

In the name of God



review Article Writing

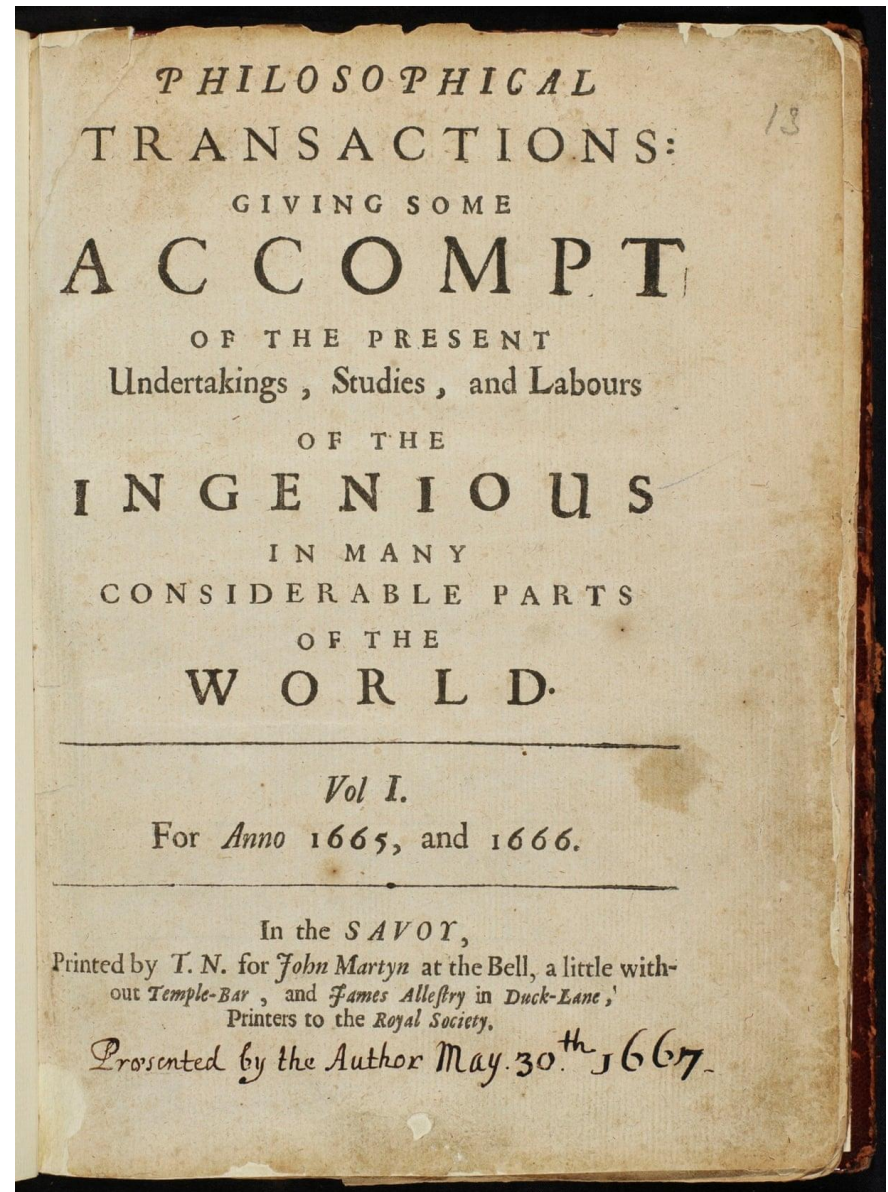
DR. K. BAVARSAD, PH.D.

ASSISTANT PROFESSOR OF PHYSIOLOGY

DEPARTMENT OF PHYSIOLOGY, FACULTY OF MEDICINE, AHVAZ JUNDISHAPUR
UNIVERSITY OF MEDICAL SCIENCES, AHVAZ, IRAN

Over 360 years
Of
scientific publishing

The history of scientific journals dates **from 1665**, when the French *Journal des sçavans* and the English *Philosophical Transactions of the Royal Society* first began systematically publishing research results. Over a thousand, mostly ephemeral, were founded in the 18th century, and the number has increased rapidly after that.

