Peer review

# Introduction

Peer review is one of the cornerstones of scholarly publishing. It is a system for evaluating the quality, relevance and validity of research. Reviews should provide constructive criticism for authors to help them improve their work, as well as helping editors assess a paper’s suitability for publication.

This resource will focus on peer review and journals and will introduce you to the principles of peer review and different practices employed by journals. It will provide you with useful tips and guidance on how to write an effective review for both the author and the journal editor.

Whether you are new to peer review, or you are looking to develop your skills, this resource will give you experience of some of the expectations and challenges involved in peer reviewing a journal article.

# What is peer review?

Peer review is the process of evaluating the quality, relevance and validity of research. Peer review comes in many forms, and you need to ensure you understand the different types of review and the expectations placed on you as the reviewer. This section will explore the different types of peer review and some of the things you need to consider as a reviewer.

Peer review is the process of evaluating manuscripts submitted to a journal. The editor has the challenge of selecting the highest quality manuscripts for their journal. They cannot be an expert in every area published by their journal, and they need external reviewers’ comments to combine with their own expertise and knowledge.

Readers have greater trust in journals that undertake peer review. Peer review assists authors in the improvement of their work and helps to ensure a journal publishes high-quality research that contributes to furthering the knowledge within the discipline.

# Why should you agree to peer review an article?

As a researcher, reading new articles allows you to keep abreast of emerging research. You will also be performing an important role as a member of the academic community, through helping others to improve their work. Undertaking peer review can also enhance your academic profile and network. Remember, you could be playing a part in the publication of the next major article in your field.

Peer review is also reciprocal. When you submit your own articles for consideration, you will be expecting reviewers to take the time to assess your work, so be prepared to review the works of others in the spirit of collegiality.

# Types of peer review

There are different types of peer review that a journal may use. If you are asked to review an article for a journal, it is important to know the procedure required before you start your review.

There are four basic systems of peer review. The identities of reviewers may, or may not, be revealed to the authors. Likewise, the identities of the authors may be concealed from the reviewers. If the identities are kept hidden this is called ‘blinding’.

## Double Blind

Neither the author nor the reviewer knows each other’s identity (common in Humanities and some Social Sciences).

### Advantages

* Review will be free to provide an honest, critical review.
* Reduces bias on the part of the reviewer against the author, work is judged on its own merits.

### Disadvantages

* It is difficult to completely anonymise an article and harder to identify conflicts of interest.
* Reviewer may be more likely to be rude and unhelpful if they know that the author will not know who they are. They may take the opportunity to bury rival research or settle scores.

## Single Blind

The reviewer knows the identity of the author, but the author does not know the identity of the reviewer (common in the Sciences and some Social Sciences).

### Advantages

* Reviewers may write better reviews because their reviews are open to the public making them more accountable for what they write.

### Disadvantages

* Reviewers may not feel able to be totally honest if the author is somebody senior. May lead to animosity from authors.

## Open

Both identities are made known to each other.

### Advantages

* Reviewers may write better reviews because their reviews are open to the public making them more accountable for what they write.

### Disadvantages

* Reviewers may not feel able to be totally honest if the author is somebody senior. May lead to animosity from authors.

## Public

Both identities are made known to each other and the reviews are published alongside the article. Readers may also be able to comment on the published article.

### Advantages

* Reviewers may write better reviews because their reviews are open to the public making them more accountable for what they write.
* The readers will be able to read the comments made about the article. Reviewers will receive recognition for their work.

### Disadvantages

* Comments made may be unhelpful out of context and may no longer be relevant to the finished article. Potential reviewers may decline to review.
* Reviewers may not feel able to be totally honest if the author is somebody senior. May lead to animosity from authors.

# Should I conduct a peer review?

Being asked to peer review an article demonstrates recognition of your knowledge in the field and undertaking the review can be a very rewarding experience. But before you agree you need to ensure you have all the details and can meet the expectations of the editor.

