

Ten Types of Sentences Every Scientific Paper Should Have

Joe Munch

Scientific Publications



Research Medical Library
Your Research Starts Here

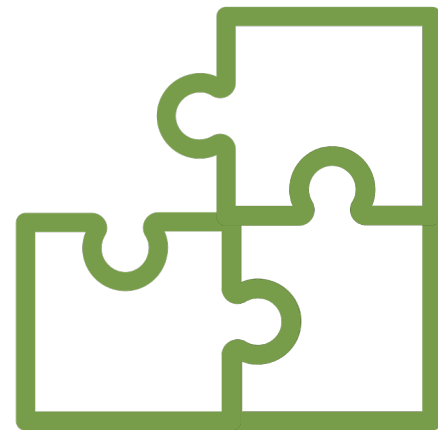
Why these 10 types of sentences?

- Serve as markers of study narrative
- Help minimize the possibility of being misunderstood



1. Gap in knowledge

- Given in the Introduction, typically towards the end
- States the gap the study sought to fill



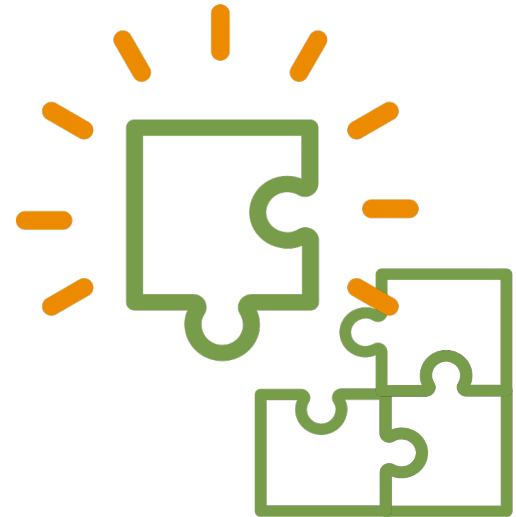
1. Gap in knowledge

“The role of protein X expression in breast cancer remains unclear.”

“The few studies that have investigated protein X expression in breast cancer have yielded inconsistent findings.”

2. Importance of filling the gap

- Given in the Introduction, immediately after the gap in knowledge
- Says why the study is worthwhile



2. Importance of filling the gap

Gap:

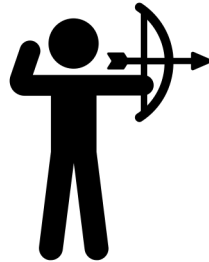
“The role of protein X expression in breast cancer remains unclear.”

Importance of filling the gap:

“An improved understanding of this role would facilitate the development of novel treatments for the disease.”

3. Purpose or hypothesis

- Given in the Introduction, after the gap in knowledge and importance of filling the gap
- Explains how you set out to fill the gap in knowledge



3. Purpose or hypothesis

“The purpose of this study was to elucidate the role of protein X expression in breast cancer.”

“Our primary aim was to . . .”

“In the present study, we tested the hypothesis that . . .”

“We hypothesized that . . .”

4. Reasons for experiments

- Given in the Methods, at the beginning of each new description of an experiment or set of experiments
- Explains why specific tasks were performed



4. Reasons for experiments

“To assess protein X expression, we subjected 100 tumor samples to IHC analysis.”

“We performed a log-rank analysis to compare the Kaplan-Meier survival estimate of patients with protein X expression with that of patients without protein X expression.”

5. Sources of findings

- Given in the Results, at the beginning of each new description of findings from an experiment or set of experiments
- Tells readers which experiments produced the following findings



5. Sources of findings

Methods:

“To assess protein X expression, we subjected 100 tumor samples to IHC analysis.”

Results:

“IHC analysis revealed strong protein X expression in 50 of 100 tumor samples.”

5. Sources of findings

Methods:

“To assess **protein X expression**, we subjected **100 tumor samples** to **IHC analysis**.”

Results:

“**IHC analysis** revealed strong **protein X expression** in 50 of **100 tumor samples**.”

5. Sources of findings

Methods: “We performed a log-rank analysis to compare the Kaplan-Meier survival estimate of patients with protein X expression with that of patients without protein X expression.”

Results: “Our log-rank analysis revealed that the Kaplan-Meier survival estimate of patients with protein X expression was lower than that of patients without protein X expression.”

