Scientific Writing for Early Career Researchers

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Key Takeaways

Explain the importance of scientific writing for early career researchers (ECRs) in terms of visibility, credibility, and career progression.

Identify the core components of the IMRaD structure and their function in a scientific manuscript.

Apply strategies to craft clear introductions, methods, results, and persuasive discussions.

Recognise common challenges in academic writing and apply practical tools to overcome them.

Plan a personal writing practice that includes drafting, revising, and engaging with feedback.

Why Scientific Writing Matters

- Gateway to publishing, funding, and career progression;
- Shapes how your research is understood and used;
- Enhances your visibility and credibility in your field;
- Writing is not just reporting, it's thinking.

(Day & Gastel,2021)

What is Scientific Writing

- A structured method of presenting research findings in a clear, concise, and logical way.
- Primary goal: To communicate research results to the academic community and broader audience.
- Follows strict standards for structure, style, and referencing.

Common Types of Scientific Documents

- Research articles
- Literature reviews
- Conference abstracts and posters
- Case reports and clinical studies
- Theses and dissertations
- Grant proposals

Characteristics of Scientific Writing

Clarity

- Use exact, specific words;
- Follow Proper Punctuation;
- Organize material logically.

Characteristics of Scientific Writing

Conciseness

- Omit non-essential words and repetition;
- Use simple words;
- Make sentences positive;
- Eliminate wordy introductory phrases;
- Pretentious words.

Characteristics of Scientific Writing

Simplicity

- Use simple sentences plus long and medium length sentences to provide variety.

Characteristics of Scientific Writing

Accuracy

- Be Specific and Concrete.

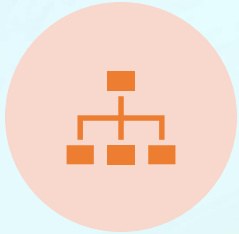
Key Qualities of Good Scientific Writing



CLEAR AND DIRECT



CONCISE AND FOCUSED



STRUCTURED AND LOGICAL



EVIDENCE-BASED



READER-CENTERED

Writing Tips

- WHO ARE YOU WRITING FOR
- QUESTIONS JOURNALS ASK
- SPECIALIST SCIENTIFIC COMMUNITY
- NO SCIENTISTS
- IS THE RESEARCH QUESTION IMPORTANT
- IS IT INTERESTING TO OUR READERS
- IS IT VALID (SCIENTIFIC STUDY)

Writing

- Keep it simple;
- Write for readers not for posterity(future generations);
- Write a first draft as though you were explaining it to a lay person.

(Spencer, S. 2024)

Short Versus Long

Never use a long word where a short one will do-George Orwell

- The majority of.. vs **most**
- Prioritise …. vs **rank**
- Utilise … vs **use**
- In order to…. vs **to**
- In the event of … vs **when**

(Spencer, S. 2024)

Short Sentences

15-30 words per sentence.

Can you read your sentence without running out of breath?

(Spencer, S. 2024)

What Editors Look for…

- Short, clear, precise title;
- Good abstract;
- Good design and methods;
- Clear conclusions;
- Brevity;
- Follow instructions.

(Spencer, S. 2024)

Use Signposts

First…. Second… third…

On the other hand…

By contrast…

In some cases, however…

Therefore…

In summary…

(Spencer, S. 2024)

Let us consider…

The Mindset Shift;

The IMRaD Structure – Your Best Friend;

Anatomy of a Strong Introduction;

Methods and Results – Clarity is Key;

Writing a Persuasive Discussion;

Abstract and Title – Your First Impression’

The Mindset Shift

Don’t wait until you feel “ready” to write;

Writing is part of doing research, not separate;

Perfectionism is the enemy of productivity;

Start early, revise often.

Source: Schimel (2022)

(Glasziou & Chalmers ,2021)

