

Review Period Report

Evidence-Based Clinical Practice Guideline on the Treatment of Clavicle Fractures

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Treatment of Clavicle Fractures Clinical Practice Guidelines

Overview of the 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 are required to disclose their conflict of interests.

Review Process:

AAOS contacted 5 organizations with content expertise to review a draft of the clinical practice guideline during the three-week peer review period in September 2022.

Additionally, the draft was also provided to members of the AAOS Board of Directors (BOD), members of the Council on Research and Quality (CORQ), members of the Board of Councilors (BOC), members of the Board of Specialty Societies (BOS) and members of the Committee on Evidence-Based Quality and Value (EBQV) for review and comment.

- Seven (7) individuals provided comments via the electronic structured peer review form. No reviewers asked to remain anonymous.
- All seven 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 peer reviewer's number.

Table 1. Reviewer Key

Reviewer Number	Name of Reviewer	Society/ Committee Being Represented
1	Corbin Hedt, PT, DPT, SCS, CSCS	American Society of Shoulder and Elbow Therapists
2	Matthew Schmitz, MD, FAAOS	AAOS Leadership Institute
3	Jaimo Ahn, MD, PhD, FAAOS	Orthopaedic Trauma Association
4	Kevin Shea, MD, FAAOS	Research and Quality Council
5	Stephen Davis, MD, FAAOS	
6	David Ring, MD, PhD, FAAOS	Bylaws Committee
7	Peter Amadio, MD, FAAOS	Research and Quality Council

Reviewer Demographics

Table 2: Reviewer Demographics

Reviewer Number	Name of Reviewer	Primary Specialty	Work Setting
1	Corbin Hedt, PT, DPT, SCS, CSCS	Sports Medicine	Clinical Hospital
2	Matthew Schmitz, MD, FAAOS	Pediatric Orthopaedics	Academic Practice
3	Jaimo Ahn, MD, PhD, FAAOS	Trauma	Academic Practice
4	Kevin Shea, MD, FAAOS	Sports Medicine	Academic Practice
5	Stephen Davis, MD, FAAOS	Trauma	Private Group or Practice
6	David Ring, MD, PhD, FAAOS	Hand	Academic Practice
7	Peter Amadio, MD, FAAOS	Hand	Academic Practice

Reviewers' Disclosure Information

All reviewers are required to disclose any possible conflicts that would bias their review via a series of 10 questions (see Table 3). For any positive responses to the questions (i.e., "Yes"), the reviewer was asked to provide details on their possible conflict.

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?
В	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?
С	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?
Н	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	В	C	D	E	F	G	Н	I	J
1	Corbin Hedt, PT, DPT, SCS, CSCS	Yes										
2	Matthew Schmitz, MD, FAAOS	Yes										
3	Jaimo Ahn, MD, PhD, FAAOS	Yes										
4	Kevin Shea, MD, FAAOS	Yes										
5	Stephen Davis, MD, FAAOS	Yes										
6	David Ring, MD, PhD, FAAOS	Yes										
7	Peter Amadio, MD, FAAOS	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 to Structured Review Questions 1-4

Reviewer Number	Name of Reviewer	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	Corbin Hedt, PT, DPT, SCS, CSCS	Strongly Agree	Strongly Agree	Agree	Strongly Agree
2	Matthew Schmitz, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Jaimo Ahn, MD, PhD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Agree
4	Kevin Shea, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Stephen Davis, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	David Ring, MD, PhD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Neutral
7	Peter Amadio, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Table 6. Reviewer Responses to Structured Review Questions 5-8

Reviewer Number	Name of Reviewer	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	Corbin Hedt, PT, DPT, SCS, CSCS	Disagree	Agree	Strongly Agree	Agree
2	Matthew Schmitz, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Jaimo Ahn, MD, PhD, FAAOS	Agree	Agree	Agree	Agree
4	Kevin Shea, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Stephen Davis, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	David Ring, MD, PhD, FAAOS	Neutral	Agree	Disagree	Agree
7	Peter Amadio, MD, FAAOS	Disagree	Agree	Strongly Agree	Strongly Agree

Table 7. Reviewer Responses to Structured Review Questions 9-12

Reviewer Number	Name of Reviewer	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	Corbin Hedt, PT, DPT, SCS, CSCS	Agree	Neutral	Strongly Agree	Strongly Agree
2	Matthew Schmitz, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Jaimo Ahn, MD, PhD, FAAOS	Agree	Strongly Agree	Agree	Agree
4	Kevin Shea, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Stephen Davis, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	David Ring, MD, PhD, FAAOS	Neutral	Disagree	Agree	Agree
7	Peter Amadio, MD, FAAOS	Neutral	Agree	Strongly Agree	Agree

Table 8. Reviewer Responses to Structured Review Questions 13-16

Reviewer Number	Name of Reviewer	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	Corbin Hedt, PT, DPT, SCS, CSCS	Agree	Agree	Agree	Strongly Agree
2	Matthew Schmitz, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Jaimo Ahn, MD, PhD, FAAOS	Agree	Strongly Agree	Strongly Agree	Agree
4	Kevin Shea, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Stephen Davis, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	David Ring, MD, PhD, FAAOS	Disagree	Neutral	Agree	Disagree
7	Peter Amadio, MD, FAAOS	Agree	Disagree	Agree	Agree

Reviewers' Recommendation for Use of this Guideline in Clinical Practice

Would you recommend these guidelines for use in clinical practice?