This section will explore some of the points which should be considered before you agree to review an article.

## Considerations

When you are asked to peer review an article, you will first be sent only the title and abstract and depending on the blinding policy of the journal, possibly the author s name as well. The journal will give you an idea of how quickly they will need you to return the review. Only after you have accepted will you be sent the full article.

You may want to accept immediately to start reading, but there a few things you should consider first before agreeing.

### Similarities

Decline to review if you have a similar article in preparation or under consideration with another journal. This will likely affect your opinion.

### Be Prompt

Respond promptly. If you cannot conduct the review, the editor will need to find another reviewer, so suggest some other reviewers if you can.

### Confidentiality

Remember that correspondence about the article and the manuscript itself is to be kept confidential during and after the peer review process.

### Time & Knowledge

Consider if you have the time or subject knowledge to write a comprehensive review. The average time required to review an article is two to five hours. Providing a late or insubstantial review is unhelpful to the editor and author. If you can only comment on parts of the research, tell the editor. They may choose to ask another reviewer instead or ask an additional reviewer to supplement your review.

### Focus

Be confident in the journal’s focus and the types of articles it publishes. Think about the audience for the journal. If you don’t know the journal’s expectations for a reviewer, ask! Many journals will have guidelines for reviewers with specific questions they want you to consider. Links to these are often found within the invitation email or the online submission and peer review site.

### Conflicts

Tell the editor if you have, or think you may have, a conflict of interest. These could be personal, financial, intellectual, professional, political or religious. For example, do you work in the same institution? Have you collaborated with the author in the past? Are they a close friend or relative? Were you involved in any of the work reported in the article?

# Responding to scenarios

Making a decision on whether to agree to conduct a peer review can be difficult. You will be presented with several peer review scenarios. Consider each scenario and decide how you would respond. When deciding if you would conduct the review, think about the considerations we looked at earlier.

### Scenario 1

You receive a request to review an article that sounds very interesting. You would like to accept but you are about to go on holiday and cannot return the review by the deadline.

**Our answer:** Respond explaining your situation and suggest an alternative deadline. The editor may agree to a later date, or they may choose to ask another reviewer. If they agree, be sure you can meet the new date; otherwise, it will cause frustrating delays for the author.

### Scenario 2

You have been asked to review for a journal you have never heard of before.

**Our answer:** Before accepting, go to the journal’s website, read its aims and scope and browse some published articles. You will need to understand what types of articles the journal accepts ad what a reviewer is expected to comment on before agreeing. Also, be aware of predatory journals ([read the library’s advice on predatory journals](https://www.library.manchester.ac.uk/services/research/)).

### Scenario 3

The author of an article you have been asked to review was in the same PhD programme as you two years ago. You never collaborated with the author on a project, but you did know them socially.

**Our answer:** Tell the editor of the journal. Depending on the journal’s policy, they may feel that you will not be able to give an unbiased review and will choose to ask another reviewer. Alternatively, because you did not work together, the editor may not deem this a conflict of interest.

### Scenario 4

You have been asked to review an article that is important to your own research. After accepting and reading the article, you want to cite it in an article you are writing.

**Our answer:** By accepting to act as a reviewer, you are agreeing to keep all information about the article confidential. You cannot cite it in your own work before it is published without permission. After you have submitted your review, ask the editor and they will request permission from the author on your behalf.

# What do I evaluate?

Journals vary in what they may ask you to evaluate depending on their audience and the discipline they cover. For example, a medical journal may want the reviewers to check the study design, whereas an English literature journal may want the reviewer to focus on the cohesiveness of the article argument. However, there are many similarities between journals, and you should always provide advice on the originality, presentation, relevance and significance of the article.

## Key issues

When you’ve received the article from the journal, read it once all the way through, take a break and then read it again in detail, checking the key issues.