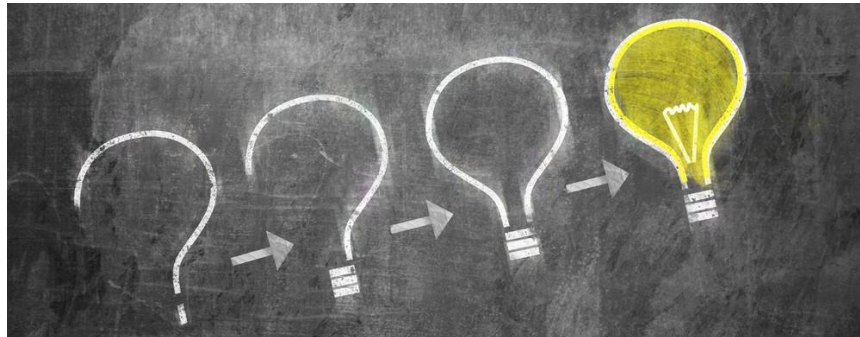


Good to know about
review articles

What is a review article?

A critical, constructive analysis of the literature in a specific field through

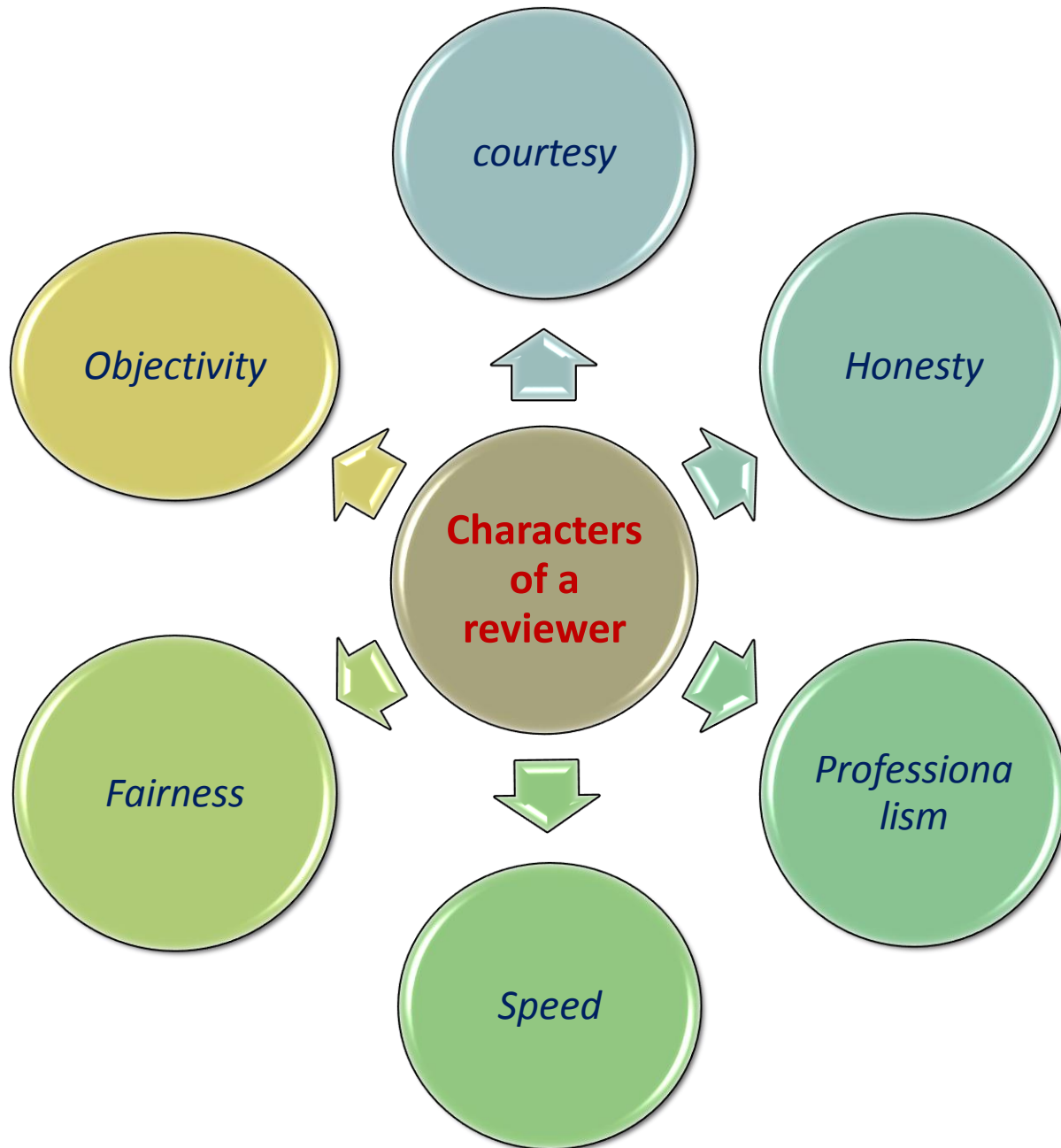
- ✓ **summary**
- ✓ **classification**
- ✓ **analysis**
- ✓ **comparison**



A scientific text **relying on previously published literature or data**.
New data from the author's experiments are not presented (with exceptions: some reviews contain new data).