The IMRaD Structure – Your Best Friend

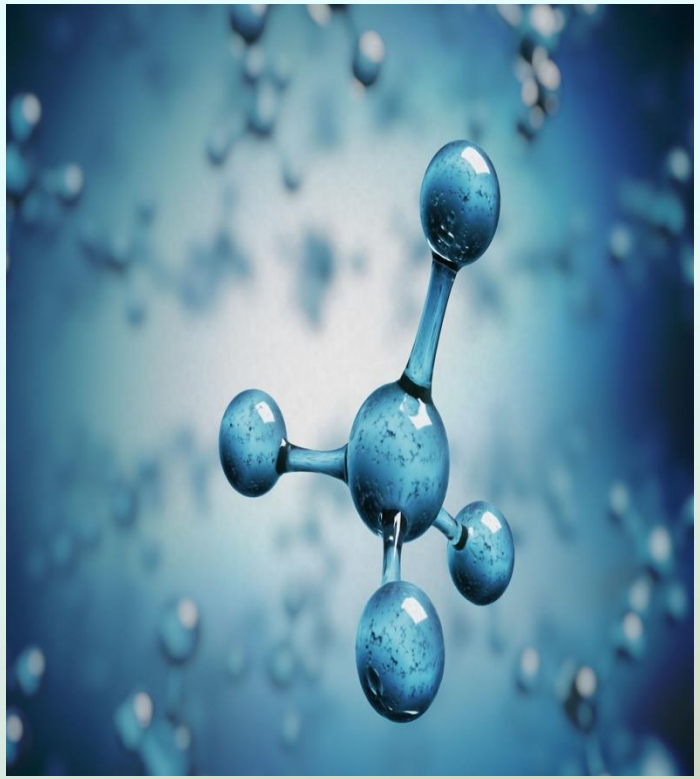
Introduction – Why this matters;

Methods – How you did it;

Results – What you found;

Discussion – What it means.

(Lang & Secic, 2020)

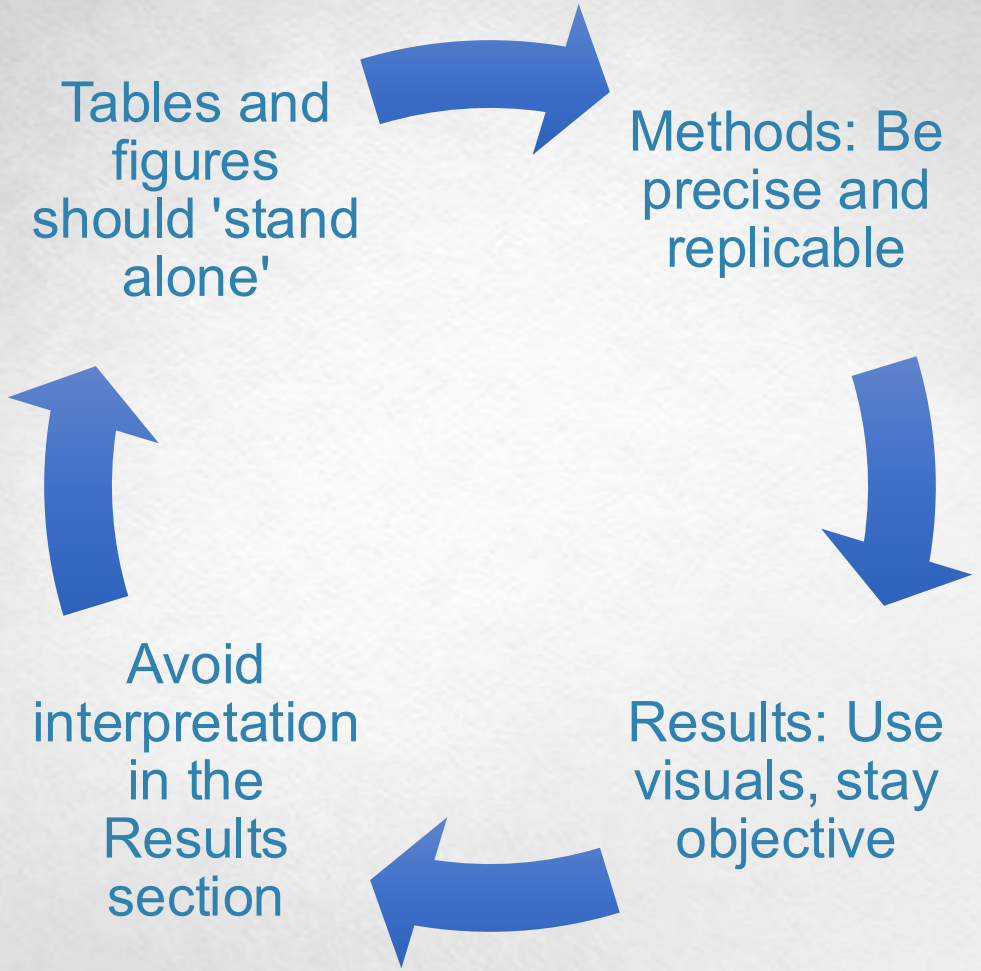


Anatomy of a Strong Introduction

- Broad to narrow: Set the context;
- Identify the gap in the literature;
- State your aim or research question clearly;
- Preview what's to come.

(Hofmann,2020)

Methods and Results – Clarity is Key



Source: Hartley (2021)

Writing a Persuasive Discussion

- Answer your research question
- Connect to previous literature
- Be honest about limitations
- Propose next steps / implications

Source: Murray (2022)

•Include purpose, methods, key findings, and conclusions.
•Usually 150–250 words.
•Written last, but read first!

