

Topic

NUHS Evidence Based Practice I Journal Club

Date:

Team Members:

Featured Research Article:

Vancouver format example:

Weinstein JN, Tosteson TD, Lurie JD, Tosteson AN, Hanscom B, Skinner JS, Abdu WA, Hilibrand AS, Boden SD, Deyo RA. Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial.

JAMA 2006 Nov 22;296(20):2441-50.

Abstract URL

http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17119140&ordinalpos=7&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

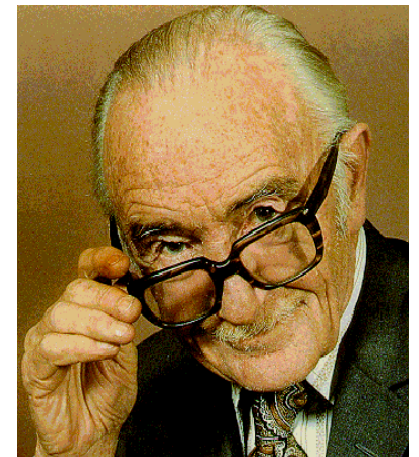
Back Pain Therapies: Patient Scenario

- Evidence based practice begins and ends with a patient
- Describe the case or problem that focused your clinical question and structured search
- Present a patient focused clinical question (PICO)



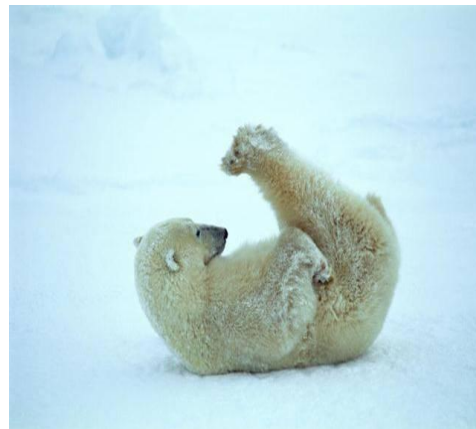
Topic: Patient Scenario

Copy the patient scenario here
Have a picture? Use a picture?
Just delete?



Topic: Patient Scenario

- Do you need to clarify patient scenario?
- Add history, details, specific information?



Topic:

Clinical Question using the PICO format

	Patient, population, problem	Intervention	Comparison	Outcome
Consider	Key words, synonyms	Key words, synonyms	Key words, synonyms	Key words, synonyms
PICO	For [P=], is [I=] as effective as [C=] to [O=]?			

Search strategy and results

- List separate searches, queries.
- Summarize.
- Explain what you did.
- Bullet point how full text was located.
- Use the following template slides.
- Add slides if you have lots of information.
- Delete all these instructional and excess slides as needed!



Search strategy and results

- Searching, finding, accessing is essential to the evidence-based practitioner.
- Communication skills are essential to applying and assessing evidence.
- Your colleagues should be able to
- repeat the search or
- Develop similar searches for different topics



Search strategy and results



Search Engines / Programs, Websites, Databases searched

- 1) Natural Standard, Natural Medicine
- 2) EBSCOhost: Academic Premier, CINAHL, etc.
- 3) NLM Entrez: PubMed

Query used (Key Search Terms, Operators, Limits)

- 1)
- 2)
- 3)

Limits and Special Techniques:

Search strategy and results:

Search results:

- 1) # retrieved, % relevant, % high quality, authoritative
 - 2)
 - 3)
- Notes about what you found with your searches and revised searches

Link to search results:

add the RSS or alert URL link to search results

How full text was accessed:



Topic

Bibliographic citation (Vancouver format)

– delete prompts when formatting for your presentation

Static link (URL) to abstract

Type of study: (Therapy, diagnosis, etiology, prognosis, etc)

Study design: (RCT, case-control, cohort, case study, etc.)

Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial.

Weinstein JN, Tosteson TD, Lurie JD, Tosteson AN, Hanscom B, Skinner JS, Abdu WA, Hilibrand AS, Boden SD, Deyo RA.

JAMA[®]

The Journal of the American Medical Association

JAMA 2006 Nov 22;296(20):2441-50.

