Peer Review and Public Commentary Report

Clinical Practice Guideline on the *Management of Osteoarthritis of the Hip*

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Management of Osteoarthritis of the Hip Evidence-Based Guideline

Overview of Peer Review and Public Commentary

The reviews and comments related to this clinical practice guideline are reprinted in this document and posted on the AAOS website. All peer 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.

Peer Review

AAOS contacted 17 organizations with content expertise to review a draft of the clinical practice guideline during the one month peer review period in October 2016.

- Seven 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.
- The work group considered all comments and made some modifications when they were consistent with the evidence.
- The largest modification to the guideline was the removal of the "Limited" recommendation on femoroacetabular impingement syndrome (FAI). For more information, please see the peer review responses on pages 28-29 and the work group's response on page 30.

Public Comment

The new draft was then circulated for a 30-day public comment period ending on February 3rd, 2017.

- AAOS received two comments, both on behalf of individuals.
- If warranted and based on evidence, the guideline draft s modified by the work group members in response to the public comments.

Peer Reviewer Key

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

Table 1. Peer Reviewer Key

Reviewer Number	Name of Reviewer (Required)	What is the name of the society that you are representing?
1	Catherine C. Roberts, M.D.	American College of Radiology
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists
4	Richard D Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association
6	James Slover, MD, MS	Hip Society
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine

Peer Reviewer Demographics

Reviewer #	Name of Reviewer (Required)	Primary Specialty	Work Setting	What is the name of the society that you are representing?
1	Catherine C. Roberts, M.D.	Musculoskeletal Radiology	Academic Practice	American College of Radiology
2	Ernest L Sink, MD	Pediatric Orthopaedics	Academic Practice	Pediatric Orthopaedic Society of North America
3	Richard W. Rosenquist, MD	Anesthesiology	Academic Practice	American Society of Anesthesiologists
4	Richard D Zorowitz, MD	Physical Medicine and Rehabilitation	Clinical Hospital	American Academy of Physical Medicine and Rehabilitation
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	Rehab/Prosthetics and Orthotics	University and Clinical Research Center	American Physical Therapy Association
6	James Slover, MD, MS	Adult Hip	Academic Practice	Hip Society
7	Scott C. Faucett, MD, MS	Sports Medicine	Private Group or Practice	American Orthopaedic Society for Sports Medicine

Peer Reviewers' Disclosure Information

All peer reviewers are required to disclose any possible conflicts that would bias their review via a series of 10 questions (see Table 2). For any positive responses to the questions (i.e. "Yes"), the reviewer was asked to provide details on their possible conflict.

Table 2. 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 3. Peer Reviewer's Disclosure Information

Reviewer #	Name of Reviewer (Required)	Please list your AAOS Customer # below (Required):	A	B	C	D	E	F	G	H	I	J
1	Catherine C. Roberts, M.D.		No	No	No	No	No	No	No	No	Yes	No
2	Ernest L Sink, MD	154153										
3	Richard W. Rosenquist, MD		No	No	No	No	No	No	No	No	Yes	No
4	Richard D Zorowitz, MD		No	No	No	No	No	No	No	No	No	No
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA		No	No	No	No	No	No	No	No	No	Yes
6	James Slover, MD, MS	326236										
7	Scott C. Faucett, MD, MS	671627										

Peer Reviewer Responses to Structured Peer Review Form Questions

All peer reviewers are asked 17 structured peer 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. Peer Reviewer Responses to Structured Peer Review Questions 1-4

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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. The guideline development group includes individuals from all the relevant professional groups.
1	Catherine C. Roberts, M.D.	American College of Radiology	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America	Agree	Agree	Agree	Agree
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Disagree
4	Richard D Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Disagree
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association	Strongly Agree	Strongly Agree	Strongly Agree	Agree
6	James Slover, MD, MS	Hip Society	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine	Strongly Agree	Agree	Strongly Agree	Strongly Agree

