

**SUGGESTED GUIDELINES FOR CRITICAL APPRAISAL OF PAPERS**  
**ANESTHESIOLOGY JOURNAL CLUB**  
**QUEEN'S UNIVERSITY**  
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Two presenters will be assigned to choose and present summaries of their papers. Ideally the two papers will represent similar topics but contrasting research methodologies. The focus remains on critical appraisal of the research and manuscript, more than on the actual contents of the article. Each presenter will then lead an open discussion about the article, based around the guidelines below. The object is to open up the appraisal to wide discussion involving all participants.

**GENERAL**

1. Title of paper: Does it seem like an important problem? Does it reflect the purpose/results?
2. Authors, institution and country of origin

**INTRODUCTION**

1. What is the problem being addressed?
2. What is the current state of knowledge of the problem studied?
3. What is the hypothesis being tested?
4. How does testing the hypothesis help solve the stated problem?

**METHODOLOGY**

1. Study design:
  - a) Clinical trial vs. systematic review/meta-analysis
  - b) Prospective vs. retrospective
  - c) Observational vs. Experimental
  - d) Randomized or not
  - e) Blinded or not
2. Population studied:
  - a) Human, animal, other
  - b) Justification
  - c) Control groups: experimental vs. historical
  - d) Is the sample size/power calculated, and how?
  - e) Is the population similar to your own practice?
  - f) Single vs. multi-centre
3. Is the study ethically sound?
  - a) Clinical equipoise
  - b) Does treatment meet standard of care (esp controls)?
  - c) Appropriate consent and institutional ethics approval
4. Exclusions: what groups are excluded and why?
5. Experimental protocol
  - a) Is it designed to test the hypothesis?

- b) Is it detailed enough to be reproducible?
  - c) Is the methodology validated?
  - d) Are the drugs/equipment used detailed?
  - e) How does the randomization take place?
- 6. What are the primary endpoints?
- 7. Is power sufficient to justify secondary endpoints?
- 8. Is the protocol clinically relevant?
- 9. Data collection and analysis
- 10. Statistical analysis: Is it appropriate? Are results

## **RESULTS**

- 1. Are the groups comparable?
- 2. Were any subjects/data eliminated?
- 3. Analyzed by intent to treat?
- 4. Are adequate details of results provided? - data, graphs, tables

## **DISCUSSION**

- 1. What is the main conclusion of the study?
- 2. Do the results support this conclusion?
- 3. Do the results address the stated purpose/hypothesis of the study?
- 4. How do the authors explain the results obtained?
- 5. Are there any alternative interpretations to the data?
- 6. Are the results clinically as well statistically relevant?
- 7. How do the results compare with those of previous studies?
- 8. What do the results add to the existing literature?
- 9. What are the limitations of the methods or analysis used?
- 10. What are the unanswered questions for future work?

## **APPLICABILITY OF THE PAPER**

- 1. Have you learned something important from reading this paper?
- 2. Will the results of this study alter your clinical practice?