

# 10 tips to improve your scientific writing

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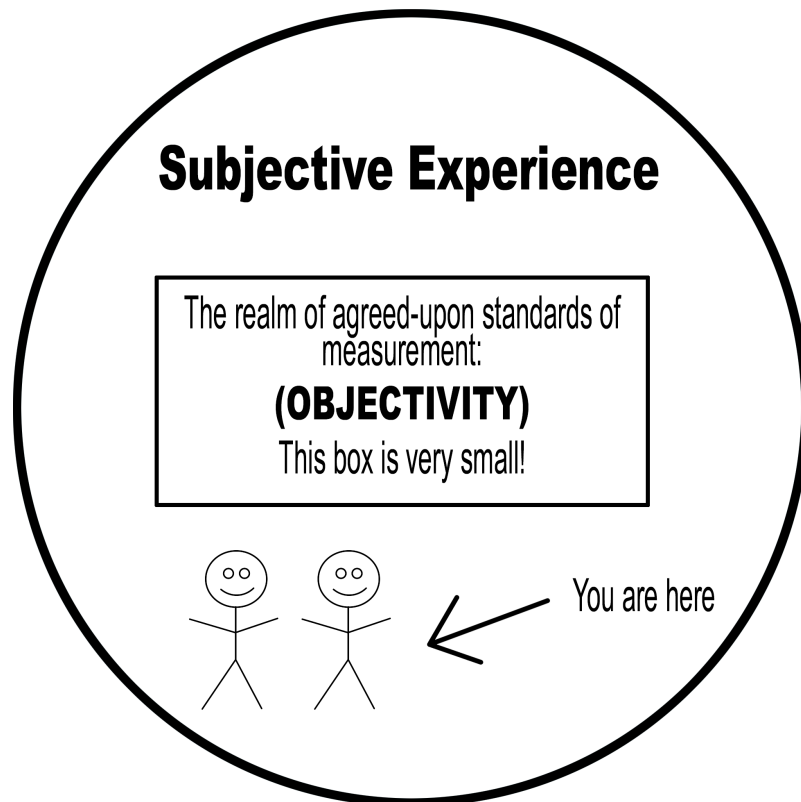


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# 1. Scientific papers are subjective and objective

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Methods & Results are objective

- *What did we do?*
- *What did we find?*

Introductions & Discussions tell the subjective story of the paper

- *Why did we start?*
- *What does it mean?*

Data doesn't interpret itself. We must speak for it.

## 2. Equator-network.org checklists for medicine and health sciences (check guidelines for your discipline)

The screenshot shows the Equator Network website. The header includes the logo and the tagline "Enhancing the QUALity and Transparency Of health Research". A navigation menu lists: Home, About us, Library, Toolkits, Courses & events, News, Blog, Librarian Network, and Contact. Below the navigation is a green banner with the text "Your one-stop-shop for writing and publishing high-impact health research" and a list of services: find reporting guidelines, improve your writing, join our courses, run your own training course, enhance your peer review, and implement guidelines. The main content area is divided into two columns. The left column is titled "Library for health research reporting" and contains a description of the library and four links: "Search for reporting guidelines", "Not sure which reporting guideline to use?", "Reporting guidelines under development", and "Visit the library for more resources". The right column is titled "Reporting guidelines for main study types" and lists various study types with their corresponding reporting guidelines: Randomised trials (CONSORT, Extensions), Observational studies (STROBE, Extensions), Systematic reviews (PRISMA, Extensions), Study protocols (SPIRIT, PRISMA-P), Diagnostic/prognostic studies (STARD, TRIPOD), Case reports (CARE, Extensions), Clinical practice guidelines (AGREE, RIGHT), Qualitative research (SRQR, COREQ), Animal pre-clinical studies (ARRIVE), and Quality improvement (SQUIRE). A small image on the right side of the page announces "The Chinese EQUATOR Centre is launched!" with Chinese text below it.

Reporting guidelines for almost 500 study types

Easy to follow checklists you can use for designing and writing studies.

Checklists can also be used to judge the quality of studies you read.

### 3. Methods sections have a lot in common with kitchen recipes

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It's frustrating  
when they are:

- Vague
- Incomplete
- Ambiguous
- Wrong

## 4. Results

- Results and Methods should be balanced: every method should have a result and the reverse.
- No editorializing: report your results but do not interpret them.
- Figures and tables should highlight main results and be “worth a thousand words.”
- Results that won’t fit into the body of the paper belong in the Web Supplement.

## 5. (Subjective) introductions answer the question, “Why did we start?”

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1. Background that introduces the reader to the topic.
2. The studies that inspired the authors to conduct the experiment.
3. The problem/question the scientists want to solve/answer.
4. A brief summary of how the authors plan to solve the problem or answer the question.

## 6. (Subjective) Discussion sections answer the question, “What does it mean?”

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1. Summarize main findings
2. Compares results to studies that inspired the experiment
3. Limitations/strengths
4. Implications of main findings
5. **Message sentence** (main finding + most important implications)

## 7. Write a strong message sentence!

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Since fetal lambs are developmentally equivalent to extremely premature human infants and they can be physiologically supported in an extra-uterine device for up to 4 weeks, it may be feasible to develop extracorporeal systems to gestate human infants.



## 8. Six ways to spot a predatory journal

1. Always check the website thoroughly

2. Check if the journal is a member of DOAJ, COPE, OASPA or STM

3. Check the journal's contact information

4. Research the editorial board

5. Take a look at their peer review process and publication timelines

6. Read through past issues of the journal

**Not all journals are legitimate**

**Google “journal name” + predatory**

**Chances are, someone has already spotted the problem.**

## 9. Retractions (not all research is good research)

- Your best source is retractionwatch.org
- Retraction Watch keeps a database of retracted papers, integrated into several popular bibliography apps (e.g., Zotero). You can use it online here:  
<http://retractiondatabase.org/RetractionSearch.aspx?>
- A leaderboard of scientists with the most retractions:  
<https://retractionwatch.com/the-retraction-watch-leaderboard/>

- How to become a better medical writer in 5 easy steps...



## 10. The Medical Library's Research Support Services department is here to help....

- Free courses
  - Academic writing
  - Systematic searching
- Comprehensive searching (fee service)
- Scientific editing (fee service)
- One-on-one sessions to develop strategic searches
  - Consultation and support
  - Library-assisted searches: up to 2 hours of free advice & help

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