Academic Writing Is a Team Sport
2025 Moerschbaecher Academic Forum

Department of Orthopaedic Surgery
in collaboration with the Faculty Development Committee

Ready for Game Day:
Be Prepared to Contribute in Journal Club

KEEP CALM IT'S JOURNAL CLUB

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April 11, 2025

JOHNS HOPKINS
MEDICINE

I have no conflicts of interest to disclose.

Learning objectives

1. Describe key points you should address in a 5-minute article presentation.

2. Understand how to assess internal and external validity of a study

3. Differentiate between various types of bias

Agenda

- Journal club formats
- The 5-minute presentation
- Validity & bias
- Evaluating systematic reviews
- Q&A

Introductions

About me

Rachel Walden, MS, ELS

- JHU Dept. of Ortho since 2014
- Formerly at *Am J Epidemiology*
- Teaching & coaching writers

Our journal club

Keep in mind

- A research article isn't a revelation of absolute truth
- It's a status update on our current knowledge
- Read with skepticism

Keep in mind

- If the article is unclear to you, it's probably unclear to others
- It's fair to comment on both the study methods and the author's presentation

Journal club formats

Traditional format

- Facilitator selects articles
- Articles are sent to participants to read
- Presenters summarize & critique each article in 5-10 minutes
- Q&A about each article
- Eating/drinking/socializing

Competitive format

(From the Naval Medical Center San Diego, Dept. of Orthopaedic Surgery)

- Faculty member poses a clinical question

- Resident teams search the literature

- Select & present an article that best answers the question

McDonald LS et al. Team based competitive journal club for the modern learner. *J Surg Educ*. 2024;82(5):1-3.

Competitive format

- The faculty host awards a point to
  - *Best article selected*
  - *Best presentation*
- At end of year, team with the most points is given a celebratory dinner

McDonald LS et al. Team based competitive journal club for the modern learner. *J Surg Educ.* 2024;82(5):1-3.

Preparing to present

Getting your mind in the game

Opportunities

- Discuss interesting studies with room full of smart people

- Improve presentation skills

- Develop critical reading skills

- Stay current in the field

Pitfalls we'll avoid

- Long, boring presentations
- Confusing presentations
- Zoned-out audience
- Feeling sketchy on the details

Where to start

- Read article at least 3 times
- Don't wait until the last minute
- Highlight/annotate the article
- Go deep
  - *read supplementary material*
  - *see what else the authors have done*

Know your audience

- Don't bore them
- Don't confuse them
- Anticipate their questions
- Be ready to ask them questions
  - *Do you agree with the conclusions?*
  - *What was the biggest limitation and how could it be overcome?*

The 5-minute presentation

Covering your bases

What to cover

- Who are the authors?
- What's the clinical context?
- What were the goals/questions?

What to cover

- What was the study design?
- Was it the best way to answer the question(s)?
- How did it improve upon previous work?

What to cover

- What were the main findings?

- Secondary finding?

- Anything surprising?

What to cover

- What were the limitations?
  - *Be very critical*
- What are the implications?
  - *Will it change your practice?*
  - *What does it mean for patients?*
  - *What is the broader relevance?*

Validity & bias

Brushing up on skills

Two types of validity

- Internal validity
  - *Does the study have sound methods?*
  - *Do the conclusions overstep?*
  - *Does it adhere to standard criteria for its design?*
  - *Resource: JBI Critical Appraisal Tools*

Example from JBI

JBI CRITICAL APPRAISAL CHECKLIST FOR COHORT STUDIES

Reviewer_____Date_____

Author_____Year_____ Record Number_____

	Yes	No	Unclear	Not applicable
1. Were the two groups similar and recruited from the same population?	☐	☐	☐	☐
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were confounding factors identified?	☐	☐	☐	☐
5. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐

Source https://jbi.global/critical-appraisal-tools

Two types of validity

- External validity
  - *Could the results apply in other settings?*
  - *Assess participant selection— inclusion/exclusion criteria*
  - *Assess the setting, surgeon skill*
  - *Also called "generalizability"*

