Submitting a journal manuscript and peer review

Having done your research you are ready to publish your results in a journal. This is a necessary step to validate your results and share your work with the scientific community. But which journal should you publish in? How can you ensure you have the best chance of being accepted? Do you really need to bother with a cover letter? How do you respond to reviewers? You will find the answers to all these questions and more in this tutorial where we will guide you through the publication process; from choosing a journal to revising all the way through the peer-review.

By the end of this tutorial you should:
•    know how to select a suitable journal for your manuscript
•    understand how editors asses your work
•    have an overview of the peer review process and how to respond to reviewers
You will also have the opportunity to test your learning by completing a quiz at the end.

# Journal selection and submission

### **Choosing a journal**

Submitting a manuscript to an unsuitable journal will result in editors rejecting the manuscript without even sending it for peer review. It wastes both yours and the editors’ time. Choosing a journal that matches your study is therefore very important because it makes it more likely that your manuscript will be accepted.

Some factors to consider when choosing a journal to submit to are:

* The journal’s **target audience**. If your study has broad implications that may be of interest to researchers in other fields, a journal that covers a wide range of topics may be best. On the other hand, if only researchers in your field are likely to want to read your study, then a specialized journal would be more appropriate as you will reach your intended audience directly.
* The **topics** the journal publishes. The Aims and Scope of the journal should indicate the topic areas the journal is willing to consider. If your research is applied, you should target a journal that publishes applied science; if it is clinical, you should target a clinical journal; if it is basic research, you should target a journal that publishes basic research.

TIP: Have a look at the articles published by the journal already. This should give you an idea of which topics the editors are interested in.

* The **types of articles** the journal publishes. For example, if you want to publish a Review Article, find out whether the journal publishes these.
* **Length restrictions**. Does the journal limit the number of words or figures in the articles it publishes? Can your manuscript meet its requirements?
* **Reputation**of the journal. A journal’s Impact Factor is only one measure of its reputation, and not always the most important. You need to consider the prestige of the authors that publish in the journal and whether the journal is well known in your specific field; sometimes the most highly regarded journals in a field are not those with the highest Impact Factor.

TIP: Although everyone believes their work to be important you must objectively consider how significant your results are for your field and for wider science. You must honestly ask yourself; what are the implications of my results? Are they limited to my field or do they have applications to a broad area of science? Are my results a major breakthrough or an incremental advancement to the field? This will help you evaluate the impact of your research and what journal it is best suited for, otherwise you may find yourself wasting your valuable time submitting to one journal after another.

* Where the journal is **indexed**. You want your work to be as discoverable as possible. One way readers find relevant research papers is by using indexing sites and databases such as PubMed, Scopus or Web of Science. If there is a particular database that is used extensively by your peers it may be worth checking if the journal is indexed in it so that your work can be found easily.
* **Compliance with funder mandates**. Many funding bodies now mandate that research funded by them is made open access. This can be done in several ways but the most common is depositing your article in a repository or publishing open access. Check that journal policies allow you to comply with your funder requirements.

TIP: [*RoMEO*](http://www.sherpa.ac.uk/romeo/index.php?la=en&fIDnum=|&mode=simple)is a searchable database of publisher policies regarding self-archiving of published work and can be useful to authors by helping them find out if journals allow them to comply with their funder’s policy. RoMEO is run by the [*Centre for Research Communications*](http://crc.nottingham.ac.uk/), University of Nottingham, UK.

Other factors to consider: Does the journal usually publish articles quickly; is the “time to publication” important for you? What kind of peer review does the journal offer? What financial costs are involved?

A good time to start thinking about what journal is suitable for your work is after you have collected enough results for a publication and have evaluated the level of impact of your research, but before you start writing your manuscript. When looking for suitable journals in which to publish your own results, start with what you have read. You should already be familiar with published studies that are similar to yours. Which journal were those studies published in? The same journals may be appropriate for your manuscript, so make a list of them. If you need more journals to consider, you can do literature searches for other published articles in your field that are similar in scope and impact on the field, and see where they were published.

TIP: references of papers that you have read are also good places to look for suitable journals to publish in that might be interested in your work.

