

Antibiotic Prophylaxis

Dentist Version

- [Infective Endocarditis](#)
- [Total Joint Replacement](#)

Antibiotic prophylaxis recommendations exist for two groups of patients:

- those with heart conditions that may predispose them to [infective endocarditis](#); and
- those who have a [total joint replacement](#) and may be at risk for developing hematogenous infections at the site of the prosthetic.

Prophylaxis Recommendations: Infective Endocarditis (IE)

With input from the ADA, the [American Heart Association \(AHA\)](#) released the current recommendations for the prevention of infective endocarditis in 2008.

The complete recommendations, including the recommended regimen, can be found in:

- [The Journal of the American Dental Association \(JADA\): Prevention of Infective Endocarditis: Guidelines from the American Heart Association](#)

The current recommendations recommend premedication for a smaller group of patients than previous versions. This change was based on a review of scientific evidence, which showed that the risk of adverse reactions to antibiotics outweigh the benefits of prophylaxis for most patients. Concern about the development of drug-resistant bacteria also was a factor.

Also, the data are mixed as to whether prophylactic antibiotics taken prior to a dental procedure prevent IE. The recommendations note that people who are at risk for IE are regularly exposed to oral flora during basic daily activities such as brushing or flossing, suggesting that IE is more likely to occur as a result of these everyday activities than from a dental procedure.

Patient selection

The current recommendations recommend use of preventive antibiotics prior to certain dental procedures for patients with:

- artificial heart valves
- a history of infective endocarditis
- a cardiac transplant that develops a heart valve problem
- the following congenital (present from birth) heart conditions:*

 - unrepaired or incompletely repaired cyanotic congenital heart disease, including those with palliative shunts and conduits
 - a completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure

- any repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or a prosthetic device

* Patients should check with their cardiologist if there is any question as to whether they fall into one of these categories.

Patients who took prophylactic antibiotics in the past but no longer need them include those with:

- mitral valve prolapse
- rheumatic heart disease
- bicuspid valve disease
- calcified aortic stenosis
- congenital (present from birth) heart conditions such as ventricular septal defect, atrial septal defect and hypertrophic cardiomyopathy

Dental procedures

Prophylaxis is recommended for all dental procedures that involve manipulation of gingival tissue or the periapical region of the teeth, or perforation of the oral mucosa.

Additional considerations about antibiotic prophylaxis

Sometimes patients forget to premedicate prior to their appointments. The recommendation is that the antibiotic be given before the procedure. This is important because it allows the antibiotic to reach adequate blood levels. However, the recommendations to prevent infective endocarditis state:

"If the dosage of antibiotic is inadvertently not administered before the procedure, the dosage may be administered up to two hours after the procedure."

Another concern that dentists have expressed involves patients who require prophylaxis but are already taking antibiotics for another condition. In these cases, the recommendations for infective endocarditis recommend that the dentist select an antibiotic from a different class than the one the patient is already taking. For example, if the patient is taking amoxicillin, the dentist should select clindamycin, azithromycin or clarithromycin for prophylaxis.

Additional resources

- [Infective Endocarditis: Legal sidebar](#) (PDF)
- [Infective Endocarditis: FAQ](#) (PDF)
- [American Heart Association downloadable wallet card](#) (available in English and Spanish)
- [IE guideline tables](#) (PDF) ADA Members only content
- [For the Dental Patient*: Antibiotics and Your Heart](#)

*For the Dental Patient is a JADA column that is geared toward patient education and intended to facilitate discussion between dentists and patients.

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Total Joint Replacement

In 2012, the American Dental Association and the American Academy of Orthopaedic Surgeons (AAOS) released the first co-developed evidence-based guideline on the Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures. The clinical practice guideline, with three recommendations, is based on a systematic review of the literature. The review found no direct evidence that dental procedures cause orthopaedic implant infections.

The following is a summary of the recommendations of the AAOS-ADA clinical practice guideline, Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures. 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 urged 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 see 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. Treatment decisions should be made in light of all circumstances presented by the patient. Treatments and procedures applicable to the individual patient rely on mutual communication between patient, physician, dentist and other healthcare practitioners.

The Guideline Recommendations:

1. The practitioner might consider discontinuing the practice of routinely prescribing prophylactic antibiotics for patients with hip and knee prosthetic joint implants undergoing dental procedures.

Strength of Recommendation: Limited

A Limited recommendation means the quality of the supporting evidence that exists is unconvincing, or that well-conducted studies show little clear advantage to one approach versus another.

Practitioners should be cautious in deciding whether to follow a recommendation classified as Limited, and should exercise judgment and be alert to emerging publications that report evidence. Patient preference should have a substantial influencing role.

2. We are unable to recommend for or against the use of topical oral antimicrobials in patients with prosthetic joint implants or other orthopaedic implants undergoing dental procedures.

Strength of Recommendation: Inconclusive

An Inconclusive recommendation means that there is a lack of compelling evidence resulting in an unclear balance between benefits and potential harm.

Practitioners should feel little constraint in deciding whether to follow a recommendation labeled as Inconclusive and should exercise judgment and be alert to future publications that clarify existing evidence for determining balance of benefits versus potential harm. Patient preference should have a substantial influencing role.

3. In the absence of reliable evidence linking poor oral health to prosthetic joint infection, it is the opinion of the work group that patients with prosthetic joint implants or other orthopaedic implants maintain appropriate oral hygiene.

Strength of Recommendation: Consensus

A Consensus recommendation means that expert opinion supports the guideline recommendation even though there is no available empirical evidence that meets the inclusion criteria.

Practitioners should be flexible in deciding whether to follow a recommendation classified as Consensus, although they may set boundaries on alternatives. Patient preference should have a substantial influencing role.

- [Full Guideline: *Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures*](#)
- [Executive Summary: *Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures*](#)
- [Commentary: An explanation of the Guideline development and results](#)
- [Shared Decision-Making Tool: An aid to help balance clinical information and treatment options with patient preferences](#)
- [Patient Education Page: Antibiotic Use in Dentistry](#)

Additional Resources

- [Combating Antibiotic Resistance](#)
- [Antibiotic Interference with Oral Contraceptives](#)

If you have any questions about these recommendations, please contact the ADA Division of Science via [e-mail](#). ADA members may also use the Association's toll-free number and ask for x2878.

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