Surgical Perioperative Antibiotic Prophylaxis Recommendations

Antibiotic Choice and Duration of Perioperative Antibiotic Therapy

- **EXCLUSION CRITERIA:** Dirty or infected wounds, including presence of obvious mucopurulence, or chronically immunosuppressed patients.
- In general, antibiotic prophylaxis for clean and clean contaminated head and neck surgeries **is not indicated**.
- *In cases of multiple procedures, the procedure with the broadest antibiotic or longest duration may be appropriate.*

Recommended Antibiotic Doses

Medication	Dose	Maximum Dose	Recommended Formulation(s)
Parenteral			
Cefazolin	30 mg/kg/dose IV q8h	2000 mg (3000 mg if ≥120 kg)	IV
Clindamycin	10 mg/kg/dose IV q8h	900 mg	
Metronidazole	15 mg/kg/dose (pre-op) 10 mg/kg/dose IV q8h (post-op)	500 mg	
Enteral ***Note that doses below are given in mg/kg/DAY to align with outpatient ordering mode. Inpatient orders use mg/kg/dose.***			
Amoxicillin	45 mg/kg/DAY divided TID	500 mg	*Suspension*: 80 mg/mL *Tablet:* 250 mg, 500 mg
Amoxicillin-clavulanate (7:1 ratio)	45 mg/kg/DAY divided BID	875 mg	*Suspension:* Amoxicillin-clavulanate 400-57 mg/5mL (max at 880 mg amoxicillin/dose (11 mL) for ease of outpatient administration *Tablet:* Amoxicillin-clavulanate 875-125 mg
Cephalexin	75 mg/kg/DAY divided TID	500 mg	*Suspension:* 50 mg/mL *Capsule:* 250 mg, 500 mg
Clindamycin	30 mg/kg/DAY divided TID	450 mg	*Solution:* 15 mg/mL *Capsule:* 150 mg, 300 mg
Levofloxacin	6 months to < 5 years: 20 mg/kg/DAY divided BID ≥ 5 years: 10 mg/kg/DAY once daily	750 mg	*Solution:* 25 mg/mL *Tablet:* 250 mg, 500 mg

When to contact Pediatric Infectious Diseases (ID):

- Concern for mastoiditis or bony involvement that would require a longer duration of antibiotic therapy and monitoring
- Patients with history of and/or new cultures growing non-tuberculous *Mycobacterium* (NTM), *Actinomyces spp.*, or multi-drug resistant organisms
- Immunocompromised patients
- Complex cases in which assistance with antibiotic selection, dosing, or long-term monitoring is desired

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The following is general guidance for preoperative and postoperative antibiotics in the absence of an active infection. If there is mucopurulent discharge or concern for active infection intraoperatively, please obtain appropriate cultures (aerobic, anaerobic, ± fungal, ± AFB) to guide antimicrobial therapy and contact Pediatric ID as necessary.

Procedure	Single Preoperative Antibiotic(s) Dose (if indicated)*	Postoperative Antibiotic and Duration	Ref
OTIC/EAR			
Auricular hematoma drainage	**NONE**	**Levofloxacin** x 7d while splints are in place	(1)
Ear cartilage graft	Cefazolin	Up to 24 hours (2 doses) IV cefazolin post-op	(2)
Implants (e.g., cochlear, OSIA)	Cefazolin	Up to 24 hours (2 doses) of cephalexin *If evidence of effusion or history of multiple ear infections within last year:* **amoxicillin-clavulanate** (clindamycin if penicillin allergy) x 5d	(2-8)
Microtia repair	Cefazolin	Continue cefazolin until drain removed, then **cephalexin** or **amoxicillin-clavulanate** (clindamycin if penicillin allergy) x 5d post-drain removal	(9)
Myringotomy	**NONE**	Ofloxacin ear drops x 5d	(10)
Myringoplasty	Cefazolin	**NONE**	(11-12)
Otoplasty	Cefazolin	**NONE**	(8)
Preauricular sinus surgery and/or cyst removal	Cefazolin	**NONE** *If spillage of cyst contents OR infected sinus tract* – Refer to Guidelines for Common Pediatric Infections: Skin and Soft Tissue Infections: Cellulitis. Antibiotic choice and duration may need adjustment based on culture results.	(13)
Tympanoplasty - with tube placement - with mastoidectomy	Cefazolin	**NONE** *If concerned for mastoiditis:* Refer to Guidelines for Common Pediatric Infections: Mastoiditis. Antibiotic choice and duration may need adjustment based on culture results.	(8, 14)

