"/> Conclusions are appropriate</li> <li><input type="checkbox"/> Areas for future study discussed</li> </ul>
<b>Methods</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Population clearly described</li> <li><input type="checkbox"/> Sample size adequate</li> <li><input type="checkbox"/> Variables are defined</li> <li><input type="checkbox"/> Sources of error/misclassification addressed</li> <li><input type="checkbox"/> Outcome assessment rigorous</li> <li><input type="checkbox"/> Interventions described in sufficient detail</li> <li><input type="checkbox"/> Statistical analysis clear &amp; appropriate</li> <li><input type="checkbox"/> Ethical approvals obtained</li> </ul>	<b>Other</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> References complete &amp; appropriate</li> <li><input type="checkbox"/> Potential conflicts of interest declared</li> </ul>

**Figure 1.** Checklist of key points to consider while reading through a manuscript for peer review.

- Is there a clearly defined research question or objective?
- While not all clinical studies require a hypothesis, many that should do not include one. Experimental studies virtually always require a hypothesis that is clear and represents a testable proposition.

### Methods

- The most important criterion in evaluating the methods section is whether enough detail is provided such that the study can be replicated by others.
- Is the population clearly defined and described? Is there selection bias? For example, a study on headache that recruits participants from an academic subspecialty clinic may include a more complex and treatment-refractory group than the general population of persons with headaches.
- Are all variables appropriately defined? Are sources of error and misclassification addressed? Are the outcomes assessed in a sufficiently rigorous manner and justified?
- Are the interventions described in sufficient detail?
- Is the sample size adequate? (i.e., is there risk of a type 2 error due to inadequate power, finding “no significant difference” when one actually exists?)
- Is the statistical analysis clearly outlined and appropriate? Most importantly, is it clear what groups are being compared, and are the associated statistical tests appropriate? How did the authors handle confounding, missing data, effect modification and potential mediating factors? Were there any sensitivity analyses?

Are there multiple comparisons, and was appropriate correction applied in determining statistical significance (i.e., is there a risk that any positive results occurred due to chance?)

- Were the appropriate ethical approvals obtained?

Remember, if methods are unclear to you, readers will likely have similar questions, so no issue is too small to raise.

### Results

- Who is included in the final study population? Are the participant's baseline characteristics clearly presented? This typically constitutes the first table in the results section of a clinical study.
- Are the methods and results consistent? Are there any data included for which the methods of collection or related analyses are inadequately described?
- Are appropriate summary statistics, results of statistical tests and measures of precision presented (e.g., mean, median, standard error, confidence intervals, *p*-values)?
- Are the figures and tables all necessary? Can any be moved to supplemental materials? Are there data presented in the text in paragraph form that can be better summarized in a table? Can a table be better illustrated as a figure? Does the text reference all tables and figures?
- Are the provided tables and figures clear, well-labeled and of appropriate quality? Do the figure captions and table headings contain sufficient detail?

## Discussion

- Do the authors summarize and interpret the results? Are the objectives and hypotheses of the study addressed? Are there alternative interpretations that they should consider?
- Does the discussion section contain any new data not shown previously in the manuscript? If so, this should be moved to the results section.
- Are the results discussed in the context of existing literature? Do the authors address why results may be inconsistent with other reports?
- Is the “so what?” of the study sufficiently clear? Do the authors discuss how meaningful their findings are?
- Are the strengths and limitations of the study adequately addressed? Are there other limitations that should be mentioned?
- Do the conclusions follow from the key findings and their interpretation?
- Do the authors highlight areas of possible future research guided by the study’s results?

## References

- Does the manuscript use appropriate, relevant and up-to-date references?
- Are there any statements in the manuscript that require a citation where none is provided?
- Are there key/landmark publications that are not cited and should be?

## Acknowledgment, conflict of interest and funding

- Are potential conflicts appropriately declared? Are important potential conflicts highlighted and explained or simply buried in a list of acknowledgments?

## Special considerations: case reports or case series

These are submitted to the *CJNS* under the “Letters to the Editor: New Observations” manuscript category.

- Is the case novel, rare or unique? Will its publication add to the scientific literature through educational merit or clinical relevance?
- Does the case describe the patient history and clinical examination in sufficient detail with pertinent positives and negatives?
- Was the workup adequate? Are there additional investigation results that should be included?
- Is the diagnosis valid? Do the authors provide sufficient evidence for the conclusions drawn?
- Are treatments described in adequate detail, including doses and durations of treatments (where appropriate)?
- Was the follow-up duration sufficient?
- Are supporting documents, such as radiological images, pathology slides, photographs or videos of appropriate quality? Are the correct sequences and slices provided for representative radiological images? Are they clearly labeled? Are they directly relevant to the case?