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

Reviewer #	Name of Reviewer (Required)	What is the name of the society that you are representing?	5. There is an explicit link between the recommendations and the supporting evidence.	6. Given the nature of the topic and the data, all clinically important outcomes are considered.	7. The patients to whom this guideline is meant to apply are specifically described.	8. The criteria used to select articles for inclusion are appropriate.
1	Catherine C. Roberts, M.D.	American College of Radiology	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America	Agree	Neutral	Neutral	Neutral
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Richard D Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	James Slover, MD, MS	Hip Society	Agree	Strongly Agree	Strongly Agree	Strongly Agree
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine	Agree	Neutral	Agree	Neutral

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

Reviewer #	Name of Reviewer (Required)	What is the name of the society that you are representing?	9. The reasons why some studies were excluded are clearly described.	10. All important studies that met the article inclusion criteria are included.	11. The validity of the studies is appropriately appraised.	12. The methods are described in such a way as to be reproducible.
1	Catherine C. Roberts, M.D.	American College of Radiology	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America	Strongly Agree	Neutral	Agree	Strongly Agree
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Richard D Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association	Strongly Agree	Strongly Agree	Agree	Strongly Agree
6	James Slover, MD, MS	Hip Society	Agree	Strongly Agree	Strongly Agree	Strongly Agree
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine	Agree	Agree	Strongly Agree	Strongly Agree

Table 8. Peer Reviewer Responses to Structured Peer Review Questions 13-17

Reviewer #	Name of Reviewer (Required)	What is the name of the society that you are representing?	13. The statistical methods are appropriate to the material and the objectives of this guideline.	14. Important parameters (e.g., setting, study population, study design) that could affect study results are systematically addressed.	15. Health benefits, side effects, and risks are adequately addressed.	16. The writing style is appropriate for health care professionals.	17. The grades assigned to each recommendation are appropriate.
1	Catherine C. Roberts, M.D.	American College of Radiology	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America	Neutral	Neutral	Agree	Agree	Neutral
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
4	Richard D Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation	Strongly Agree	Strongly Agree	Agree	Strongly Agree	Strongly Agree
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	James Slover, MD, MS	Hip Society	Strongly Agree	Strongly Agree	Agree	Agree	Strongly Agree
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine	Strongly Agree	Strongly Agree	Strongly Agree	Agree	Agree

Peer Reviewers' Recommendation for Use of this Guideline in Clinical Practice

Would you recommend these guidelines for use in clinical practice?

Reviewer #	Name of Reviewer (Required)	What is the name of the society that you are representing?	Would you recommend these guidelines for use in clinical practice? (Required)
1	Catherine C. Roberts, MD	American College of Radiology	Strongly Recommend
2	Ernest L Sink, MD	Pediatric Orthopaedic Society of North America	Recommend
3	Richard W. Rosenquist, MD	American Society of Anesthesiologists	Strongly Recommend
4	Richard D. Zorowitz, MD	American Academy of Physical Medicine and Rehabilitation	Strongly Recommend
5	Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA	American Physical Therapy Association	Strongly Recommend
6	James Slover, MD, MS	Hip Society	Recommend
7	Scott C. Faucett, MD, MS	American Orthopaedic Society for Sports Medicine	Recommend

Peer Reviewer Detailed Responses

Reviewer #1, Catherine C. Roberts, MD

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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	Catherine Roberts	American College of Radiology	This guideline is comprehensive and clearly written. Minor comments are as follows: A. Page 712, Line 2789: Change "ip" to "hip" B. Page 699, Line 2366: Should the IA Imaging row be removed from the table if the search results are not part of the final document?

Workgroup Response

Dear Dr. Catherine Roberts,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. This has been corrected.
B. The goal of including all of the original PICO questions in the Appendix is to be transparent of what questions were asked, regardless of if we found evidence to formulate a recommendation.