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Procedure	Single Preoperative Antibiotic(s) Dose (if indicated)*	Postoperative Antibiotic and Duration	Ref
Salivary gland procedures (including removal/ligation) - Parotid gland and duct surgery - Salivary gland tumor removal	Cefazolin +/- metronidazole with external excision **ONLY.** **No preoperative dose indicated for intraoral incision.**	**NONE** ***** Cefazolin may be continued < 24 hours (2 doses) postoperatively for patients undergoing extensive parotid gland surgery with neck dissection	(2, 8, 15-16, 39)
Other clean otologic cases, e.g., - lesion excisions - ossicular reconstruction	**NONE¥**	**NONE¥** *¥ In the case of placement of new implants or with concern for low grade infection (e.g., cholesteatoma), we recommend a single dose of pre-operative **cefazolin** (clindamycin if penicillin allergy) be given, and post-operative antibiotics of **amoxicillin-clavulanate** (clindamycin if penicillin allergy) x 5d at the discretion of the surgeon.*	(2, 8)
Other clean-contaminated otologic cases (e.g., ear canal reconstruction)	Cefazolin		(2,17, 35)
FACIAL			
Facial fractures	**NONE**	**NONE**	(18)
Extensive facial fractures that include sinus disruption	Cefazolin	**NONE** If significant disruption of sinus, post-op antibiotics may be continued < 24 hours (2 doses) postoperatively.	(18)
NASAL			
Septoplasty	Cefazolin	**NONE** Post-operative antibiotics ONLY if splints left in place – **cephalexin** (clindamycin if penicillin allergy) x 7d	(2, 8, 19)
Open septorhinoplasty	Cefazolin	**Autograft used:** No post-operative antibiotics needed **If allograft used**: Post-operative antibiotics ONLY if splints placed – **cephalexin** (clindamycin if cephalexin allergy) x 7d	(5, 19-22)
Turbinate reduction/ cautery	**NONE**	**NONE**	(8)

Procedure	Single Preoperative Antibiotic(s) Dose (if indicated)*	Postoperative Antibiotic and Duration	Ref
SINUS			
Endoscopic Sinus Surgery (e.g., antrostomy, sphenoidotomy, ethmoidectomy)	Cefazolin	**NONE** Post-operative antibiotics ONLY if splints left in place – **cephalexin** (clindamycin if penicillin allergy) x 7d	(8, 23)
OROPHARYNGEAL			
Intra-oral procedures, e.g., - adenoidectomy - mucosal/tongue biopsy - pharyngoplasty* - ranula excision - submandibular gland excision (internal approach) - tonsillectomy	**NONE** *For injection pharyngoplasty:* *Cefazolin*	**NONE** ***** *For injection pharyngoplasty:* **amoxicillin-clavulanate** (clindamycin if penicillin allergy) x 7d	(2, 8, 24, 39)
Dental Extraction	**NONE** *For incision through oral or pharyngeal mucosa:* Cefazolin + Metronidazole	*If extraction without concern for dental infection/abscess:* Third molar extractions: **Amoxicillin (clindamycin if penicillin allergy)** x 5d; All other: **NONE** *If extraction WITH concern for dental infection/abscess:* Refer to Guidelines for Common Pediatric Infections: Odontogenic infection. Antibiotic choice and duration may need to be adjusted based on culture results.	(25-27, 36-38)
Clean non-invasive scopes - Esophagoscopy - EGD - Bronchoscopy - Laryngoscopy - Sleep endoscopy (DISE)	**NONE**	**NONE**	(28-29)
Other clean-contaminated oropharyngeal cases (e.g., oral cavity resection, removal of upper airways masses)	Cefazolin + Metronidazole	**NONE**	(39)

Procedure	Single Preoperative Antibiotic(s) Dose (if indicated)*	Postoperative Antibiotic and Duration	Ref
CERVICAL/NECK			
Mastoidectomy	Cefazolin	**NONE** *If perioperative otorrhea or concern for infection:* Refer to Guidelines for Common Pediatric Infections: Mastoiditis and adjust antibiotics based on culture results	(8)
Neck mass/cyst excision and removal of sinus tract - Branchial cleft cyst - Thyroglossal duct cyst - Subglottic cyst - Submandibular gland excision (external approach)	Cefazolin	**NONE** *If spillage of cyst contents OR infected sinus tract:* Refer to Guidelines for Common Pediatric Infections: Cellulitis. Antibiotic choice and duration may need to be adjusted based on culture results.	(29)
Tracheoplasty	Cefazolin (no MRSA or *Pseudomonas*) Cefazolin plus vancomycin (MRSA positive) Cefepime (*Pseudomonas* positive) Cefepime plus vancomycin (MRSA and *Pseudomonas* positive)	48 hours postoperative Antibiotic based on pre-operative antibiotics	(29)
Tracheostomy/ tracheotomy	*Placement/Incision:* Cefazolin single preoperative dose *Tracheostomy tube removal:* **NONE**	**NONE**	(30-31)

Procedure	Single Preoperative Antibiotic(s) Dose (if indicated)*	Postoperative Antibiotic and Duration	Ref
Total thyroidectomy/ Parathyroidectomy	Cefazolin if surgery anticipated to last > 4hr	*Drain left in place:* **cefazolin** or **cephalexin** (clindamycin if cefazolin OR cephalexin allergy) up to 24 hours (2 doses), regardless of drain status *No drain:* **NO** postoperative antibiotics	(2)
Other neck surgery (clean-contaminated)	Cefazolin	**NONE**	(2)
CRANIOFACIAL RECONSTRUCTION			
Cranioplasty/facial reconstruction (clean)	Cefazolin	**NONE**	(29)
Skull base surgery Anterior, clean-contaminated Lateral, clean	Cefazolin	*Anterior:* Continue **cefazolin** (clindamycin if penicillin allergy) IV < 24 hours (2 doses) post-op. If > 48 hours of nasal packing/splint, use may continue cefazolin until packing is removed. *Lateral:* **NONE**	(2)
OTHER PLASTICS SURGERY			
Mastectomy with or without drains left in place after procedure	Cefazolin	**NONE**	(32-34)

**** Inpatient antibiotics per order set "ENT General Post-op", "Microtia Reconstruction (Stage 1) Post-Op", OR "Plastic Surgery General Post-Op". In case of allergy, follow alternative antibiotic recommendations per order set.***

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