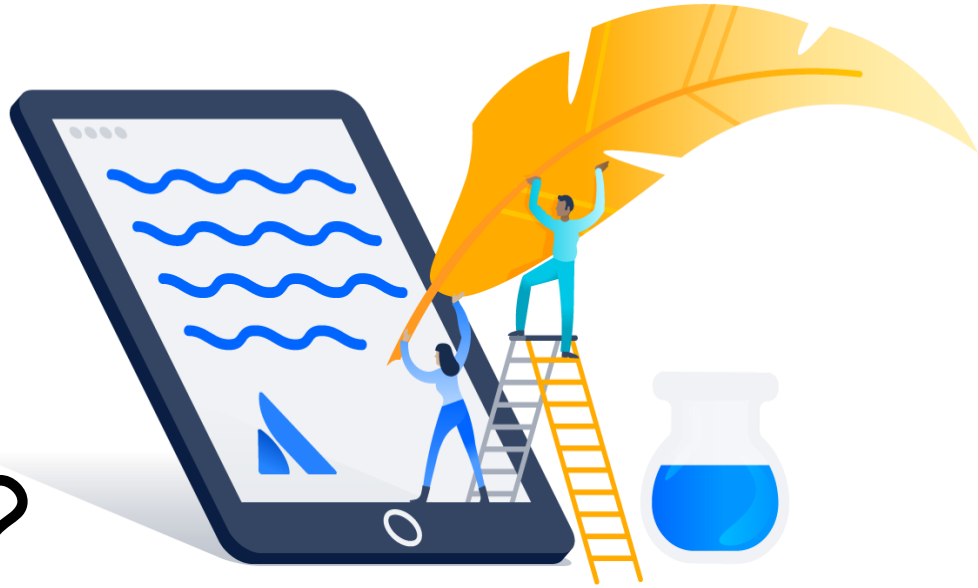
Abstract

How to write it?

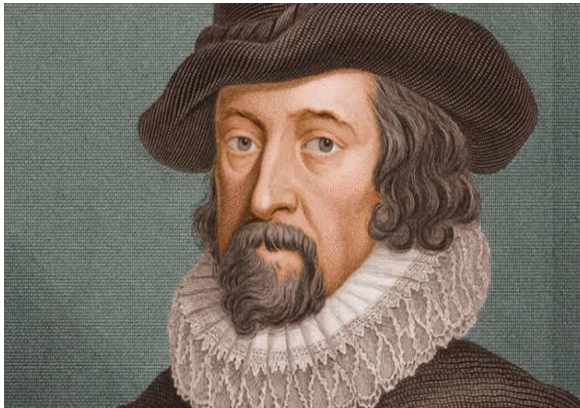


Dr. Shamima Choudhury
MBBS, MPH, MPhil
Assistant Professor
Dept. of Community Medicine
Member, Research Cell
Green Life Medical College

Why writing is Important

- Francis Bacon once said,

  “Reading maketh a full man; conference a ready man; but writing an exact man”