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #2, Ernest L. Sink, MD

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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	Ernest Sink	Pediatric Orthopaedic Society of North America	A. I think there could be better use of MCID criteria. For example in the age-adverse events in THA patients, the use of change in MCID pre to post op should be utilized. B. Also in the age section one of the studies utilized was 20-30 years ago which may not be relevant to current and future use of perioperative pathways. C. The comparison of age studies had random age cutoffs with a difference of 1.49 in the Oxford score. This appears to have a small effect. D. The FAI discussion appears to be an add-on subject. It is relevant in the discussion of hip OA but so is dysplasia (maybe more causality) and this is not discussed**.** E. With regards to the approach exposure recommendations, the strength of recommendation appears high without randomized studies and longer term follow up.

Workgroup Response

Dear Dr. Ernest Sink,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. Your point is well-taken. Unfortunately, the varying types of data that was found within the prognostic analysis prohibited us for performing a proper meta-analysis, in which we could have effectively incorporated the MCID statistic to see if age is not only a statistically significant risk factor, but also crosses the clinically important threshold.

B. The 1990 cutoff was selected by the Work Group ahead of time to allow a contemporary window (<26 years) and produce enough data to make an optimal recommendation. This was a judgment call and may have compromised analysis on more rapidly changing practice trends.

C. Thank you for pointing this out.

D. Dysplasia is discussed in the "Consensus" section. With the studies that met our inclusion criteria there was noted to be an "absence of reliable" data on this topic to make a weak recommendation. Nevertheless the Work Group determined that PAO may be useful in the treatment of this disorder, and that a consensus statement was warranted.

E. All studies used to form recommendations in AAOS clinical practice guidelines undergo a standardized quality evaluation based on modified GRADE criteria. The various criteria assessed to determine the quality of the included articles can be found under each recommendation's "Quality Evaluation" table.

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #3, Richard W. Rosenquist, MD

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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:
3	Richard Rosenquist	American Society of Anesthesiologists	A. Question #1 The guideline objectives are straightforward, appropriate and well-described. B. Question #2 The health questions covered by the guideline are clearly described and are relevant to daily practice in the care of patients with osteoarthritis of the hip. C. Question #3 The target audience is clearly outlined and incorporates all of the primary and specialty care groups involved in the care of the target patient population. D. Question #4 asks if the guideline development group includes individuals from all of the relevant professional groups - since this data was removed for this review, I cannot comment on this accurately and must therefore disagree. The reviewer document does not even include the generic names of the specialties. This is problematic as a reviewer and makes it impossible to answer this question. E. Question #5 The guideline authors have done a very good job of linking the available evidence to the recommendations for each clinical question. In the absence of strong data, they have made the source and the rationale for the consensus recommendation explicit. F. Question #6 All of the important clinical outcomes have been taken into consideration in the development of this guideline. G. Question #7 The patient population for whom this guideline is intended is clearly described. H. Question #8 The inclusion and exclusion criteria used to select articles for this guideline are appropriate and provide a sound foundation for developing a high quality, contemporary, evidence based guideline. I. Question #9 The rationale for excluding studies in the guideline is clearly set forth. J. Question #10 The guideline includes the relevant studies for each of the topics. K. Question #11 The process of determining validity of the studies is appropriate and uniformly applied. L. Question #12 The methods are clearly outlined and describe a reproducible process. M. Question #13 The statistical methods are valid.

			N. Question #14 The various factors within the articles used to develop the guideline have been thoroughly and consistently assessed with regard to factors that could have impacted the published outcome and subsequent conclusions for the manuscript as well as the recommendation contained in the guideline are clearly addressed. O. Question #15 There are clear descriptions of the potential health benefits, side effects and risks for each of the recommendations. P. Question #16 The writing style is professional and easy to read and should foster widespread acceptance and use. Q. Question #17 The grading paradigm is applied consistently and the grades applied to each of the recommendations is appropriate. There guideline clearly differentiates between things that are known and things we might believe, but do not have clear evidence to support. The summary of recommendations is clear, concise and very well written.

Workgroup Response

Dear Dr. Richard W. Rosenquist,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A-C. Thank you

D. We apologize for this oversight. You are correct, it is AAOS procedure to exclude the names of the guideline work group members during peer review and public comment to prevent reviewer bias. This question will be removed for future comment periods.