- A critical analysis of existing research in your field.
- It **highlights both the strengths and weaknesses of existing research**.
- Allows you to gain a critical understanding of your field.

- Opportunity to think about what has been done in your field.
- Opportunity to think about the **similarities, patterns, trends and also differences** across the existing research.
- By **identifying strengths and weakness**, you will be able to think about what has not/needs to be done in your field.
- **The gap in the literature** is your justification for your research.



Who is the audience of review articles?

- ✓ **Experts in specific research areas**
- ✓ **Students or novice researchers**
- ✓ **Decision-makers**

Which types of review articles exist?

1. Types by methodological approach
2. Types by objective
3. Types by mandate

Types by methodological approach

- **Narrative review**

Selected studies are **compared** and **summarized** on the basis of the author's experience, existing theories and models.

- **Systematic review**

Findings from various individual studies are analyzed statistically by strict procedures.

Meta-Analyses are used to pool the results of individual studies.

Types by objective (Noguchi 2006)

- **Status quo review**

Presentation of the most current research for a given topic or field of research.

- **History review**

Development of a field of research over time.

- **Issue review**

Investigation of an issue (i.e. **a point of disagreement or a question**) in a specific field of research.

- **Theory/model review**

Introduction of a new theory or model in a specific field of research.

Types by mandate

- **Invited reviews:** experienced researchers are invited
- **Commissioned reviews:** formal contracts of authors with clients
- **Unsolicited submissions:** researchers develop an idea for a review and submit it to journal editors

How long is a review article?

- ✓ **Review articles vary considerably in length.**
- ✓ **Narrative reviews** may range between 8,000 and 40,000 words (references and everything else included).
- ✓ **Systematic reviews** are usually shorter with less than 10,000 words.

Journal Manuscripts

The first step in writing an article is to select the journal and consider the following points:

- ✓ **Limitations**
- ✓ **Guidelines**



Strategies to choose the journal:

- ✓ Where many of the papers cited were published?
- ✓ Where do cited scientists publish their work?

Where to start?!



YOU DON'T NEED TO READ EVERYTHING – you can't!

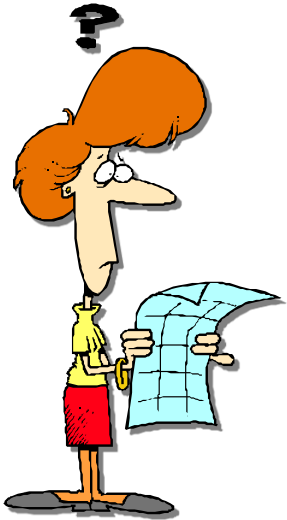
- You don't need to read every text
- You don't need to read every word



The hardest
part is
getting started

Write to illuminate, not to impress. Use the simplest words and the simplest phrasing consistent with that goal.

Jan A. Pechenik



Elements of a review article

General Structure

1. Title
2. Abstract
3. Introduction
4. Methods
5. Body: Main Part of the Review Article
6. Conclusions
7. Acknowledgements
8. References



-
1. **Body: Main Part of the Review Article**
 2. **Conclusions**
 3. **Acknowledgements**
 4. **Introduction**
 5. **Abstract**
 6. **Title**



Title

The title must explain what the paper is broadly about.

It is your first (and probably only) opportunity to attract the reader's attention.

In this way, remember that **the first readers are the Editor and the referees.**

Also, readers are the potential authors who will cite your article, so **the first impression is powerful!**

- ✓ **We are all flooded by publications**, and readers don't have time to read all scientific production. They must be selective, and **this selection often comes from the title.**
- ✓ Reviewers will check whether the title is specific and whether it reflects the content of the manuscript.
- ✓ **Editors hate titles that make no sense** or fail to represent the subject matter adequately.
- ✓ Hence, keep the title informative and concise (clear, descriptive, and not too long).
- ✓ **You must avoid technical jargon and abbreviations**, if possible. This is because **you need to attract a readership as large as possible.**



Guidelines for writing the title

Limitation of word/ character

As much specific and intelligible information as you can in as few words as possible (10-24 words)

Avoid wasted or redundant words such as (studies on) (a study of) (an investigation of) (a research on/of) and also try to minimize the use of the terms (the role of) (the treatment of) (report of a case of)

Avoid abbreviations and jargon.

Function

Helping readers to decide whether they should read the text or not.