<http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17119140&ordinalpos=7&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed ResultsPanel.Pubmed RVDocSum>

Journal Paper Selection Rationale

JTASS Summary

- 1 or 2 bulleted slides
- should be enough...
- Use JTASS questions
- Format your slides as needed

- Title relevance:
 - What makes it relevant to PICO
 - Don't copy and paste the actual title

- Journal:
 - Use JTASS questions
 - Note quality characteristics
 - Don't just copy and paste the Journal name



Journal Paper Selection Rationale

- Authors
 - Expertise, publishing history
- Site:
 - Where was the study was conducted?
 - How does it relate to PICO clinical question (relevance)?



Journal Paper Title

URL to abstract – use creatively! Use journal logo?

Summary (focus on features that made you select this article, relevance – not the whole appraisal)

- Research question / objective:
 - Should find it in Abstract, Introduction
 - How does it relate or compare to your PICO question?
- Outcomes measured:
 - Primary:
 - Secondary:
- Outstanding features / Significant results:
 - What enticed you to read this paper?
 - Relate to PICO
 - Key relevant and interesting results
 - Key issues, significant conclusions



Journal Paper Title

URL to abstract – use creatively!

Bottom line:

- What is the importance, relevance or context of this paper regarding your patient & PICO?
- Why did you / your team select this particular paper?



Use pictures, diagrams or graphics that support your presentation: the journal logo, pictures of your patient, diagrams, tables and charts from the paper or supporting papers...

Remove prompts and example text

Format your slides

Type of study, study design, strength

- Was the study design stated and adequately described?
- What is the stated study design?
- Considering the strengths and limitations of the study design, is it suitable for the objectives?



Study objectives and hypothesis

- State the purpose, objectives and hypothesis
- Using your words, what was the research question and objective(s) of the study?
- Was the purpose of the study conveyed plainly and rationally?
- Were the objectives of the study clearly stated?
- Was the hypothesis / null hypothesis explained?



Study Design, Objectives, Hypothesis

- Add background or supporting information from other studies
- Add any figures, tables to support your presentation

Aims of Complete SPORT Study

Birkmeyer et al. Spine 2002;27:1361–1372.

- To simultaneously conduct three multicenter **randomized controlled trials comparing surgical and nonsurgical treatment** for patients considered eligible for surgery with repeated longitudinal measurement up to 24 months with
 - Intervertebral disk herniation (IDH)
 - Spinal Stenosis (SpS)
 - Degenerative Spondylolisthesis DS
- To **characterize subjects** declining participation in randomization but agree to be followed as part of an observational cohort. (**treatments, outcomes, costs**)
- To formally **estimate the cost-effectiveness of surgical versus nonsurgical interventions** for IDH, SpS, and DS through a synthesis of the results from the randomized controlled trial and the observational study cohorts.

