

**ZUCKERBERG SAN FRANCISCO GENERAL HOSPITAL &
TRAUMA CENTER**

**GUIDELINES FOR PROPHYLACTIC ANTIBIOTICS
TO REDUCE SURGICAL SITE INFECTION**

Revised September 2023 | Approved by ZSFG Pharmacy & Therapeutics Committee 9/2023

**THORACIC, NEUROSURGERY (no spinal hardware)
ORTHOPEDIC (not total joint or spine), VASCULAR (no graft),
AND OTHER SURGERIES NOT LISTED BELOW**

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Vancomycin <u>OR</u>	1 g	≤120 min before incision	Infuse over 60 mins in pre-op area	1 g q 8 hours
Clindamycin	900 mg	≤60 min before incision	Infuse over 30 mins (not to exceed 30 mg/min)	900 mg q 6 hours

**UROLOGIC SURGERY:
TURP, TURBT, URS, URETERAL STENTS,
PERCUTANEOUS NEPHROLITHOTOMY
(For TRUS, see INTRA-ABDOMINAL SURGERY)**

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Ciprofloxacin	400 mg	≤120 min before incision	Infuse over 60 mins	400 mg q 6 hours

INTRA-ABDOMINAL SURGERY: HERNIA REPAIR

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Vancomycin <u>OR</u>	1 g	≤120 min before incision	Infuse over 60 mins in pre-op area	1 g q 8 hours
Clindamycin	900 mg	≤60 min before incision	Infuse over 30 mins (not to exceed 30 mg/min)	900 mg q 6 hours

INTRA-ABDOMINAL SURGERY: PANCREATODUODENECTOMY, BILIARY, HEPATIC SURGERY

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Piperacillin-tazobactam	3.375 g	≤60 min before incision	Infuse over 30 min	3.375 g q 2 hours for up to 3 doses, then q 8 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Ciprofloxacin <u>PLUS</u>	400 mg	≤120 min before incision	Infuse over 60 mins	400 mg q 6 hours
Metronidazole	500 mg	≤60 min before incision	Infuse over 30 mins	500 mg q 6 hours

INTRA-ABDOMINAL SURGERY: LARGE & SMALL BOWEL (INCLUDING APPENDECTOMY), COLON, TRANSRECTAL ULTRASOUND (TRUS)

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Ceftriaxone <u>PLUS</u>	<40 kg: 1 g ≥40 kg: 2 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	<40 kg: 1 g q 12 hr ≥40 kg: 2 g q12 hr
Metronidazole	500 mg	≤60 min before incision	Infuse over 30 mins	500 mg q 6 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Ciprofloxacin <u>PLUS</u>	400 mg	≤120 min before incision	Infuse over 60 mins	400 mg q 6 hours
Metronidazole	500 mg	≤60 min before incision	Infuse over 30 mins	500 mg q 6 hours

**OBSTETRICS/GYNECOLOGY: CESAREAN DELIVERY,
HYSTERECTOMY, MIDURETHRAL SLING, VAGINAL PROLAPSE
(UTEROSACRAL SUSPENSION, SACROCOLPOPEXY)**

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Clindamycin	900 mg	≤60 min before incision	Infuse over 30 mins (not to exceed 30 mg/min)	900 mg q 6 hours
<u>PLUS</u>				
Gentamicin	5 mg/kg**	≤60 min before incision	Infuse over 30 mins	No need to re- dose
<i>**Secondary Alternative For Hysterectomy Only**</i>				
Ciprofloxacin	400 mg	≤120 min before incision	Infuse over 60 mins	400 mg q 6 hours
<u>PLUS</u>				
Metronidazole	500 mg	≤60 min before incision	Infuse over 30 mins	500 mg q 6 hours

** Dose based on actual weight. If actual weight > 20% ideal body weight (IBW), use dosing weight.

Dosing Weight (DW) = IBW + 0.4 (Actual Body Weight – IBW).

IBW Calculations: IBW (Women) = 45.5 + 2.3 * (Height (in) - 60).

IBW (Men) = 50 + 2.3 * (Height (in) - 60).

**SURGERIES WITH PROSTHETIC MATERIAL: HIP & KNEE
ARTHROPLASTY, SPINAL HARDWARE PROCEDURES, PLACEMENT
OF VASCULAR GRAFT**

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
<u>PLUS</u>				
Vancomycin	1 g	≤120 min before incision	Infuse over 60 mins in pre-op area	1 g q 8 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Vancomycin	1 g	≤120 min before incision	Infuse over 60 mins in pre-op area	1 g q 8 hours
<u>OR</u>				
Clindamycin	900 mg	≤60 min before incision	Infuse over 30 mins (not to exceed 30mg/min)	900 mg q 6 hours

CLEAN-CONTAMINATED HEAD AND NECK SURGERY*

Drug	Dose	Timing	Infusion Duration	Re-dose Intraop
Cefazolin <u>PLUS</u>	<120 kg: 2 g ≥120 kg: 3 g	≤60 min before incision	Bolus over 3-5 mins (with bolus, tissue levels adequate in a few mins)	2 g q 4 hours
Metronidazole <u>OR</u>	500 mg	≤60 min before incision	Infuse over 30 mins	500 mg q 6 hours
Ampicillin-Sulbactam	3 g	≤60 min before incision	Infuse over 30 mins	3 g q 2 hours x 3 doses maximum; then q 6 hours
<i>For Serious Beta-Lactam Allergy (i.e., Hives, Angioedema, Anaphylaxis)</i>				
Clindamycin	900 mg	≤60 min before incision	Infuse over 30 mins (not to exceed 30 mg/min)	900 mg q 6 hours

* For clean-contaminated cases, redose Cefazolin+Metronidazole or Clindamycin Q 8 Hours x 2 doses post-op or Ampicillin-Sulbactam Q 6 Hours x 3 doses post-op; do not continue past 24 hours of wound closure.

NOTES:

- In most instances, a single antibiotic dose prior to the procedure is sufficient for prophylaxis. However:
- Per protocol for clean-contaminated head and neck surgery, antibiotics should be continued for a maximum of 24 hours post surgery
- Additional intra-operative doses should also be administered in circumstances of significant blood loss (Adults: ≥6 units or ≥1.5 L EBL or hemo dilution during surgery. Pediatrics ≥20-30 mL/kg).
- With prolonged procedures, antibiotics may need to be re-dosed intraoperatively to ensure adequate levels until wound closure. Please refer to “Re-dose Intraop” column for information on specific antibiotics.
- Prophylactic antibiotics should not be continued after wound closure.
- Always confirm with surgeons at the Time-Out or earlier before antibiotics are administered. In some cases they may wish to delay antibiotics until after cultures are obtained.
- The entire antibiotic dose should be administered before the tourniquet is inflated.

Pediatric Patients – Suggested Dosing*

Drug	Dose
Cefazolin	25 mg/kg
Vancomycin	15 mg/kg (as an infusion over 30-60 min)
Gentamicin	2.5 mg/kg
Clindamycin	10 mg/kg
Ceftriaxone	50 mg/kg
Metronidazole	10 mg/kg
Ampicillin- Sulbactam	50 mg/kg of ampicillin component

* All pediatric doses should not exceed adult dosing recommendations. Please order using the Pediatric Antimicrobial Prophylaxis Orderset.