Elements

The title must be **informative**:

- The title has to include important terms.
- **It has to indicate that the text is a review article.**

Tense

In a title with results indicated:

- The present tense
- The past tense

Length

between eight to 12 words (Davis 2005)

Examples of titles

A retrospective hospital based study on pattern of ear diseases in children

Pattern of ear diseases in children.

Ear diseases in children.

What is the pattern of...?

The unclassified ear disease is the most common type of ear diseases in Indian children.

Pattern of ear diseases in Indian children presented at a rural hospital.

Running title

It is a short title used for page headings

Students evaluation of teaching effectiveness: A structural modeling approach

Running title: students evaluation of teaching

Review of the literature on PBL in the clinical setting

Running title: PBL in the clinical setting

Cover page and title:

Title

Names of the authors

Authors qualifications and affiliations

Running title

Address for correspondence

State the source of any funding

List of authors

Function

Declare intellectual ownership of the work
provide contact information

Elements

1) Decision on authorship:

- Every person that contributed significantly to the literature search, literature exploration and/or writing process.

2) Order of authors:

- **The first author** has done most of the research and written major parts of the article.

- Authors between first and last author have contributed in one way or the other to the success of the project. They may be ordered alphabetically (indicating equality) or in a sequence of decreasing involvement.
- The last author usually coordinated the project and had the original idea.

IMPORTANT: Discuss authorship as early as possible!

Authorship:

Having substantial contributions to all the following three conditions:

- 1) Conceptualization and design of the study, analysis and interpretation of data, or scientific collection of information.
- 2) Drafting the paper or revising it critically for important intellectual content
- 3) Review and approval of the final version to be published

(International Committee of Medical Journal Editors 2007)

Write the Abstract



Write a very strong abstract !



Together with the title, it's the advertisement of your article.

- ❖ **Make it interesting and easily understood without reading the whole article.**
- ❖ The abstract provides a short description of the perspective and purpose of your paper.
- ❖ highly recommend that you wait until you have written the rest of your review article to write the abstract.

- ✓ It is very important to remind that the abstract offers a short description of the interpretation/**conclusion in the last sentence**.
- ✓ A clear abstract will strongly influence **whether or not your work is further considered**.
- ✓ However, the abstracts must be keep **as brief as possible**.
- ✓ Just **check the 'Guide for authors' of the journal**, but normally they have **less than 250 words**.

Some points about writing abstracts

- 1) Omit all references to the literature.
- 2) Do not refer to tables or figures.
- 3) avoid abbreviations unless the word is repeated in the abstract
- 4) avoid repetitions: (or, ...,)
- 5) avoid parenthesis as much as possible
- 6) Avoid short form of words (it doesn't, it does not)
- 7) it is possible to use numerical digits

Abstract

Function

Informs about the main objectives and result of the review article (**informative abstract**) or indicates the text structure (**descriptive abstract**).

Descriptive abstract - for narrative reviews

Elements

Description of subjects covered without specific details.

A descriptive abstract is like a table of contents in paragraph form.

Tense

present

Elements

Informative abstract - for systematic

- 1) **Objectives:** One or two sentences describe the context and intention of the review.
- 2) **Material and methods:** One or a few sentences provide a general picture of the methodological approach.
- 3) **Results:** A few sentences describe main outcomes.
- 4) **Conclusions:** One or two sentences present the conclusion (which is linked to the objectives).

Tense

- ✓ objectives: present
- ✓ material and methods, results: past
- ✓ conclusions: present

Abstract

STRUCTURED

NOT STRUCTURED

Max 250 words

150 words

- Introductory sentence indicates the importance.
- Objective: (the general)
- Method: study design – sample size – area- sampling technique - description of method.
- Results: That achieve the objective.
- Conclusion: An answer of the research question.

Key words

Key words are:

- 1) Terms related to the variables**
- 2) Population of the study**
- 3) Method used in the study**

Table of Contents

Function

Shows the readers **the organization of the text**.

Helps orientation among sections.

Note

Some review journals print an outline/table of contents at the beginning of the article, others do not.

In general, these are recommended for extensive narrative reviews.

Introduction

Function

- Provides information about the context
- Indicates the **aim for the review**
- Defines the focus and the **research question**

Elements

Elements of a three paragraph introduction

- 1) Subject background.** The general topic, issue, or area of concern is given to illustrate the context.
- 2) “Problem”.** Trends, new perspectives, gaps, conflicts, or a single problem is indicated.
- 3) Motivation/justification.** The author’s reason for reviewing the literature, the approach and the organization of the text are described.

Tense Present

Citations many

Length

Between 10% and 20% of the core text (introduction, body, conclusions).

Note

Make sure to have a **narrow focus and an explicit research question.**

Give theoretical or practical justifications for the need for a review.

