

Review Period Report

Evidence-Based Clinical Practice Guideline on the Surgical Management of Osteoarthritis of the Knee

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Surgical Management of Osteoarthritis of the Knee

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 7 organizations with content expertise to review a draft of the clinical practice guideline during the three-week peer review period in May 2022.

Additionally, the draft was also provided to members of the AAOS Board of Directors (BOD), members of the Research and Quality Council (RQC), 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.

- Thirteen (13) individuals provided comments via the electronic structured peer review form. No reviewers asked to remain anonymous.
- All thirteen 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	Toni McLaurin, MD, FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors
2	Charles Hannon, MD, MBA	American Academy of Orthopaedic Surgeons, Committee on Evidence-Based Quality and Value
3	Hari Bezwada, MD, FAAOS	American Association of Hip and Knee Surgeons
4	Adolph Yates, MD, FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors
5	Gregory Brown, MD, PhD, FAAOS	American Academy of Orthopaedic Surgeons, Key Informants Panel
6	Nanne Kort, MD, PhD	American Academy of Orthopaedic Surgeons, Key Informants Panel
7	Lutul Farrow, MD, FAAOS	American Academy of Orthopaedic Surgeons, Board of Specialty Societies
8	Peter Amadio, MD, FAAOS	American Academy of Orthopaedic Surgeons, Research and Quality Council
9	Chad Krueger, MD, FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	American Academy of Orthopaedic Surgeons, Key Informants Panel
11	Eric Stiefel, MD, FAAOS	Arthroscopy Association of North America
12	James Barber, MD, FAAOS	American Academy of Orthopaedic Surgeons, Board of Councilors
13	Richard Valdesuso, MD, FAAOS	AIM Specialty Health

Reviewer Demographics

Table 2: Reviewer Demographics

Reviewer Number	Name of Reviewer	Primary Specialty	Work Setting
1	Toni McLaurin, MD, FAAOS	Trauma	Academic Practice
2	Charles Hannon, MD, MBA	Total Joint	Academic Practice
3	Hari Bezwada, MD, FAAOS	Total Joint	Private Group or Practice
4	Adolph Yates, MD, FAAOS	Adult Knee	Academic Practice
5	Gregory Brown, MD, PhD, FAAOS	Total Joint	Clinical Hospital
6	Nanne Kort, MD, PhD	Total Joint	Private Group or Practice
7	Lutul Farrow, MD, FAAOS	Sports Medicine	Academic Practice
8	Peter Amadio, MD, FAAOS	Hand	Academic Practice
9	Chad Krueger, MD, FAAOS	Adult Hip	Private Group or Practice
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Adult Knee	Academic Practice
11	Eric Stiefel, MD, FAAOS	Sports Medicine	Private Group or Practice
12	James Barber, MD, FAAOS	Other	Private Group or Practice
13	Richard Valdesuso, MD, FAAOS	Hand	Other

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?
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?

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	Toni McLaurin, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Charles Hannon, MD, MBA	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Hari Bezwada, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Adolph Yates, MD, FAAOS	Agree	Agree	Agree	Disagree
5	Gregory Brown, MD, PhD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	Nanne Kort, MD, PhD	Strongly Agree	Agree	Strongly Agree	Agree
7	Lutul Farrow, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
8	Peter Amadio, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
9	Chad Krueger, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Neutral
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
11	Eric Stiefel, MD, FAAOS	Agree	Agree	Agree	Agree
12	James Barber, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
13	Richard Valdesuso, MD, FAAOS	Agree	Agree	Agree	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	Toni McLaurin, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Charles Hannon, MD, MBA	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Hari Bezwada, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Adolph Yates, MD, FAAOS	Strongly Disagree	Neutral	Neutral	Disagree
5	Gregory Brown, MD, PhD, FAAOS	Agree	Strongly Agree	Agree	Strongly Agree
6	Nanne Kort, MD, PhD	Agree	Strongly Agree	Agree	Neutral
7	Lutul Farrow, MD, FAAOS	Agree	Strongly Agree	Strongly Agree	Strongly Agree
8	Peter Amadio, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
9	Chad Krueger, MD, FAAOS	Neutral	Strongly Agree	Strongly Agree	Strongly Agree
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
11	Eric Stiefel, MD, FAAOS	Agree	Agree	Agree	Neutral
12	James Barber, MD, FAAOS	Strongly Agree	Strongly Agree	Agree	Strongly Agree
13	Richard Valdesuso, MD, FAAOS	Neutral	Agree	Neutral	Neutral

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	Toni McLaurin, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Charles Hannon, MD, MBA	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Hari Bezwada, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Adolph Yates, MD, FAAOS	Disagree	Disagree	Disagree	Disagree
5	Gregory Brown, MD, PhD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	Nanne Kort, MD, PhD	Agree	Agree	Agree	Agree
7	Lutul Farrow, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
8	Peter Amadio, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
9	Chad Krueger, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
11	Eric Stiefel, MD, FAAOS	Agree	Agree	Agree	Agree
12	James Barber, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
13	Richard Valdesuso, MD, FAAOS	Agree	Neutral	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	Toni McLaurin, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Charles Hannon, MD, MBA	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
3	Hari Bezwada, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Adolph Yates, MD, FAAOS	Disagree	Disagree	Neutral	Strongly Disagree
5	Gregory Brown, MD, PhD, FAAOS	Agree	Agree	Strongly Agree	Strongly Agree
6	Nanne Kort, MD, PhD	Agree	Agree	Agree	Agree
7	Lutul Farrow, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
8	Peter Amadio, MD, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
9	Chad Krueger, MD, FAAOS	Neutral	Neutral	Strongly Agree	Agree
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
11	Eric Stiefel, MD, FAAOS	Agree	Agree	Agree	Agree
12	James Barber, MD, FAAOS	Strongly Agree	Agree	Strongly Agree	Agree
13	Richard Valdesuso, MD, FAAOS	Agree	Disagree	Agree	Disagree

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	Toni McLaurin, MD, FAAOS	Strongly Recommend
2	Charles Hannon, MD, MBA	Strongly Recommend
3	Hari Bezwada, MD, FAAOS	Strongly Recommend
4	Adolph Yates, MD, FAAOS	Recommend
5	Gregory Brown, MD, PhD, FAAOS	Strongly Recommend
6	Nanne Kort, MD, PhD	Strongly Recommend
7	Lutul Farrow, MD, FAAOS	Strongly Recommend
8	Peter Amadio, MD, FAAOS	Strongly Recommend
9	Chad Krueger, MD, FAAOS	Would Not Recommend
10	Nicolas Noiseux, MD, MS, FRCSC, FAAOS	Strongly Recommend
11	Eric Stiefel, MD, FAAOS	Strongly Recommend
12	James Barber, MD, FAAOS	Strongly Recommend
13	Richard Valdesuso, MD, FAAOS	Recommend

Reviewer Detailed Responses and Editorial Suggestions

Reviewer #1, Toni McLaurin, 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.
1	Toni McLaurin, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors	A. No comment.

Workgroup Response to Reviewer #1

Dear Toni McLaurin, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

A. No comment.

Reviewer #2, Charles Hannon, M.D., MBA

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.
2	Charles Hannon, M.D., MBA	American Academy of Orthopaedic Surgeons, Committee on Evidence-Based Quality and Value	<p>A. Thank you for the opportunity to review this clinical practice guideline on Surgical Management of Osteoarthritis of the Knee. I commend the workgroup for their efforts and fantastic work putting together this well thought out and impressive clinical practice guideline document. Please see below for some recommended changes and areas for improvement.</p> <p>B. General For all recommendations where the strength of recommendation was "upgraded" or "downgraded" it is helpful to identify exactly why. This is done for several recommendations (e.g., UKA v. TKA), but not for others (e.g., cemented v. cementless TKA).</p> <p>C. UKA v. TKA Line 1019 - The line states that the recommendation was downgraded due to differing outcomes at short and long-term follow-up. However, the rest of the rationale just discusses the advantages of UKA in the short-term. Highlighting some of the long-term studies that report different outcomes than short-term studies would be beneficial for the readers. In particular, there is no discussion in the rationale of the long-term increased revision rates with UKA.</p> <p>D. Peripheral Nerve Blockade Lines 1072 - While I agree that PNBs are beneficial, all PNBs are not created equal. For example, there are major differences between femoral nerve blocks, adductor canal blocks, sciatic, and IPACK blocks. It would be beneficial to be more specific about the type of blocks. The AAOS endorsed AAHKS CPG on multimodal analgesia and anesthesia in TJA supported the use of adductor canal blocks. They recognized the efficacy of femoral nerve blocks, but highlighted the issue of quadriceps weakness with their use. More specifics for this recommendation would be beneficial.</p> <p>E. Risk Factors BMI</p>

