

Review Period Report

Evidence-Based Clinical Practice Guideline on the Evaluation of Psychosocial Factors Influencing Recovery from Adult Orthopaedic Trauma

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Overview of Review Period

The reviews and comments related to this clinical practice guideline are reprinted in this document and posted on the AAOS website. All reviewers and public commenters are required to disclose their conflict of interests. Names are removed from the forms of reviewers who requested that they remain anonymous; however, their COI disclosures still accompany their response.

Review Period

AAOS contacted 6 organizations with content expertise to review a draft of the clinical practice guideline during the three-week review period between October and November 2019. Members of the AAOS Committee on Evidence-Based Quality and Value, AAOS Council on Research and Quality, and AAOS Board of Directors also received the draft for review. Members of the AAOS Board of Councilors and AAOS Board of Specialty Societies were also provided the opportunity to provide comments

- Four individuals provided comments via the electronic structured review form. No reviewers asked to remain anonymous.
- All four reviews were on behalf of a society and/or committee.
- The work group considered all comments and made some modifications when they were consistent with the evidence.

Reviewer Key

Each reviewer was assigned a number (see below). All responses in this document are listed by the assigned reviewer's number.

Table 1. Reviewers

Reviewer Number	Name of Reviewer	Society Being Represented
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)
2	James Rundell, MD	American Psychiatric Association (APA)
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)

Reviewer Demographics

Table 2. Reviewer Demographics

Reviewer Number	Name of Reviewer	Society you are representing	Please list your primary specialty	Please list your work setting
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Rehab/Prosthetics and Orthotics	Academic Practice
2	James Rundell, MD	American Psychiatric Association (APA)	Psychiatry	Military
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Pediatric Orthopaedics	
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Total Joint	Private Group or Practice

Reviewer's Disclosure Information

Table 3. Disclosure Question Key

Disclosure Question	Disclosure Question Details
A	A) Do you or a member of your immediate family receive royalties for any pharmaceutical, biomaterial or orthopaedic product or device?
B	B) Within the past twelve months, have you or a member of your immediate family served on the speakers bureau or have you been paid an honorarium to present by any pharmaceutical, biomaterial or orthopaedic product or device company?
C	C) Are you or a member of your immediate family a PAID EMPLOYEE for any pharmaceutical, biomaterial or orthopaedic device or equipment company, or supplier?
D	D) Are you or a member of your immediate family a PAID CONSULTANT for any pharmaceutical, biomaterial or orthopaedic device or equipment company, or supplier?
E	E) Are you or a member of your immediate family an UNPAID CONSULTANT for any pharmaceutical, biomaterial or orthopaedic device or equipment company, or supplier?
F	F) Do you or a member of your immediate family own stock or stock options in any pharmaceutical, biomaterial or orthopaedic device or equipment company, or supplier (excluding mutual funds)?
G	G) Do you or a member of your immediate family receive research or institutional support as a principal investigator from any pharmaceutical, biomaterial or orthopaedic device or equipment company, or supplier?
H	H) Do you or a member of your immediate family receive any other financial or material support from any pharmaceutical, biomaterial or orthopaedic device and equipment company or supplier?
I	I) Do you or a member of your immediate family receive any royalties, financial or material support from any medical and/or orthopaedic publishers?
J	J) Do you or a member of your immediate family serve on the editorial or governing board of any medical and/or orthopaedic publication?

Table 4. Reviewer's Disclosure Information

Reviewer Number	Name of Reviewer	Disclosure Available via AAOS Disclosure System	A	B	C	D	E	F	G	H	I	J
1	Lindsay Ramey, MD	No	No	No	No	No	No	No	No	No	No	No
2	James Rundell, MD	No	No	No	No	No	No	No	No		No	No
3	Selina Poon, MD	Yes										
4	Karl Roberts, MD	Yes										

Reviewer Responses to Structured Review Form Questions

All reviewers are asked 16 structured review questions which have been adapted from the Appraisal of Guidelines for Research and Evaluation (AGREE) II Criteria*. Their responses to these questions are listed on the next few pages.