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Writing the Abstract

- A concise summary of the entire paper.
- Include purpose, methods, key findings, and conclusions.
- Usually 150–250 words.
- Written last, but read first!

CUPID
CANCER - UNDERSTANDING PREVENTION IN INTELLECTUAL DISABILITIES

Remember-Abstract and Title… Your First Impression

- Abstract = Mini version of your paper;
- Include Background, Methods, Results, Conclusion;
- Title: Clear, specific, and searchable;
- Avoid jargon, use keywords.

(Sword, 2020)

Post Review

BE HUMBLE!!!

Common Struggles

Writer's block → Start with bullet points

Overwriting → Edit in layers (structure, then language)

Fear of critique → Seek feedback early

Not knowing where to publish → Target specific journals early

One Minute Assignment

Please read the next slide carefully and share with us your understanding of it.

The Scientist's Writing

Two humans ascended a certain geological protuberance to collect a hydride of oxygen, whose quantity is not specified.

One member descends dramatically suffering mechanical damage to the cranial parts of his anatomical structure. The other follows the first in a series of rapid, irregular and disturbing movements.

The Layman's Way

Jack and Jill
Went up the hill
To fetch a pail of water
Jack fell down
And broke his crown
And Jill came tumbling after

Strategies to Build Your Writing Practice

1

Set small, regular writing goals (Pomodoro, writing sprints)

2

Keep a writing journal or research notebook

3

Use templates or outlines

4

Join a writing group or peer review circle

Common Mistakes to Avoid

- Plagiarism and improper referencing.
- Poor structure and disorganized content.
- Overuse of passive voice.
- Data without interpretation.
- Too much technical jargon without explanation.

Importance of Referencing

- Acknowledge prior research.
- Avoid plagiarism.
- Allow readers to verify sources.
- Use a consistent citation style (APA, Harvard, Vancouver, etc.).

Ethics in Scientific Writing

- Avoid data fabrication or manipulation.
- Declare conflicts of interest.
- Follow authorship guidelines.
- Ensure transparency and reproducibility.

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Useful Tools and Resources

Reference managers: Zotero, Mendeley, EndNote

Style tools: Hemingway

Writing handbooks

'Writing Science' by Joshua Schimel

Journal-specific author guidelines

Your Next Steps

Identify	Identify a writing goal this month;
Choose	Choose one writing habit to try;
Talk	Talk to a mentor about publishing strategy;
Remember	Remember: Writing is a skill, not a talent.

Understanding the Publishing Process

- **Select the right journal** – scope, audience, and impact.
- **Prepare your manuscript** – follow author guidelines.
- **Submit online** – via manuscript submission systems.
- **Peer review** – feedback from experts in the field.
- **Revision and resubmission** – address reviewers' comments.
- **Publication** – in print, online, or both.

Choosing the Right Journal

- Match your topic to the journal's aims and scope.
- Check impact factor, indexing (Scopus, Web of Science, etc.).
- Open access vs. subscription journals.
- Review acceptance rate and publication speed.

Common Reasons for Rejection

- Poor alignment with journal scope.
- Weak research design or analysis.
- Language and clarity issues.
- Incomplete or inaccurate references.
- Lack of novelty or significance.

Tips for Successful Publishing

- Read and follow author guidelines exactly.
- Use clear, concise academic language.
- Include well-labeled tables and figures.
- Respond professionally to reviewer comments.
- Network with editors and peers in your field.

Remember-
Scientific writing is a process of thinking, not just reporting. A recap…

The IMRaD structure is your friend: use it to bring clarity and logic to your paper.

Good writing starts with clarity and purpose, not jargon or complexity.

Overcome writer's block by starting with bullet points and revising in layers.

Your abstract and title are the first, and sometimes, the only part that reviewers read. Make them count.

Build a writing habit using tools like Zotero, and author guidelines.

Seek feedback early and choose your journal strategically.

Wrap-Up

Any Questions



Thank You!



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Self-directed Reading
Reading = Language Processing

As we read a text, several processes go on more or less simultaneously. Difficulty with one of these processes interrupts our progress along the lines of the text and affects our judgment of the text's overall readability!

- Identifying words-**Lexical processing;**
- Recognising how words are meant to be related-**Syntactic Processing;**
- Drawing meaning from words and word groups-**Semantic Processing;**
- Interpreting the text overall **Discourse Processing;**
- Processing graphic symbols and graphic syntax is a **Display Convention**.

(Kirkmann, 2006)