### Overview

* Is it within the journal’s scope?
* Does it make a significant and original contribution?
* Does the article add to the body of knowledge?
* Does it address a question that needed to be answered?
* Remember, negative or dull results are OK if the question is important.

### Methodology and theoretical framework

* Is the methodology appropriate to address the research question?
* Has it been described sufficiently?
* Has the author done enough research and looked at the right sources?
* Have they addressed any ethical issues in their research?
* Are the author’s interpretations and conclusions sound and justified by the evidence?

### Structure and content

* Are the arguments presented clearly and well structured? Are they non-discriminatory and free of bias?
* Is the article well organised?
* Is the research contextualised for an international audience?
* Is the article the appropriate length? Should it be shorter and more concise? Or 8is more space needed to expand upon any sections?
* Should certain sections be provided as supplementary data rather than in the body of the article?
* Do the title and abstract correctly represent the article, and are they well-written?
* Would the article benefit from more or fewer figures/tables? Does the text complement the figures and tables or simply repeat the data?

# How to write your report

After you have read the article a couple of times and considered its originality, presentation, relevance and significance, you will need to write a report for both the journal’s editor and the author(s).

Remember that the editor is depending on you to help them make a decision, so your report will need to be detailed and comprehensive. Also, remember, you too are an author; write a review that you would want to receive.

## What to include

Writing a good review takes practice and will take time. Here are some tips that will help you write a constructive supportive and useful report.

* Be systematic. Comment on the entire article, not just some selected sections.
* But if you’re not able to comment on every aspect, tell the editor. For example, it is OK to say you think the statistics may not be correct, but you are not sure.
* Give the authors confidence that you have read and understood their paper by capturing what you see as the main findings and key take home messages.
* Comment on the strengths, not just the weaknesses and what needs improvement. Let the author know what they are doing right. This will also help the editor to know if the article is worth seeing through revision.
* Use confidential comments to the editor sparingly. For example, if you suspect plagiarism or misconduct in the research or writing of the article, have concerns about ethical aspects or if you come across any other irregularities. The majority of your comments should be appropriate for the author to see.

## How to frame your comments

* Be specific in areas of strengths and weakness, and areas for improvement. General, vague or sweeping comments are unhelpful.
* Provide sufficient guidance or justification for your opinion and suggested revisions. For example, if you think the work is unoriginal provide references to support this.
* Be objective. Do not impose your own bias or attempt to rewrite the author’s style.

## Help to improve the article

* Suggest additional and/or alternative books or articles that the author should read and reference.
* List issues in spelling or grammar if you spot them, but this is not your main task. If there are a number of mistakes, make a single comment to say that spelling/grammar should be checked by the authors.
* Be specific about which proposed changes are crucial and which are not essential but would improve the article.

## Critique reviews – abstract

Below you can see an article abstract and two reviews. You can also see our critiques of these reviews.

**Title**

Promoting development and uptake of health innovations: The Nose to Tail Tool.

**Introduction**

Health sector management is increasingly complex as new health technologies, treatments, and innovative service delivery strategies are developed. Many of these innovations are implemented prematurely, or fail to be implemented at scale, resulting in substantial wasted resources.

**Methods**

A scoping review was conducted to identify articles that described the scale up process conceptually or that described an instance in which a healthcare innovation was scaled up. We define scale up as the expansion and extension of delivery or access to an innovation for all end users in a jurisdiction who will benefit from it.

**Results**

Sixty-nine articles were eligible for review. Frequently described stages in the innovation process and contextual issues that influence progress through each stage were mapped. 16 stages were identified: 12 deliberation and 4 action stages. Included papers suggest that innovations progress through stages of maturity and the uptake of innovation depends on the innovation aligning with the interests of 3 critical stakeholder groups (innovators, end users and the decision makers) and is also influenced by 3 broader contexts (social and physical environment, the health system, and the regulatory, political and economic environment). The 16 stages form the rows of the Nose to Tail Tool (NTT) grid and the 6 contingency factors form columns. The resulting stage by issue grid consists of 72 cells, each populated with cell specific questions, prompts and considerations from the reviewed literature.

