

Antibiotic Prophylaxis/Endocarditis Prevention and Prosthetic Joints

EDIC CLINICAL DENTISTRY ADVISOR | 2022 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, left ventricular assist devices or implantable heart.
- Previous, relapse or recurrent 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 transcatheter 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)
 - Surgical or transcatheter pulmonary artery valve or conduit placement such as Melody valve and Contegra conduit.
- Cardiac transplantation recipients who develop cardiac valvulopathy (eg.: valve regurgitation due to structurally abnormal valve)

ANTIBIOTIC PROPHYLAXIS NOT RECOMMENDED

- Implantable devices such as pacemaker or similar devices
- Septal defect closure devices when complete closure is achieved
- Peripheral vascular grafts and patches, including those used for hemodialysis
- Coronary artery stents or other vascular stents
- CNS ventriculoatrial shunts
- Vena Cava filters
- Pledgets

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

Prophylactic Regimens for Dental and Oral Procedures

<u>SITUATION</u>	<u>ANTIBIOTIC AGENT</u>	<u>REGIMEN - SINGLE DOSE</u> <u>30-60 MINUTES BEFORE PROCEDURE</u>	
		<u>Adults</u>	<u>Children</u>
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medications	Ampicillin	2 g IM or IV	50 mg/kg IM or IV
	OR Cefazolin or Ceftriaxone	1 g IM or IV	50 mg/kg IM or IV
Allergic to Penicillin OR Ampicillin-oral	Cephalexin**+ OR	+2 g	50 mg/kg
	Azithromycin or Clarithromycin	500 mg	15 mg/kg
	Doxycycline	100mg	<45 kg, 2.2mg/kg >45kg, 100mg
Allergic to Penicillin OR Ampicillin and unable to take oral medication	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.