E-Q. Thank you

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #4, Richard D. Zorowitz, MD

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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	Richard Zorowitz	American Academy of Physical Medicine and Rehabilitation	This guideline meets most of the standards of the AGREE II. However, the following areas need to be addressed: - A. List the guideline development group to determine that it includes individuals from all relevant professional groups – B. Describe facilitators and barriers to the guideline's application – C. Provide monitoring and/or auditing criteria.

Workgroup Response

Dear Dr. Richard D. Zorowitz,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. We apologize for this oversight. You are correct, it is AAOS procedure to exclude the names of the guideline work group members during peer review and public comment to prevent reviewer bias. This question will be removed for future comment periods.
B. This is a great suggestion. A Facilitators and Barriers section has been added to the document.
C. Thank you for your suggestion. Monitoring and auditing criteria are addressed by AAOS performance measures.

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #5, Maura Daly Iversen, PT, DPT, SD, MPH, FNAP, FAPTA

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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:
5	Maura Iversen	American Physical Therapy Association	A. 632-634 Suggest including "rehabilitation management" B. 682-683: Composition of review team. The guideline clearly specifies that the team consisted to physicians and surgeons who formulated the PICO questions and completed the comprehensive stages of CPG development. To enhance the comprehensiveness of the CPG health professionals could have been included in the PICO question development and identification of search terms. C. 683-712: This robust approach to the CPG development with respect to the iterative, standard process is a major strength of the CPG D. 698 and APPENDIX III: PICO 15 correct grammar. Presently," In a patient with symptomatic hip OA does self-management programs, do their outcomes improve as compared to patients with no treatment or usual care?", change to, "Among patients with symptomatic hip OA who participate in a self-management program, do their outcomes improve as compared to patients with no treatment or usual care?" E. 721-735: A strength of this CPG is the focus on recent literature (1990-present). A comprehensive list of inclusion criteria are identified in the document. F. 743-745: Excluding controlled trials that did not account for baseline differences among groups or did not randomly assign patients to group, is a strength of this CPG G. 772-780: The criteria established for no recommendation from the synthesis of data are clear and reasonable. H. 782-790: Use of MCID/MID in the evaluation process of the study data enhances the clinical utility of the CPG I. 796-780: Perhaps expanding database searches to include PsychInfo and PEDro may have led to the identification of more research in the rehabilitation/self-management domain. J. 810: The search strategy for PICO 13-15: Does appear in APPENDIX V. Thus, a judgment to the completeness of this search is difficult to make K. APPENDIX IV: The search strategy figure could be enhanced by listing the reasons for exclusion from the guideline and number of articles associated with

			these exclusions. Though for each PICO question posed this data is provided in the narrative summary for that section. L. 812-863: Assessment of Study Quality: While it appears that the questions used to assess study quality are similar in content to those in included the published CONSORT and STROBE frameworks, the team could include a statement about whether components of these frameworks were used for assessing study quality. Additionally, it is unclear whether members of the review team independently assessed study quality and then met to discuss discrepancies. M. 886-899 Definitions established to make recommendations and statements about clinical relevance are appropriate N. 911-940: Statistical analysis and meta-analytic approaches were appropriate. A strength of the CPG is the inclusion of cost/benefit analyses, when possible. The methodology for determining cost/benefit were appropriate and the group used blinding of the team to cost data to reduce bias. O. PICO14: The question posed is, "In patients with symptomatic hip OA, scheduled for or have undergone total hip replacement, does perioperative/postoperative physical therapy lead to better outcomes compared with patients who do not undergo PT or undergo comparison PTs?" P. In the summary statement, it might be beneficial to discuss the tremendous change in LOS following THR from 1990 to present and the potential impact that change has on the evaluation of peri-operative, but more importantly, post-operative PT.

