

# Surgical Decolonization and Prophylaxis

## DECOLONIZATION

Nasal Screening Result	Recommended Intervention
MRSA Negative MSSA Negative	<ul style="list-style-type: none"> <li>No decolonization required</li> </ul>
MRSA Positive	<ul style="list-style-type: none"> <li>Intranasal mupirocin twice daily x 5 days, <b>AND</b></li> <li>Chlorhexidine bathing one day prior to surgery</li> </ul>

## ANTIMICROBIAL PROPHYLAXIS

### CLINICAL CONSIDERATIONS

- Preoperative dose-timing  
Within 60 minutes of surgical incision  
Exceptions: vancomycin and fluoroquinolones within 120 minutes of surgical incision
- Weight-based dosing  
Cefazolin: 2 gm for patients <120 kg, and 3 gm for patients ≥120 kg  
Vancomycin: use ABW  
Gentamicin: use ABW unless ABW is >120% of their IBW, in which case use AdjBW (see below for equation)
- Duration of prophylaxis  
A single dose, or continuation for <24 hours is recommended

### INTRA-OPERATIVE REDOSING

- Required if the duration of procedure exceeds two half-lives of the drug or if there is extensive blood loss during the procedure (>1500 mL) †
- Recommendation: use the same antibiotic dose and measure the redosing interval from the time of administration of the preoperative dose, not the time of incision

ABW= actual body weight; AdjBW= adjusted body weight; IBW= ideal body weight; MRSA= Methicillin-resistant Staphylococcus aureus; MSSA= Methicillin-susceptible Staphylococcus aureus

† Redosing may not be necessary for patients with poor renal function (CrCl <30mL/min)

<b>IBW Calculation:</b> Male = 50 kg + [2.3 kg for each inch over 5 feet] Female = 45 kg + [2.3 kg for each inch over 5 feet]	<b>AdjBW Calculation:</b> AdjBW = 0.4 (ABW-IBW) + IBW
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#### References:

- Schweitzer ML, Chiang H, Septimus E, Moody J, Braun B, Hafner J, et al. Association of a Bundled Intervention with Surgical Site Infections Among Patients Undergoing Cardiac, Hip, or Knee Surgery (STOP SSI – Study to Optimally Prevent SSI in Select Cardiac and Orthopedic Procedures). *JAMA* 2015; 313(21): 2162-2171.
- Chen AF, Wessel CB, Rao N. Staphylococcus aureus Screening and Decolonization in Orthopaedic Surgery and Reduction of Surgical Site Infections. *Clin Orthop Relat Res* 2013; 471: 2383-2399.
- Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm* 2013; 70:195-283.

# Antimicrobial Surgical Prophylaxis

## REDOSING RECOMMENDATIONS

Antibiotic	Half-life (hours)	Redosing Interval (hours)
Ampicillin/sulbactam	0.8-1.3	2
Cefazolin	1.2-2.2	4
Cefoxitin	0.7-1.1	2
Ciprofloxacin	3-7	Not necessary
Clindamycin	2-4	6
Gentamicin	2-3	Not necessary
Metronidazole	6-8	Not necessary
Vancomycin	4-8	Not necessary

  

SURGICAL PROCEDURE	RECOMMENDED AGENTS	ALTERNATIVES FOR PATIENTS WITH BETA-LACTAM ALLERGY
Laparoscopic, low-risk	None	None
Laparoscopic, high-risk	Cefazolin, cefoxitin, cefotetan, ceftriaxone, ampicillin/sulbactam	Clindamycin or vancomycin + aminoglycoside or aztreonam or fluoroquinolone
Small intestine, nonobstructed	Cefazolin	Clindamycin + aminoglycoside or aztreonam or fluoroquinolone
Small intestine, obstructed	Cefazolin + metronidazole, cefoxitin, cefotetan	Metronidazole + aminoglycoside or fluoroquinolone
Hernia repair	Cefazolin	Clindamycin, vancomycin
Colorectal	Cefazolin + metronidazole, cefoxitin, cefotetan, ampicillin/sulbactam, ceftriaxone + metronidazole, ertapenem	Clindamycin + aminoglycoside or aztreonam or fluoroquinolone; Metronidazole + aminoglycoside or fluoroquinolone
Head and neck, clean	None	None
Head and neck, placement of prosthetic	Cefazolin, cefuroxime	Clindamycin
Clean-contaminated cancer surgery	Cefazolin + metronidazole, cefuroxime + metronidazole, ampicillin/sulbactam	Clindamycin

### References:

1. Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm* 2013; 70:195-283.

# Antimicrobial Surgical Prophylaxis

SURGICAL PROCEDURE	RECOMMENDED AGENTS	ALTERNATIVES FOR PATIENTS WITH BETA-LACTAM ALLERGY
Ortho: clean hand, knee, or foot not involving implantation of foreign materials	None	None
Ortho: implantation of foreign material and/or total joints	Cefazolin	Clindamycin, vancomycin
Urologic with risk factors for infection	Fluoroquinolone, TMP/SMX, cefazolin	Aminoglycoside +/- clindamycin
Urologic, clean without entry into urinary tract	Cefazolin*	Clindamycin, vancomycin
Urologic involving implanted prosthesis	Cefazolin ± aminoglycoside, cefazolin ± aztreonam, ampicillin/sulbactam	Clindamycin ± aminoglycoside or aztreonam, vancomycin ± aminoglycoside or aztreonam
Urologic, clean with entry into urinary tract	Cefazolin*	Fluoroquinolone, aminoglycoside ± clindamycin
Urologic, clean-contaminated	Cefazolin + metronidazole, ceftiofen	Fluoroquinolone, aminoglycoside + metronidazole or clindamycin

TMP/SMX= trimethoprim/sulfamethoxazole

\*Addition of a single dose of an aminoglycoside may be recommended for placement of prosthetic material (e.g. penile prosthesis)

## References:

1. Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm* 2013; 70:195-283.