How To Review a Journal Article

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Why?

• “Fundamental part of the scientific world”
• Decider of what constitutes a quality submission-know the journal and have breadth of knowledge and objectivity
• Reviewer must be passionate and have the time; we do it for free
• What is your role?
  • To decide if the article merits publication
  • To improve the manuscript by constructive critique

http://www.nature.com/articles/nm0807-887
What are you looking for

• Timely, relevant, evidence based
• Well designed and written
• Followed directions
• Clear, logical and easy to read
• Accepting of reviewers suggestions
• Succinct
• Audience values
Articles that are rejected

• Problem statement is insufficient or clinical question is not valid
• Technically doomed: data is incomplete, suboptimal measure was used, sample population too small, or biased
• Incomplete or results are over-interpreted
• Extension of prior paper (often from same authors)
• Text is grammatically flawed
• Wrong audience, “not interested”

https://www.elsevier.com/connect/8-reasons-i-rejected-your-article
Bordage G, Acad Med 2001
Publication Merit—what are the options?

• Accept outright
  • Rare, most manuscripts need something

• Accept with revision
  • Assuming authors address queries, critique, will be accepted

• Sometimes conditional acceptance by editor
  • Usually some issues are necessary to address

• Reject with request for resubmission
  • Worth second look; always undergoes repeat formal review

• Reject
  • Poor science, without value, redundant or duplicate, biased, too esoteric
  • Could be great paper but wrong audience
Approaches to review

• Is the article of interest to journal readers

• Strengths and weaknesses

• Summary—consider the overall aim
  • Did they state what they identified in the work?

• Critique
  • Summarizes article and analyzes each section

• Automated templates accompany each request

• Usually 2-3 reviewers—you can access the other reviewers’ comments at the point an editor’s decision is finalized

http://medicine.yale.edu/yjbm/reviewers/pointsforreviewing.aspx
The Basics

• What type of manuscript is forwarded to you?
  • Original research, hypothesis driven: clinical study or lab based
  • Clinical trials
  • Brief report, clinical case studies
  • Letter to editor, perspective, opinion, commentary
  • Review articles

• Is there bias (on either side)?

• Do you have sufficient expertise to review?

• Do you have time?

https://www.editage.com/insights/6-article-types-that-journals-publish-a-guide-for-early-career-researchers
It's not just you: science papers are getting harder to read

Papers from 2015 are a tougher read than some from the nineteenth century — and the problem isn’t just about words, says Philip Ball.

• Focus on correct grammar, syntax, spelling
• Often jargon heavy
• Abbreviations at first “call out”
• Avoid unconventional abbreviations
• As a reviewer, point out if there are few errors; say “multiple errors of grammar and syntax” if many
  • Often a writer where English is not first language-suggest review by colleague who can assist

Nature doi:10.1038/nature.2017.21751
How to review

• Most do a quick survey first
  • Read abstract
  • Skim the article without taking notes
  • Read for “big picture”
  • Note terms that require definition; look up if you don’t know

• Re-read for detail

• Develop questions
  • Why, what intent
  • Is article relevant to journal readers
  • Does the article answer an important clinical question?

Provenzale and Stanley, AJR 2005
http://twp.duke.edu/writing-studio
Review

• Consider the existing body of knowledge and scientific merit
• Briefly summarize
• General comments
• Section review
  • Title
  • Abstract
  • Introduction
  • M/M
  • Results
  • Discussion/conclusions
  • Tables, figures, etc
  • References
• Summarize why manuscript should be accepted/revised/rejected
Title

• Reflects purpose and findings
• Generally no more than 12 words
• Declarative, descriptive, interrogative
  • A 3 month educational program to reduce inappropriate GAS testing
  • The impact of an educational program on inappropriate GAS testing
  • Does education improve performance in test ordering for GAS?
• Avoid abbreviations
• Suggest title change if puns, humor, or irony used
Titles with humor are less cited

• “Guess Who’s Not Coming to Dinner? Evaluating Online Restaurant Reservations for Disease Surveillance”

• Swedish scientists like to include reference to certain musicians-Dylan seems to be a favorite
  • Nitric Oxide and Inflammation: The Answer is Blowing in the Wind” (about farts)
  • “Like a Rolling Histone”
  • “Knockin’ on Pollen’s Door: Live Cell Imaging of Early Polarization Events in Germinating Arabidopsis Pollen.”

