

Distribution Information

AAE members may reprint this position statement for distribution to patients or referring dentists.

About This Document

This paper is designed to provide scientifically based guidance to clinicians regarding the use of antibiotics in endodontic treatment.

Thank you to the Special Committee on Antibiotic Use in Endodontics: Ashraf F. Fouad, Chair, B. Ellen Byrne, Anibal R. Diogenes, Christine M. Sedgley and Bruce Y. Cha.

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The guidance in this statement is not intended to substitute for a clinician's independent judgment in light of the conditions and needs of a specific patient.

Antibiotic Prophylaxis 2017 Update

AAE Quick Reference Guide

Endocarditis Prophylaxis Recommendations

These recommendations are taken from 2017 American Heart Association and American College of Cardiology focused update of the 2014 AHA/ADA Guideline for Management of Patients with Valvular Disease (1) and cited by the ADA (2).

Prophylaxis against infective endocarditis is reasonable before dental procedures that involve manipulation of gingival tissue, manipulation of the periapical region of teeth, or perforation of the oral mucosa in patients with the following:

In 2017, the AHA and American College of Cardiology (ACC) published a focused update (5) to their previous guidelines on the management of valvular heart disease. This reinforced their previous recommendations that AP is reasonable for the subset of patients at increased risk of developing IE and at high risk of experiencing adverse outcomes from IE (5). Their key recommendations were:

1. Prosthetic cardiac valves, including transcatheter-implanted prostheses and homografts.
2. Prosthetic material used for cardiac valve repair, such as annuloplasty rings and chords.
3. Previous IE.
4. Unrepaired cyanotic congenital heart disease or repaired congenital heart disease, with residual shunts or valvular regurgitation at the site of or adjacent to the site of a prosthetic patch or prosthetic device.
5. Cardiac transplant with valve regurgitation due to a structurally abnormal valve.

In 2017, the ADA reaffirmed the recommended regimen as follows.

Situation	Agent	Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medication	Ampicillin OR Cefazolin or ceftriaxone	2 g IM* or IV+ 1 g IM or IV	50 mg/kg IM or IV 50 mg/kg IM or IV
Allergic to penicillins or ampicillin—oral	Cephalexin $\phi\delta$ OR Clindamycin OR Azithromycin or clarithromycin	2 g 600 mg 500 mg	50 mg/kg 20 mg/kg 15 mg/kg
Allergic to penicillins or ampicillin and unable to take oral medication	Cefazolin or ceftriaxone δ OR Clindamycin	1 g IM or IV 600 mg IM or IV	50 mg/kg IM or IV 20 mg/kg IM or IV
*IM: Intramuscular +IV: Intravenous ϕ Or other first- or second-generation oral cephalosporin in equivalent adult or pediatric dosage. δ Cephalosporins should not be used in an individual with a history of anaphylaxis, angioedema, or urticaria with penicillins or ampicillin.			

The ADA and AHA have a downloadable wallet card available to providers at no cost to educate patients who may be at risk for IC. http://www.heart.org/idc/groups/heart-public/@wcm/@hcm/documents/downloadable/ucm_448472.pdf

Patients with Joint Replacement

The following recommendation is taken from the *ADA Chairside Guide* (© ADA 2015)

- In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection.
- In cases where antibiotics are deemed necessary, it is most appropriate that the orthopedic surgeon recommend the appropriate antibiotic regimen and when reasonable write the prescription

Additional Considerations

The practitioner and patient should consider possible clinical circumstances that may suggest the presence of a significant medical risk in providing dental care without antibiotic prophylaxis, as well as the known risks of frequent or widespread antibiotic use. As part of the evidence-based approach to care, this clinical recommendation should be integrated with the practitioner's professional judgment in consultation with the patient's physician, and the patient's needs and preferences.

- These considerations include, but are not limited to:
- Patients with previous late artificial joint infection
- Increased morbidity associated with joint surgery (wound drainage/hematoma)
- Patients undergoing treatment of severe and spreading oral infections (cellulitis)
- Patient with increased susceptibility for systemic infection
- Congenital or acquired immunodeficiency
- Patients on immunosuppressive medications
- Diabetics with poor glycemic control
- Patients with systemic immunocompromising disorders (e.g. rheumatoid arthritis, lupus erythematosus)
- Patient in whom extensive and invasive procedures are planned
- Prior to surgical procedures in patients at a significant risk for medication-related osteonecrosis of the jaw.

Special Circumstances

The 2007 AHA guidelines state that an antibiotic for prophylaxis should be administered in a single dose before the procedure (3,4). However, in the event that the dosage of antibiotic is inadvertently not administered before the procedure, it may be administered up to two hours after the procedure. For patients already receiving an antibiotic that is also recommended for IE prophylaxis, then a drug should be selected from a different class; for example, a patient already taking oral penicillin for other purposes may likely have in their oral cavity viridans group streptococci that are relatively resistant to beta-lactams.

In these situations, clindamycin, azithromycin or clarithromycin would be recommended for AP. Alternatively if possible, treatment should be delayed until at least 10 days after completion of antibiotic to allow re-establishment of usual oral flora. In situations where patients are receiving long-term parenteral antibiotic for IE, the treatment should be timed to occur 30 to 60 min after delivery of the parenteral antibiotic; it is considered that parenteral antimicrobial therapy is administered in such high doses that the high concentration would overcome any possible low-level resistance developed among oral flora (3,4).

APPENDIX C REFERENCES

1. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP, 3rd, Fleisher LA, et al. 2017 AHA/ACC Focused Update of the 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation* 2017
2. ADA. Antibiotic prophylaxis prior to dental procedures. *Oral Health Topics* 2017 [cited 31st March 2017]; Available from: <http://www.ada.org/en/member-center/oral-health-topics/antibiotic-prophylaxis>
3. Wilson W, Taubert KA, Gewitz M, Lockhart PB, Baddour LM, Levison M, et al. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *Circulation* 2007;116:1736-54.
4. Wilson W, Taubert KA, Gewitz M, Lockhart PB, Baddour LM, Levison M, et al. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *J Am Dent Assoc* 2008;139 Suppl:3S-24S.