**Conclusion**

We offer a tool that helps stakeholders identify the stage of maturity of their innovation, helps facilitate deliberative discussions on the key considerations for each major stakeholder group and the major contextual barriers that the innovation faces. We believe the NTT will help to identify potential problems that the innovation will face and facilitates early modification, before large investments are made in a potentially flawed solution.

**Reference**

Gupta A, Thorpe C, Bhattacharyya O and Zwarenstein M. Promoting development and uptake of health innovations: The Nose to Tail Tool [version 1; referees: 3 approved, 1 approved with reservations]. F1000 Research 2016, 5:361 doi: [10.12688/f1000 research.8145.1](https://f1000research.com/articles/5-361/v1)).

## Critique reviews – review 1

Kumar S. Referee Report For: Promoting development and uptake of health innovations: The Nose to Tail Tool [version 1; referees: 3 approved, 1 approved with reservations]. F1000Research 2016, 5:361 (doi : 10.5256/f1000research.8761.r13537)

Thank you for asking me to review this manuscript. Overall, I was pleased to read this manuscript which outlines the development of a unique tool called Nose to Tail Tool (NTT). It is innovative and in an area which has so much theoretical science (evidence implementation/implementing change) it was refreshing to read about process which resulted in the development of a practical tool that could be utilised by a range of health care stakeholders. I commend the authors for extensively reviewing the literature (although the methodology is a bit weak) and placing the NNT in comparison to other frameworks in this space.

While there is a lot to like about this manuscript, there are some issues to consider too. They are:

1. The methodology while I understand that this is a scoping review and as such a formal critical appraisal was not undertaken, I was surprised to note that the searching was confined to PubMed only. Why was this the case? PubMed is quite rudimentary and given the amount of work that has been undertaken, this could have extended to other mainstream databases too (such as Cinahl, Embase, Medline, etc). I also would have liked a bit more information about the developmental process. For example, the authors state that “Each of the three categorizations (stages, themes and contingency factors) went through three iterations.” What happened during those stages? How did the authors respond to the findings during those stages?
2. The burden of complexity While the NNT is quite detailed, I worry if it will also be its Achilles Heel. I suspect these tools are aimed at those at the coal face and given the complexity of the tool (I understand the reasons underpinning it), I worry many clinicians could be put off by it. A tool needs to have good clinical utility and I suspect while this may be useful for research and/or evaluation purposes, how readily and effectively clinicians use this remains to be seen. I will be interested to know about the pilot study findings.
3. The manuscript itself I must say the manuscript is very long and verbose! While I am aware that F1000 Research may not have a word limit, it is the duty of the researchers to ensure what is presented is reader friendly and engaging. Given that most manuscripts are 4000 words (approx.), I think this would be double that word count. As it stands, this manuscript could be trimmed down to make it more succinct and punchier.

## Assessment of review 1

Is the review thorough, commenting on the article’s:

* Significance and originality – **YES**
* Methodology – **YES**
* Sources or data – **YES**
* Argument and conclusion – **YES**
* Structure and organisation – **YES**
* Does it comment on strengths as well as weaknesses? – **YES**
* Does the reviewer justify their opinion and stay objective? – **NO**
* Is it constructive? Does it suggest how the article could be improved? – **YES**

Overall, this is a good review, but the reviewer does not always justify their opinion. They should clarify why they think the source of data, PubMed, is rudimentary for the purposes of the study.

## Critique reviews – review 2

Molyneux E. Referee Report For: Promoting development and uptake of health innovations: The Nose to Tail Tool [version 1; referees: 3 approved, 1 approved with reservations]. F1000 Research 2016, 5:361 (doi: 10.5256/f1000research.8761.r13086).