Workgroup Response

Dear Dr. Maura Daly Iversen,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. Thank you for your suggestion.
B. Thank you for your suggestion. The guideline development group is blinded to prevent bias during peer review; however, the work group was multidisciplinary, including orthopaedic surgeons, radiologists, and physical therapists.
C. Thank You
D. PICO question language was revised based on reviewer's comment.

E-H. Thank you

I. Thank you for your suggestion. It is possible that more literature may have been found on this topic via the recommended journals; however, the strict inclusion criteria of this guideline may have added to the quantity of articles that would have to be reviewed, increasing the stress on staff resources and extending the development timeline, without adding much quality to the final recommendations.

J. The physical therapy literature is captured via the overall search. After the overall search has been conducted AAOS staff reviewed the search results for articles relevant to PICO 13-15.

K. The reasons for exclusion for each excluded article can be found in Appendix X under "Excluded Articles".

L. AAOS staff employs modified GRADE criteria when evaluating the quality of each study type. This has been clarified in the document.

M-N. Thank You

O. Thank you.

P. Thank you for your suggestion. During dissemination of this guideline we will work with our physical therapy colleagues in an attempt to address the historical changes as mentioned in your comment.

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #6, James Slover, MD, MS

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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:
6	James Slover	Hip Society	Comments: A. Line 649 - Please give consideration to briefly mentioning shared decision making rather than only informed decision making as surgeons may feel an individual patient's profile makes surgery too high risk. B. Line 1096 - Why are the cannibus / diabetes and adverse events / MRSA etc. included in this table with no studies? Perhaps some brief description in legend would help. C. Line 1212 - Regarding part (b), there is risk of interpreting this data such that age does not need to be considered when assessing risks of THA. D. Line 1252 - A potential harm is that tobacco cessation will not be as encouraged as much as it should be prior to THA. E. Line 1326 - The term Risk Assessment Tool is confusing to me in this section. Many of the studies you cite, use WOMAC, SF-36 and EQ-5D instruments, which measure function and quality of life, but not necessarily risk. They imply that patients with lower function or quality of life pre operatively may expect lower function or quality of life after surgery, but they don't asses risks of complications. Also, some studies assess impact comorbidities such as diabetes on complications, but the guideline was not able to have a specific recommendation on those individual comorbidities. F. Line 1350 - I would adding a statement/phrase that states modifiable risk factors that have been shown to positively impact outcomes, as opposed to risk factors that are modifiable, but changing them does not improve outcomes. G. Line 1406 - Why no mention of potential future research on NSAIDs, such as long - term effects or other agents commonly used? H. Line 1510 - Infection is mentioned as a potential harm with these injections, but there is some recent evidence that these infections may pose longer term risk if THA is later done as well. This is causing many to move away from these injections, especially in those with severe arthritis and I am concerned this guideline goes against that. Is there consideration to mention that here? I. Line 2014: - Might consider commenting on definitive impact on blood transfusions, which have many known negatives and high cost, as well.

			J. Line 2083 - Although there may not be studies that met the criteria of the review, there are many studies on benefits of neuroaxial anesthesia and the wording of the recommendation may decrease use of this technique. K. Line 2160 - Why no further research needed?