Reviewer Number	Name of Reviewer	Would you recommend these guidelines for use in clinical practice?
1	Corbin Hedt, PT, DPT, SCS, CSCS	Strongly Recommend
2	Matthew Schmitz, MD, FAAOS	Strongly Recommend
3	Jaimo Ahn, MD, PhD, FAAOS	Unsure
4	Kevin Shea, MD, FAAOS	Strongly Recommend
5	Stephen Davis, MD, FAAOS	Strongly Recommend
6	David Ring, MD, PhD, FAAOS	Unsure
7	Peter Amadio, MD, FAAOS	Recommend

Reviewer Detailed Responses and Editorial Suggestions

Reviewer #1, Corbin Hedt, PT, DPT, SCS, CSCS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
1	Corbin Hedt, PT, DPT, SCS, CSCS	American Society of Shoulder and Elbow Therapists	 A. I'd like to take the time to thank the editorial board and all associated authors for allowing me to provide my comments and review of this manuscript. I have no doubt that this body of work will add greatly to the scientific knowledge of clavicle fractures and subsequent treatment and rehabilitation. I have carefully read through and made line comments as listed below. B. Line 126 – "healing" misspelled C. Line 131 – Has EtD been previously defined? D. Line 362 – first person language, not sure if supported by publication E. Line 528-531 – This sentence could be worded a little differently for clarity. Not sure if non-operative treatment is ever "contraindicated", but it may or may not be less appropriate based on the given situation. F. Line 531-534 – Might be beneficial to indicate which types of fractures or patterns we're referring to here. This would help support the following paragraph as well. G. Line 540 – Again, referring to particular fracture patterns without indicating which kind. H. Line 540-544 – Pneumothorax? Are there other risks to mention? I. Line 547-549 – This is written a little clumsy, consider revision. J. Line 550 – I'd suggest "not indicated" versus contraindicated. The use of "contraindication" generally means that something is blatantly harmful as opposed to just inappropriate. K. Line 599-600 – This sentence doesn't really add to the paragraph. I'd be more specific as to the search mechanisms, or just remove entirely. L. Line 608 – Has CQV been defined previously? M. Line 678 – Table 1 – not sure if "rec" is a necessary abbreviation N. Line 893 – EISN/IMN not previously defined, all acronyms should be checked throughout O. Line 988-993 – In-text citation formatting different from previous sections. Check throughout for other inconsistencies. P. Line 1009 – First sentence could be improved. Contrast this with Line 1045 and other sections.

strategies were adequate in covering PT, exercise, or even return to sport/recreation.
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Dear Corbin Hedt, PT, DPT, SCS, CSCS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

- A. Thank you for your positive feedback.
- B. Thank you for your feedback. They typographical error has been corrected.
- C. Thank you for your comment. While the EtD Framework is discussed in the Introduction section, additional language has been added for clarity.
- D. Thank you for the feedback. The grammatical error has been corrected.
- E. Thank you for your comment.
- F. Thank you for your comment. Additional language has been added for clarity.
- G. Thank you for your comment. Additional language has been added for clarity.
- H. The statement has been edited to reflect other potential risks.
- I. Thank you for your comment. The sentence has been revised for clarity.
- J. Thank you for your comment. The sentence has been revised for clarity.
- K. Thank you for your comment.
- L. Please see our Methods Section for details on CQV.
- M. We use Rec to keep our descriptions concise.
- N. Thank you for your comment. The text has been revised for clarity.
- O. Thank you for your comment. The manuscript has been revised for consistency.
- P. Thank you for your comment. The sentence has been revised for consistency.
- Q. Rehabilitation and physical therapy were included in the search; however, none of the resulting literature met the a priori inclusion criteria as set by the work group.

Reviewer #2, Matthew Schmitz, MD, FAAOS

Reviewer Number	Reviewer Name	Society or committee you are representing	Please provide a brief explanation of both your positive and negative answin the preceding section. If applicable, please specify the draft page and linumbers in your comments. Please feel free to also comment on the overa structure and content of the Guideline: The response(s) below also includall editing suggestions received from the Additional Comments section of structured review form.	
2	Matthew Schmitz, MD, FAAOS	AAOS Leadership Institute	A. The CPG is well written. No further feedback for the guidelines based on feedback from the POSNA Evidence Based Practice Committee.	