Much innovation research is all about developing an innovation, with too little attention paid to how the new tool or idea will be, or can be, implemented. Gupta et al. have done a literature search of the subject to review how innovators plan (or not) for the whole process from development and funding through to implementation and commercialisation. They have developed a planning programme called the Nose to Tail Tool which provides steps for action and steps for deliberation, by all the players concerned along the entire process of innovation implementation. Specific questions are raised with different groups of people during the course of development. The NTT tool is a planning grid (of 72 boxes) which helps bring everyone together early in the development phase so that problems further down the line can be anticipated or avoided. Discussions may even lead the team to decide not to waste further time and effort on the project.

Gupta states that the tool is being put to use in Canada; it will be interesting to see how effective it is; experience with using the tool will probably lead to some fine tuning.

I like the idea of the NTT. I think the paper is long, with quite a bit of repetition; but it is worth a read and the NTT could save innovators both time and money. But the proof of the pudding will be in its successful use.

## Assessment of review 2

Is the review thorough, commenting on the article’s:

* Significance and originality – **YES**
* Methodology – **NO**
* Sources or data – **NO**
* Argument and conclusion – **NO**
* Structure and organisation – **YES**
* Does it comment on strengths as well as weaknesses? – **NO**
* Does the reviewer justify their opinion and stay objective? – **YES**
* Is it constructive? Does it suggest how the article could be improved? – **YES**

The review is positive, but it is short and incomplete. The reviewer summarises, but does not critique, the article’s methodology and conclusion. Even if a reviewer agrees with an article’s approach, they should say so. A thorough review that comments on all aspects of an article will be the most useful to the editor and author.

# Recommend a decision

Once you have read the paper and assessed its quality, you may be asked to make a publication recommendation to the editor.

This section will explore the decisions you can make.

## Decisions you could make

Remember it is only a recommendation. Remember it is only a recommendation. The editor may choose to take a different decision based on their own judgement and the other reviewer s report.

Decisions you could recommend are:

* **Accept with no changes:** This is relatively uncommon (most articles need some corrections).
* **Accept with changes:** The article needs some changes, but if they are made satisfactorily then the article is suitable for publication. Some journals may break this down to minor changes (light revisions) or major changes (structural changes, such as additional experiments, expanding the data analysis or literature review or rewriting large sections of text).
* **Reject but invite resubmission after substantial changes:** The article needs substantial changes, but the research is of significant interest that if revised you think the editor should consider it again as a new submission.
* **Reject no resubmissions:** The article is unsuitable for publication in the journal usually because of problems with the research, it does not fit with the journal’s remit or because you feel that it does not add anything to the body of knowledge.

# Summary

The process of peer reviewing is crucial to academic publishing and can be both challenging and rewarding for reviewers. Remember, when agreeing to conduct a peer review you will be helping to improve the paper, giving you the opportunity to contribute and to be the first to hear about new research.

# Related resources

You’ve reached the end of this resource. You can find more information on peer review by visiting the web pages below.

## Cope guidelines

[Committee on Publication Ethics](https://publicationethics.org/) (COPE) guidelines for peer review setting out the basic principles and standards to which all peer reviewers should adhere during the peer review process.

## Report

[Trust and Authority in Scholarly Communications in the Light of the Digital Transition](http://ciber-research.eu/download/20140115-Trust_Final_Report.pdf). This report provides an overview of an investigation into trust and authority in scholarly communications in the digital era.

## Peer review: the nuts and bolts

This is a [nuts and bolts guide](http://www.senseaboutscience.org/data/files/resources/99/Peer-review_The-nuts-and-bolts.pdf) to peer review for early career researchers written by members of the VoYS network.

## Peer review: an introduction and guide

[Peer Review: An Introduction and Guide](http://publishingresearchconsortium.com/index.php?option=com_content&view=article&id=155&catid=120&Itemid=822) offers a readable overview of the processes used in peer review that assesses its strengths and limitations and looks at alternative approaches that are now being developed and trialled.