Bias comes in many forms

We'll review a few
common ones
- *Selection*
- *Susceptibility*
- *Performance*
- *Detection*
- *Transfer*
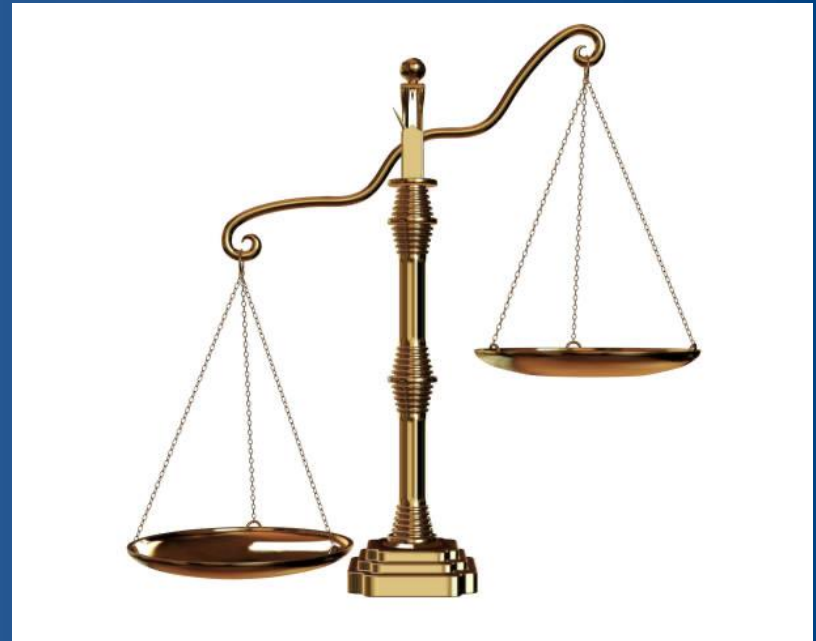
Selection bias

- **The problem:** study participants don't represent the target population

Questions to ask:

- *Were participants randomly selected?*
- *Did loss to follow-up differ between groups?*

Susceptibility bias

- **The problem:** treatment & comparison groups are different at baseline

Questions to ask:

- *Were participants randomly selected?*
- *Might healthier patients have been more likely to receive a certain procedure?*

Performance bias

- The problem: comparison groups are treated differently

Questions to ask:

– *Were surgeons similarly skilled?*

– *Did comparison groups get the same attention/support?*

Detection bias

- The problem: outcomes are identified/ diagnosed differently between groups

Questions to ask:

- *Were the endpoints consistent?*
- *Were assessors blinded?*
- *Were outcome measures validated?*

Transfer bias

- The problem: event rates can be misleading when comparing groups

Questions to ask:

– *Did a lot of participants drop out?*

– *Was loss to follow-up different between groups?*

Evaluating Systematic Reviews

Search Strategies and PRISMA Diagrams

Evaluate the Search

Goal: Locate all existing studies (published and unpublished) that meet the eligibility criteria

Focus: Transparency and Reproducibility

Evaluate the Search

Questions:

Did the authors try to find the totality of the evidence?

Could the search be reproduced?

Did they apply unnecessary limits that added bias?

Things to look for:

- More than one major database searched
- Manual searching of references
- Additional sources for trial registries, conference proceedings, dissertations, etc
- No language filter
- If date limitation, was it appropriate?

Example 1:

This is written in the Methods section:

From inception to Dec 6, 2018, we searched MEDLINE, EMBASE, Cochrane Controlled Register of Trials, Latin American & Caribbean Health Sciences Literature, China National Knowledge Infrastructure, WHO's Clinical Trials Registry Platform (ICTRP), US Food and Drug Administration (FDA), and European Medicines Agency databases for published and unpublished RCTs comparing oral immunotherapy with placebo or allergen avoidance for the

Excerpt from Chu DK, Wood RA, French S, et al. Oral immunotherapy for peanut allergy (PACE): a systematic review and meta-analysis of efficacy and safety. *Lancet*. 2019;393(10187):2222-2232.

treatment of peanut allergy (a full list of the search terms is available in the appendix). We did not use any language restrictions and translated non-English studies. ....We checked all reference lists and articles citing included studies and recent reviews for any additional relevant studies.

This is included in the Appendix:

1. Search Strategies
MEDLINE

|	
1	exp Randomized Controlled Trial/ (473979)
2	randomized controlled trial.pt. (473544)
3	controlled clinical trial.pt. (92824)
4	random*.tw. (1018738)
5	placebo.ab. (194310)
6	drug therapy.fs. (2071720)
7	trial.ab. (449084)
8	groups.ab. (1865430)
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (4548950)
10	peanut.mp. or exp Arachis/ (12272)
11	immunotherapy.mp. or exp Immunotherapy/ (290441)
12	Desensitization, Immunologic/ (10157)
13	Desensiti?*.mp. (36384)
14	12 or 13 (36384)
15	11 or 14 (316225)
16	10 and 15 (606)
17	9 and 16 (156)

Assessment:
- Thorough?
- Reproducible?
- Biased?

Example 2:

This is written in the Methods section:

A comprehensive search of the literature was conducted using the electronic databases CINAHL, Medline, PubMed, Science Direct, and Web of Science (Figure 1). Search terms included solid food, complementary food, or infant feeding combined with allergy or hypersensitivity. Complementary foods are all solid and liquid foods other than breast milk and infant formula (Agostoni et al., 2008). The search yielded 554 unique articles published in 2000 or later, written in English, with human subjects.

