

**4th Annual
National Conference
September 21-23,
2023**

RhAPP
RHEUMATOLOGY ADVANCED
PRACTICE PROVIDERS



The background features a pattern of small, light-colored dots. Overlaid on this are several large, overlapping circles in shades of blue, orange, and grey. The title text is centered in the upper half of the image.

Interpreting Clinical Research

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Accreditation Statement

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Faculty Disclosures

- Speakers Bureau: Eli Lilly

Objectives

By the end of today's session, the learner should be able to:

1. Discuss various types of study designs
2. Review the interpretation of clinical trials
3. Distinguish the difference statistical and clinical significance



THE WHY

WHY ARE YOU HERE TODAY?

THE WHAT / Study Design



Prospective

Subjects followed forward in time
Endpoints are measured and analyzed
in future



Retrospective

Investigators look back in time
Endpoints occurred in the past

THE WHAT / Study Design

MetaAnalysis

**Systematic
Review**

Practice Guideline

Randomized Control Trial

Cohort Study

Case-Control Study

THE HOW / Clinical Trial Interpretation

- Superiority Trials
 - Test efficacy of experimental agent to control
 - Placebo or a standard of care
 - When endpoints are ratios (RR,OR,HR)
 - 95% CI excludes 1: statistically significant
 - 95% CI includes 1: not statistically significant
 - When endpoints are differences (ARR,ARI,RRR,RRI)
 - 95% CI excludes 0: statistically significant
 - 95% CI includes 0: not statistically significant

THE WHAT / Study Design

- Non-inferiority Trials
 - Test efficacy of experimental agent to standard of care
 - Pre-defined non-inferiority margin
 - based on previous studies
 - Smallest value considered clinically meaningful

THE WHAT / Study Design

- Internal Validity
 - How well study was conducted
- External Validity
 - How well study can be applied to other groups

THE WHAT / Study Design

- Things to consider
 - Study limitations
 - Side effects
 - Access

THE WHEN

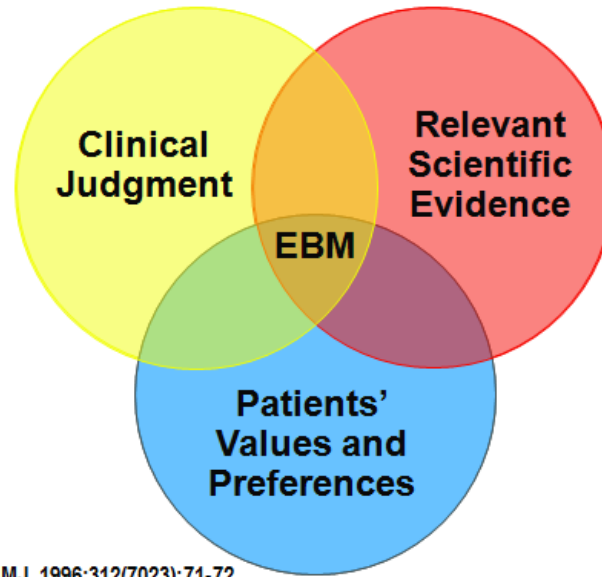


Statistical Significance

Clinical Significance

THE WHO

What Is Evidence-Based Medicine?



Sackett DL, et al. *BMJ*. 1996;312(7023):71-72.

References

- Herring, Charles, and Abby Harris. *Quick Stats Basics for Medical Literature Evaluation*. Sixth ed.
- “Research Guides: Critical Appraisal of Research Articles: Home.” *Home - Critical Appraisal of Research Articles - Research Guides at George Washington University*, guides.himmelfarb.gwu.edu/CriticalAppraisal. Accessed 20 Aug. 2023.
- “Welcome to Study Design 101.” *Himmelfarb Health Sciences Library*, himmelfarb.gwu.edu/tutorials/studydesign101/. Accessed 20 Aug. 2023.
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