### **Instructions for authors**

When you have a list of potential target journals, **visit and read the websites for these journals**. Every journal should have a page that provides instructions or guidelines for authors, including information on many of the factors listed above.

Journals on your list that are **not a match**for your manuscript based on the factors listed above should be **eliminated from consideration**. Among the remaining journals, it is likely that one or more will stand out as a very good candidate. Consider if any additional experiments will give you a better chance of achieving publication in your top choice. If you are in a hurry to publish, consider which of the remaining journals offers rapid publication; if none do, consider which has the highest publication frequency. If your main goal is to reach as many readers as possible, strongly consider candidate journals that provide an open access option. **Open access allows anyone to read your article, free of charge, online**, which can make your article more likely to be read and cited.
When you have chosen the journal you think is the best fit for your study and your goals, it is usually a good idea to also identify your second- and third-choice journals. That way, if your paper is rejected from your first-choice journal, you can quickly submit to your second-choice journal.

TIP: Many publishers now offer a service that allows you to transfer manuscripts that have been rejected to another journal in their portfolio. This can save you time as in many cases you will not have to reformat your work; your files are resubmitted automatically and; if the manuscript has been through peer review, you can transfer the reviewer reports too so that it may not have to undergo peer review again. Look out for journals that are part of this transfer scheme and, if appropriate, consider journals which can receive transfers as your second- and third choice journals

What do journal editors want?

Journal editors evaluate all manuscripts that are submitted to their journal, select those which they consider to be suitable for the journal to send for peer review, and consider peer reviewers’ advice to make a final decision about what gets published. Therefore, it is important to know how they make their decisions.

Journal editors are busy and usually have to make an initial decision on the suitability of a paper quickly. When first faced with a manuscript they usually look at the cover letter, abstract, conclusion and references. They use this to judge whether the submission is in scope for the journal and of sufficient impact. Editors are always trying to weigh up the novelty and significance of a paper against the expectations of the readership and the impact of the journal.

Journal editors want to publish **good quality science that is of interest to their readers**. Your submission is more likely to be accepted if it:

* Is within the scope of the journal
* Is novel and describes research that advances the field
* Adds to an active research field
* Is carefully prepared and formatted with all required sections present
* Uses clear and concise language
* Follows ethical standards

Your manuscript should relay a scientific message that clearly explains the importance of the study.

*TIP: once you have written your manuscript get a colleague to read it and provide feedback on how the manuscript flows. If necessary rewrite your manuscript so it reads well and grabs the attention of the editor*

# Cover letters

A good cover letter can help to “sell” your manuscript to the journal editor. As well as introducing your work to the editor you can also take this opportunity to explain why the manuscript will be of interest to a journal's readers, something which is always as the forefront editors’ mind. As such it is worth spending time writing a coherent and persuasive cover letter.

The following is an example of a poor cover letter:

Dear Editor-in-Chief,I am sending you our manuscript entitled “Large Scale Analysis of Cell Cycle Regulators in bladder cancer” by Researcher et al. We would like to have the manuscript considered for publication in Pathobiology.Please let me know of your decision at your earliest convenience.With my best regards,Sincerely yours,A Researcher, PhD

Instead, check to see whether the journal’s Instructions for Authors have any cover letter requirements (e.g. disclosures, statements, potential reviewers). Then, write a letter that explains why the editor would want to publish your manuscript. The following structure covers all the necessary points that need to be included.

* If known, address the editor who will be assessing your manuscript by their name. Include the date of submission and the journal you are submitting to.
* First paragraph: include the title of your manuscript and the type of manuscript it is (e.g. review, research, case study). Then briefly explain the background to your study, the question you sought out to answer and why.
* Second paragraph: you should concisely explain what was done, the main findings and why they are significant.
* Third paragraph: here you should indicate why the readers of the journal would be interested in the work. Take your cues from the journal’s aims and scope. For example if the journal requires that all work published has broad implications explain how your study fulfils this. It is also a good idea to include a sentence on the importance of the results to the field.
* To conclude state the corresponding author and any journal specific requirements that need to be complied with (e.g. ethical standards).

TIP: All cover letters should contain these sentences:

* We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal.
* All authors have approved the manuscript and agree with its submission to [insert the name of the target journal].

