



AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS CLINICAL PRACTICE GUIDELINE ON

The Diagnosis of Periprosthetic Joint Infections of the Hip and Knee

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Summary of Recommendations

The following is a summary of the recommendations in the AAOS' clinical practice guideline, The Diagnosis of Periprosthetic Joint Infections of the Hip and Knee. This summary does not contain rationales that explain how and why these recommendations were developed nor does it contain the evidence supporting these recommendations. All readers of this summary are strongly encouraged to consult the full guideline and evidence report for this information. We are confident that those who read the full guideline and evidence report will note that the recommendations were developed using systematic evidence-based processes designed to combat bias, enhance transparency, and promote reproducibility.

This summary of recommendations is not intended to stand alone. Clinical decisions should be made in light of all circumstances presented by the patient. Procedures applicable to the individual patient rely on mutual communication between patient, physician, and other healthcare practitioners.

Disclosure: One or more of the authors received payments or services, either directly or indirectly (i.e., via his or her institution), from a third party in support of an aspect of this work. In addition, one or more of the authors, or his or her institution, has had a financial relationship, in the thirty-six months prior to submission of this work, with an entity in the biomedical arena that could be perceived to influence or have the potential to influence what is written in this work. No author has had any other relationships, or has engaged in any other activities, that could be perceived to influence or have the potential to influence what is written in this work. The complete **Disclosures of Potential Conflicts of Interest** submitted by authors are always provided with the online version of the article.

Disclaimer: This clinical guideline was developed by an AAOS physician volunteer Work Group and is provided as an educational tool based on an assessment of the current scientific and clinical information and accepted approaches to treatment. It is not intended to be a fixed protocol as some patients may require more or less treatment. Patient care and treatment should always be based on a clinician's independent medical judgment given the individual clinical circumstances.

The complete AAOS guideline can be found at <http://www.aaos.org/research/guidelines/PJISummary.pdf>

1. In the absence of reliable evidence about risk stratification of patients with a potential periprosthetic joint infection, it is the opinion of the work group that testing strategies be planned according to whether there is a higher or lower probability that a patient has a hip or knee periprosthetic infection.

Strength of Recommendation: Consensus

Note: Please see page 17 of this document for a definition of “higher and lower probability”.

2. We recommend erythrocyte sedimentation rate and C-reactive protein testing for patients assessed for periprosthetic joint infection.

Strength of Recommendation: Strong

3. We recommend joint aspiration of patients being assessed for periprosthetic **knee** infections who have abnormal erythrocyte sedimentation rate **AND/OR** C-reactive protein results. We recommend that the aspirated fluid be sent for microbiologic culture, synovial fluid white blood cell count and differential.

Strength of Recommendation: Strong

4. We recommend a selective approach to aspiration of the **hip** based on the patient’s probability of periprosthetic joint infection and the results of the erythrocyte sedimentation rate (ESR) AND C-reactive protein (CRP). We recommend that the aspirated fluid be sent for microbiologic culture, synovial fluid white blood cell count and differential.

Selection of Patients for Hip Aspiration

Probability of Infection	ESR and CRP Results	Planned Reoperation Status	Recommended Test
Higher	+ + or + -	Planned or not planned	Aspiration
Lower	+ + or + -	Planned	Aspiration or frozen section
Lower	+ +	Not planned	Aspiration
Lower	+ -	Not planned	Please see Recommendation 6
Higher or Lower	- -	Planned or not planned	No further testing

Key for ESR and CRP results

+ + = ESR **and** CRP test results are abnormal
 + - = either **ESR or** CRP test result is abnormal
 - - = ESR **and** CRP test results are normal

Strength of Recommendation: Strong

5. We suggest a repeat **hip** aspiration when there is a discrepancy between the probability of periprosthetic joint infection and the initial aspiration culture result.

Strength of Recommendation: Moderate

6. In the absence of reliable evidence, it is the opinion of the work group that patients judged to be at lower probability for periprosthetic **hip** infection and without planned reoperation who have abnormal erythrocyte sedimentation rates **OR** abnormal C-reactive protein levels be re-evaluated within three months. We are unable to recommend specific diagnostic tests at the time of this follow-up.

Strength of Recommendation: Consensus

7. In the absence of reliable evidence, it is the opinion of the work group that a repeat **knee** aspiration be performed when there is a discrepancy between the probability of periprosthetic joint infection and the initial aspiration culture result.

Strength of Recommendation: Consensus

8. We suggest patients be off of antibiotics for a minimum of 2 weeks prior to obtaining intra-articular culture.

Strength of Recommendation: Moderate

9. Nuclear imaging (Labeled leukocyte imaging combined with bone or bone marrow imaging, FDG-PET imaging, Gallium imaging, or labeled leukocyte imaging) is an option in patients in whom diagnosis of periprosthetic joint infection has not been established and are not scheduled for reoperation.

Strength of Recommendation: Weak

10. We are unable to recommend for or against computed tomography (CT) or magnetic resonance imaging (MRI) as a diagnostic test for periprosthetic joint infection.

Strength of Recommendation: Inconclusive

11. We recommend against the use of intraoperative Gram stain to rule out periprosthetic joint infection.

Strength of Recommendation: Strong

12. We recommend the use of frozen sections of peri-implant tissues in patients who are undergoing reoperation for whom the diagnosis of periprosthetic joint infection has not been established or excluded.

Strength of Recommendation: Strong

13. We recommend that multiple cultures be obtained at the time of reoperation in patients being assessed for periprosthetic joint infection.

Strength of Recommendation: Strong

14. We recommend against initiating antibiotic treatment in patients with suspected periprosthetic joint infection until after cultures from the joint have been obtained.

Strength of Recommendation: Strong

15. We suggest that prophylactic preoperative antibiotics not be withheld in patients at lower probability for periprosthetic joint infection and those with an established diagnosis of periprosthetic joint infection who are undergoing reoperation.

Strength of Recommendation: Moderate