

Writing Research Articles

How to Write the Title & Abstract

Abstracts and titles are written last, when the results and their implications are clear to the author(s). Because they are the first thing readers see, they need to be informative and to the point.

The Title

Function of the title: attract the reader or editor, summarize the main result(s).

The title should:

1. Tell the complete story/describe the specific study, without overstating the results
2. Be concise but precise and unambiguous
3. Name the organism/study system

Some tips to write the title:

1. Begin with an important word
2. Avoid vague titles “Effect of X on Y” “Study of X under Z conditions” “X affects Y”. Try rather “X increases Y in Z” “X is independent of Y but increases under Z in W”
3. Avoid catchy or cute phrasing

Exercise:

How would you improve the following titles?

1. “Effect of hypoxia on efficacy of infection in gut epithelia”
2. “Myocardial ischemia causes the release of substance P”
3. “Short-term resistance to diet-induced obesity in mice is not associated with regulation of neuropeptides”

Compare the above titles to the published titles:

1. “Components of intestinal epithelial hypoxia activate the virulence of Pseudomonas”
2. “Myocardial ischemia induces the release of substance P from cardiac afferent neurons in rat thoracic spinal cord”
3. “Short-term resistance to diet-induced obesity in A/J mice is not associated with regulation of hypothalamic neuropeptides”

The Abstract

Function of the abstract: summarize all aspects of the paper, including background and significance. The abstract should stand on its own: be understandable without any need to read the whole paper. It should be succinct and clear (avoid jargon, abbreviations, etc.) Ideally, it should also make sense to a non-specialist reader (though that requirement might not apply in a very specialized journal.) It does not need to include references, nor does it usually mention specific data values.

Some tips to write the abstract:

1. A simple way to write the abstract is to answer, in order, the following questions:
 - a. What is the background for your question? (i.e. Why does it matter? Or Where does it come from)
 - b. What is the question/hypothesis/problem your paper addresses?
 - c. What did you do?
 - d. What did you find?
 - e. What does it mean?



2. Keep your answers short: One to three sentences per answer.
3. Draw your answers from the main text. Use the same logic to justify your approach or explain your results as you did in your Introduction and your Discussion. **Use the same words** to describe key ideas, reagents, conclusions, as you did in the main text.
4. Use **signals** to make your logic clear (X is known, Y is unknown, In this study, To determine whether, We found, These results show, etc...)
5. Use the **same keywords** when posing the question (b) and stating the answer (e)
6. Shorten to requisite length in successive revisions.
7. Check journal specifications on length and structure of abstract.
8. Note that an article abstract is distinct from a meeting abstract. The latter can include more background, methodology, and significance. It can also include references and data values or even figures.

Ways to trim your abstract to size:

1. Check the length of each section: if one section has more than 3 sentences, look for ways to shorten it (but don't sacrifice clarity: perhaps you do need 4 sentences to answer question c.)
2. Remove references, data values, experimental details
3. Remove clutter: "There is...that..." "It has been shown that..."
4. Avoid passive voice if possible.
5. Put the action in the verb (replace "An increase in adherence to protocol was observed" by "Adherence to protocol increased.")

Class exercises:

1. Read the sample abstracts with group leader and identify the answers to questions a-e.
Discuss the sample titles.

2. Look at your abstract and see whether it answers questions a-e. If not, find ways to insert the missing part(s). If your abstract is too long, how will you shorten it?
Write 2-3 versions of your abstract (or more)