Again, brevity is important.

And again, this should be one of the last portions of your review article that you write.

how can you write an introduction for a paper you haven't written yet?
You don't know yet how it will turn out.

Body: Material and Methods

Function

- **Systematic reviews** have a methods section.
- **Narrative reviews** do not have a methods section

Elements

The material and methods section contains for example information about:

- ✓ **Data sources**
- ✓ **Search terms and search strategies**
- ✓ **Selection criteria (inclusion/exclusion of studies)**
- ✓ **The number of studies included**
- ✓ **Statistical methods of meta-analysis**

Tense

past

Citations

few

Length

Approx. 5% of the core text (introduction, body, conclusions)

Body: Main Part of the Review Article

Section structure

- A coherent structuring of the topic is necessary to develop the section structure (Bem 1995).
- **Subheadings** reflect the organization of the topic and indicate the content of the various sections.

Possible criteria for structuring the topic are:

- methodological approaches
- models or theories
- studies that agree with another versus studies that disagree
- chronological order
- geographical location

Paragraph structure

- Cover one idea, aspect or topic per paragraph.
- **Avoid referring to only one study per paragraph**; consider several studies per paragraph instead.

Links

- Frequently link the discussed research findings to the research question stated in the introduction.

These links create a thread of coherence in your review article.

- Link the studies to one another. Compare and discuss these relationships.

Tense

According to Ridley (2008) three tenses are frequently used:

- **Present**: reporting what another author thinks, believes, writes, reporting current knowledge or information of general validity
- **Simple past**: referring to what a specific researcher did or found, referring to a **single study**, e.g. *They found...*
- **Present perfect**: referring to an area of research with a number of independent researchers involved, e.g. *They have found...*

Citations are usually **indirect** but in some cases pointed and relevant remarks might be cited **directly**.

- **Non-integral references (indirect):** The author's name, or a number referring to the reference list, appears in brackets.

Non-integral references emphasize the idea, result, theory etc. rather than the person behind it (*Ridley 2008*). Most references in biology are non integral.

- **Integral references (direct):** The author's name has a grammatical function in the text. *As Ridley (2008) points out* this type is appropriate to emphasize the contribution of a specific author.

Length

70 to 90% of the core text (introduction, body, conclusions).

Note

- Make sure to organize the different pieces of information into a line of argument.
- An appropriate organization of information is all-important for the quality of a review (Day & Gastel 2006).
- Throughout it is important that the idea/topic (**paragraph 3 of the Introduction**) drives the article and not the literature used; **write an idea-driven, rather than literature-driven article!**

Conclusions

Function

Answer the research question set in the introduction.

Elements

- implications of the findings
- interpretations by the authors (kept separate from factual information)
- identification of unresolved questions



Tense

present: summarizing and drawing conclusions

present perfect: referring to an area of research or a body of Literature

Citations

few or none

Length

5 to 10% of the core text (introduction, body, conclusions).

Note

Make sure your conclusions are not simply a repeat of the abstract!

Acknowledgements

Function

- Expresses gratitude to **people who helped** with the literature search, the structuring of the material or in the writing process (but whose contribution is too small to justify co-authorship).
- Expresses gratitude to **funding organization** and specifies the funding program (often required by funding agencies).

Full names of people and their specific contributions to the project are given.

- The **name of the funding agency** and **program** as well as the **grant number** and the person to whom it was awarded are mentioned.

Tense

present (past tense when referring to funding agencies in terminated projects)

Citations

none

References

Function

- Shows interested readers how to find the literature mentioned in the text.
- Acknowledges the work of other scientists.
- Compulsory to avoid charges of plagiarism

Elements

Include every reference cited in the text.

Avoid internet sources.

If internet sources must be used, find the original source for the internet reference, check it has been correctly cited and cite it directly.

Length

A range between **50-100 references** is in most cases appropriate.

Note

- For narrative reviews the inclusion of all relevant, high quality studies is the target.

Illustrations: Concept Maps

Function

Concept maps are used in review articles to visualize the structuring of the topic, to show the **relationships between studies, concepts, models or theories.**

Organization of data

Boxes with terms or names are arranged in a two-dimensional space.

Arrows are used to link boxes.

Specifications of the relationship are written on the arrows.

