Antibiotic Prophylaxis/Endocarditis Prevention and Prosthetic Joints

EDIC CLINICAL DENTISTRY ADVISOR | 2026 UPDATE

Cardiac Conditions Associated with the Highest Risk of Adverse Outcome from Infective Endocarditis

ANTIBIOTIC PROPHYLAXIS RECOMMENDED

Antibiotic prophylaxis targets only viridans group streptococci (VGS) IE, not IE caused by staphylococci, enterococci, or gram-negative organisms

- 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) (e.g., 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 (e.g., 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 rheumatic heart disease (RHD) unless they also have a prosthetic valve or prosthetic material from valve repair
- Coronary artery stents or other vascular stents
- CNS ventriculoatrial shunts
- Vena Cava filters
- Pledgets
- Mitral valve prolapse

No more Antibiotic Prophylaxis for Patients with Prosthetic Joint Implants

CLINICAL RECOMMENDATION

The 2024 AAOS evidence-based guideline states, "Routine use of a systemic prophylactic antibiotic prior to a dental procedure in patients with a hip or knee replacement may not reduce the risk of a subsequent periprosthetic joint infection." AP does not reduce the risk of developing prosthetic joint infections (PJIs) but may result in adverse drug reactions (e.g., Clostridioides difficile infection) and promote the development of antibiotic resistance.

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 risks for most patients.

**In the limited unique cases where antibiotics are deemed necessary by the orthopedic surgeon, the orthopedic surgeon should write the prescription.*

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Dental Procedures and Antibiotic Prophylaxis in High-Risk 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

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	Cephalexin**+ OR Azithromycin or Clarithromycin	+2 g 500 mg	50 mg/kg 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.

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