Workgroup Response

Dear Dr. James Slover,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. This sentence has been revised to read, "Once the patient and/or their decision surrogate have been informed of available therapies and have discussed these options with the patient's physician, an informed and shared decision can be made."
B. This is a very good suggestion. The explanation is that no evidence was discovered to answer these a priori PICO questions. This explanation will be added to the legend of the chart.
C. The work group acknowledges your concerns; however, the interpretation that age is a possible risk factor is clearly expressed via the recommendation language.
D. Lines 1248-1250 note the priority of engaging patients in the health benefits of smoking cessation. However, the work group strongly believes that the potential harm of not having access to THR because of the patient's unwillingness to stop smoking must to be mentioned in the possible harms section.
E. Your comment is well-taken. The reviewer brings up an important point regarding language and illustrates the challenge of searching for a variety of studies on this topic using language that has changed over the years. With the modern concerns in hip and knee arthroplasty regarding risk mitigation, the term "risk assessment tool" has different meaning than it may have in years past. That being said, the original PICO question, resulting literature search, and framework for this recommendation was based off of the terms "risk assessment tool" and the articles used for the recommendation were defined in the journals as "risk-assessment tools". The work group has added the following statement to the future research section, "Future studies should attempt to better delineate between clinical outcome tools and risk assessment tools which incorporate comorbidities such as diabetes, tobacco use, etc."
F. Thank you for your suggestion.
G. The work group has added the following statement to the future research section, "Future studies performed assessing the efficacy and potential complications of long-term use of NSAIDs for the treatment of symptomatic hip osteoarthritis may be of benefit."
H. The work group has refined the harms statement to read, "Risks of corticosteroid IA injection include bleeding, potential injury to adjacent structures, transient pain, allergic reaction, and infection before and after total hip arthroplasty, post-injection pain flare and hyperglycemia."
I. The work group has refined the harms statement to read, "Randomized, prospective trials comparing IV TXA, topical TXA, and oral TXA are warranted to specifically assess dosing, technique and timing of administration, uniform measures of perioperative blood loss, cost, including impact on blood transfusion, and contraindications."
J. With the limited comparative evidence the statement cannot definitively ascribe specific harms to either modality, particularly when deciding which modality to use.
K. The work group agrees that a future research section is warranted. The following statement has been added to the future research section: "Future randomized clinical trials and longitudinal cohort studies are warranted to better investigate surgical and nonsurgical treatment techniques for FAI treatment, as well as to assess the natural history of symptomatic and asymptomatic FAI patients with or without treatment."

Respectfully,

2016 OA Hip Guideline Work Group

Reviewer #7, Scott C. Faucett, MD, MS

Reviewer #	Name of Reviewer (Required)	What is the name of the society that 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:
7	Scott Faucett	American Orthopaedic Society for Sports Medicine	A. The language used for the consensus statements is too variable. In some statements with moderate evidence the term "could" is used (i.e. Tranexamic Acid) and in some statements such as Tobacco use with limited evidence the statement is more strongly worded and does not use the language described in the methods (might be). B. It is not clear what the point was of including symptomatic FAI in this CPG. In my opinion and on behalf of AOSSM it does not apply. Even in the selected studies the indications for surgery included Tonnis grade <1 which is not osteoarthritis. There are no studies to date showing a reduced risk of osteoarthritis after hip arthroscopy. The evidence is quite strong that symptomatic FAI is improved with hip arthroscopy with Krych's high quality study and numerous level IV and some III studies. As the CPG authors recognize, there is no study comparing non-operative treatment of FAI to operative treatment and the study alone would likely be questioned due to the inherent equipoise of any patient willing to be randomized to non-operative treatment for this condition. I think if the authors wanted to answer a question about the use of hip arthroscopy, a valuable addition to the CPG would be to cite the 2 studies on the use of hip arthroscopy in the setting of hip OA show limited evidence that does not support its use. Larson CM, Giveans MR, Taylor M. Does arthroscopic FAI correction improve function with radiographic arthritis? Clin Orthop Relat Res. 2011;469(6):1667-1676. Skendzel JG, Philippon MJ, Briggs KK, Goljan P. The effect of joint space on midterm outcomes after arthroscopic hip surgery for femoroacetabular impingement. Am J Sports Med. 2014;42(5):1127-1133. C. In addition, the first paragraph of the Rationale statement for FAI does not make sense: "Only four studies ... with symptomatic FAI reported better outcomes following PAO, femoral osteotomy, or hip arthroscopy." Of the four studies included none of them had PAO or femoral osteotomies performed to treat symptomatic FAI. These studies were comparing open hip dislocation and osteoplasty versus hip arthroscopy osteoplasty, not the use of PAO or femoral osteotomy. On behalf of the AOSSM I strongly believe this section should either be excluded from the CPG in its current state or modified to evaluate the studies on the use of hip arthroscopy in osteoarthritic patients.

