Clinical Practice Guideline Evaluation of Psychosocial Factors Influencing Recovery from Adult Orthopaedic Trauma

Adopted by the American Academy of Orthopaedic Surgeons (AAOS) Board of Directors

December 6, 2019
The Major Extremity Trauma and Rehabilitation Consortium in collaboration with the American Academy of Orthopaedic Surgeons
2019 Clinical Practice Guideline for Evaluation of Psychosocial Factors Influencing Recovery from Adult Orthopaedic Trauma

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WHAT IS A CLINICAL PRACTICE GUIDELINE?

Clinical Practice Guideline

A clinical practice guideline is a series of recommendations created to inform clinicians of best practices, based on best available evidence.
GOALS AND RATIONALE OF A CLINICAL PRACTICE GUIDELINE

- Improve treatment based on current best evidence
- Guides qualified physicians through treatment decisions to improve quality and efficiency of care
- Identify areas for future research

*CPG recommendations are not meant to be fixed protocols; patients’ needs, local resources, and clinician independent medical judgement must be considered for any specific procedure or treatment*
WHAT IS EVIDENCE-BASED MEDICINE?

Evidence-Based Medicine is a Combination of:

- **Individual Clinical Experience**
- **Best External Evidence**
- **Patient Values and Expectations**
WHAT IS EVIDENCE-BASED MEDICINE?

Evidence-Based Medicine

Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence from clinical care research in the management of individual patients

Haynes, Sackett et al, 1996
Transferring evidence from research into practice
Sacket et al, 1996, BMJ
EBM: what it is and isn’t
IOM STANDARDS FOR DEVELOPING TRUSTWORTHY GUIDELINE

- Establish Transparency
- Management of Conflict of Interest
- Guideline Development Group Composition
- Clinical Practice Guideline-Systematic Review Intersection
- Establish Evidence of Foundations for and Rating Strength of Recommendations
- Articulation of Recommendations
- External Review
- Updating
1. Select CPG Topic

2. Formulate Work Group (WG): Representatives from AAOS/BOS/BOC/Other Organizations as appropriate. WG members may have no relevant FCOI.

3. Seek Input on Question Topics: From patients, AAOS members, Key Informant Panel (a panel of content experts precluded from WG participation due to FCOI).

4. In-Person Intro Meeting: Formulate PICO Questions, Set Inclusion Criteria (Completed by WG).

5. Literature Search and Review: Conduct systematic literature search, appraise quality of studies (staff); WG members review included literature for their assigned recommendations.

6. In-Person Final Meeting: Develop Final Recommendations; Review quality appraisals and evidence tables. Assign a grade/rating for each based on evidence (WG). Completed both prior to and during final in-person meeting.

7. Review Period: (3 weeks) Nominated Specialty Society Representatives, AAOS BOD, AAOS CORQ, AAOS EBQV, AAOS BOC and BOS, Key Informant Panel.

8. Response to Review and Revisions: Chairs and AAOS Staff review and respond to review; revise the draft as needed; any revisions to recommendation language requires WG approval.

9. Approval Process: The final CPG is reviewed and approved by the WG, EBQV, CORQ, and the AAOS Board of Directors.

10. Communication, Dissemination, and Implementation
FORMULATING PICOs

“P” = Patient Population

“I” = Intervention or variable of Interest

“C” = Comparison

“O” = Outcome
INCLUSION/EXCLUSION CRITERIA

Standard inclusion criteria include:

- Must study humans
- Must be published in English
- Must be published in or after 1966
- Can not be performed on cadavers

Work group members define additional exclusion criteria based on PICO question
LITERATURE SEARCHES

• Databases used:
  • MEDLINE
  • EMBASE (Excerpta Medica dataBASE)
  • Cochrane Central Register of Controlled Trials
• Search using key terms from work group’s PICO questions and inclusion criteria
• Secondary manual search of the bibliographies of all retrieved publications for relevant citations
• Recalled articles evaluated for inclusion based on the study selection criteria
RESULTS OF QUALITY ASSESSMENT: STUDY ATTRITION FLOWCHART

6647 abstracts reviewed. Final search performed on January 4, 2019

1588 articles recalled for full text review

5049 articles excluded from title and abstract review

1521 articles excluded after full text review for not meeting the a priori inclusion criteria or not best evidence available

67 articles included after full text review and quality analysis
BEST EVIDENCE SYNTHESIS

Include only highest quality evidence for any given outcome if available.

