

# Antibiotic Prophylaxis/Endocarditis Prevention and Prosthetic Joints

EDIC CLINICAL DENTISTRY ADVISOR | 2020 UPDATE

## Cardiac Conditions Associated with the Highest Risk of Adverse Outcome from Endocarditis for Which Prophylaxis with Dental Procedures is Recommended

### ANTIBIOTIC PROPHYLAXIS RECOMMENDED

- Prosthetic cardiac valve, including transcatheter-implanted prostheses and homografts, use of annuloplasty rings and chords.
- Previous infective endocarditis (IE)
- Congenital heart disease (CHD)\*
  - Unrepaired cyanotic CHD
  - Palliative shunts and conduits
  - Completely repaired congenital heart defects with prosthetic material or device, whether placed by surgery, or catheter intervention, during the first 6 months after the procedure, especially in pediatric patients\*\*
  - Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (which inhibits endothelialization) (eg.: persistent leaks, abnormal flow)
- Cardiac transplantation recipients who develop cardiac valvulopathy (eg.: valve regurgitation due to structurally abnormal valve)

\*Except for the conditions listed above, antibiotic prophylaxis is no longer recommended for any other form of CHD.

\*\*Prophylaxis is recommended because endothelialization of prosthetic material occurs within 6 months after the procedure.

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

## Management of Patients with Prosthetic Joints Undergoing Dental Procedures

### CLINICAL RECOMMENDATION

In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection.

For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon.\* To assess a patient's medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

### CLINICAL REASONING FOR THE RECOMMENDATION

- There is evidence that dental procedures are not associated with prosthetic joint implant infections.
- There is evidence that antibiotics provided before oral care do not prevent prosthetic joint implant infections.
- There are potential harms of antibiotics including risk for anaphylaxis, antibiotic resistance, and opportunistic infections like *Clostridium difficile*.
- The benefits of antibiotic prophylaxis may not exceed the harms for most patients.
- The individual patient's circumstances and preferences should be considered when deciding whether to prescribe prophylactic antibiotics prior to dental procedures.

\*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.

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## Dental Procedures and Antibiotic Prophylaxis in Susceptible Patients

### ANTIBIOTIC PROPHYLAXIS RECOMMENDED

- All dental procedures involving:
- Manipulation of gingival tissue
  - Manipulation of the periapical region of teeth
  - Perforation of the oral mucosa

### ANTIBIOTIC PROPHYLAXIS NOT RECOMMENDED

- Routine anesthetic injections through non-infected tissue
- Taking dental radiographs
- Placement of removable prosthodontic or orthodontic appliances
- Adjustment of orthodontic appliances
- Placement of orthodontic brackets
- Shedding of deciduous teeth
- Bleeding from trauma to the lips or mucosa

Adapted from: 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

## Prophylactic Regimens for Dental and Oral Procedures

SITUATION	ANTIBIOTIC AGENT	REGIMEN - SINGLE DOSE 30-60 MINUTES BEFORE PROCEDURE	
		Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medications	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 Penicillin OR Ampicillin-oral	Clindamycin OR	600 mg
Cephalexin**+ OR		+2 g	50 mg/kg
Azithromycin or Clarithromycin		500 mg	15 mg/kg
Allergic to Penicillin OR Ampicillin and unable to take oral medication	Clindamycin OR	600 mg IM or IV	20 mg/kg IM or IV
	Cefazolin or Ceftriazone+	1 g IM or IV	50 mg/kg IM or IV

\*\*Or other first or second-generation oral cephalosporin in equivalent adult or pediatric dosage.

+Cephalosporins should not be used in an individual with a history of anaphylaxis, angioedema, or urticaria with penicillins or ampicillin.

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