Table 5. Reviewer Responses Questions 1-4

Reviewer Number	Name of Reviewer	Society you are representing	1. The overall objective(s) of the guideline is (are) specifically described.	2. The health question(s) covered by the guideline is (are) specifically described.	3. The guideline's target audience is clearly described.	4. There is an explicit link between the recommendations and the supporting evidence.
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	James Rundell, MD	American Psychiatric Association (APA)	Agree	Agree	Strongly Agree	Agree
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Table 6. Reviewer Responses Questions 5-8

Reviewer Number	Name of Reviewer	Society you are representing	5. Given the nature of the topic and the data, all clinically important outcomes are considered.	6. The patients to whom this guideline is meant to apply are specifically described.	7. The criteria used to select articles for inclusion are appropriate.	8. The reasons why some studies were excluded are clearly described.
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Agree	Strongly Agree	Agree	Neutral
2	James Rundell, MD	American Psychiatric Association (APA)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Strongly Agree	Strongly Agree	Strongly Agree	Agree
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Table 7. Reviewer Responses Questions 9-12

Reviewer Number	Name of Reviewer	Society you are representing	9. All important studies that met the article inclusion criteria are included.	10. The validity of the studies is appropriately appraised.	11. The methods are described in such a way as to be reproducible.	12. The statistical methods are appropriate to the material and the objectives of this guideline.
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Agree	Strongly Agree	Agree	Neutral
2	James Rundell, MD	American Psychiatric Association (APA)	Agree	Agree	Agree	Strongly Agree
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Table 8. Reviewer Responses Questions 13-16

Reviewer Number	Name of Reviewer	Society you are representing	13. Important parameters (e.g., setting, study population, study design) that could affect study results are systematically addressed.	14. Health benefits, side effects, and risks are adequately addressed.	15. The writing style is appropriate for health care professionals.	16. The grades assigned to each recommendation are appropriate.
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	James Rundell, MD	American Psychiatric Association (APA)	Strongly Agree	Agree	Neutral	Agree
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Reviewer's Recommendation for Use of this Guideline in Clinical Practice

Table 9. Would you recommend these guidelines for use in clinical practice?

Reviewer Number	Name of Reviewer	Society you are representing	Would you recommend these guidelines for use in clinical practice?	Additional Comments regarding this CPG?
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	Strongly Recommend	<p>Again, this is a well-written guidelines statement with a concise summary of the best evidence to date, as well as directions for further research. Due to a number of issues the guidelines raises, its practical application in clinic remains limited (which surveys, how often, interventions once factor is identified) BUT it opens the conversation related to a very important topic.</p> <p>I have a few minor comments, but support the overall message of the guidelines. I have added continuous line numbers to the draft and reference specific comments by line number, as able.</p> <p>Grammatical/formatting issues:</p> <ol style="list-style-type: none"> 1. Please consistently do or do not hyphenate low-quality; high-quality; etc. throughout the paper. It is inconsistent throughout the paper. 2. Page 13, line 336. Formatting error. This should be one paragraph. 3. Page 16, line 442. Missing word. "two moderate quality STUDIES" 4. Page 17, line 457. Missing word. "psychiatric CONDITIONS" 5. Please insure abbreviations are defined for those unfamiliar (Ex: CES-D scale) <p>Other:</p> <ol style="list-style-type: none"> 6. Page 13, line 419: "...with just one recent high quality retrospective observational study of 601 patients (Castillo, 2013) indicating that increased anxiety at six and twelve-months post-injury is associated with increased anxiety and pain 6 and 12 months later". This was confusing. Please consider something similar to "with just one recent high quality retrospective observational study of 601 patients (Castillo, 2013) indicating that increased anxiety at six and twelve-months post-injury is associated with increased pain at 18 and 24 months post-injury". 7. Page 13, line 430. "Increased scores on the Brief System Inventory (BSI) Depression Scale are associated with decreased functional outcomes." What is the reference? 8. Page 17, line 459. "Another study examined pre-injury outcomes and included the presence of pre-injury alcohol or substance use and pre-injury depression." What is the reference? What "pre-injury outcomes" are you referring to? I am confused by this statement. 9. Page 17, line 470. "One low-quality study examined pre-injury psychiatric diagnosis, specifically PTSD, in a military population. Melcer (2013), examined 772 individuals and found the presence of a pre-injury psychiatric diagnosis is associated with increased odds