If there are fewer than two occurrences of an outcome of this quality, the next lowest quality is considered until at least two occurrences have been acquired.
All included studies undergo a quality assessment.

Each study’s design is evaluated for risk of bias and receives a final quality grade, depending on the number of study design flaws.

Study quality tables are made available to the work group in the final data report and the final publication of the guideline.
<table>
<thead>
<tr>
<th>STRENGTH</th>
<th>OVERALL STRENGTH OF EVIDENCE</th>
<th>OVERALL STRENGTH OF EVIDENCE</th>
<th>STRENGTH VISUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONG</td>
<td>STRONG</td>
<td>Two or more HIGH Strength Studies with consistent findings for recommending for or against the intervention*</td>
<td></td>
</tr>
<tr>
<td>MODERATE</td>
<td>MODERATE OR STRONG</td>
<td>Evidence from two or more MODERATE quality studies with consistent findings, or evidence from a single HIGH quality study for recommending for or against the intervention*</td>
<td></td>
</tr>
<tr>
<td>LIMITED</td>
<td>LIMITED, MODERATE OR STRONG</td>
<td>Evidence from one or more “Low” quality studies with consistent findings or evidence from a single “Moderate” quality study recommending for or against the intervention*</td>
<td></td>
</tr>
<tr>
<td>CONSENSUS</td>
<td>NO RELIABLE EVIDENCE</td>
<td>In the absence of reliable evidence, the guideline work group is making a recommendation based on their clinical Opinion*</td>
<td></td>
</tr>
</tbody>
</table>

*Recommendation strength can be upgraded or downgraded based on the application of the EtD framework.
Incorporating the GRADE Evidence to Decision Framework into Recommendation Strengths

- Benefits and Harms
- Certainty of Evidence
- Outcome Importance
- Cost Effectiveness
- Acceptability and Feasibility
## Wording the Final Recommendations

<table>
<thead>
<tr>
<th>Guideline Language</th>
<th>Strength of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In patients with [condition], X is recommended for...</td>
<td>STRONG</td>
</tr>
<tr>
<td>In patients with [condition], X is suggested for...</td>
<td>MODERATE</td>
</tr>
<tr>
<td>In patients with [condition], X is an option for...</td>
<td>LIMITED</td>
</tr>
<tr>
<td>In the absence of reliable evidence, it is the <em>opinion</em> of this guideline work group that...</td>
<td>CONSENSUS</td>
</tr>
</tbody>
</table>
## TRANSLATING RECOMMENDATIONS IN A CPG

<table>
<thead>
<tr>
<th>STRENGTH OF RECOMMENDATION</th>
<th>PATIENT COUNSELING TIME</th>
<th>DECISION AIDS</th>
<th>IMPACT OF FUTURE RESEARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>Least</td>
<td>Least important, unless the evidence supports no difference between two alternative interventions</td>
<td>Not likely to change</td>
</tr>
<tr>
<td>Moderate</td>
<td>Less</td>
<td>Less important</td>
<td>Less likely to change</td>
</tr>
<tr>
<td>Limited</td>
<td>More</td>
<td>More</td>
<td>Possible / Anticipates</td>
</tr>
<tr>
<td>Consensus</td>
<td>Most</td>
<td>Most Important</td>
<td>Impact unknown</td>
</tr>
</tbody>
</table>
The work group is charged with:

- Review of data summaries
- Final recommendation language
- Rationale and risk/harm construction
- Future research
VOTING ON THE RECOMMENDATIONS

• Recommendations and recommendation strengths voted on by work group during final meeting

• Approved and adopted by simple majority (60%) when voting on every recommendation

• If disagreement, further discussion to whether the disagreement could be resolved
REVIEW PERIOD

- Specialty societies are solicited for nominations of reviewers approximately six weeks prior to final meeting.

- CPG is also provided to:
  - AAOS Board of Directors
  - AAOS Council on Research and Quality
  - AAOS Committee on Evidence-Based Quality and Value
  - AAOS Board of Councilors
  - AAOS Board of Specialty Societies
  - 200 commentators have the opportunity to provide input into each CPG.

- Recommendation changes required a majority vote by work group.

