

## WRITING TIPS SERIES

# Effective writing and publishing scientific papers—part I: how to get started

### 1. What you should know

Most researchers find it challenging to start writing a new paper and to remain motivated during the process. Every writer experiences good and bad writing days. There are, however, many possibilities to make writing generally more efficient and also more fun.

The order of the writing process does not have to be the same as the eventual order of the article sections, and you may find some sections easier to write than others. As the introduction and discussion sections are often perceived as the most difficult ones, you may find it easier to start with the methods and results. Furthermore, there are advantages to writing or finalizing the introduction and discussion at the end (but before the abstract) as their contents depend on the choice of journal and on the methods and findings presented in the paper.

Before actually starting to write a paper, it is absolutely vital that the first author as well as the main collaborators on the paper have a clear, shared understanding of the primary research objective and key findings of *this* paper. Without this, it will be impossible to write a clear and concise story. A paper is often one of many resulting from the same, large research project, and there is always more to report from that project than is possible within the word limit. Therefore, each individual paper has its own objective, allowing you to decide what needs to be reported and what can be omitted. It is also important to choose a potential journal and target audience at an early stage.

### 2. What you should do

Before wondering “how to start?,” think about “when and where” you are most serene, creative, and productive in writing. What environment inspires you? Where are you most concentrated and least distracted? What day of the week and what time of the day do you find most fruitful for writing? It is helpful to set aside blocks of several hours of uninterrupted writing and to give writing the priority it deserves in your otherwise busy agenda.

Split the thinking from the writing! Structure your complete storyline before actually writing full sentences and paragraphs. Prepare a “skeleton,” especially for the introduction and discussion section.

1. Use single-word topics or one-liners indicating the main message of each paragraph to create a logical and convincing storyline within the section (these headings later become the “lead sentences” of your paragraphs).

2. Gather key publications related to your paper and add notes under each heading with appropriate citations.
3. Replace the notes with rough sentences to build a paragraph (of approximately 6–8 sentences).
4. Rewrite the sentences until the whole paragraph reads well.
5. Check whether the paragraph has a “head” (i.e., a lead or first sentence that summarizes the essence of the paragraph) and “tail” (i.e., a bridge or final sentence that connects with the next paragraph).

Create empty tables and figures right at the beginning. This will force you to decide what results are most relevant, allowing you to create a clear and concise storyline. Discuss the skeleton and empty tables/figures with your main coauthors; at this stage, it is still easy to make major changes.

Keep up your motivation by planning writing sessions into your calendar (minimum 2 h) and dividing the writing of a paper into manageable chunks, which can be achieved during one session. Make writing a priority during these sessions and avoid any distractions such as answering e-mails. Go with the flow when you feel it is going well, but stop writing when you get stuck. Use several small breaks (5–10 min) during a session to clear your mind, and use longer breaks (several hours or days) to create sufficient time for reflection. Do not wait too long to ask for help and talk with coauthors about your paper. Define feasible intermediate goals (e.g., “I want to send a skeleton of my paper to my coauthors by the end of the week”) and define your final goal (e.g., “I want to submit the paper to the journal before the end of the month”). Last but not least, reward yourself when reaching intermediate and final goals!

#### Checklist for how to start writing a paper

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- Set aside time for writing and choose the optimal environment.
  - Split the thinking from the writing: structure your complete storyline, and create empty tables/figures before actually writing full sentences and paragraphs.
  - Choose a potential journal early.
  - Divide the writing of a paper into manageable chunks.
  - Make use of writing sessions and sufficient short and long breaks.
  - Reward yourself for achieving intermediate- and long-term goals.
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