			D. Other comments: The evidence seems very supportive for the use of tranexamic acid yet the authors only chose moderate evidence. E. The term mental health is too vague. Most of the studies looked at depression. The guideline should be more specific looking at depression rather than grouping these into all mental health disorders. F. Why did the authors not investigate bearing surface material, or head ball size, or implant fixation? These are all valuable questions to the stakeholders in hip osteoarthritis management.

Workgroup Response

Dear Dr. Scott C. Faucett,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. We will address your comments by guideline section in the order that you listed them.

A. Thank you for your comment. As a reminder, these are not consensus statements, rather they are evidence-based statements. The language template presented in the Methodology section is a guide for the work group members, not prescriptive. The work group carefully assembles the language for each recommendation based on the quality of the evidence, the directionality of the evidence findings, and thinking forward to usability of the guideline at the point of care.
B. After much discussion between the guideline work group chairs and the leaders of the AAOS Evidence-Based Quality and Value Committee regarding your concerns, we have found your comments to be valid and have made the decision to remove the FAI recommendation from this guideline, with the understanding that the AAOS will address this topic in a future hip preservation guideline.
C. See B.
D. The work group agrees with the reviewer that the first sentence is confusing. Our rationale was written with knowledge that we were assessing PAO, other open surgery (femoral osteotomy, surgical hip dislocation), and/or hip arthroscopy to treat FAI, but our rationale only discusses arthroscopy vs surgical hip dislocation. This sentence has been rewritten as follows: "Only four studies, 3 low quality… analysis of whether patients with symptomatic FAI reported better outcomes with open or arthroscopic hip surgery. Due to the heterogeneous study cohorts, varying study questions, differing……." Four studies, 3 low quality (Domb et al; Nepple et al; Zingg et al) and 1 high quality (Krych et al), met the strict criteria for inclusion in the analysis of whether patients with symptomatic FAI reported better outcomes with open or arthroscopic hip surgery."
E. You are correct that the evidence is in support of TXA; however, the strength of the recommendation is based on the quality of the evidence, which is also dependent on if each study is evaluating similar types of the same treatment. The literature discovered for the TXA recommendation was high and moderate quality but highly variable which limited the strength of the recommendation to "Moderate".
F. Your comment is noted. Since there were other risk factors discovered via the literature search (i.e. anxiety and psychosis), the recommendation language must remain as-is. The rationale does clarify the quantity of the articles identifying depression as a risk factor.
G. The scope of this CPG is to assess the management of hip OA in relationship to known treatment alternatives. Other than analysis of results using various surgical approaches to the hip in THR, the more technical aspects of THR were not thought to be appropriate for inclusion, but may be well suited for the accompanying appropriate use criteria (AUC).

Respectfully,

2016 OA Hip Guideline Work Group

Public Comment Responses

Public Commenter Key

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

Table 1. Public Commenter Key

Reviewer Number	Name of Reviewer (Required)
1	Christopher Bono, MD
2	Laith Farjo, MD

Public Commenter Demographics

Reviewer #	Name of Reviewer (Required)	Primary Specialty	Work Setting
1	Christopher Bono, MD	Adult Spine	Academic Practice
2	Laith Farjo, MD	Arthroscopy	Private Group or Practice

Public Commenters' Disclosure Information

All public commenters are required to disclose any possible conflicts that would bias their review via a series of 10 questions (see Table 2). For any positive responses to the questions (i.e. "Yes"), the reviewer was asked to provide details on their possible conflict.