Abstract

• Usually is the last item written to highlight key points of study
• Consider if it can stand alone-no discrepancies between body of paper and abstract
• Consider word limits—generally between 120 and 250 words—though editor should oversee
• Ensure it includes well-articulated purpose and hypothesis
• Concise materials/methods
• Key results
• Conclusions
Introduction

• 4 goals: establish knowledge in field, summarize prior work, set the stage, introduce present work stating purpose and outlining design
  • Does it explain background and why the authors undertook study?
  • Includes rationale illustrating importance of problem, clinical question and failure of prior work to adequately address
  • Should set the stage by defining goals/aims of the study
  • Introduces present work and design and includes unique terms used
  • Referenced

Materials and Methods

• This is the blueprint for how the study was performed
• Enough information that another investigator could replicate
• Outline of stats with enough detail
  • Some journals offer statistical oversight if beyond reviewers’ expertise
• Includes definitions of patient groups, techniques, outcome measures, study endpoints
  • Patient groups include demographics, comorbidities, disease definitions
  • Look at sample size and was it representative of the population?
  • Make sure numbers add up
  • Were there controls, variables, or other factors that could impact outcome?
• Look for IRB approval
• Look for inclusion of technique specifics
• How were complications categorized?
Results

• Read this section more than once
• Order should parallel the M/M
• May use section headings if data is complex
• Look for guidelines for figures/tables
  • Try and interpret before reading caption and details
  • Many have trouble limiting and consider whether each is necessary
  • Look at figure quality and legends
  • Tables should summarize complex data to add readability
  • Not necessary if text suffices
  • Should not be a repeat of text
Discussion

• Was hypothesis verified?
• What questions were answered?
• Are findings in line with prior studies?
• Is medical literature review inclusive of only those articles relevant to the study?
• Limitations
• Concluding paragraph
References

• Brief review can find spelling/author errors
• Do they follow journal citation format?
  • Editor should oversight
• Do they support claims in text?
• Is evidence cited accurately?
• Are they missing a recent major addition to the literature?
  • Add when needed
Drafting your summary: Common Sense

- Describe in your words and distill down to “scientific essence”
- Include key points
- When you write your draft, write then refer back for details
  - Purpose, questions asked, did study address questions, major findings, any surprises, remaining questions
  - Use past tense in your review
  - First paragraph introduces background and purpose, next explains methods and then results, lastly states what the author of the study learned
- Be polite-no insults, sarcasm
- There is a way to communicate confidentially to the editor
- You also communicate to “the authors” but avoid “you” and refer to “the manuscript” or “the authors”
One approach to evaluation

• Research question clearly defined and answered?
• Overall design adequate, relevant
• Participants described with conditions defined
• Methods described, any ethical issues?
• Results answered the question, validated?
• Discussion and conclusions warranted? Clearly messaged?
• References up to date; omissions?
• 7 scores of 1-5
• Calculation of final scores will appear as excellent if it score between 20-30 points, as average if between 10-20 and as poor if <10 points

Reading reviews and re-reviews

• Accepting suggestions of reviewers?
• Response thoughtful if disagreement
• Know that short, concise articles are easier to read—you can always add material if needed
If you are trying to get your manuscript published...

• Know the audience for the journal to which you are submitting
• Read the “instructions for authors” carefully, understand type of manuscripts accepted, follow directions
• Know the typical layout of articles within that journal (e.g. 3 paragraph intro)
• Readability is key
• Spotlight the importance, how it is unique and what it adds to the literature
  • In general avoid “this is the first”-hard to confirm, may not add to worth, sometimes absurd
  • Why should the reader care about what you are describing
• Focus intro on background and clear statement of purpose
• Focus discussion on why conclusions and purpose are valuable