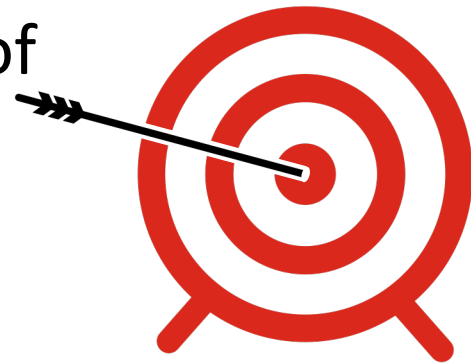
5. Sources of findings

Methods: “We performed a **log-rank analysis** to compare the **Kaplan-Meier survival estimate of patients with protein X expression** with **that of patients without protein X expression.**”

Results: “Our **log-rank analysis** revealed that the **Kaplan-Meier survival estimate of patients with protein X expression** was lower than **that of patients without protein X expression.**”

6. Conclusion(s)

- Given at the beginning of the Discussion—first sentence if possible
- Answers the research question—fills the gap in knowledge
- Wording reflects the wording of the purpose or hypothesis



6. Conclusion(s)

Purpose:

“The purpose of this study was to elucidate the role of protein X expression in breast cancer.”

Conclusion:

“Taken together, the findings of this study suggest that protein X expression promotes breast cancer.”

6. Conclusion(s)

Purpose:

“**The purpose of this study** was to elucidate the role of **protein X expression in breast cancer.**”

Conclusion:

“Taken together, **the findings of this study** suggest that **protein X expression** promotes **breast cancer.**”

6. Conclusion(s)

“Our findings support our hypothesis that . . .”

“The results of this study suggest that . . .”

“The present study shows that . . .”

Don't repeat results

Purpose: The goal of our study was to determine the toxic effects of drug X in patients.

Finding: Of the 25 patients who took drug X, 20 developed hand-foot syndrome.

Poor Conclusion: Eighty percent of patients who receive drug X develop hand-foot syndrome.

Good Conclusion: Our results indicate that hand-foot syndrome is a toxic effect of drug X.

7. Topic sentences

- Used throughout the manuscript; most useful in the Discussion
- Give the main idea of a paragraph
- In the Discussion, topic sentences typically explain how each paragraph relates to the study's findings

7. Topic sentences

“The study’s results provide new insight into the role of protein X expression in breast cancer.”

“Our findings regarding protein X expression in breast cancer are not unlike those reported for ovarian, colorectal, and bladder cancer.”

“The results of our survival analysis stand in stark contrast to the findings of Smith et al., who showed that . . .”

8. Limitations and strengths

- Given in the Discussion, usually towards the end, often in the second-to-last paragraph
- Acknowledge—and refute if possible—the potential limitations of the study
- Highlight the strengths of the study and/or the importance or robustness of its findings

Limitations:

“Our study had a few potential limitations.”

“Our study was limited by its retrospective nature and small sample size; however, the tumor we studied is extremely rare, making prospective studies infeasible and large sample sizes almost impossible to obtain.”

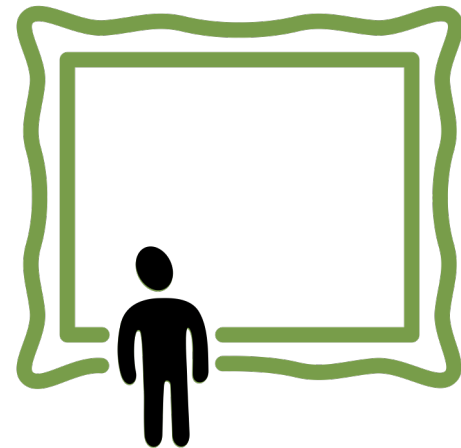
Strengths:

“Despite these limitations, our study is a valuable addition to the literature on this topic because . . .”

“In our opinion, however, our study also had several strengths, including . . .”

9. Overall implications

- Given in the last paragraph of the Discussion
- Emphasize the important implications of the study's findings or conclusions



9. Overall implications

“Our study suggests that alternative treatments for breast cancer with protein X expression are needed.”

“Our findings provide a new framework for thinking about protein X–positive breast cancer.”

“Our study has broad implications for the treatment of breast cancer, including . . .”

10. Future directions

- Often the final sentence(s) of the Discussion
- Identify the new avenues of study that should be pursued, given the results of your study













10. Future directions

“Given our results, future studies should investigate . . .”

“Additional studies are needed to determine . . .”

“Our next study will investigate this issue in . . .”

1. Gap in knowledge  *Introduction*
2. Importance of filling the gap  *Introduction*
3. Purpose or hypothesis  *Introduction*
4. Reasons for experiments  *Methods*
5. Sources of findings  *Results*
6. Conclusion(s)  *Discussion*
7. Topic sentences  *Discussion*
8. Limitations and strengths  *Discussion*
9. Overall implications  *Discussion*
10. Future directions  *Discussion*

Scientific Publications

- <http://inside.mdanderson.org/departments/scipub/index.html>
- Tel: 713-792-3305
- Email: scientificpublications@mdanderson.org
- Location: Mid-Campus Building 1