Table 2. 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 3. Public Commenters' Disclosure Information

Reviewer #	Name of Reviewer (Required)	A	B	C	D	E	F	G	H	I	J
1	Christopher Bono, MD	No	No	No	No	No	No	No	No	No	No
2	Laith Farjo, MD	No	No	No	Yes - Arthrex	No	No	No	No	No	No

Public Comment Responses to Structured Peer Review Form Questions

All public commenters are asked 16 structured peer 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. Public Comment Responses to Structured Peer Review Questions 1-4

Commenter #	Name of Commenter (Required)	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	Christopher Bono, MD	Agree	Agree	Agree	Agree
2	Laith Farjo, MD	Strongly Agree	Strongly Agree	Strongly Agree	Agree

Table 6. Public Comment Responses to Structured Peer Review Questions 5-8

Commenter #	Name of Commenter (Required)	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	Christopher Bono, MD	Agree	Agree	Agree	Agree
2	Laith Farjo, MD	Neutral	Strongly Agree	Strongly Agree	Strongly Agree

Table 7. Public Comment Responses to Structured Peer Review Questions 9-12

Commenter #	Name of Commenter (Required)	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	Christopher Bono, MD	Agree	Agree	Agree	Agree
2	Laith Farjo, MD	Disagree	Agree	Agree	Agree

Table 8. Public Comment Responses to Structured Peer Review Questions 13-17

Commenter #	Name of Commenter (Required)	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	Christopher Bono, MD	Agree	Agree	Agree	Agree
2	Laith Farjo, MD	Agree	Agree	Strongly Agree	Agree

Public Commenters' Recommendation for Use of this Guideline in Clinical Practice

Would you recommend these guidelines for use in clinical practice?

Commenter #	Name of Commenter (Required)	Would you recommend these guidelines for use in clinical practice? (Required)
1	Christopher Bono, MD	Recommend
2	Laith Farjo, MD	Recommend With Revisions - Revise or Eliminate FAI Recommendation

Public Comment Detailed Responses

Commenter #1, Christopher Bono, MD

Reviewer #	Name of Commenter (Required)	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	Christopher Bono, MD	The "Age as a Risk Factor" recommendation, a), is not in agreement with a recent JAAOS article about total joint replacement in the elderly (October 2016). Specifically, outcomes were thought not be inferior in the elderly in the JAAOS article. However, the CPG is accurate in that the individual studies cited in the article suggested that the outcomes of THA were lower in those >80 yo but not for TKA. The problem is that the JAAOS article lumped TKA and THA together, so that the conclusions were that the two procedures generally produced comparable outcomes in patients older than 80 yo. This is an issue for the JAAOS article, not the CPG, but may come across as an inconsistency when reviewed together.

Workgroup Response

Dear Dr. Christopher Bono,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. Your insight on the discrepancies between our guideline's findings and the findings suggested in the JAAOS article is very insightful and we will be prepared to address differences should the issue present itself.

Respectfully,

2016 OA Hip Guideline Work Group

Commenter #2, Laith Farjo, MD

Reviewer #	Name of Commenter (Required)	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	Laith Farjo, MD	Overall, I found the guidelines to be appropriate and well-thought out. However, the guidelines regarding FAI are grievously inadequate. You seriously could only find 3 articles on outcomes of FAI surgery? Also, the guideline states open or arthroscopic FAI treatment, whereas the articles referenced seem to imply you're looking for superiority of one vs. another. If you're going to set guidelines regarding FAI, then you must be complete - i.e. look at all modes of treatment of FAI, open vs. arthroscopic, repair vs. debridement, repair +/- osteochondroplasty etc. When you put out a consensus statement indicating "limited evidence to support", it gives insurers the opening to deny these procedures. I have been doing hip arthroscopy for 17 years and FAI surgery for more than 10, and I can definitely tell you I have saved hundreds of patients from hip arthroplasty as had been recommended to them by other surgeons.

Workgroup Response

Dear Dr. Laith Farjo,

Thank you for your expert review of the Clinical Practice Guideline on the Management of Osteoarthritis of the Hip. After much discussion between the guideline work group chairs and the leaders of the AAOS Evidence-Based Quality and Value Committee regarding the FAI recommendation, we have made the decision to remove the FAI recommendation from this guideline, with the understanding that the AAOS will address this topic in a future hip preservation guideline.

Respectfully,

2016 OA Hip Guideline Work Group

Appendix A – Structured Peer Review/Public Comment Form

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

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?*

- Strongly Recommend
- Recommend
- Would Not Recommend
- Unsure

Additional Comments: