

# Antibiotic Prophylaxis

## Quick Reference Guide

*Excerpted from recommendations with permission from the American Heart Association, the American Dental Association, and the American Academy of Orthopaedic Surgeons<sup>8</sup>*

Provided by the American Association of Endodontists. 10/97

### JOINT REPLACEMENT

Antibiotic prophylaxis is not indicated for dental patients with pins, plates, and screws, nor is it routinely indicated for most dental patients with total joint replacements. However, it is advisable to consider premedication in a small number of patients who may be at potential increased risk of hematogenous total joint infection.

#### Patients at Potential Increased Risk of Hematogenous Total Joint Infection

##### ***Immunocompromised/ immunosuppressed patients***

- Inflammatory arthropathies: rheumatoid arthritis, systemic lupus erythematosus
- Disease-, drug-, or radiation-induced immunosuppression

##### ***Other patients***

- Insulin-dependent (Type 1) diabetes
- First two years following joint placement
- Previous prosthetic joint infections
- Malnourishment
- Hemophilia

\*Prophylaxis is recommended for patients with high- and moderate-risk cardiac conditions.

†This includes restoration of decayed teeth (filling cavities) and replacement of missing teeth.

‡Clinical judgment may indicate antibiotic use in selected circumstances that may create significant bleeding.

## BACTERIAL ENDOCARDITIS

### Cardiac Conditions Associated with Endocarditis

#### ***Endocarditis Prophylaxis Recommended***

##### **High-risk category**

- Prosthetic cardiac valves, including bioprosthetic and homograft valves
- Previous bacterial endocarditis
- Complex cyanotic congenital heart disease (e.g., single ventricle states, transposition of the great arteries, tetralogy of Fallot)
- Surgically constructed systemic pulmonary shunts or conduits

##### **Moderate-risk category**

- Most other congenital cardiac malformations (other than above and below)
- Acquired valvar dysfunction (e.g., rheumatic heart disease)
- Hypertrophic cardiomyopathy
- Mitral valve prolapse with valvar regurgitation and/or thickened leaflets

#### ***Endocarditis Prophylaxis Not Recommended***

##### **Negligible-risk category**

##### **(no greater risk than the general population)**

- Isolated secundum atrial septal defect
- Surgical repair of atrial septal defect, ventricular septal defect, or patent ductus arteriosus (without residua beyond 6 months)
- Previous coronary artery bypass graft surgery
- Mitral valve prolapse without valvar regurgitation
- Physiologic, functional, or innocent heart murmurs
- Previous Kawasaki disease without valvar dysfunction
- Previous rheumatic fever without valvar dysfunction
- Cardiac pacemakers (intravascular and epicardial) and implanted defibrillators

### Dental Procedures and Endocarditis Prophylaxis

#### ***Endocarditis Prophylaxis Recommended\****

- Dental extractions
- Periodontal procedures including surgery, scaling and root planing, probing, and recall maintenance
- Dental implant placement and reimplantation of avulsed teeth
- Endodontic (root canal) instrumentation or surgery only beyond the apex
- Subgingival placement of antibiotic fibers or strips
- Initial placement of orthodontic bands but not brackets
- Intraligamentary local anesthetic injections
- Prophylactic cleaning of teeth or implants where bleeding is anticipated

#### ***Endocarditis Prophylaxis Not Recommended***

- Restorative dentistry<sup>†</sup> (operative and prosthodontic) with or without retraction cord<sup>‡</sup>
- Local anesthetic injections (nonintraaligamentary)
- Intracanal endodontic treatment; post placement and buildup
- Placement of rubber dams
- Postoperative suture removal
- Placement of removable prosthodontic or orthodontic appliances
- Taking of oral impressions
- Fluoride treatments
- Taking of oral radiographs
- Orthodontic appliance adjustment
- Shedding of primary teeth

## Prophylactic Regimens for Dental, Oral, Respiratory Tract, or Esophageal Procedures

Situation	Agent	Regimen*
<b>Standard general prophylaxis</b>	Amoxicillin	<b>Adults:</b> 2.0 g orally 1 hour before procedure <b>Children:</b> 50 mg/kg orally 1 hour before procedure
<b>Unable to take oral medications</b>	Ampicillin	<b>Adults:</b> 2.0 g intramuscularly (IM) or intravenously (IV) within 30 minutes before procedure <b>Children:</b> 50 mg/kg IM or IV within 30 minutes before procedure
<b>Allergic to penicillin</b>	Clindamycin  <i>or</i> Cephalexin† or cefadroxil  <i>or</i> Azithromycin or clarithromycin	<b>Adults:</b> 600 mg orally 1 hour before procedure <b>Children:</b> 20 mg/kg orally 1 hour before procedure  <b>Adults:</b> 2.0 g orally 1 hour before procedure  <b>Children:</b> 50 mg/kg orally 1 hour before procedure  <b>Adults:</b> 500 mg orally 1 hour before procedure <b>Children:</b> 15 mg/kg orally 1 hour before procedure
<b>Allergic to penicillin and unable to take oral medications</b>	Clindamycin  <i>or</i> Cefazolin†	<b>Adults:</b> 600 mg IV within 30 minutes before procedure <b>Children:</b> 20 mg/kg IV within 30 minutes before procedure  <b>Adults:</b> 1.0 g IM or IV within 30 minutes before procedure <b>Children:</b> 25 mg/kg IM or IV within 30 minutes before procedure

\*Total children's dose should not exceed adult dose.

†Cephalosporins should not be used in individuals with immediate-type hypersensitivity reaction (urticaria, angioedema, or anaphylaxis) to penicillins.

**Antiseptic mouth rinses** applied immediately prior to dental procedures may reduce the incidence or magnitude of bacteremia. Agents include chlorhexidine hydrochloride and povidone-iodine. Fifteen milliliters of chlorhexidine can be given to all at-risk patients via gentle oral rinsing for about 30 seconds prior to dental treatment; gingival irrigation is not recommended. Sustained or repeated frequent interval use is not indicated as this may result in the selection of resistant microorganisms.

**If a series of dental procedures is required**, it may be prudent to observe an interval of time between procedures to both reduce the potential for the emergence of resistant organisms and allow repopulation of the mouth with antibiotic susceptible flora.

It is recognized that **unanticipated bleeding** may occur on some occasions. In such an event, data from experimental animal models suggest that antimicrobial prophylaxis administered within two hours following the procedure will provide effective prophylaxis. Antibiotics administered more than four hours after the procedure probably have no prophylactic benefit.

**Consultation with the patient's physician** is recommended if there are any questions regarding antibiotic prophylaxis. If the physician has prescribed a premedication regimen with which you disagree, attempt to ascertain the basis for the physician's recommendation and to acquaint the physician with the reasons why you disagree. All discussions with the patient and the patient's physician should be well documented.

### §References

- Adnan S, et al. Prevention of bacterial endocarditis: Recommendations by the American Heart Association. *J Am Med Assoc.* 1997;277:1794-1801.
- American Dental Association, American Academy of Orthopaedic Surgeons. Advisory statement: Antibiotic prophylaxis for dental patients with total joint replacements. *J Am Dent Assoc.* 1997;128:1004-7.
- Todd, KM. A legal perspective on antibiotic prophylaxis. *J Am Dent Assoc.* 1997;128:1007-8.