## Special considerations: systematic reviews and meta-analyses

- Are the rationale and purpose of the systematic review clearly described?

- Is the review a valuable resource for *CJNS* readership, and does it contribute to existing literature in a meaningful way? For example, does the systematic review and/or meta-analysis summarize existing literature in a way that is helpful in making evidence-based clinical decisions? A systematic review and especially a meta-analysis with a very narrow scope that only includes a small number of participants may not translate meaningfully to the body of evidence on the topic.
- Is the search strategy clearly described? Do the authors use appropriate search terms databases and inclusion/exclusion criteria for studies? Are the study selection and data collection processes clearly stated? Are the results of these presented (ideally in a flow diagram)? Strong articles will adhere to guidelines such as those from the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement.<sup>2</sup>

If a meta-analysis was performed, consider the following additional points:

- Was a risk of bias assessment conducted, and were its results presented?
- For all included studies, are the study characteristics and relevant summary statistics presented?
- Are the methods used for the synthesis of data clearly described? Are summary estimates along with their precision (e.g., confidence intervals) and measures of statistical heterogeneity presented?
- Did the authors assess for reporting bias?

## Special considerations: equity and language in research

- Is appropriate terminology used? For example, are the authors differentiating biological sex at birth from self-identified gender?
- Do the authors use language that promotes health equity by avoiding stigmatizing language?<sup>3</sup>
- If the study collects demographic information such as ethnicity, gender identity and sexual orientation, is the best practice of self-identification followed?

## Writing the review

The questions listed above represent key factors to consider in evaluating a manuscript and provide a comprehensive approach to generating a review. However, when it comes to actually writing the review, it may be unnecessary to discuss every manuscript section. If the submission is obviously inappropriate for the journal or suffers from egregious methodological or ethical flaws that cannot be addressed with revisions, then the review should clearly say so, and a detailed point-by-point critique is unnecessary. When writing the review, please frame your comments based on the merits of the current article (rather than the prior record or previous work of the authors). The language used should be objective and avoid critiques that could be perceived as confrontational or biased against a specific author or research group.

There has been a growing use of artificial intelligence (AI) writing tools over the past years. Please keep in mind that peer reviews should be your original work. Submitted manuscripts are considered confidential and should not be uploaded for analysis by AI tools.

Please consider the “dos and don’ts” in Table 1 below when drafting your review. You may consider using the template provided in Figure 2 when organizing your review.

Table 1. Dos and don'ts of writing review comments

Confidential comments to editors	Comments to the authors
<b>Do provide an overall impression.</b> Is the manuscript of interest and relevant to the journal's readership? Is it novel and original? Are the results clearly presented and correctly interpreted?	<b>Do</b> consider opening your review with a <b>brief 1–2 sentence summary</b> of the manuscript and highlighting its strengths.
<b>Do include a recommendation on acceptance or rejection to the editor.</b> Provide clear reasoning for a rejection. It is helpful to indicate if you think the authors will be able to address your concerns through revisions.	<b>Don't include a recommendation on acceptance or rejection to the authors.</b> This should go in your confidential comments to the editors and is ultimately a decision made by the editors based on input from multiple reviewers.
<b>Do discuss concerns you do not wish to share directly with the authors.</b> Examples may include ethical concerns, unmitigated conflicts of interest threatening the validity of the work, plagiarism or inappropriate use of AI tools.	<b>Do provide specific recommendations</b> on how the manuscript can be improved.
<b>Do indicate if you are only able to comment on only specific components of the manuscript.</b> For example, you may feel that the manuscript may benefit from a dedicated statistical or methodological review. <i>CJNS</i> does have a team of specialized statistical reviewers in this scenario.	<b>Do provide your comments in an organized manner.</b> It is helpful to present specific points as a numbered list. This can be separated into "major" and "minor" points or organized by section of the manuscript. It is often useful to provide page/line numbers for specific points.
<b>Do indicate if you feel the manuscript requires significant copyediting</b> for language and grammar elements.	<b>Do provide respectful comments</b> while remaining critical and constructive. A flawed manuscript may be the product of months of hard work. Imagine you are providing feedback to a colleague.
<b>Don't duplicate information already in the comments to authors</b> unless it is to emphasize a key issue or reiterate major concerns with the manuscript.	<b>Do focus your review on scientific or clinical content.</b> Accepted articles will be copyedited by the journal for grammar and style.