				<p>of having PTSD as well as increased odds of substance abuse." Which article(s) are you referencing?</p> <p>- Melcer, T., Walker, G. J., Sechriest, V. F., 2nd, Galarneau, M., Konoske, P., Pyo, J. Short-term physical and mental health outcomes for combat amputee and nonamputee extremity injury patients. <i>Journal of Orthopaedic Trauma</i> 2013; 2: e31-7</p> <p>- Melcer, T., Sechriest, V. F., Walker, J., Galarneau, M. A comparison of health outcomes for combat amputee and limb salvage patients injured in Iraq and Afghanistan wars. <i>J Trauma Acute Care Surg</i> 2013; 2: S247-54</p> <p>The above two phrases are difficult to understand. I do not think they were just looking at pre-injury PTSD and post-injury PTSD. Please consider rewording this to more accurately reflect the study results.</p> <p>10. Page 19, line 565. "another low-quality study (Melcer, 2013) demonstrated that pre-injury psychological diagnosis predicted increased odds of post-injury PTSD and/or substance abuse." Why is this here? It does not seem to fit in this section and is previously discussed in the psychological diagnosis section, though the verbiage used here seems more appropriate and concise-- see comment above.</p>
2	James Rundell, MD	American Psychiatric Association (APA)	Strongly Recommend	<p>Unfortunately, the draft of the CPG provided to me did not have any line numbers to refer to. So I'll use the 'page, paragraph number convention.</p> <p>Page 5. Suggest considering an alternate phrasing of "increased biopsychosocial limitations..." Not clear what is "increased." Perhaps "...worse clinical, functional, and quality of life outcomes..."</p> <p>Page 5. Suggest spelling out acronyms when presented for the first time. e.g., Post-traumatic Stress Disorder (PTSD).</p> <p>Page 7. 4th paragraph. 1st sentence. I believe the authors mean combat deaths, not combat casualties. Deaths are a subset of casualties, which includes injured soldiers who survived.</p> <p>Page 7. Would make the point that since a higher proportion of casualties survive, a higher number of servicemembers with limb injuries exist, who previously would have died.</p> <p>Page 8. Final sentence. Combat-related extremity injuries may be more accurate than "military extremity injures."</p> <p>Page 9. First paragraph. I believe "higher likelihood of biopsychosocial limitations" is more accurate than "increased likelihood of..."</p> <p>Page 10. Spell out what EHR means the first time it is used.</p> <p>Pages 16-20. There are several instances of the comparative word "increased" being used when comparing categorical variables. "Higher" or "greater" seems more appropriate when comparing categorical variables. Increased would be appropriate when there are continuous variables and the groups compared are before/after.</p> <p>Page 17. 3rd paragraph. Spell out what DASH stands for.</p>

				Page 17. 3rd Paragraph. Final sentence. "Developing PTSD" I think is what the authors mean, and not "Having PTSD." Page 19, next to last paragraph. Spell out what SIP stands for.
3	Selina Poon, MD	American Academy of Orthopaedic Surgeons (AAOS)	Strongly Recommend	
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	Strongly Recommend	

Reviewer Detailed Responses

Reviewer #1

Reviewer Number	Name of Reviewers	Society you are representing	Please provide a brief explanation of both your positive and negative answers in the preceding section. If applicable, please specify the draft page and line numbers in your comments. Please feel free to also comment on the overall structure and content of the Guideline:
1	Lindsay Ramey, MD	American Academy of Physical Medicine and Rehabilitation (AAPMR)	<p>This is a well-written and thoroughly researched guideline of the literature to-date. It is reproducible, easy to understand and concise.</p> <p>The two lowest metrics were regarding statistical methods, as this is not applicable to this guideline report, and definition of exclusion criteria, as this was not made readily apparent in the text. Appendix 2 and 3 do a good job of defining the inclusion criteria with PICO questions and librarian search criteria, but I am unclear on the exclusion criteria to get from the initial 6647 abstracts that returned from the library search to the 1588 articles in which full text were reviewed. I assume that these did not relate to the PICO questions, but it would be helpful to clarify how the first 5000 abstracts were excluded.</p>

Workgroup Responses to Reviewer #1

All suggested clarifying language, typographical corrections, and grammatical improvements have been incorporated into the final guideline draft.

