
CHECKLIST FOR WRITING A BIOMEDICAL PAPER

Title

- Is the title specific?
 - ✓ Does it reflect the topic of the paper?
 - ✓ Does it use specific terms?
- Is the title concise?
 - ✓ Does every word contribute something?
 - ✓ Have unnecessary words been eliminated?
- Is the title clear?
 - ✓ Are the key terms used?
 - ✓ Is the relationship among items in the title clear?
 - ✓ Have noun clusters (too many nouns grouped together) been eliminated?
 - ✓ Is the title grammatically correct?

Introduction

- Is the introduction targeted for the intended readership?
- Does the introduction use a funnel organization?
- Is the beginning of the introduction written at an appropriate level (not too specific or general) for the readership?
- Is the general problem (or gap in knowledge) presented early in the introduction?
- Is the background information relevant?
- Are the unique features of this study (relative to previous work) presented clearly?
- Is the hypothesis or research question presented in specific terms?
- Will this introduction catch and keep the reader's interest?

Materials and Methods

- Does this section describe what was done?
 - ✓ Is the study design clear?
 - ✓ Are the materials and patients (or animal subjects) described adequately?
 - ✓ Are all methods described adequately or cited correctly?
- Are the descriptions presented in a logical order, such as

- ✓ Study design
 - ✓ Materials/patients (or animal subjects)
 - ✓ Procedures
 - ✓ Analytical methods
- Are subheadings used?
 - Are figures or tables used if needed?

Results

- Are the data presented in a sequence that logically answers the research question?
- Are data presented in tables, graphs, photographs, or drawings?
- Is the text used to supplement and highlight, rather than repeat, the data in the display items (ie, figures and graphs)?
- Does every result have a method and every method a result?
- Are data presented only from this study?
- Are the data presented consistently in the text of the manuscript and the display items?

Discussion

- Is the research question answered at the beginning of the discussion?
- Is the strongest result of the study discussed first?
- Do the discussion points and the cited information clearly relate to findings in this study?
- Are minor points, if any, presented briefly in the middle of the section?
- Are any conflicting data (within this study or between this study and previous studies) presented objectively?
- Are speculations and opinions clearly distinguished from facts?
- Is the overall focus of the section on this study?
- Is a conclusion presented?
- Does the conclusion repeat the answer to the research question?
- Does the ending give the reader a sense of completeness?

References

- Have appropriate references been selected?
- Are reference numbers placed appropriately (after names of investigators, or after ideas)?
- Are references formatted according to the style preferred by the journal?
- Have the references been checked against the original sources?

Review

- Keep one thought per sentence and one idea per paragraph.
- Use active voice when possible.
- Use simple words.
- Eliminate unnecessary words.
- Use transitions and key words.
- Use the same terms consistently throughout the paper.
- Make an outline.
- Consult a statistician.
- Keep the focus of the paper on answering the question asked in the introduction.
- Be as brief as possible in making your point.

Checklist for Editing Sentences

- Make sure the message of each sentence is clearly identified and understood.
- Place the message of the sentence in the subject, verb, and completer. (Check your sentence patterns.)
- Check that the subject and verb make sense together.
- Make sure the important information in the sentence is placed at the beginning and the end of the sentence (the stress positions). Generally, new information should come at the end of the sentence.
- Use strong, active verbs that precisely state the action of the sentence.
- Eliminate "be" verbs when possible.
- Use passive voice (form of "be" + verb) sparingly.
- Make sure the subject agrees with the verb.

- Eliminate nominalizations (nouns created from verbs, e.g., selection, necessity, discussion, agreement).
- Minimize the use of noun clusters (three or more nouns in a row).
- Eliminate prepositional phrases when possible.
- Change sentence fragments into full sentences.
- Convert negatives (e.g., use “common” rather than “not uncommon”).
- Eliminate jargon and slang.
- Avoid dangling or misplaced modifiers. Modifiers should be placed near the word(s) they modify.
 - ✓ Place adjectives immediately before the noun or pronoun they modify.
 - ✓ Place adverbs after the object of the verb (He plays the saxophone well.).
 - ✓ If the verb has no object, place the adverb directly before or after the verb (He went happily.).
 - ✓ If the adverb modifies a verb phrase, place it after the first word in the phrase (was extremely surprised) or, if it modifies only the participle, directly before the participle (had been justly accused).
- Check for parallel structure in items in a series, in conjunctions used (and, or, etc.), and in comparison statements.
- Check for spelling and punctuation errors.