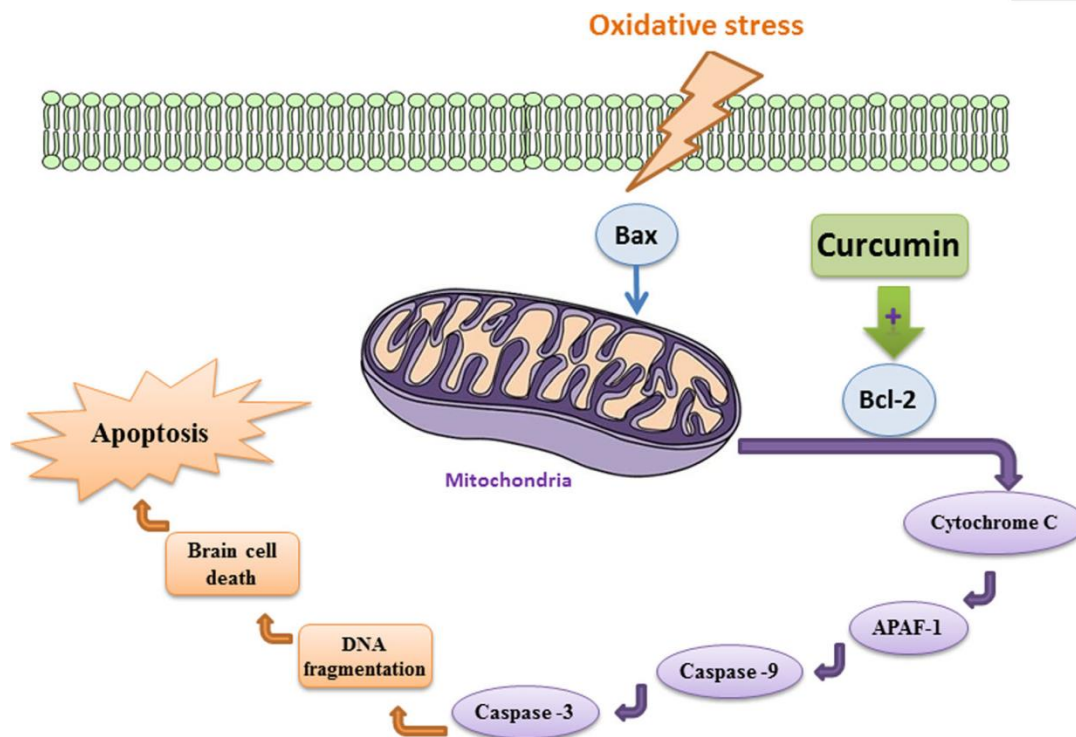
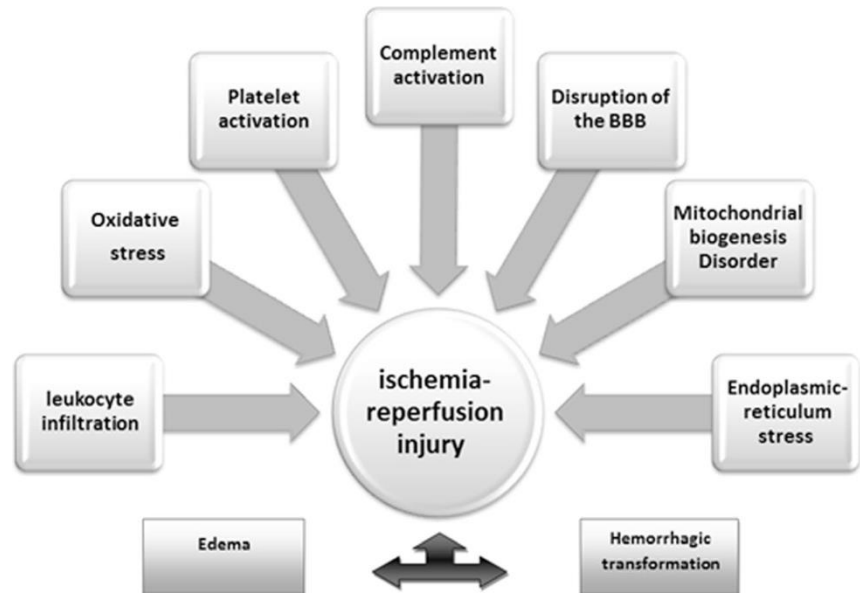
Legend

