

How to Revise a First Draft

Revising a scientific manuscript can feel like a daunting task. Revision doesn't necessarily mean rewriting the whole paper. Sometimes it means revising the thesis to match what you've discovered while writing. Sometimes it means coming up with stronger arguments to defend your position, or coming up with more vivid examples to illustrate your points. The truth is, though, that except for those rare moments of inspiration or genius when the perfect ideas expressed in the perfect words in the perfect order flow gracefully and effortlessly from the mind, all experienced writers revise their work.

- **Let it sit, then, read it through.**
 - Let it sit for a few days. Then, go back to your target journal and refresh your mind on the Author Instructions. First, you need to **do your own appraisal**. Try to read your first draft through, and as much like a general-audience reader as you can. This is the "problem-finding" read-through. **Think big**. Don't get lost, lose track, get diverted, or lapse into fiddling and tinkering.
 - Consider **making a reverse outline** of your draft. This is making an outline after your paper has been written, and it will help you to see your draft's structure and logical flow.
- **Organize your thoughts.**
 - Identify **problems that run all the way through the manuscript**: the order you're telling the story in doesn't work, key terminology isn't consistent throughout the paper, your conclusion doesn't match your introduction, or there's massive hole in the story or unreported information in the manuscript.
 - Then work on **particular sections**: a saggy middle methods section, the results is flat as a pancake, the too-confusing introduction, or the crucial but oh-so-difficult conclusion.
 - Then work on problems of **continuity and consistency**, such as paragraphing, how key terms are referenced, and how literature is cited.
 - Finally, work on those individual corrections and tweaks, from typos to one-off clunky paragraphs, to missing research.
- **Work from big to small in layers across the draft.**
 - If it helps you, work through the draft focusing on **just one layer** – for example, your first specific aim. Ignore anything else (good or bad) if it doesn't pertain to that issue, and just examine how that specific storyline is presented throughout the manuscript.
- **Other steps to consider in later revisions.**
 - Examine **the balance** within your paper: Are some parts out of proportion with others? Do you spend too much time on one trivial point and neglect a more important point? Do you give lots of detail early on and then let your points get thinner by the end?
 - Check that you have kept your promises to your readers: Does your paper follow through on what the thesis promises? Do you support all the claims in your thesis? Are the tone and formality of the language appropriate for your audience?
 - Check the **organization**: Does your paper follow a pattern that makes sense? Do the transitions move your readers smoothly from one point to the next?
 - Check your **information**: Are all your facts accurate? Are any of your statements misleading?
 - Check your **conclusion**: Does the last paragraph tie the paper together smoothly and end on a stimulating note, or does the paper just die a slow, redundant, lame, or abrupt death?