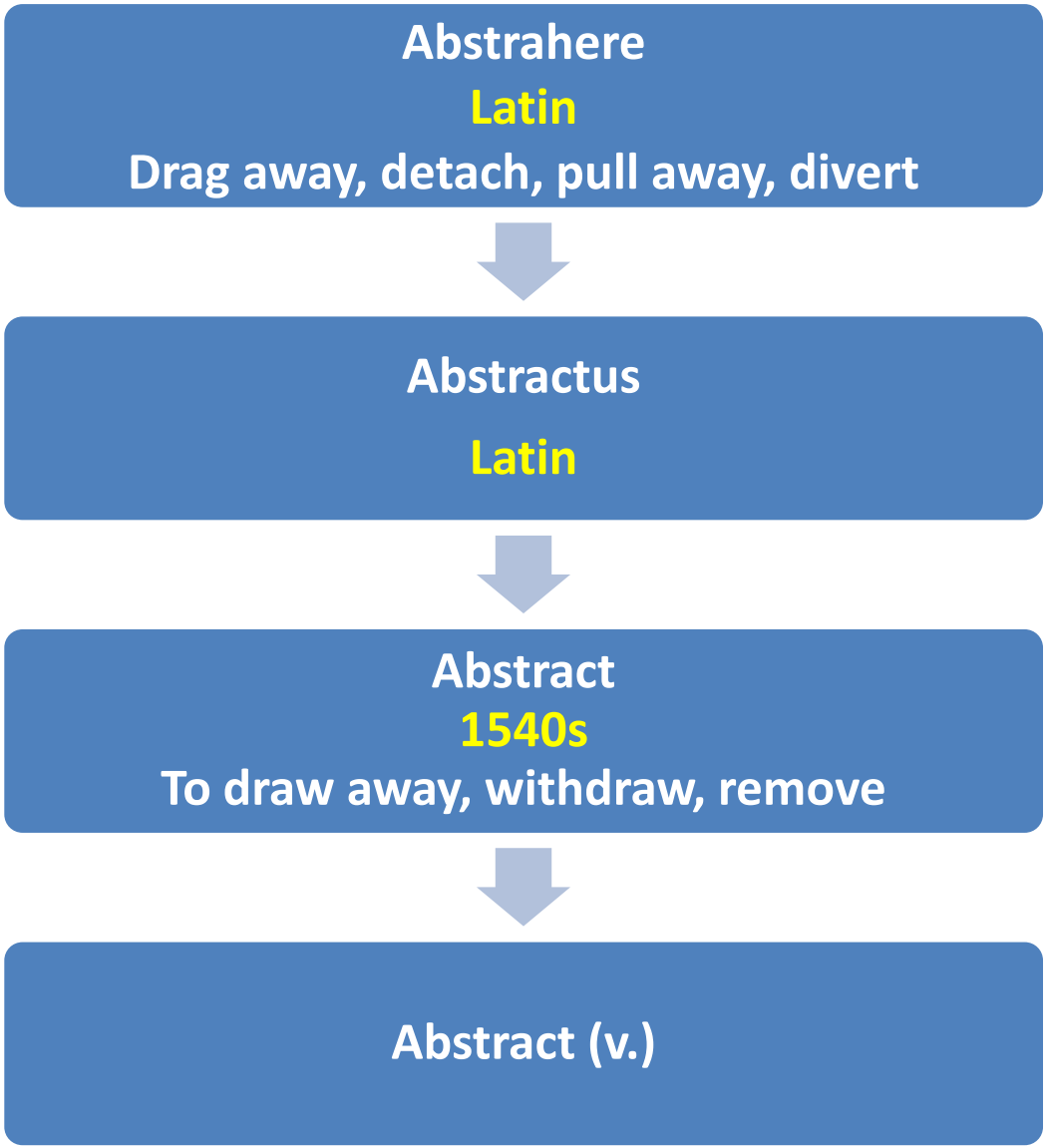
Reasons for Not Writing

- Difficulty in knowing from **where to start**
- Not knowing **how to start**
- Anxiety about **writing skills**
- Lack of **confidence**

Discussion outline

- What is Abstract?
- Importance of Abstract
- Basic information about various types of Abstract
- When do people write Abstract?
- Characteristics of an Abstract
- How to write Abstract?
- Prior to submission of Abstract
- Some writing tips
- Take home massage

Origin of the word "Abstract"



What is Abstract?

Condensed version of a full scientific paper

It summarizes, usually in one paragraph of 200 – 300 words or less, the major aspects of the entire (research) paper

In publications usually at the beginning of the paper (but it can appear elsewhere, e.g. in book of abstracts or on-line)

Use/Importance of Abstract

Selection

- Allows readers to quickly decide whether it is relevant to their purposes and either they need to read the whole paper

Indexing

- Introduce journal articles
- Inform readers about the article content
- Enable searches in abstracts
- Allows for quick retrieval by users
- Incorporates the key terms that a potential researcher would use to search

Types of Abstract

- Descriptive
- Informative

Difference between Descriptive & Informative abstract

Descriptive Abstract	Informative Abstract
Indicates the type of information found in the work	Acts as a surrogate for the work itself
Emphasis is placed on the problem and method	Emphasis is placed on the results and conclusion of the project
Makes no judgments about the work, nor does it provide results or conclusions of the research (Describe the major points of the project to a reader)	Presents and explains all the main arguments and the important results and evidence in the paper (Informs the audience of all essential points of the paper)

Difference between Descriptive & Informative abstract contd.

Descriptive Abstract	Informative Abstract
Incorporate key words found in the text and may include the purpose, methods, and scope of the research	Includes the information that can be found in a descriptive abstract as well as the results and conclusions of the research and the recommendations of the author
Usually very short, 100 words or less	Usually no more than 300 words in length
Often written before a project is completed. May required for conference paper, proposals or for progress reports.	After a project has been completed

Types of Abstract contd.