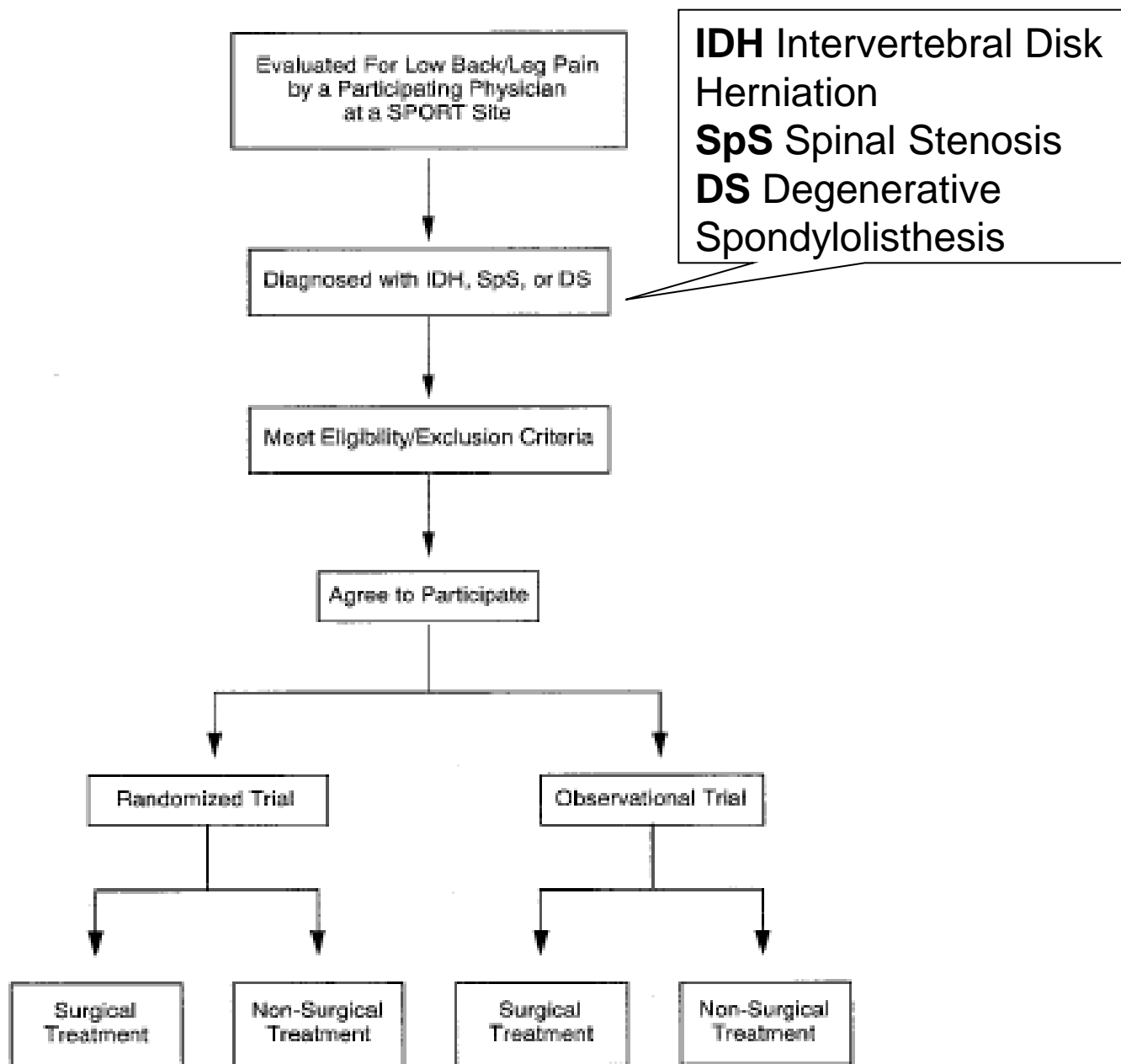


Figure 1. Overview of the SPORT study design.

Weinstein JN, et al. Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial.

JAMA 2006 Nov 22;296(20):2441-50. [ABSTRACT](#)

Study objectives and hypothesis

- Objective: To assess the efficacy of standard open discectomy with involved nerve root examination *vs. nonoperative treatments*
- This analysis for Lumbar Disk Herniation (LDH) and discectomy
- Stated in abstract (with modifications from SPINE paper)
- Hypothesis not clear 🏠
- Null hypothesis:
 - Surgery is not effective for lumbar disk herniation
 - Surgery is not as effective as nonoperative treatments 🏠
- Initial “intention to treat” analysis intent

Importance / Relevance / Context of the Research Question

- PICO: State your clinical question
- Research question: Compare the research question, hypothesis and study objectives to your patient oriented, PICO structure clinical question



Importance / Relevance / Context of the Research Question

- PICO: Is chiropractic manipulation / exercise / acupuncture as effective as surgery for relief of chronic low back pain?
 - Are nonoperative therapies effective for treating chronic low back pain in adults desiring alternatives to surgery?
- Research question: Is surgery effective (treatment) for lumbar disk herniation
 - 1^o outcomes: bodily pain, physical function, disability
 - 2^o outcomes: sciatica severity, satisfaction with symptoms, self-reported improvement, and employment status


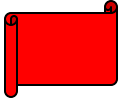


Ethical Approval

- Note approvals, reviews, Internal Review Board, Institutional Review, etc.
- Ethical approval and oversight is different from affiliation and disclosure
- Discuss affiliation and disclosure in conjunction with validity discussion (bias)



Methods: Subjects / Participants / Patient / Population

- Critical Appraisal Guide section 3
- Note strengths, weaknesses, potential biases
- Add flowcharts, tables, diagrams from original paper
- Make new graphics as needed 
- Need help? Just ask! 



Methods: Subjects / Participants / Patient / Population

Inclusion criteria specific:

➤ list

Exclusion criteria:

➤ list

Methods: Subjects / Participants / Patient / Population

Baseline comparisons

- Did the population, experimental and control or comparison groups start with the same baseline demographics and prognostic factors?
 - Clinical trials
 - RCTs
 - Cohort
 - Case series
- How homogeneous is the population selected?
- **Confounders:** 2 or more factors that are “associated” (age and weight) and may affect (confuse, distort, augment?) the effect of the other factors on the outcome (onset of diabetes)

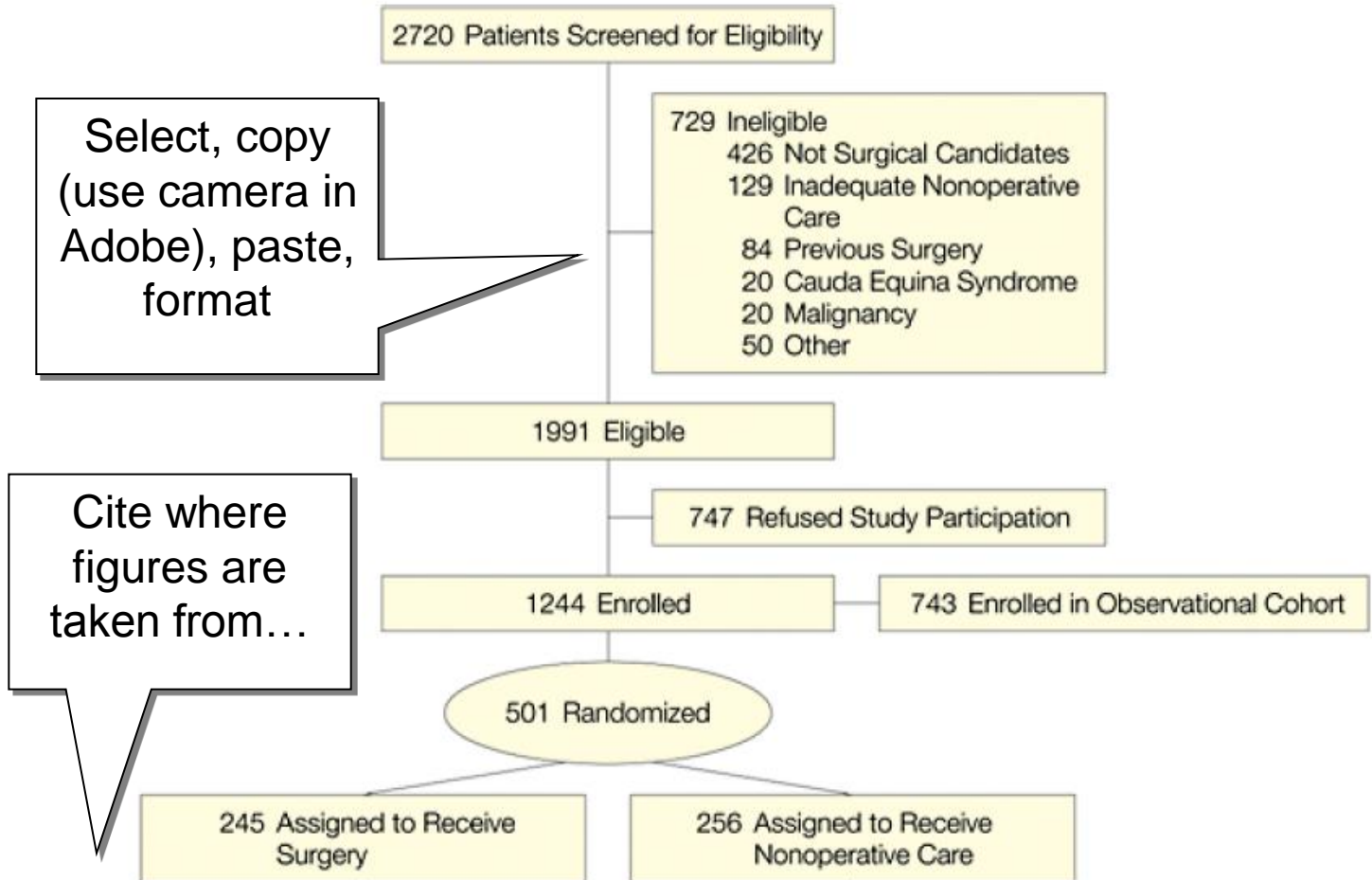
Methods: Randomization



- Recruitment
- Enrollment
- Randomization or allocation
- What makes a case a case?

Methods: Randomization

Figure 1: Flow Diagram of the SPORT Randomized Controlled Trial of Disk Herniation Exclusion, Randomization and Follow-up.



