

PEDIATRIC ANTIBIOTIC PROPHYLAXIS FOR SURGICAL PROCEDURES

PEDIATRIC DOSING GUIDE			Intra-operative re-dosing interval for prolonged procedures or major blood loss (>20 mL/kg)		NEONATAL SECTION First 4 weeks of life or PMA* 44 weeks	
Antibiotic	IV Dose	Maximum Dose	Normal Renal Function	Compromised Renal Function (CrCl <30 mL/min)	Neonatal IV Dose	Intra-operative re-dosing interval
Ampicillin	50 mg/kg	2000 mg	4 hours	8 hours	50 mg/kg (100 mg/kg for meningitis)	12 hrs (8 hrs if >3 kg & >7 days old)
Ampicillin/Sulbactam (premixed 1g A / 0.5g S)	50 mg/kg (dose per ampicillin)	3.1 grams (3 grams of ampicillin)	4 hours	8 hours	50 mg/kg	12 hrs (8 hrs if >3 kg & >7 days old)
Cefazolin	25 mg/kg	< 80 kg: 1 gram ≥ 80 kg: 2 grams	4 hours	12 hours	25 mg/kg	12 hrs (8 hrs if >3 kg & >7 days old)
Ceftriaxone	25 mg/kg	2000 mg	16 hours	16 hours	N/A	N/A
Cefuroxime	50 mg/kg	1500 mg	4 hours	12 hours	50 mg/kg	12 hrs
Clindamycin	10 mg/kg	600 mg	8 hours	8 hours	7.5 mg/kg	12 hrs (8 hrs if >3 kg & >7 days old)
Ertapenem	15 mg/kg	1000 mg	12 hours	no re-dose	N/A	N/A
Gentamicin**	2 mg/kg	No max	6 hours	12 hours	2.5 mg/kg (or defer to current regimen)	24 hrs (or defer to Neofax)
Levofloxacin	10 mg/kg	750 mg	16 hours	no re-dose	N/A	N/A
Metronidazole	10 mg/kg	500 mg	8 hours	no re-dose	Initial: 15 mg/kg Maintenance: 7.5 mg/kg	24 hrs (12 hrs if >3 kg & >7 days old)
Oxacillin	50 mg/kg	2000 mg	6 hours	no re-dose	25 mg/kg (or defer to current regimen)	12 hrs (8 hrs if >3 kg & >7 days old)
Penicillin G	50,000 units/kg	1.2 million units	4 hours	no re-dose	25,000 units/kg	12 hrs (8 hrs if >3 kg & >7 days old)
Piperacillin/Tazobactam (premixed 1 g P / 0.125 g T)	50 mg/kg (dose per piperacillin)	3.375 grams (3 grams of piperacillin)	6 hours	8 hours	50 mg/kg	12 hrs (8 hrs if >3 kg & >7 days old)
Vancomycin	15 mg/kg	2000 mg	12 hours	no re-dose	10 mg/kg	12 hrs (8 hrs if >3 kg & >7 days old)

*PMA (Postmenstrual Age) = Gestational Age + postnatal age (Example: Born at 28 weeks and 21 days old = 31 weeks PMA)

**Tobramycin dosing is equivalent to gentamicin; may be substituted during drug shortages

Operation	Recommended Antibiotic Prophylaxis	Re-dosing Schedule for Prolonged Surgery** (Hours)
Dental, Oral, Respiratory Tract or Esophageal Procedures	<u>Preferred:</u> Ampicillin OR Cefazolin <u>Alternatives:</u> Clindamycin 20 mg/kg IV/PO (Max Dose 600 mg) OR Ceftriaxone	4 / 4 8 16
Cardiothoracic	<u>Preferred:</u> Cefuroxime OR Cefazolin <u>Alternatives:</u> Clindamycin +/- Gentamicin OR Vancomycin +/- Gentamicin	4 / 4 8 / 6 12 / 6
Gastroduodenal, Esophageal (High Risk Only: open procedures, biliary tract)	<u>Preferred:</u> Cefazolin <u>Alternatives:</u> Clindamycin + Gentamicin	4 8 / 6
Colorectal	<u>Preferred:</u> Ertapenem OR Cefazolin + Metronidazole <u>Alternatives:</u> Clindamycin + Gentamicin	12 / 4 / 8 8 / 6
Appendectomy (Non-perforated, non-infected)	<u>Preferred:</u> Ampicillin/Sulbactam <u>Alternatives:</u> Cefazolin +/- Metronidazole	4 4 / 8
Appendectomy (Suspected perforation or suspected or documented infection)	<u>Preferred:</u> Piperacillin/Tazobactam <u>Alternatives:</u> Metronidazole + Gentamicin + Ampicillin	6 8 / 6 / 4
Orthopedic Implantation of Joint Devices	<u>Preferred:</u> Cefazolin <u>Alternatives:</u> Clindamycin OR Vancomycin	4 8 / 12
Genitourinary (High-Risk Patients Only)	<u>Preferred:</u> Cefazolin <u>Alternatives:</u> Gentamicin + Metronidazole (or Clindamycin) OR Ampicillin/Sulbactam	4 6 / 8 / 8 4
Head and Neck (Hardware Placement or Clean/Contaminated)	<u>Preferred:</u> Cefazolin 30 - 40 mg/kg (Max Dose 2 grams) +/- Metronidazole OR Oxacillin <u>Alternatives:</u> Clindamycin 15 mg/kg (Max Dose 600 mg) +/- Gentamicin	4 8 / 4 8 6
Neurosurgery (Elective Craniotomy or CSF shunting)	<u>Preferred:</u> Cefazolin OR Oxacillin <u>Alternatives:</u> Vancomycin	4 / 4 12
Transplantation (Heart, Lung or Heart & Lung)	<u>Preferred:</u> Cefazolin OR Cefuroxime <u>Alternatives:</u> Vancomycin +/- Gentamicin	4 / 4 12 / 6
Transplantation (Liver)	<u>Preferred:</u> Ampicillin/Sulbactam <u>Alternatives:</u> Clindamycin + Gentamicin	4 8 / 6
Transplantation (Kidney or Kidney & Pancreas)	<u>Preferred:</u> Cefazolin <u>Alternatives:</u> Clindamycin	4 8

Timing of first dose: Antibiotics should be initiated no earlier than 60 minute prior to incision (with the exception of vancomycin doses > 2 grams); if the patient is on chronic antibiotic therapy then no first doses are needed.

****Antibiotic re-dosing:** Re-dosing should occur if the operation is still in process 2 half-lives after the first dose was administered or if the patient experiences major blood loss. If a patient is on chronic antibiotic therapy then send any scheduled doses to the OR with patient.

Patients with penicillin/cephalosporin allergies: Verify it is a true allergy (e.g. urticaria, pruritus, angioedema, bronchospasm, hypotension or arrhythmia) or serious adverse drug reaction (drug-induced hypersensitivity, drug fever or toxic epidermal necrolysis). Cephalosporins may be an appropriate option due to limited cross-reactivity with the penicillin class. In case of true allergy, vancomycin or clindamycin may be appropriate alternatives.

Endocarditis prophylaxis: Only for dental procedures and patients at high risk:

1. Prosthetic cardiac valve or prosthetic material used for cardiac valve repair;
2. Previous infective endocarditis;
3. Unrepaired cyanotic congenital heart disease (CHD), including palliative shunts and conduits; completely repaired congenital heart defect with prosthetic material or device, during the first six months after the procedure; repaired CHD with residual defects at the site of a prosthetic patch or prosthetic device (which inhibit endothelialization); cardiac transplantation recipients who develop cardiac valvulopathy.