Reviewer Detailed Responses

Reviewer #2

Reviewer Number	First Name	Society you are representing	Please provide a brief explanation of both your positive and negative answers in the preceding section. If applicable, please specify the draft page and line numbers in your comments. Please feel free to also comment on the overall structure and content of the Guideline:
2	James Rundell, MD	American Psychiatric Association (APA)	<p>This is a much-needed guideline and it is good to see standardly used criteria for medical studies applied to psychosocial studies. I think the article selection process was appropriately conservative and conclusions drawn defensible. Though comprehensive the CPG is also concise. It is easy to find the supporting evidence for the recommendations in the materials provided.</p> <p>My lowest score was for the writing style. I believe it could be tightened considerably. In "additional commentary" I'll provide several specific examples, but a prominent one is repeated use of comparative terms like "increased" instead of "higher." Unless the reference is to continuous data, terms like "higher" are more appropriate when comparing results of different groups (categorical data).</p>

Workgroup Responses to Reviewer #2

All suggested clarifying language, typographical corrections, and grammatical improvements less the instance stated below have been incorporated into the final guideline draft.

The comment to:

Suggest considering an alternate phrasing of "increased biopsychosocial limitations..." Not clear what is "increased." Perhaps "...worse clinical, functional, and quality of life outcomes..." was not included in the final guideline draft. This was discussed at length in the workgroup meeting. The group opted to list it as "increased limitations," as they wanted to avoid negative phrasing and jargon overuse which may be associated with social stigma in this arena.

Reviewer Detailed Responses

Reviewer #4

Reviewer Number	First Name	Society you are representing	Please provide a brief explanation of both your positive and negative answers in the preceding section. If applicable, please specify the draft page and line numbers in your comments. Please feel free to also comment on the overall structure and content of the Guideline:
4	Karl Roberts, MD	American Academy of Orthopaedic Surgeons Committee on Evidence-Based Quality and Value (AAOS EBQV)	<p>The CPG is well done and must have been a challenge from an EBM standpoint due to the complexity in studying and comparing psychological domains and diagnosis.</p> <p>My only concern is that the CPG makes recommendations to evaluate for psychosocial risk factors but they do not recommend treatment. We encountered this dilemma on the hip fracture CPG and after much debate changed our recommendation from patients should be evaluated for osteoporosis, to evaluated and treated. It is a small change and this may be assumed (if we screen, we should initiate or refer for treatment), but makes the recommendation more impactful and prescriptive of treatment.</p>

Workgroup Responses to Reviewer #4

The following supporting language was added to the rationale:

This recommendation was derived from data regarding the association between psychosocial factors and patient outcomes. Clinicians should actively address the presence of these factors appropriately. However, this guideline did not evaluate effective treatment strategies for psychosocial factors.

Appendix A – Structured Review Form

Review Questions (REQUIRED)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The overall objective(s) of the guideline is (are) specifically described.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The health question(s) covered by the guideline is (are) specifically described.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The guideline's target audience is clearly described.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. There is an explicit link between the recommendations and the supporting evidence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Given the nature of the topic and the data, all clinically important outcomes are considered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. The patients to whom this guideline is meant to apply are specifically described.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. The criteria used to select articles for inclusion are appropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The reasons why some studies were excluded are clearly described.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. All important studies that met the article inclusion criteria are included.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The validity of the studies is appropriately appraised.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. The methods are described in such a way as to be reproducible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. The statistical methods are appropriate to the material and the objectives of this guideline.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Important parameters (e.g., setting, study population, study design) that could affect study results are systematically addressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Health benefits, side effects, and risks are adequately addressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. The writing style is appropriate for health care professionals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. The grades assigned to each recommendation are appropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide a brief explanation of both your positive and negative answers in the preceding section. If applicable, please specify the draft page and line numbers in your comments. Please feel free to also comment on the overall structure and content of the Guideline:

Would you recommend these guidelines for use in clinical practice? (REQUIRED)

- Strongly Recommend
- Recommend
- Would Not Recommend
- Unsure

Additional Comments regarding this clinical practice guideline?