Dear Matthew Schmitz, MD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

A. Thank you for your positive feedback.

Reviewer #3, Jaimo Ahn, MD, PhD, FAAOS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
3	Jaimo Ahn, MD, PhD, FAAOS	Orthopaedic Trauma Association	 A. Typo: 126 result in accelerated heling or lower rates of non-union. B. While this is a Guideline and Recommendations are provided, the wording of many of the Recommendations were not actually worded as recommendations. C. I am not sure it is appropriate to publish the Recommendations when they are not actually recommendations

Dear Jaimo Ahn, MD, PhD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

- A. Thank you for the feedback. The typographical error has been corrected.
- B. Thank you for your comment.
- C. Thank you for your comment.

Reviewer #4, Kevin Shea, MD, FAAOS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
4	Kevin Shea, MD, FAAOS	Research and Quality Council	A. Very well done. Includes up to date work on adult and adolescent clavicle fractures.

Dear Kevin Shea, MD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

A. Thank you for the positive feedback.

Reviewer #5, Stephen Davis, MD, FAAOS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
5	Stephen Davis, MD, FAAOS		A. No Comment

Dear Stephen Davis, MD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

A. No comment.

Reviewer #6, David Ring, MD, PhD, FAAOS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
6	David Ring, MD, PhD, FAAOS	AAOS Bylaws Committee	 A. Most of the recommendations are reasonable so I will focus my comments on the second recommendation regarding lateral clavicle fractures. I think the current AAOS CPG process overweights findings from a small number of studies which creates notable potential for false, misleading, and potentially harmful conclusions. B. Regarding hook plate vs. locking plate for lateral clavicle fractures, the results are based on a single study (Wang 2020) published in an obscure journal that does not seem to be a randomized trial (not sure what a "random grouping method" is). Most importantly, the mean amount of lateral bone is 3 centimeters, which means many of these fractures were just relatively lateral diaphyseal fractures rather than acromioclavicular joint dislocation variants that have very little bone remaining distallythe type of fracture a hook plate is intended for. I think this study and this recommendation should be discarded. C. I continue to advocate for an overhaul of the CPG process and would be happy to participate in that endeavor. We can do better.

Dear David Ring, MD, PhD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

- A. Per AAOS methodology, a Moderate strength recommendation is supported by 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.
- B. Per AAOS methodology, a Moderate strength recommendation is supported by 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.
- C. Thank you for your comment.

Reviewer #7, Peter Amadio, MD, FAAOS

Reviewer Number	Reviewer Name	Society or committee 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: The response(s) below also includes all editing suggestions received from the Additional Comments section of the structured review form.
7	Peter Amadio, MD, FAAOS		 A. positive: technically strong review. B. Negative- socioeconomic outcomes are not considered; consensus opinions are by definition neither objective nor reproducible and have no place in a formal CPG document. a different panel should come up with similar levels of evidence but would not necessarily arrive at similar consensus opinions.

Dear Peter Amadio, MD, FAAOS,

Thank you for your expert review of the Treatment of Clavicle Fractures Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

- A. Thank you for the positive feedback.
- B. Socioeconomic outcomes were not included in the a priori scope as determined by the workgroup and were therefore not eligible for comment in the final report. Consensus statements are listed as options rather than recommendations in the final guideline and are included at the discretion of the workgroup. Consensus statements are transparently the opinion of the workgroup, as well as transparently due to a dearth of available evidence. These statements frequently encourage future research.

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.	0	0	0	0	0
2. The health question(s) covered by the guideline is (are) specifically described.	0	0	0	0	0
3. The guideline's target audience is clearly described.	0		0	0	0
4. There is an explicit link between the recommendations and the supporting evidence.	0	0	0	0	0
5. Given the nature of the topic and the data, all clinically important outcomes are considered.	0	0	0	0	0
6. The patients to whom this guideline is meant to apply are specifically described.	0	0	0	0	0
7. The criteria used to select articles for inclusion are appropriate.	0	0	0	0	0
8. The reasons why some studies were excluded are clearly described.	0	0	0	0	0
9. All important studies that met the article inclusion criteria are included.	0	0	0	0	0
10. The validity of the studies is appropriately appraised.	0	0	0	0	0
11. The methods are described in such a way as to be reproducible.	0	0	0	0	0
12. The statistical methods are appropriate to the material and the objectives of this guideline.	0	0	0	0	0
13. Important parameters (e.g., setting, study population, study design) that could affect study results are systematically addressed.	0	0	0	0	0
14. Health benefits, side effects, and risks are adequately addressed.	0	0	0	0	0
15. The writing style is appropriate for health care professionals.	0	0		0	0
16. The grades assigned to each recommendation are appropriate.	0	0	0	0	0

Please provide a brief explanation of both your positive and negative answers in the receding section. If applicable, please specify the draft page and line numbers in comments. Please feel free to also comment on the overall structure and content of Guideline:	your
	/
Vould you recommend these guidelines for use in clinical practice? (REQUIRED)	
Strongly Recommend	
Recommend	
Would Not Recommend	
Unsure	
Additional Comments regarding this clinical practice guideline?	
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