Structured Abstract	Unstructured Abstract
•Usually follow IMRAD pattern Introduction, Methods, Results and Discussion	•Composed of one paragraph with no explicit headings •Don't follow the IMRAD pattern within their bodies. •Often appropriate for review articles

Example of Structured abstract

Structured -- **Carbon monoxide-activated Nrf2 pathway leads to protection against permanent focal cerebral ischemia**

Background and Purpose—Carbon monoxide (CO) is a gaseous second messenger produced when heme oxygenase enzymes catabolize heme. We have demonstrated that CO can be therapeutic in ischemia-reperfusion brain injury; however, it is unclear whether CO can also offer protection in permanent ischemic stroke or what mechanism(s) underlies the effect. Heme oxygenase-1 neuroprotection was shown to be regulated by Nrf2; therefore, we investigated whether CO might partially exert neuroprotection by modulating the Nrf2 pathway.

Methods—To evaluate the potential protective effects of CO, we exposed male wild-type and Nrf2-knockout mice to 250 ppm CO or control air for 18 hours immediately after permanent middle cerebral artery occlusion. Infarct volume and neurologic deficits were assessed on day 7. Molecular mechanisms of Nrf2 pathway activation by CO were also investigated.

Results—Mice exposed to CO after permanent ischemia had 29.6±12.6% less brain damage than did controls at 7 days, although amelioration in neurologic deficits did not reach significance. Additionally, 18-hour CO treatment led to Nrf2 dissociation from Keap1, nuclear translocation, increased binding activity of Nrf2 to heme oxygenase-1 antioxidant response elements, and elevated heme oxygenase-1 expression 6 to 48 hours after CO exposure. The CO neuroprotection was completely abolished in Nrf2-knockout mice.

Conclusions—Low-concentration CO represents a neuroprotective agent for combination treatment of ischemic stroke, and its beneficial effect would be at least partially mediated by activation of the Nrf2 pathway.

Key Words:
carboxyhemoglobin
heme oxygenase
mouse
neuroprotection
stroke

Example of unstructured abstract

Unstructured – **Estradiol protects against ischemic injury**

Clinical studies demonstrate that estrogen replacement therapy in postmenopausal women may enhance cognitive function and reduce neurodegeneration associated with Alzheimer's disease and stroke. The study assesses whether physiologic levels of estradiol prevent brain injury in an in vivo model of permanent focal ischemia. Sprague-Dawley rats were ovariectomized; they then were implanted, immediately or at the onset of ischemia, with capsules that produced physiologically low or physiologically high 17β-estradiol levels in serum (10 or 60 pg/mL, respectively). One week after ovariectomy, ischemia was reduced. Estradiol pretreatment significantly reduced overall infarct volume compared with oil-pretreated controls (mean ± SD: oil = 241 ± 88; low = 139 ± 91; high = 132 ± 88 mm^3); this protective effect was regionally specific to the cortex, since no protection was observed in the striatum. Baseline and ischemic regional CBF did not differ between oil and estradiol pretreated rats, as measured by laser Doppler flowmetry. Acute estradiol treatment did not protect against ischemic injury. Our finding that estradiol pretreatment reduces injury demonstrates that physiologic levels of estradiol can protect against neurodegeneration.

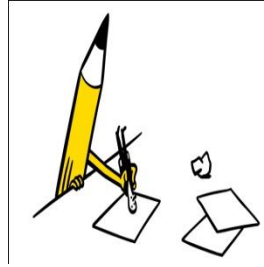
Keywords:

Estrogen; Neuroprotection; Cerebral ischemia; Stroke; Plasticity; Menopause

When do people write abstracts?

- When submitting articles to journals, especially online journals
- When applying for research grants
- When writing a book proposal
- When completing the MPhil, Ph.D. dissertation or MD / MS thesis
- When writing a proposal for a conference paper
- When writing a proposal for a book chapter

Characteristics of an Abstract



- Accurate, coherent and readable
- Concise, specific and selective
- Self-contained, i.e, stand alone Complete and internally consistent
- Follow strictly the chronology of the report
- Add no new information – merely summarizes report
- Are intelligible to a wide audience

How to write an abstract

- Read the paper in its entirety
- Underline and pick up major points from each section
- Check word length for each major point
- Edit for flow and cohesion

Parts or sections of an abstract

Objective

Problem

Methodology

Results

Conclusion and Implications

How to write an abstract contd.

Objective:

- Start by clearly defining the purpose of your research.

- You can also include some brief context on the social or academic relevance of your topic, but don't go into detailed background information.

How to write an abstract contd.

Problem:

Research problem:

what practical or theoretical problem does the research solve?

