

Pediatric Antibiotic Prophylaxis for Surgical Procedures

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Cardinal Glennon Children's Hospital

**The following guideline refers to surgical prophylaxis and does not apply specifically to treatment.

	Operation/Type of Procedure	Recommended Antibiotic	Alternative for Allergies
Cardiothoracic	CT surgery/procedure excluding cardiac catheterization	Cefazolin (Vancomycin if MRSA)	Clindamycin or vancomycin
Gastrointestinal	Esophageal, gastroduodenal	Cefazolin	Clindamycin or Vancomycin PLUS gentamicin
	Biliary tract Open procedure	Cefazolin	Clindamycin or vancomycin PLUS gentamicin
	Laparoscopic procedure --low risk --high risk – (non-functioning gall bladder, obstructive jaundice.) ^^If cholangitis or cholecystitis, treat as infection <u>not</u> prophylaxis	None Cefazolin	None Clindamycin or vancomycin PLUS gentamicin
	Appendectomy Non-perforated, non-infected	Piperacillin/tazobactam – can consider ceftriaxone plus metronidazole (discuss with surgery attending)	Ciprofloxacin + metronidazole
	Suspected perforation	Piperacillin/tazobactam	Ciprofloxacin + metronidazole
	Small intestine Non-obstructed	Cefazolin	Clindamycin + gentamicin
	Obstructed	Piperacillin/tazobactam – can consider ceftriaxone plus metronidazole (discuss with surgery attending)	
	Colorectal	Cefazolin + metronidazole	Clindamycin + gentamicin
Head and Neck	Hardware placement	Cefazolin	Clindamycin
	Clean-contaminated/cancer surgery	Cefazolin + metronidazole	Clindamycin + gentamicin
	Clean-contaminated involving sinuses or naso/oropharynx	Clindamycin	Ampicillin/sulbactam
Neurosurgery	Elective craniotomy, CSF shunting, or intrathecal pump placement	Cefazolin (Vancomycin if MRSA)	Clindamycin or Vancomycin
Orthopedic		Cefazolin (Vancomycin if MRSA)	Clindamycin or vancomycin
Urologic	Routine cystoscopy	None - if urine is sterile	
	Other urologic procedures	Cefazolin +/- gentamicin [@]	Ciprofloxacin
	Urologic procedures involving bowel	Cefoxitin or Cefazolin plus metronidazole	Ciprofloxacin + metronidazole
Transplant	Heart	Cefazolin	Clindamycin or vancomycin
	Liver	Piperacillin/tazobactam	Clindamycin or vancomycin PLUS gentamicin
	Pancreas, pancreas-kidney	Cefazolin +/- fluconazole (for high risk i.e. enteric drainage of pancreas)	Clindamycin or vancomycin PLUS gentamicin

[@]Add aminoglycoside if inserting prosthetic material

Neonatal Antibiotic Prophylaxis for Surgical Procedures

Check patient medication profile for previous administrations of antibiotics prior to administering pre-op dose

		Operation Type of Procedure	Recommended Antibiotic
<u>Neonatal</u>		≤ 72h of age	Ampicillin + gentamicin
		>72 h of age	Target to operative site, nosocomial or colonizing organisms
		Esophageal/gastroduodenal/jejunal	Cefazolin
		Gastroschisis abdominal closure	Cefazolin
		Ileal/colorectal	Ampicillin/gentamicin/metronidazole
		NEC	Ampicillin/gentamicin/metronidazole

Dosing Schedule for Pre-Operative Antibiotics

Administer within 60 minutes prior to surgical incision. For vancomycin or fluoroquinolones, administer within 120 minutes of incision. Re-dose antibiotics after specified time period in table below for patient with **normal renal function**. Consider re-dosing if excessive or prolonged bleeding occurs.

Antimicrobial Agent	Pediatric to adult IV Dose	Infusion time	Re-dosing Schedule*	Neonatal Dose	Re-dosing Schedule*
Cefazolin	30 mg/kg (max 2g; 3g for pts ≥120kg)	3-5 min	4 hr	25 mg/kg	12hr or 8h if >3kg and >7d
Clindamycin	10 mg/kg (max 900 mg)	30 min	6 hr	7.5 mg/kg	12hr or 8h if >3kg and >7d
Vancomycin	15 mg/kg (max 1500 mg)	60 min	NA	10 mg/kg	12 hr
Metronidazole	15 mg/kg (max 500 mg)	30 min	NA	<1.2 kg: 7.5 mg/kg ≥1.2 kg: 15 mg/kg	NA
Cefoxitin	40 mg/kg (max 2g)	3-5 min	2 hr	40 mg/kg	
Piperacillin/tazobactam (based on piperacillin component)	2-9 months: 80 mg/kg >9 mo and ≤40 kg: 100 mg/kg (max 3g) >40 kg: 3 g	30 min	2 hr	PNA<7d: 100 mg/kg PNA 8-28d: 80mg/kg	12hr or 8h if >3kg and >7d
Ciprofloxacin	10 mg/kg (max 400 mg)	60 min	NA	10 mg/kg	12h
Gentamicin	2.5 mg/kg Adults: 5 mg/kg --use dosing weight if obese ¹	30 min	NA	≤29wks GA: 5 mg/kg >30 wks GA: 4 mg/kg	NA
Fluconazole	6 mg/kg (max 400 mg)	120min [#]	NA	6 mg/kg	NA

Ampicillin	50 mg/kg (max 2000mg)	15 min	2hr	50 mg/kg	12hr or 8h if >3kg and >7d
Ampicillin/sulbactam	50 mg ampicillin/kg (max 2000mg)	15 min	2hr	50 mg ampicillin/kg	12hr or 8h if >3kg and >7d

* From Initial Pre-Op dose. For patients with Normal Renal Function
min if dose is ≤ 200 mg

#May infuse over 60

¹ Dosing weight= IBW + 0.4 (actual BW – IBW); IBW male = 50kg +2.3 (Height” - 60”); IBW female = 45.5kg + 2.3(Height” - 60”)

Surgeries that do not require prophylaxis: tonsillectomy, endoscopic sinus procedures, tympanostomy tube placement, Ortho – clean operations without implantation of foreign materials in hand, knee, or foot. Clean head/neck procedures. Routine hernia procedure without use of mesh.

References:

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