Weinstein, J. N. et al. JAMA 2006;296:2441-2450

<http://jama.ama-assn.org/cgi/content-nw/full/296/20/2441/JOC60155F1>

Methods: Intervention

Intervention (245 / 501)

- Standard open diskectomy well described
- Provided by experts, experienced surgeons
- Standardized and references provided
- Follow-up visits: 6 weeks, 3, 6, 12, 24 mo

Comparison (256 / 501)

- Nonoperative treatments
 - Heterogeneous, not well “controlled” or defined 🏠
 - Includes chiropractic, osteopathic, physical therapy, acupuncture, education, exercise therapy, NSAIDS and other meds, use of “devices” (shoe inserts to TENS)
 - Comparable to each other?
 - Comparable to surgery?

Table 2. Nonoperative Treatments

	No. (%) (n = 323)*
Clinicians/services	
Education/counseling	299 (93)
Emergency department	52 (16)
Surgeon	119 (37)
Chiropractor	36 (11)
Internist/neurologist/other physician	195 (60)
Physical therapist	142 (44)
Acupuncturist	13 (4)
Injections	180 (56)
Other	102 (32)
Medications	
NSAIDs	193 (60)
COX-2 inhibitors	101 (31)
Oral steroids	15 (5)
Narcotics	147 (46)
Muscle relaxants	66 (20)
Other	172 (53)
Devices	
Brace	18 (6)
Corset	9 (3)
Magnets	12 (4)
Orthopedic pillow	38 (12)
Shoe inserts	25 (8)
TENS device	12 (4)
Other medical devices	27 (8)
None	216 (68)

Abbreviations: COX-2, cyclooxygenase 2; NSAIDs, non-steroidal anti-inflammatory drugs; TENS, transcutaneous electrical nerve stimulation.

*Patients who had used clinicians, treatments, medications, and devices within 1 year following enrollment or until the time of surgery; 323 patients either had no surgery in the first year of enrollment or had at least 1 regularly scheduled follow-up visit prior to surgery at which nonoperative treatment information could be assessed.

- Initial groups:
 - 245 surgery
 - 256 nonoperative
- 323 had no surgery within 1st year
- Education 93%
 - CCGPP = A grade evidence is positive
- Clinician vs. specific therapy or service
- Multiple alternatives

Weinstein, J. N. et al. JAMA
2006;296:2441-2450

<http://jama.ama-assn.org/cgi/content-nw/full/296/20/2441/JOC60155T2>



Methods: Subjects / Participants / Patient / Population

Follow up / Accountability

- Were all study participants or subjects accounted for at the end of the study?
- Rule-of thumb: >20% drop-out, non-adherence affects validity
- Unintended cross-over
- Cross-over not accounted for affects validity
- Are the reasons why patients withdraw from clinical trials included in the follow-up information



Outcomes Measured

- Primary outcomes:
- Secondary outcomes:
- Remember, outcomes are not the results
- Outcomes are what is measured
- Clinically relevant?

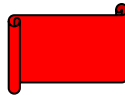
Outcomes Measured

- Are outcome measurement tools are valid, well-recognized and referenced




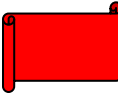


Results

- Summarize
- Note key points
- Relate to research question
- Relate to clinical (PICO) question



Results

- 1991 eligible
- 501 enrolled in randomized, controlled trial
- 472 (94%) completion (at least 1 follow-up) 
- Data available 73-86% for patients at each follow-up
- Baseline characteristics similar (average of group) for both groups 
- Non-adherence to treatment assignment affected both groups 
 - 43% nonoperative treatment “crossed” to surgery
 - All patients enrolled were surgery candidates
 - Baseline
- Baseline characteristics for cross-over to surgery statistically different from non-crossover. 