			<p>Lines 1246 - The rationale section here is written different than many of the others. It jumps right into a study results without describing the study groups or populations being compared.</p> <p>F. Lines 1292 - 1295 - This discusses diabetic patients but the recommendation only comments on BMI. This may be better suited for the diabetes section.</p> <p>G. Patellar Resurfacing Lines 1446 - 1447 - The section is on patellar resurfacing, but the recommendation discusses tourniquets.</p> <p>H. UKA v. HTO The recommendation just specifies generally "knee osteoarthritis" It may be more appropriate to specify single compartment disease.</p>
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Workgroup Response to Reviewer #2

Dear Charles Hannon, M.D., MBA,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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. Thank you for your feedback. The manuscript has been modified for consistency.
- C. Thank you for the feedback. The decision around the long-term outcomes has been added to the rationale.
- D. Thank you for your comment. The rationale has been modified.
- E. Thank you for the feedback. The rationale has been modified.
- F. Thank you for the feedback. The rationale has been modified.
- G. Thank you for the feedback. The rationale has been modified.
- H. Thank you for your comment. All included literature investigated the medial compartment, and a line was added to the rationale to reflect this.

Reviewer #3, Hari Bezwada, M.D., 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	Hari Bezwada, M.D., FAAOS	American Association of Hip and Knee Surgeons	<p>A. I am concerned regarding the statement about drains, if the summary is no difference then why say no drains. It appears that either choice is appropriate. The decision should be left to the surgeon to decide if the risks of hematoma, ecchymosis, and draining wounds are equivalent to no difference in blood loss or transfusion?</p> <p>B. In terms of surgical navigation, I believe the evidence is strong and the recommendation stating no difference in outcomes, pain, or function is strong.</p> <p>C. Otherwise, great job by all the participants!</p> <p>D. Excellent CPG on SMOAK.</p>

Workgroup Response to Reviewer #3

Dear Hari Bezwada, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 comment. This recommendation was downgraded from Strong to Moderate following the work group's application of the GRADE Evidence-to-Decision framework.
- B. Thank you for the positive feedback.
- C. Thank you for the positive feedback.
- D. Thank you for the positive feedback.

Reviewer #4, Adolph Yates, M.D., 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	Adolph Yates, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors	<p>A. Ideally reviewers would have access to whatever ETD tables were used as well as any Forest Plots or NNT analyses. The recommendations should be referencing such synthesis of data. If the data available does not lend itself to such synthesis, grading needs to be substantially lower.</p> <p>B. Regarding Drains: Before further comment on methodology, the authors state three times without cited support that drains represent a risk for retrograde infection. These are dangerous statements. Although drain tips after more than 2-3 days might culture positive, leaving a drain for one to two days has never been shown to increase the risk of infection. Those statements should be removed as unsupported. Adding them in to support the grade of recommendation is not appropriate in EBM and is an attempt to beg the question.</p> <p>In terms of methodology, this recommendation is problematic and reflects flaws in the AAOS CPG process that has yet to utilize true GRADE processes. If ETD table were used, they are not made available for review. The most important missing step is the failure to perform a Delphi process to determine what outcomes are important to patients. Avoiding infection has been demonstrated as one of the highest rated outcomes to avoid for patients (1)). Drains throughout the history of surgery have been used to prevent accumulation of fluid in dead spaces and are routinely used by Plastic and Orthopaedic Oncology surgeons on cases with large flaps that need protection from infection. Given that infection is a prime patient concern and the historical basis for use of a drain, such an outcome should have been a focus of this review. The study arms of the six papers never exceed 50 patients and the overall number of drained knees when combined was 204. Given that infection rates after TKA are approximately 0.7% , none of the studies nor their combined results provide enough cases to generate the statistical power to say that infections are equivalent.</p> <p>Even if the question of using a drain is addressed with the less important outcomes that were used, some benefits were found for using a drain. The lower rate of manipulation was brought forward from a cited paper in the last SMOAK CPG. The lack of harm, some</p>

			<p>benefit and marginal added cost makes a for an ETD table- based decision of either a limited recommendation for their use or, given the paucity of data for the most important outcome, a result of recommending neither for nor against use. Unfortunately, the AAOS CPG process removed the latter as a possible option a decade ago.</p> <p>Finally, the statement “The overall benefit outweighs the harm”, would seem to argue for use of a drain as written. If that is not the intention, it would be better stated as “The benefit does not appear to be sufficient to advise use”.</p> <p>1.) Goodman SM, Miller AS, Turgunbaev M, Guyatt G, Yates A, Springer B, Singh JA. Clinical Practice Guidelines: Incorporating Input From a Patient Panel. Arthritis Care Res (Hoboken). 2017 Aug;69(8):1125-1130. doi: 10.1002/acr.23275. Epub 2017 Jun 16. PMID: 28620968.</p> <p>C. Regarding Cemented versus Uncemented: This is a question that has the potential for considerable pre-data review bias, which is reflected in the given recommendation. It is not clear as to how the given data can support a moderate level of recommendation. The papers overall show more evidence for revision higher revision rates for uncemented knees. At best, a limited recommendation is better supported by confounding results. Again, bias is a concern.</p> <p>D. Regarding Obesity: It is not clear as to why the categories of morbid and super obesity were not addressed.</p> <p>E. Regrading Glucose Control: The wording of the recommendation is superimposing perioperative management of glucose and pre-operative optimization. It should be more clearly written. It is not clear as to why a HgbA1c of 6.5 is the critical number; the cut-off in the literature is usually higher.</p> <p>F. Regarding Bilateral Procedures: The bilateral recommendation was probably based on data that missed more recent findings showing that even the healthiest cohorts have three times the risk of complications when undergoing bilateral procedures. It might be better to more simply state that bilateral procedures are feasible in such patients, but that shared decision making and transparent presentation of the added risk with the patient is critical. I refer the reader to this commentary.</p> <p>1.) Yates AJ Jr. Bilateral Total Knee Arthroplasty Should Remain the Exception and Not the Rule: Commentary on an article by Jared A. Warren, DO, ATC, CSCS, et al.:</p>
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			<p>"Bilateral Simultaneous Total Knee Arthroplasty May Not Be Safe Even in the Healthiest Patients". J Bone Joint Surg Am. 2021 Feb 17;103(4):e16. doi: 10.2106/JBJS.20.02092. PMID: 33591685.</p> <p>G. My opinions expressed in this review are more alone, and do not represent AAOS, its Board, or any other specialty society.</p>
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Workgroup Response to Reviewer #4

Dear Adolph Yates, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 comment. All EtD and study data that is used to create recommendations is published along with the guideline.
- B. Thank you for your comment. The AAOS plans to incorporate outcome prioritization in future guidelines; however, a process was not in place for the development of this recommendation. The work group elected to downgrade the strength of the Drains recommendation from Strong to Moderate.
- C. Thank you for your comment. The work group considered all of the evidence, which consistently demonstrated similar rates across a variety of outcomes (e.g., functional outcomes and complications) and created a recommendation in support of either cemented or uncemented. The work group downgraded the strength of recommendation from Strong to Moderate in accordance with AAOS methodology.
- D. Thank you for your feedback. The recommendation has been modified for clarity.
- E. Thank you for your feedback. This recommendation has been modified.
- F. Thank you for your comment. The option present explicitly states in appropriately selected patients, as well as the need to perform bilateral TKA with caution. The workgroup downgraded this recommendation from Limited strength to a Consensus opinion; the referenced Warren study is linked within the rationale.
- G. Thank you for your comment.

Reviewer #5, Gregory Brown, M.D., 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.
5	Gregory Brown, M.D., PhD., FAAOS	American Academy of Orthopaedic Surgeons, Key Informants Panel	<p>A. Removal of the recommendation regarding antibiotic bone cement is appropriate because there is insufficient evidence (and power) from RCTs to find a difference in infection rates. The recommendation in SMOAK was a type 2 statistical error.</p> <p>B. RCTs do not have sufficient statistical power to evaluate revision rate differences. Failure rates are a prognostic outcome and registry data is superior to RCTs for long-term prognostic outcomes such as failure rates. Both the Australian registry and AJRR show statistically higher revision rates for posterior stabilized versus cruciate retaining TKA designs. At 13 years, the Australian registry reports the PS vs CR hazard ratio for all cause revisions is 1.45 (95% CI 1.30-1.63, p<0.001). The 2021 AJRR Annual Report also notes an increased failure rate of PS designs in Figure 3.5. The CR versus PS adjusted hazard ratio is 0.810 (95% CI 0.756-0.867, p<0.0001). Lines 267-270, consider changing the recommendation.</p> <p>The practitioner could use cruciate retaining (CR) instead of posterior stabilized (PS) total knee arthroplasty (TKA) designs when possible. Although they have similarly efficacious/favorable short-term outcomes, posterior stabilized TKA designs have significantly higher long-term revision rates.</p> <p>Christopher Vertullo et al, "The effect on long-term survivorship of surgeon preference for posterior-stabilized or minimally stabilized total knee replacement," Journal of Bone and Joint Surgery, 99A(13): 1129-1139, 2017.</p> <p>C. There seems to be an assumption that conversion of UKA to TKA has the same outcome as primary TKA. Patient-reported outcome measures (PROMs) from the New Zealand registry demonstrate poorer outcomes for UKA revised to TKA than primary TKA. Lines 180-186, consider adding "and patient-reported outcome measures of unicompartmental knee arthroplasties revised to total knee arthroplasties are poorer than primary total knee arthroplasties."</p>

			<p>Andrew Pearse et al, "Osteotomy and unicompartmental knee arthroplasty converted to total knee arthroplasty: Data from the New Zealand Joint Registry, Journal of Arthroplasty, 27(10): 1827-1831, 2012.</p> <p>D. Respectfully submitted.</p>
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Workgroup Response to Reviewer #5

Dear Gregory Brown, M.D., PhD., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 comment.
- B. Thank you for your feedback. The rationale has been modified.
- C. Thank you for your comment. We've added a statement into the rationale to address this.
- D. Thank you.

Reviewer #6, Nanne Kort, M.D., PhD

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	Nanne Kort, M.D., PhD	American Academy of Orthopaedic Surgeons, Key Informants Panel	<p>A. Lines 194: PERIPHERAL NERVE BLOCKADE (PNB) The practitioner should use peripheral nerve blockades for total knee arthroplasty because they decrease postoperative pain and opioid requirements with no difference in complications or outcomes. STRONG 4 stars.</p> <p>Many studies are missing in the rationale at line 1072: Just some examples: A.S. Chung et al. J arthropl 2018: PAIs have demonstrated near equivalence to FNB and sciatic nerve blocks without the added time, cost, and potential for neurologic complications. The efficacy of ACB alone appears limited and may even be inferior to PAI alone. Adding an ACB to PAI warrants consideration as it may provide additional benefits. Talmo et al. J arthropl 2018: While pain scores were slightly lower in the control group in the first 24 hours after TKA compared with LB PAI, the magnitude of the difference was small, and excellent pain relief was provided by both interventions. The use of LB PAI in TKA is a reasonable alternative to FNB, which avoids the additional weakness and other risks associated with FNB procedures.</p> <p>B. Line 1099: Depending upon clinical circumstances, peripheral nerve blockade may also be associated with postoperative motor weakness. Under these conditions, care must be taken to minimize the risk of patient falls or delayed mobilization during the hospitalization. Little attention is paid to this critical aspect of Blocks!!!</p> <p>C. Lines 277: PATIENT SPECIFIC TECHNOLOGY The practitioner should not use patient-specific technology (e.g., guides, cutting blocks) because there is no significant difference in patient outcomes, function, or pain compared to conventional total knee arthroplasty (TKA). Additionally, it does not reduce operating time, blood loss, length of stay, and/or complications.</p>

			<p>Strength of Evidence: Strong</p> <p>OR efficiency could be a point why PSI can add value. From a CAS point of view!</p> <p>This recommendation should be more neutral! 1575: The evidence is both in favor and against PSI. There is no clear evidence against PSI."</p> <p>D. 308: Cessation of preoperative opioids should be attempted for total knee arthroplasty (TKA), as preoperative opioid use demonstrates decreased postoperative functional scores and increased pain scores and complications.</p> <p>Strength of Evidence: Low</p> <p>Many studies show a high percentage of pre-OR Opioid users start using opioids in the long run after TKA. This questions the current indication for TKA. Long term opioids use after TKA is evidence that would support the attempt to cessate opioids pre-OR! Cessation might be a good screening/ optimizing tool.</p> <p>E. Lines 1786: add the evidence for chronic opioid use after TKA!</p> <p>F. 338 UNICOMPARTMENTAL KNEE ARTHROPLASTY VS. HIGH/PROXIMAL TIBIAL OSTEOTOMY The practitioner could use unicompartmental knee arthroplasty or tibial osteotomy to treat knee osteoarthritis.</p> <p>Strength of Evidence: Moderate</p> <p>Add medial OA of the knee as a separate identity: 95% of HTO and uni is for medial OA.</p>
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Workgroup Response to Reviewer #6