Search terms: infant feeding, solid food, complementary food, hypersensitivity, allergy

Records screened (*n* = 554)	→	Records excluded (*n* = 433)
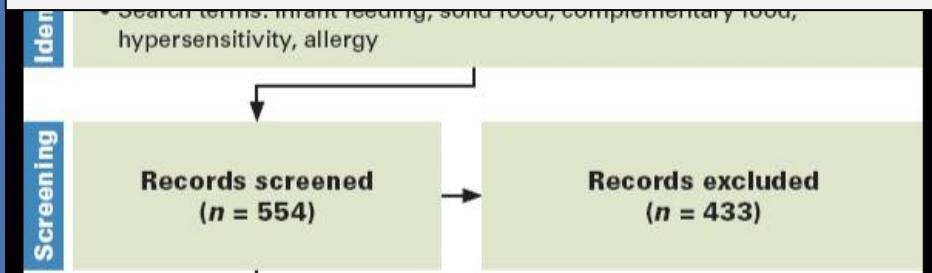
Excerpt from Larson K, McLaughlin J, Stonehouse M, Young B, Haglund K. Introducing Allergenic Food into Infants' Diets: Systematic Review. *MCN Am J Matern Child Nurs*. 2017;42(2):72-80.

Assessment:

- Thorough?

- Reproducible?

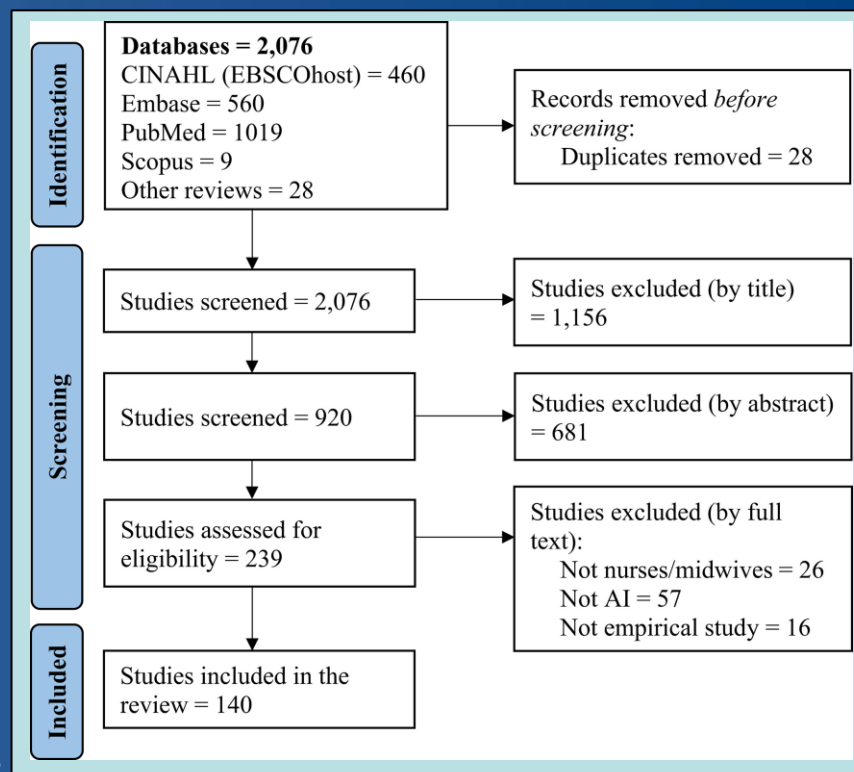- Biased?

The PRISMA Flow Diagram

What is the PRISMA Flow Chart?

The PRISMA flow chart, also sometimes called the PRISMA diagram, is a chart that shows how studies are selected for a systematic review.

It consists of four main phases:

1. **Identification**: You search databases and other sources for studies and record the total number of studies found.
2. **Screening**: You review the titles and abstracts of the studies and filter out those that are not relevant.
3. **Eligibility**: You read the full text of the remaining studies and exclude those that do not fit your criteria.
4. **Inclusion**: The final group of studies that will be included in your literature review or meta-analysis remains.

From: https://shribe.eu/prisma-literature-review/ accessed 4/8/2025

Identification

Databases = 2,076
CINAHL (EBSCOhost) = 460
Embase = 560
PubMed = 1019
Scopus = 9
Other reviews = 28

Records removed *before screening*:
    Duplicates removed = 28

Screening

Studies screened = 2,076

Studies excluded (by title) = 1,156

Studies screened = 920

Studies excluded (by abstract) = 681

Studies assessed for eligibility = 239

Studies excluded (by full text):
    Not nurses/midwives = 26
    Not AI = 57
    Not empirical study = 16

Included

Studies included in the review = 140

O'Connor, S., Yan, Y., Thilo, F. J. S., Felzmann, H., Dowding, D., & Lee, J. J. (2023). Artificial intelligence in nursing and midwifery: A systematic review. *Journal of Clinical Nursing, 32,* 2951–2968

One more thing

Bringing it home

After you present

- Congrats!
- Solicit feedback from someone you trust
- Be open to criticism
- Consider what went well & what you want to improve

Questions?

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