Results

- Add graphs and tables to illustrate and support

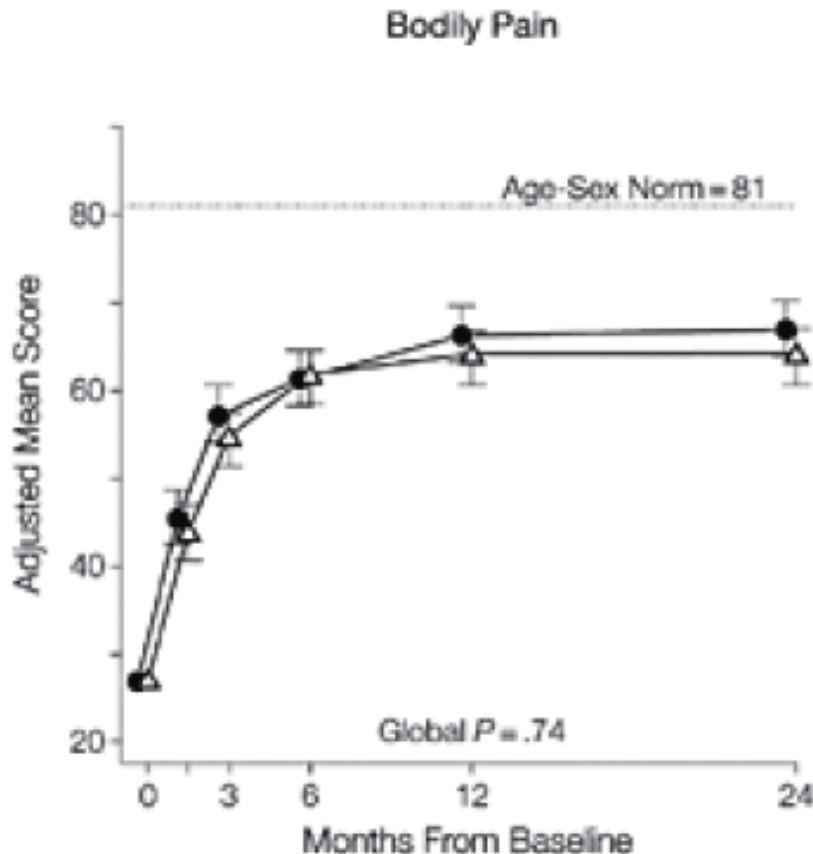


Figure 2. Mean Scores Over Time for SF-36 Bodily Pain
Weinstein, J. N. et al. JAMA 2006;296:2441-2450

<http://jama.ama-assn.org/cgi/content-nw/full/296/20/2441/JOC60155F2>

Statistical Analysis

- See sections 6, 7, 8 of the Critical Appraisal Guide
- Descriptive statistics
- Note predetermined p value
- Stated confidence intervals?

Validity & Limitations

Hypothesis / Research Question



- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Validity & Limitations

Population / Patient



- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Validity & Limitations

Intervention and Methods



- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Validity & Limitations

Blinding

- Potential bias or problems with the study
- Did you see any flaws or bias with this study?



Validity & Limitations

Comparisons



- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Validity & Limitations

Follow-up / drop-out / cross-over



- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Validity & Limitations

Analysis and Statistics



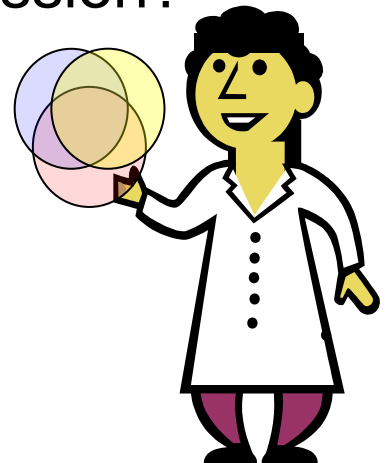
- See Critical Appraisal Guide
- Sections 6, 7, 8
- Potential bias or problems with the study
- Did you see any flaws or bias with this study?

Clinical Impact & Significance

- Do the studies add anything to the body of evidence?
- What is your evaluation of the strength of the evidence presented in these selected papers?
- Does your appraisal of the papers indicate studies are as strong as / stronger than the “CEBM” designations indicate?
- Is the evidence presented strong, moderately strong, neutral or weak if therapy, prognosis or etiology papers were selected?
- Does the evidence support the therapy, diagnosis, procedure or diagnostic tool discussed?
- What is the clinical significance in light of your patient?
- Form a “Clinical Impact Statement” referring to your patient

Discussion

- Potential bias or problems with the study
- Is this study valid?
- Did you see any flaws or bias with this study?
- Do you agree with the impact statement?
 - Why or Why Not?
- How would you treat / advise the patient?
- Do you feel this topic is applicable and important to the chiropractic profession?



Clinical Impact & Significance

Impact statement:

Conclude using your own words, analysis and experience whether / why the results can or cannot be applied to your patient / situation.

Make a statement regarding whether this study is useful in your practice. Resolve your clinical question in light of the study and your patient.

Could this study lead to other studies?