Dear Nanne Kort, M.D., PhD,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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. This comparison was outside the scope of this guideline.
- B. Thank you for your comment.
- C. Thank you for your comment. The work group created this recommendation due to the fact that strong evidence supported no significant difference between patient specific instrumentation and conventional TKA across a variety of outcomes.
- D. Thank you for your comment.
- E. Thank you for your comment. The rationale has been modified to include references.
- F. Thank you for the comment. All included literature investigated the medial compartment, and a line was added to the rationale to reflect this.

Reviewer #7, Lutul Farrow, M.D., 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	Lutul Farrow, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Board of Specialty Societies	A. No comment.

Workgroup Response to Reviewer #7

Dear Lutul Farrow, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

A. No comment.

Reviewer #8, Peter Amadio, M.D., 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.
8	Peter Amadio, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Research and Quality Council	A. Typo on line 180- arthroplasty is misspelled.

Workgroup Response to Reviewer #8

Dear Peter Amadio, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 feedback. The spelling error has been corrected.

Reviewer #9, Chad Krueger, M.D., 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.
9	Chad Krueger, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Board of Directors	<p>A. Overall, this is excellent. Below are my concerns that should be addressed before this goes further, however.</p> <p>For the TXA recommendation: It states that 'except for patients with contraindications to TXA, TXA should be used.' However, it then states that we really have no idea what those contraindications are. I would suggest the wording of the recommendation remove the word 'contraindications' and use a statement along the lines of 'in patients in which the benefits are thought to outweigh the risks, TXA should be used.' Something like that.</p> <p>B. For the smoking CPG: it is a consensus recommendation with horrible supporting literature. Stating that surgeons 'should' tell their patients to stop smoking in the CPG does not appear to be supported by the evidence. As such, I would remove that strong language. It is dangerous legally and with insurance companies.</p> <p>C. It should not have a recommendation for both a peripheral nerve block and a PAI as patients should not get both secondary to risk of LAST. As such, would clearly word the recommendations that it is EITHER peripheral nerve block OR PAI.</p> <p>D. For kinematic alignment- while the literature does seem to support the overall recommendation, there are limits to what that kinematic alignment can be and there is literature suggesting that severe 'outliers' have worse outcomes. This should be mentioned. We can't have a CPG that allows surgeons to put knees in 30 degrees of valgus and hope for the best.</p> <p>E. For obesity- some of the manufacture implant guidelines caution against use in patients with a BMI above 35 in terms of early and late failure. Should this be mentioned?</p>

			<p>F. I'm not sure there is enough supporting evidence to allow for the wording of 'early benefit in recovery and length of stay' for robotic arthroplasty. These studies have inherent limitations (e.g., the surgeon and the patient know they received robotic surgery, etc.) which could lead to the difference shown. In addition, they do not account for the timing of the surgery during the day and the differences seen with 'early benefit/LOS' have not been shown to be clinically meaningful or relevant.</p> <p>G. See comments above that I would adjust before using in clinical practice.</p>
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Workgroup Response to Reviewer #9

Dear Chad Krueger, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 input. Although contraindications have not been clearly defined, those used in the supporting evidence have been provided in the future research section.
- B. Thank you for the comment. Consensus statements are listed as Options, rather than Recommendations, due to the lack of supporting evidence. The statement is made in the absence of evidence and is transparently presented as the consensus opinion of the physician work group. AAOS guidelines are not a fixed protocol nor are they intended for use as benefits determination documents.
- C. Thank you for the comment. The PICO questions were not designed to compare both interventions. The work group chose to maintain both recommendations.
- D. Thank you for your comment. The recommendation reflects the evidence returned from the systematic literature search as dictated by the PICO question.
- E. Thank you for your input, a statement on implant-specific precautions has been added.
- F. This recommendation was downgraded the maximum amount per AAOS methodology (from a Strong recommendation to a Limited option) due to imprecision of evidence. The presented statement reflects the available evidence and has been stated as an option for consideration rather than a recommendation.
- G. Thank you.

Reviewer #10, Nicolas Noiseux, M.D., MS, FRCSC, 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.
10	Nicolas Noiseux, M.D., MS, FRCSC, FAAOS	American Academy of Orthopaedic Surgeons, Key Informants Panel	<p>A. Recommendation #12 (summary: lines 267-270, full: lines 1521-1572) Cruciate Retaining Arthroplasty</p> <p>TKAs are no longer only CR or PS. The alternative to CR should perhaps be a group including: CS (cruciate sacrificing) which is not always PS cam-and-post style; and/or more modern bearings such as ultra-congruent, medial-stabilized, pivoting, asymmetric medial-lateral, etc.</p> <p>The caveat or difficulty being that some of these modern bearings are usable in a CR or CS fashion.</p> <p>Overall, it is rather dated to discuss TKAs as only CR or PS.</p> <p>B. As above, TKAs are no longer only CR or PS. Recommendation #12 (Cruciate Retaining Arthroplasty) should include some acknowledgement of modern bearings that are different than both CR or traditional PS, some of which have published data detailing better outcomes/PROs such as forgotten joint score.</p>

Workgroup Response to Reviewer #10

Dear Nicolas Noiseux, M.D., MS, FRCSC, FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 comment. The Future Research statement has been modified.
- B. Thank you for your comment. The Future Research statement has been modified.

Reviewer #11, Eric Stiefel, M.D., 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.
11	Eric Stiefel, M.D., FAAOS	Arthroscopy Association of North America	A. The Guidelines consider all appropriate topics. The literature review is comprehensive. The conclusions are clearly supported by the narratives provided. Excellent review.

Workgroup Response to Reviewer #11

Dear Eric Stiefel, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 #12, James Barber, M.D., 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.
12	James Barber, M.D., FAAOS	American Academy of Orthopaedic Surgeons, Board of Councilors	<p>A. I have concerns about recommendation for navigation vs robotics, and for peripheral nerve block vs periarticular infiltration. I have made my comments in the additional commentary section below.</p> <p>B. regarding NAVIGATION: As a disclaimer, I use navigation for my TKRs. I began using it after approximately 5 years of practice and have used it for approximately 15 years. I have plenty of evidence clearly now outside the statute of limitations that navigation has reduced my outliers mostly in tibial tray alignment. I am low volume, and navigation has greatly improved my accuracy in tibial tray alignment. The guideline as written will likely result in 3rd party payors or my hospital refusing to allow me to continue to use navigation. The purpose of navigation is to reduce outliers. Ironically, under the robotics section, it is written as ""may use"" because it may reduce outliers. Both navigation and robotics reduce outliers, and I think the navigation recommendation should be changed to reflect this. I believe the low-volume TKR surgeon will read this CPG to recommend robotics because of the lower risk of outliers, without long term evidence of improvement, whereas navigation is presented in a negative light because of the lack of long term evidence. Can't have it both ways.</p> <p>C. Regarding peripheral nerve blocks and local infiltration, shouldn't we choose one or the other? Am I to interpret this CPG that we should do both? I am concerned about anesthetic toxicity and a lack of efficacy where local anesthetic time of effectiveness is less than the time of effectiveness of the block.</p>

Workgroup Response to Reviewer #12

Dear James Barber, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee Evidence-Based Clinical Practice Guideline. We will address your comments by guideline section in the order that you listed them.

- A. No comment.
- B. Thank you for your comment. We've modified the Benefits/Harms statement to reflect the potential benefit of navigation.
- C. Thank you for your comment. We've restructured the recommendations for clarity.