### **Submission checklist**

Before submitting your manuscript, thoroughly check its quality one more time. Evaluate it critically—could anything be done better?

Be sure that:

* The manuscript follows the Instructions for Authors
* All files are in the correct file format and of the appropriate resolution or size
* The spelling and grammar are correct
* You have contact information for all authors
* You have written a persuasive cover letter

# Peer-review process

Peer review exists to ensure that journals publish good science which is of benefit to entire scientific community.

Sometimes authors find the peer-review process intimidating because it can lead to the rejection of their manuscript. Keep in mind that revisions and improvement are part of the publication process and actually help raise the quality of your manuscript.

### **Peer review is a positive process**

Peer review is an integral part of scientific publishing that confirms the validity of the science reported. Peer reviewers are experts who volunteer their time to help improve the journal manuscripts they review—they offer authors **free advice**.

Through the peer-review process, manuscripts should become:

* More **robust**: Peer reviewers may point out gaps in your paper that require more explanation or additional experiments.
* Easier to **read**: If parts of your paper are difficult to understand, reviewers can tell you so that you can fix them. After all, if an expert cannot understand what you have done, it is unlikely that a reader in a different field will understand.
* More **useful**: Peer reviewers also consider the importance of your paper to others in your field and can make suggestions to improve or better highlight this to readers.

Of course, in addition to offering authors advice, another important purpose of peer review is to make sure that the manuscripts published in the journal are of the correct quality for the journal’s aims.

### **Different types of peer review**

There are different forms of peer review used by journals, although the basis is always the same, field experts providing comments on a paper to help improve it. The most common types are

Closed – where the reviewers are aware of the authors’ identities but the authors do not know who reviewed their manuscript.

Double blind – in this case neither authors nor reviewers know each other’s identities.

Open – where there reviewers are aware of the authors’ identity and the reviewers’ identity is revealed to the authors. In some cases journals also publish the reviewers’ reports alongside the final published manuscript

Common reasons for rejection

Your manuscript can be rejected for many reasons but these can generally be divided into technical and editorial reasons.

Technical reasons usually require more work such as further experiments or analysis before your work can be published. Technical reasons for rejection include:

* Incomplete data such as too small a sample size or missing or poor controls
* Poor analysis such as using inappropriate statistical tests or a lack of statistics altogether
* Inappropriate methodology for answering your hypothesis or using old methodology that has been surpassed by newer, more powerful methods that provide more robust results
* Weak research motive where your hypothesis is not clear or scientifically valid, or your data does not answer the question posed
* Inaccurate conclusions on assumptions that are not supported by your data

These rejection reasons can be avoided by investing enough time in reading around the subject area, carefully deciding on the topic to focus on, the hypothesis and planning a comprehensive experiment as outlined in the Springer Nature Journal Author Academy: Writing a Journal Manuscript.

Editorial reasons for rejection include:

* Out of scope for the journal
* Not enough of an advance or of enough impact for the journal
* Research ethics ignored such as consent from patients or approval from an ethics committee for animal research
* Lack of proper structure or not following journal formatting requirements
* Lack of the necessary detail for readers to fully understand and repeat the authors’ analysis and experiments
* Lack of up-to-date references or references containing a high proportion of self-citations
* Has poor language quality such that it cannot be understood by readers
* Difficult to follow logic or poorly presented data.
* Violation of publication ethics

These rejection reasons can be avoided by following the journal specific guidelines, ensuring you write a coherent paper in good English and honestly assessing you work when deciding on a target journal. All of these points are covered in the [Writing a Journal Manuscript](https://www.springer.com/gp/authors-editors/authorandreviewertutorials/writing-a-journal-manuscript) and the [Writing in English](https://www.springer.com/gp/authors-editors/authorandreviewertutorials/writinginenglish)tutorials

Revising and responding

Once you manuscript has come back from reviewers you may be given the opportunity to revise it in accordance with the reviewer comments. You will usually receive a letter from the editor who handled your manuscript outlining the changes they would like you to make and links to the reviewer reports. This letter usually contains information on how to return your revised manuscript including instructions on how to highlight the changes made and when you need to return the revised version.