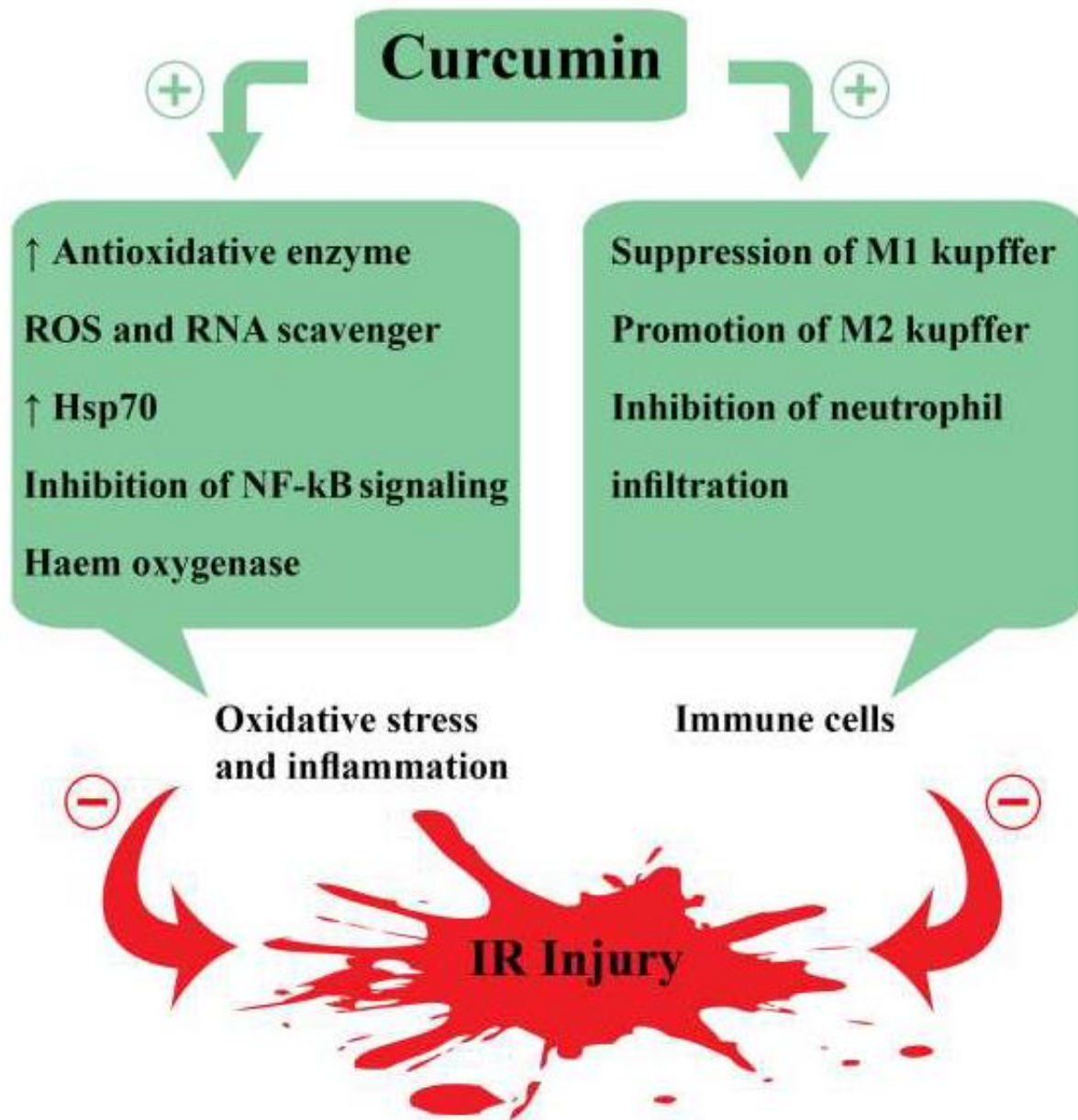
The legend describes the concept map's content.

It is specific and informative (it should be possible to understand the map without reading the full text).

Note

Concept maps are very useful to display complex relationships.





Preparing a review article in 18 steps

Getting Started

The bad news: There are two things nobody wants to hear about writing:

1) Writing is hard.

2) Writing takes time.

The good news: The above truisms hold for everyone, even the most seasoned writers. And there are some tried and true ways to make the writing easier.

prepare

- 1.** Narrow the topic, define a few research questions or hypotheses
- 2.** Search for literature sources, refine topic and research questions during the search
- 3.** Read, evaluate, classify and make notes
- 4.** Redefine the focus and the research questions, define the take-home message
- 5.** Compose a preliminary title

develop structure

6. Find a **structuring principle** for the article (e.g. **chronological, subject matter, experimental procedure**)
7. Prepare an **outline**, find headings for the sections in the text body
8. Plan the content of each **paragraph** in the different sections
9. Prepare tables, concept maps, figures

write draft

- 10.** draft the methods section (if needed)
- 11.** draft the body sections
- 12.** draft the conclusions
- 13.** draft the introduction
- 14.** draft the abstract

revise

- 15.** revise drafts of different sections, abstract & title, tables, figures & legends
- 16.** revise citations and references
- 17.** correct grammar, spelling
- 18.** adjust the layout

