JOHNS HOPKINS MEDICINE

Orthopaedic Surgery

# Developing a Good Research Question Question

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# Attributes of a Good Research Question

- Clear and focused
- Researchable
- Feasible to answer with available resources
- Arguable
- Something that interests you
- To contribute new knowledge


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# Where do you find ideas?

- From your attending
- From an issue that comes up in clinic or in surgery
- From a question that you ask during clinic or surgery
- From patients
- Grand rounds or journal club
- From reading journal articles
- From lectures at Hopkins and Society meetings

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# The Best Question


1. Why this patient?
2. Why did they respond well to treatment?
3. Why did they not do well to treatment?
4. Why are you doing the procedure this way?
5. Why do you follow the patient up to 6 months? 1 year? 2 years? More?

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# Why is not the only question


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# Do others find your question interesting and of value?

- The attending surgeon?
- Other faculty?
- Your peers?
- The patient?
- Your family?

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# Conduct a literature review

- What's been published on the topic?
- Have things changed since this was published?
- If so, what are the gaps in our knowledge?
- How well were the previous studies done?
- Look for Delphi Panel publications.

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# Delphi Panel Study

- Wiki: The Delphi method or Delphi technique is a structured communication technique or method, originally developed as a systematic, interactive forecasting method that relies on a panel of experts.
  - Expert Opinion
  - Extensive systematic literature search
- Often conducted to develop clinical practice guidelines


- Cheng EY, Cui Q, Goodman SB, Ando W, Baek SH, Bakker C, Drescher W, Hernigou P, Jones LC, et al. Diagnosis and Treatment of Femoral Head Osteonecrosis: A Protocol for Development of Evidence-Based Clinical Practice Guidelines. Surg Technol Int. 2021 May 20;38:371-378.

# Research Question vs Hypothesis

**Research Question**

- Identifies a problem or topic to be explored
- Asks a question
- Guide the direction of the study and its objectives (provides context)
- Broad

**Hypothesis**

- A testable prediction about the outcome of the research
- Provides a specific statement that can be supported or refuted through a laboratory or clinical study
- Narrow and focused

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# Examples of Good Research Questions

- Does early surgical intervention (within 24 hours) improve functional outcomes compared to delayed surgery (after 48 hours) in elderly patients with hip fractures?"

- Why is this good?
  - Clinically relevant
  - Specific and focused
  - Measureable outcomes
  - Ethically feasible
  - Contributes to practice change

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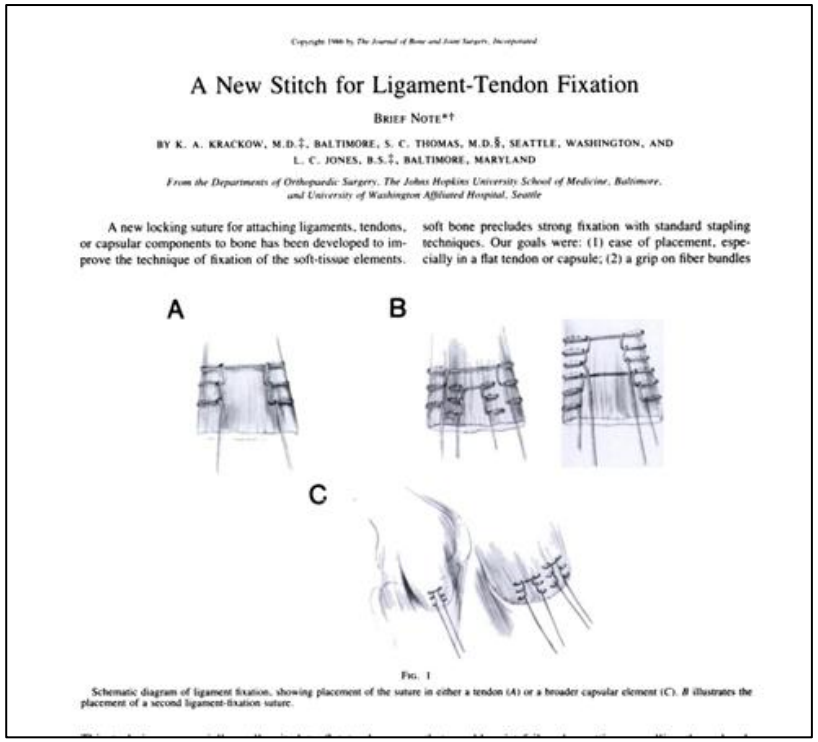
# Examples of Good Research Questions

- Is there a better way to repair tendons?
- Is the Krackow stitch have better outcomes that the current method of repairing tendons?
- 86 publications referencing the
- Krackow Stitch





A New Stitch for Ligament-Tendon Fixation

BRIEF NOTE*†

BY K. A. KRACKOW, M.D.‡, BALTIMORE, S. C. THOMAS, M.D.§, SEATTLE, WASHINGTON, AND L. C. JONES, B.S.‡, BALTIMORE, MARYLAND

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A new locking suture for attaching ligaments, tendons, or capsular components to bone has been developed to improve the technique of fixation of the soft-tissue elements. soft bone precludes strong fixation with standard stapling techniques. Our goals were: (1) ease of placement, especially in a flat tendon or capsule; (2) a grip on fiber bundles



FIG. 1

Schematic diagram of ligament fixation, showing placement of the suture in either a tendon (A) or a broader capsular element (C). *B* illustrates the placement of a second ligament-fixation suture.

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# Examples of Good Research Questions

- Does a core decompression with bone marrow aspirate concentrate perform better than a core decompression alone for the treatment of osteonecrosis of the femoral head?


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# Good Articles to Read


- Leary E, Li, J. Biostatistics in orthopedic surgery: Common data pitfalls and how to avoid them. Journal of Orthopaedic Reports, 4(1) Suppl., Volume 4, Issue 1, Supplement, 2025. ISSN 2773-157X, https://doi.org/10.1016/j.jorep.2025.100573. (https://www.sciencedirect.com/science/article/pii/S2773157X25000256)
- Peters MAK. How to develop good research questions. Nat Hum Behav. 2025 Aug 11. doi: 10.1038/s41562-025-02292-5. Epub ahead of print. PMID: 40790368.
- Covvey JR, McClendon C, Gionfriddo MR. Back to the basics: Guidance for formulating good research questions. Res Social Adm Pharm. 2024 Jan;20(1):66-69. doi: 10.1016/j.sapharm.2023.09.009. Epub 2023 Oct 12. PMID: 37838572; PMCID: PMC11129835. **
- Bragge P. Asking good clinical research questions and choosing the right study design. Injury. 2010 Jul;41 Suppl 1:S3-6. doi: 10.1016/j.injury.2010.04.016. Epub 2010 May 13. PMID: 20466367.
- Knottnerus JA, Tugwell P. Research without good questions is a waste. J Clin Epidemiol. 2019 Apr;108:vi-viii. doi: 10.1016/j.jclinepi.2019.02.017. PMID: 30902351.


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