- A detailed report of all resulting revisions is published with the guideline document.
CLINICAL PRACTICE GUIDELINE FOR PSYCHOSOCIAL FACTORS

OVERVIEW

- Based on a systematic review of published studies
- Addresses the evaluation of psychosocial factors influencing recovery from adult orthopaedic trauma.
- Additionally, this guideline addresses psychosocial factors influencing clinical, functional, and quality of life recovery following military and civilian adult orthopaedic trauma.
- Highlights limitations in literature and areas requiring future research.
- Trained orthopaedic surgeons and other surgical providers and rehabilitation specialists who partner in the care of patients with severe lower extremity trauma are the intended users.
Factors Associated with Patient Outcomes

• It is recommended that clinicians evaluate the following factors, as they are associated with increased biopsychosocial limitations after adult orthopaedic trauma:
  
  • Anxiety
  • PTSD
  • Depression
  • Premorbid psychiatric conditions
  • Smoking
  • Lower education level
  • Less social support
  • Resilience Issues (i.e. Limited self-efficacy, less effective coping strategies)

Strength of Recommendation: Moderate
ACKNOWLEDGEMENTS:

Development Group Roster:
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Free for both iOS and Android or at www.orthoguidelines.org

Provides easy access to all AAOS:

- Clinical Practice Guidelines
- Full Guideline PDF’s
- Appropriate Use Criteria
- Case Studies
- Clinician Checklists
- Impactful Statements
- Plain Language Summaries
- Evidence-based Databases
- Evidence-based Methods, Appraisals and Standards
Easier access to AAOS Guidelines:
- Sort Alphabetically by Topic
- Sort Recommendations by Strength
  - (Strong, Moderate, Limited, Consensus)
- Sort by Stage of Care
- Search Across all CPGs via a Single Keyword Search

Easier Access to Individual Recommendations:
- View recommendations via shortened titles
- Access to full recommendation & rationale
- Links to references (PubMed)
Search across all CPG and AUC Via a Single Keyword Search
References provided for each recommendation


Links to PubMed
Appropriate Use Criteria Tool

- Indication Profile
  - Symptom Severity
    - Mild Symptoms
    - Moderate Symptoms
    - Severe Symptoms
  - American Society of Anesthesiologist's (ASA) Status (co-morbidities)
    - ASA 1
    - ASA 2
    - ASA 3
  - Identifiable Factors that Negatively Affect Healing
    - Present
    - Absent
  - Identifiable Factors that Negatively Affect Outcome
    - Present
    - Absent
  - Tear Size and Retraction: Southern California Orthopaedic Institute (SCOI) Classification (Snyder Classification)
    - C1: Small, complete tear
    - C2: Moderate tear

- Procedure Recommendations
  - Repair
  - Non-Operative
  - Partial Repair and/or Debridement
  - Reconstruct
  - Arthroplasty

Click Procedure of Interest to View Interactive Literature Reviewer

- AGL Reconstruction - Autograft
- AGL Reconstruction - Allograft
- Supine rehabilitation program with reconstruction
- Activity Modification without reconstruction
PUBLISHED CLINICAL PRACTICE GUIDELINES

- Acute Achilles Tendon Rupture
- Acute Compartment Syndrome
- Anterior Cruciate Ligament Injuries
- Carpal Tunnel Syndrome
- Diagnosis and Prevention of Periprosthetic Joint Infections
- Distal Radius Fractures
- Glenohumeral Joint Osteoarthritis
- Hip Fractures in the Elderly
- Limb Salvage or Early Amputation
- Osteoarthritis of the Hip
- Osteoarthritis of the Knee (Arthroplasty)
- Osteoarthritis of the Knee (Non-Arthroplasty)
- Osteochondritis Dissecans
- Pediatric Developmental Dysplasia of the Hip in infants up to Six Months
- Pediatric Diaphyseal Femur Fractures
- Pediatric Supracondylar Humerus Fractures
- Psychosocial Factors Influencing Trauma Recovery
- Prevention of Orthopaedic Implant Infections in Patients Undergoing Dental Procedures
- Rotator Cuff Injuries
- Surgical Site Infections
- VTE Disease in Patients Undergoing Elective Hip & Knee Arthroplasty
- Tranexamic Acid in Total Joint Arthroplasty (Endorsement)
- Use of Imaging Prior to Referral to a Musculoskeletal Oncologist (Endorsement)

Management of Surgical Site Infections

Full Guideline PDF | Print Summary

Use of Imaging

- ★★★★ LIMITED EVIDENCE

Cultures

- ★★★★ STRONG EVIDENCE

C-Reactive Protein

- ★★★★ STRONG EVIDENCE

Erythrocyte Sedimentation Rate

For additional information, please visit http://www.orthoguidelines.org/