IMPORTANT:

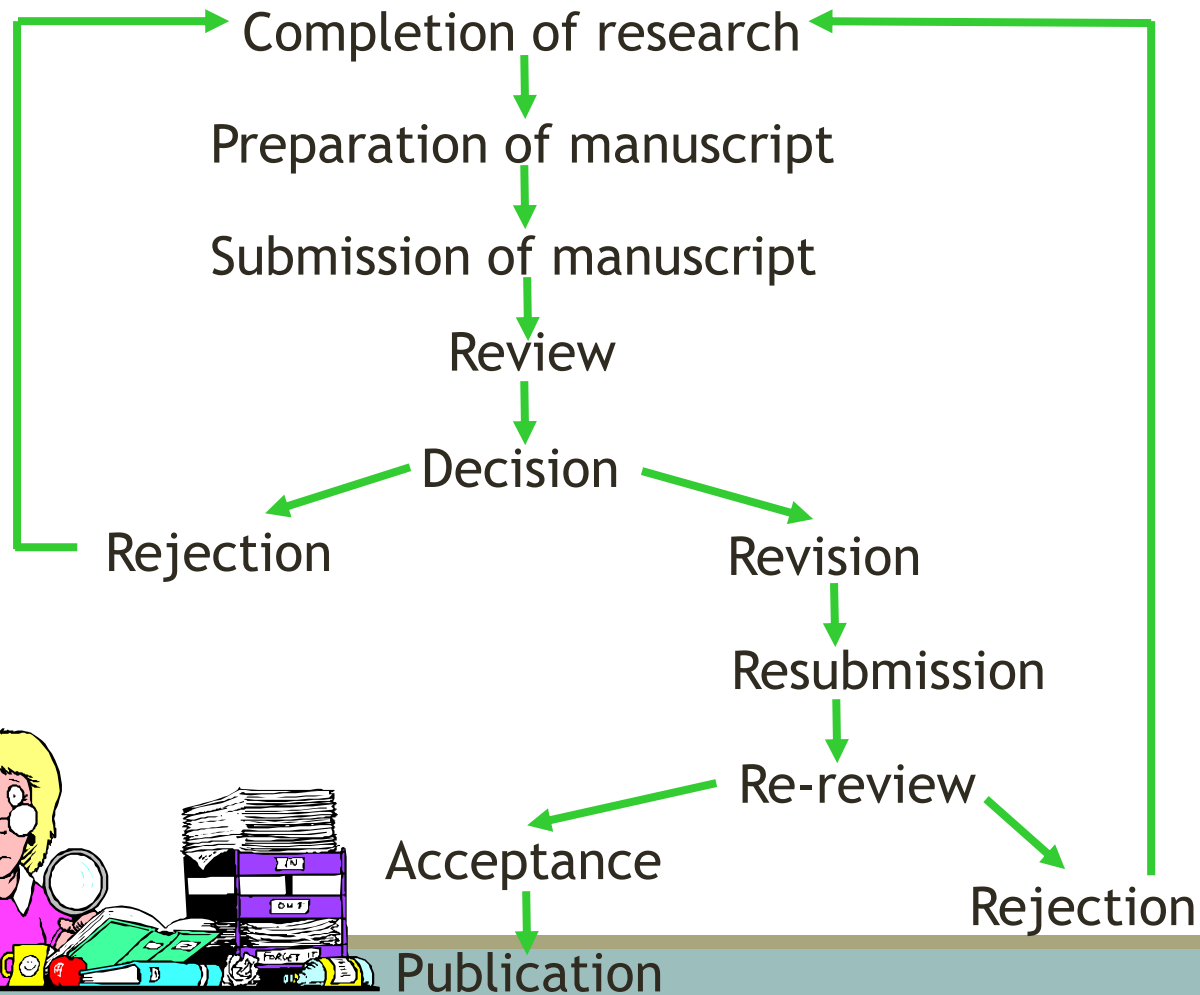
For all types of review articles: **Make sure to ask competent persons for feedback** in the stages “prepare”, “develop structure”, and “revise”.

Your Second Reader

Now that you have written every section of your review article, it is time to have a trusted friend read it for you and make comments.

- Is it interesting?
- Does it make sense?
- Does it flow? (Does one section acknowledge that there was a section before it and that there will be one after it?)
- Is the review article in a logical right order?
- Does the review article raise and answer the question “So What?”
- Do you feel persuaded to the writer’s point of view?
- If you are not persuaded, do you at least understand what the writer was attempting to persuade you to do or think?

Process of Research





*Thanks for
your attention*

Thanks for your attention





Thanks for your attention