

## Interpreting Medical Literature

### Objectives

- Describe the submission process of a research manuscript from submission to publication, including the role of peer review, editorial decisions, and the importance of maintaining scientific rigor
- Identify key tools and guidelines to assess the quality and transparency of various research study designs
- Explain the significance and limitations of P-values, effect sizes, and confidence intervals in interpreting the results of medical research studies
- Identify examples of research misconduct, such as predatory journals, data fabrication, and plagiarism, and understand their impact on public trust in science

### Content Outline

1. Introduction to Medical Literature
  - A. Importance of interpreting medical literature for clinical practice
  - B. Emergence of evidence-based medicine and critical appraisal
2. The Publication Process
  - A. Types of journals and articles
  - B. Peer review process and editorial decisions
  - C. Challenges in diversity and unconscious bias in editorial boards
3. Accessing Medical Literature
  - A. Primary literature
  - B. Secondary literature
  - C. Distribution and preprints
4. Assessing Study Methodology
  - A. Observational vs. interventional study designs
  - B. Evolution of the evidence pyramid
  - C. Big data and pragmatic clinical trials
5. Interpreting Statistical Analysis
  - A. Understanding P-values, effect sizes, and confidence intervals
  - B. Differentiating correlation from causation
  - C. Reducing bias in study design
6. The Dark Side of Medical Literature
  - A. Research
  - B. Impact of misconduct on public trust in science

### Reading Material Resources

**Module WB2749: Interpreting Medical Literature** is based on the resources listed below. A copy of each resource is included with the module.

Chapter 87, Interpreting Medical Literature, Miller's Anesthesia, Gropper, et al., Elsevier, 2025, 2722-2740e2