*TIP: journals have different revision deadlines which vary from as little as a few weeks to three months depending on the revisions that need to be made. If you do not think you will be able to return a revised manuscript in the allotted time tell the editor immediately. They should be able to offer you an extension but it is best to discuss this with them as early as possible.*

When revising your manuscript and responding to peer review comments you must:

* Thank the reviewers and editors for their time and comments.
* Address **all**points raised by the editor and reviewers.
* Describe the major revisions to your manuscript in your response letter followed by point-by-point responses to the comments raised.
* Perform any additional experiments or analyses the reviewers recommend (unless you feel that they would not make your paper better; if so, please provide sufficient explanation as to **why**you believe this to be the case in your response letter).
* Provide a polite and scientific rebuttal to any points or comments you disagree with. Remember if your manuscript is sent for a second round of peer review the reviewers will see this letter too.
* Differentiate between reviewer comments and your responses in your letter.
* Clearly show the major revisions in the text, either with a different color text, by highlighting the changes, or with Microsoft Word’s Track Changes feature. This is in **addition**to describing the changes in your point by point cover letter.
* Return the revised manuscript and response letter within the time period allotted by the editor.

The following is an example as to how to respond to a reviewer comment:

**Reviewer comment:** “In your analysis of the data you have chosen to use a somewhat obscure fitting function (regression). In my opinion, a simple Gaussian function would have sufficed. Moreover, the results would be more instructive and easier to compare to previous results.

**Response in agreement with the reviewer:** “We agree with the reviewer’s assessment of the analysis. Our tailored function does make it impossible to fully interpret the data in terms of the prevailing theories. In addition, in its current form, we agree it would be difficult to tell that this measurement constitutes a significant improvement over previously reported values. We have therefore re-analyzed the data using a Gaussian fitting function.”

**Response disagreeing with the reviewer:** “We agree with the reviewer that a simple Gaussian fit would facilitate comparison with the results of other studies. However, our tailored function allows for the analysis of the data in terms of the Smith model [Smith et al, 1998]. We have added two sentences to the paper (page 3, paragraph 2) to explain the use of this function and Smith’s model.

Note that in both comments (agreeing and disagreeing) the author is polite and shows respect for the reviewer’s opinion. Also, in both circumstances the author makes a change to the manuscript that addresses the reviewer’s question.

When to dispute a decision

It is disappointing when you are rejected from a journal however it is important to know when it is appropriate to contest a decision and when to submit to another journal. We recommend that before you decide your next steps you take a few days to consider you options.

Appeals of a rejection decision are only successful in a handful of cases and usually only when you can provide strong evidence or new data that can respond to and alleviate the concerns of the editor and reviewers. As appeals are matters of journal policy they are given lower priority than new submissions and may take at least several weeks, if not longer, to resolve. Appeals must be rational arguments not emotional ones so be sure you have enough evidence before trying to change the editor’s mind.

If you do decide to go ahead with an appeal letter you should:

* Clearly explain why you disagree with the decision and provide any new information that you would like the editors to take into consideration. This should **not**be a repetition of what you have included in your original submission or cover letter.
* If the editors or reviewers have highlighted shortcomings with your paper that you think you can address please indicate how you would do this, such as providing further data.
* Include a point-by-point response to any reviewer comments.
* Provide any evidence to support your opinion when you believe a reviewer has made technical errors in their assessment of your manuscript or has been biased.

*TIP: Do not make appeals personal attacks on the editors or reviewers. Editors make decisions on manuscripts using a variety of criteria, if one of your manuscripts is rejected it does not mean the journal or the editor won’t be willing to consider your work again in the future.*

Generally, only one letter defending your submission will be accepted for each of the review stages (editorial review and peer review). If you are unsuccessful after sending a response letter, then you should strongly consider selecting another journal.

There may be cases when you want to submit to another journal prior to receiving a decision. For example, if your results are time sensitive, the review process is taking much longer than normal for that journal, and the editors cannot speed up the process. In this case, it is important to notify the editors that you are withdrawing your manuscript, and get confirmation that this it has been withdrawn, **before**you submit it to a different journal.