

BARNES-JEWISH HOSPITAL

**Initial Recommended Antibiotic Prophylaxis for Open Fractures:
Orthopaedic Surgery, Trauma Surgery, Emergency Medicine**

SUBMITTED/REVIEWED BY: Orthopaedic Surgery, Trauma Surgery,
Emergency Medicine

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General Guidance:

**** Consult ID Bone & Joint (314-510-3805) for all Type III open fractures and patients who may require closer toxicity monitoring (e.g., CrCl <30). Some cases may require additional antibiotic coverage and/or longer durations of IV and/or PO therapy**

Gustilo-Anderson Classification	Type I	Type II	*** Type III *** ID Bone & Joint consult recommended
Definition	<ul style="list-style-type: none"> • ≤ 1 cm wound • Min. contamination, comminution, tissue injury 	<ul style="list-style-type: none"> • ≥ 1 cm wound • Mod. contamination, comminution, tissue injury 	<ul style="list-style-type: none"> • Displaced segmental fx • Fx w/ diaphyseal loss • Fx w/ assoc. vasc injury • Farmyard injury • Highly contaminated wound • High velocity GSW • Crush from high speed MV <ul style="list-style-type: none"> • IIIa: ≤ 10 cm wound w/crushed tissue & contamination • IIIb: > 10 cm wound w/crushed tissue & contamination • IIIc: Major vascular injury requiring repair to salvage limb
Treatment	Cefazolin 1-2 gm IV q 8 h (Select 2 g if > 80 kg)	Cefazolin 1-2 g IV q 8 h (Select 2 g if > 80 kg)	Cefazolin 1-2g IV q 8 h (Select 2 g if > 80 kg) + *Gentamicin 5 mg/kg (Adjusted Body Weight) IV q 24 h for normal renal function
Treatment if PCN Allergy	Vancomycin 15 mg/kg (Actual Body Weight) IV q 12 h	Vancomycin 15 mg/kg (Actual Body Weight) IV q 12 h	Vancomycin 15 mg/kg (Actual Body Weight) IV q 12 h + *Gentamicin 5 mg/kg (Adjusted Body Weight) IV q 24 h for normal renal function
Duration	All antibiotics should be discontinued 24h after soft tissue coverage or final debridement.		

* Adjusted BW = IBW + 0.4 (Actual BW - IBW); [Use adjusted if ABW > 1.2 x IBW]. Obtain Gentamicin level 8 hrs after initial dose to verify correct dosing interval based on aminoglycoside extended interval dosing nomogram in the BJH Toolbook.

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References/Resources:

1. Hauser CJ, et al (2006). Prophylactic antibiotic use in open fractures: an evidence-based guideline. *Surgical Infections*, 7, 379-405.
2. Hoff WS, et al (2011). EAST practice management guidelines work group: update to practice management guidelines for prophylactic antibiotic use in open fractures. *Journal of Trauma Injury, Infection, and Critical Care*, 70, 751-4.
3. Hospenthal DR, et al (2011). Executive Summary: guidelines for the prevention of infections associated with combat-related injuries: 2011 update. *Journal of Trauma Injury, Infection, and Critical Care*, 71, 202-9.
4. Murray CK, et al (2011). Prevention of infections associated with combat-related extremity injuries. *Journal of Trauma Injury, Infection, and Critical Care*, 71, 235-50.

Approval:

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