Reviewer #13, Richard Valdesuso, M.D., 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.
13	Richard Valdesuso, M.D., FAAOS	AIM Health Specialty	<p>A. UNICOMPARTMENTAL VS. TOTAL KNEE ARHTROPLASTY We believe the recommendation should be downgraded to Limited because of the higher revision rates and added costs which have not been included in the overall cost effectiveness of this procedure.</p> <p>B. RISK FACTORS: BODY MASS INDEX (BMI) We believe the recommendation should come with strong suggestion to surgeons to offer patients opportunity to participate in a weight reduction program to mitigate risk of SSI. This is a modifiable risk factor that should be part of the shared decision making process.</p> <p>C. RISK FACTORS: DIABETES/HYPERGLYCEMIA We believe there is a typo in the statement “Optimization of perioperative glucose control (<126mg/dl) after total knee arthroplasty should be attempted in diabetic and non-diabetic patients with HgbA1C <6.5...” in that it should read > 6.5 not < 6.5.</p> <p>D. RISK FACTORS: DIABETES/HYPERGLYCEMIA We believe the recommendation should come with strong suggestion to surgeons to offer patients opportunity to lower elevated Hgb A1C prior to surgery to mitigate risk of complications. This is a modifiable risk factor that should be part of the shared decision making process.</p> <p>E. ROBOTICS IN TOTAL KNEE ARTHROPLASTY & ROBOTICS IN UNICOMPARTMENTAL KNEE ARTHROPLASTY We believe there is a typo in the rationale section under the Strength of Evidence where it is listed as “high” but in the summary section it is listed as “low”. We believe the correct word is “low”</p> <p>F. ROBOTICS IN TOTAL KNEE ARTHROPLASTY & ROBOTICS IN UNICOMPARTMENTAL KNEE ARTHROPLASTY</p>

			<p>We also believe the recommendation should be “consensus” and not “limited”. There is no reliable evidence to support its use especially in light of significant conflict of interests by the primary authors of many of the studies. There are also substantial additional costs associated with this technology as compared to conventional methods.</p> <p>G. ROBOTICS IN TOTAL KNEE ARTHROPLASTY & ROBOTICS IN UNICOMPARTMENTAL KNEE ARTHROPLASTY Under Benefits/ Harms of Implementation we believe the message should be similar to what is under the section, Patient Specific Technology, i.e., robotic navigation may be useful for the rare circumstances when intramedullary instrumentation cannot be utilized. In addition, radiation from required preop CT scan is a potential harm when using robotic navigation. Robotic navigation also has a very steep learning curve.</p> <p>H. ROBOTICS IN TOTAL KNEE ARTHROPLASTY & ROBOTICS IN UNICOMPARTMENTAL KNEE ARTHROPLASTY Under Outcome Importance we believe suggesting the recommendation is made because of “growing popularity” of robotics assisted surgery for TKA has no place in an evidence based document.</p> <p>I ROBOTICS IN TOTAL KNEE ARTHROPLASTY & ROBOTICS IN UNICOMPARTMENTAL KNEE ARTHROPLASTY Suggest modeling the language similar to that used for patient specific instrumentation (would argue that the evidence is no better for robotic, but the AAOS PSI recommendation is much stronger) – perhaps something like “the committee recognizes that there may be unique situations where the technology is useful but evidence is lacking” and/or “randomized trials documenting superior efficacy and /or safety over conventional methods are needed to establish whether robotic assisted arthroplasty offers net benefit to patients”</p> <p>J. The additional reviewers of this guideline besides myself and on behalf of AIM Specialty Health include: Dr. Chris Buckle (Radiology) Dr. Kit Song (Orthopedics) Dr. Jennifer Marek (Radiology)</p>
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Workgroup Response to Reviewer #13

Dear Richard Valdesuso, M.D., FAAOS,

Thank you for your expert review of the Surgical Management of Osteoarthritis of the Knee 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 comment. Per AAOS methodology, the work group downgraded this recommendation from Strong to Moderate using the GRADE Evidence-to-Decision framework.
- B. This PICO question addressed the impact of BMI on outcomes to serve as a shared decision making tool. The efficacy of weight loss programs was outside of the scope of this PICO question.
- C. Thank you for your comment. This recommendation has been modified.
- D. The recommendation and evidence support the statement that optimization should be attempted in patients with hyperglycemia.
- E. The supporting evidence for this recommendation was high strength; however, the workgroup downgraded the recommendation to limited due to an imprecision of evidence. The typographical error has been corrected
- F. AAOS methods allow for a single downgrade; however, in the instance of an imprecision of evidence the work group may downgrade a recommendation twice. This recommendation has been downgraded the maximum allowable amount (i.e., from Strong to Limited).
- G. Thank you for your comment. The rationale has been modified.
- H. Thank you for your comment. The statement was not meant to indicate that the growing popularity influenced the recommendation outcome. It has been modified for clarity.
- I. Thank you for your comment. We've strengthened the Future Research statement's call for additional RCTs on this topic.
- J. Thank you all for your participation in this guideline's development.

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?