Thesis statement:

what do you argue?

- Written in the present or past simple tense, but should never refer to the future
  - This study will investigate the relationship between coffee consumption and productivity.

  - This study investigates the relationship between coffee consumption and productivity.

How to write an abstract contd.

Methodology:

- A straightforward description of what you did in one or two sentences.

- To give the reader a quick insight into the overall approach and procedures you used.

- Written in the past simple tense
  - Semi-structured interviews will be conducted with 25 participants.
  - Semi-structured interviews were conducted with 25 participants.

How to write an abstract contd.

Results:

- Try to highlight only the most important findings that will allow the reader to understand your conclusions.

- Written in the present or past simple tense.

  - Analysis of the responses has shown that there is a strong correlation between coffee consumption and productivity.

  - Analysis of the responses shows that there is a strong correlation between coffee consumption and productivity.

  - Analysis of the responses showed that there was a strong correlation between coffee consumption and productivity.

How to write an abstract contd.

Conclusion:

- What is your answer to the problem or question?
- The reader should finish with a clear understanding of the central point that your research has proved or argued.
- If there are important limitations to your research, you should mention them briefly in the abstract.
- Conclusions are usually written in the present simple tense.
  - Based on these results, we concluded that coffee consumption increases productivity.

  - Based on these results, we conclude that coffee consumption increases productivity.

How to write an abstract contd.

Implications:

- What changes should be implemented as a result of the findings of the work?
- How does this work add to the body of knowledge on the topic?
- If relevant, you can briefly make suggestions for further research.

To put it simple

- What the author did
- How the author did it
- What the author found
- What the author concluded

How to write an Abstract:

Some useful tips

DOs

- Use a clear and concise writing style
- Be specific
- Write in simple English
- Remove or shorten any unnecessary words or phrases
- Always use the full term before you refer to it by acronym

  [for example, Orthotopic Liver Transplantation (OLT)]

DOs

- Write only one thought per sentence.
- If many results, only present the most important
- Mention just the major implications
- Relate back to your purpose and research question
- Avoid using I or we, but choose active verbs instead of passive when possible

  eg. The study tested ……rather than it was tested by the study

DON'Ts

- Do not enumerate a list of topics covered; instead, convey the essential information found in your paper.
- Avoid repeating information from the title.
- Do not give equations and math.

- Do not refer in the abstract to information that is not in the document.
- Do not use trade names, acronyms, Unexplained abbreviations, or symbols and jargon.

DON'Ts

- Do not commence with "this paper…", "this report…" or similar.
- Do not use sentences that end in "…is described", "…is reported", "…is analyzed" or similar.
- Do not begin sentences with "it is suggested that…" "it is believed that…", "it is felt that…"or similar.
- Do not repeat or rephrase the title.
- Quotations from the original work or from other works
- Do not include references

Prior to Submission

Make a self-assessment by asking these questions:

- Have I followed the journal's instructions to authors?
- Have I followed the right structure (i.e. structured, unstructured) and style (we vs passive)?
- Include headings exactly as stated in the instructions/template?
- Have I covered the relevant points from those below?
- Whenever I have given my readers information, will it be 100% clear to them

Prior to Submission contd.

- Have I chosen my keywords carefully so that readers can locate my abstract?
- Have I use short, clear sentences; one idea per sentence?
- Have I limit my abstract to the word count requirement?
- Is there any technical errors, such as grammar, syntax and spelling mistakes
- **Edit, edit, edit**

Why Abstracts Not Accepted

- If it is not self explanatory
- If the abstract are more likely to be an introduction of the paper
- Poor presentation
- If it mentions irrelevant details
- If the reader has no idea of what results were obtained
- Poor methods
- Weak discussion
- Lack of originality

How to Improve

- Writing is an art, you can learn
- Read published manuscript and abstract carefully in major journals and focus on detail
- Practice; practice; practice
- Attend classes in writing skills/read books
- Make the abstract the best part of the article
- Make sure it stands alone
- Get help from your peer and colleagues
- Double check every piece of data

Closing Thoughts

- Scholarly activities and Publications are a required part of residency training
- Very Important for residents pursuing academic career
- Important for academic advancement

Take Home Massage

- Abstract is the first section that is examined by journal editors for reviewing manuscript
- And when published it is the first section that is evaluated by reader
- Stand alone complete and internally consistent
- Concise, specific and selective & follow strictly the chronology of the report
- Write only one thought per sentence
- Make the abstract the best part of the article

It is your turn now!

Writing Abstract


Thank
You