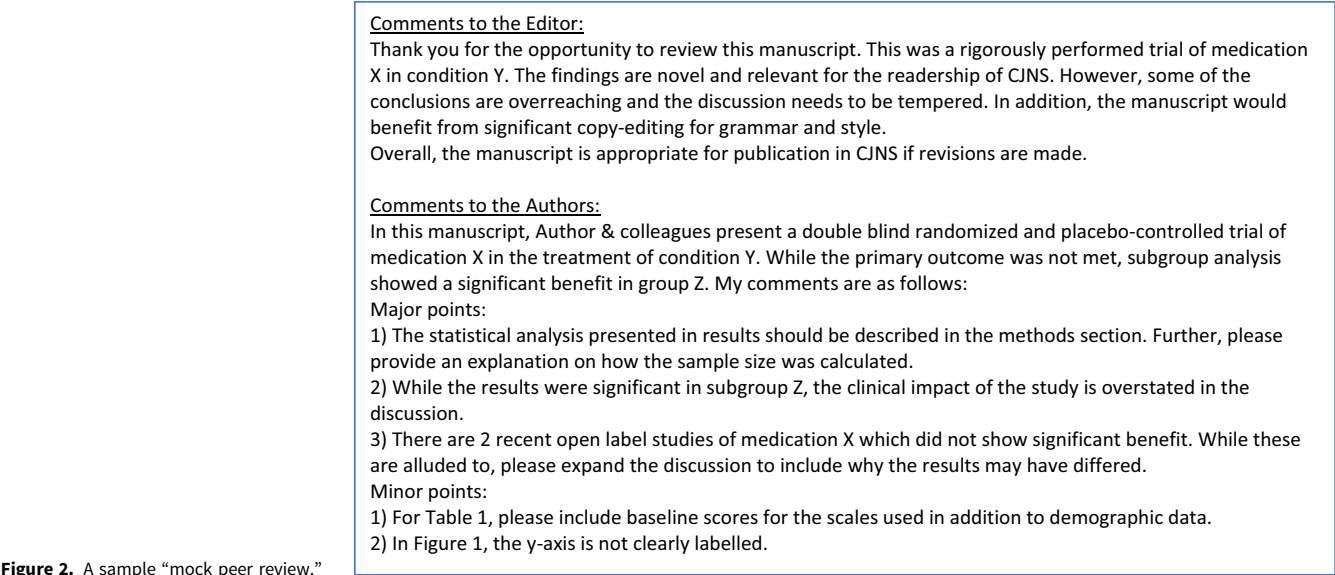


Figure 2. A sample “mock peer review.”

Special considerations: confidentiality and use of artificial intelligence (AI)

Submitted manuscripts are considered confidential and should not be saved or distributed to others. As mentioned above, this includes analysis by AI writing tools; peer reviews should be your own original work. Uploading a submitted manuscript to an AI tool is considered a violation of confidentiality.

Special considerations: revised and resubmitted articles

You may be asked to review a manuscript that has been resubmitted after an initial round of revisions. You may or

may not have been involved in the previous round(s) of reviews yourself. In these cases, the authors will upload a manuscript with tracked changes as well as a detailed point-by-point response to the reviewers. When evaluating a resubmission, consider whether the authors have adequately addressed the concerns raised by the reviewers. Ideally, the re-review will build on the previous round and not introduce contradictory feedback or fundamental new issues with the manuscript (although this may be unavoidable if you were not involved in the previous round). Ask yourself, does the submission now meet the standard for publication in the journal?

### Getting involved with peer review for *CJNS*

If you are interested in becoming a reviewer for *CJNS*, please contact [cjns-ed@cambridge.org](mailto:cjns-ed@cambridge.org). Trainees interested in gaining experience in peer review are encouraged to apply to future iterations of the *CJNS* Reviewer-in-Training program, which was launched in early 2025.

High-quality peer review is a key guiding principle for *CJNS* and of importance to upholding the standard of scientific rigor in publications. The contributions of the journal's community of peer reviewers are greatly appreciated and valued.

### Additional resources

Cambridge Press Guide to Peer Reviewing – <https://www.cambridge.org/core/services/peer-review/how-to-peer-review-journal-articles>

COPE Council. COPE Ethical guidelines for peer reviewers – English. <https://doi.org/10.24318/cope.2019.1.9>

F1000 Peer Review Examples: <https://f1000research.com/for-referees/peer-reviewing-tips/examples>

Neurology Open Review Pilot Project: <https://www.neurology.org/journal/wnl/open-peer-review>

Researcher Academy/Elsevier Certified Peer Reviewer Course – <https://researcheracademy.elsevier.com/navigating-peer-review/certified-peer-reviewer-course>

Sense about Science. Peer Review: the nuts and bolts. <http://b.link/sas-peer>

Web of Science Academy – Introduction to Peer Review – <https://webofscienceacademy.clarivate.com/learn/courses/119/an->

[introduction-to-peer-review](#) – this resource includes templates for the peer review process and for the report.

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