

# Surgical Antibiotic Prophylaxis Guidelines

## Orthopaedic Surgery (Not Joint Replacement)

**This guideline does not apply to open fractures.**

### Pre-Operative Considerations

**Consider individual risk factors for every patient** – need for prophylaxis, drug choice or dose may alter (e.g. immune suppression, presence of prostheses, allergies, obesity, diabetes, remote infection, available pathology or malignancy)

**Pre-existing infections (known or suspected)** – if present, use appropriate treatment regimen instead of prophylactic regimen for procedure. Doses should be scheduled to allow for re-dosing just prior to skin incision

### Practice Points

#### Drug administration

- > IV bolus – should be timed ≤ 60 minutes before skin incision (optimal 30 minutes). Administration after skin incision or > 60 minutes before incision reduces effectiveness
- > IV infusion – should be commenced 30-60 minutes prior to skin incision (e.g. metronidazole). See below for vancomycin administration

**MRSA risk** (defined as history of MRSA colonisation or infection, OR inpatient of high risk hospital or unit (where MRSA is endemic) for more than the last five days)

- > Add vancomycin to cefazolin (see vancomycin administration below)

#### Vancomycin administration

- > Give vancomycin 1g (1.5g for patients > 80kg actual body weight) started 30 to 120 minutes before surgical incision and given at a recommended rate of 1g per hour (1.5g over 90 minutes). Note: Infusion can be completed after skin incision.

#### Repeat doses

A single pre-operative dose is sufficient for most procedures, however repeat intra-operative doses are advisable:

- > for prolonged surgery (> 4 hours from the time of first preoperative dose) when a short-acting agent is used (e.g. cefazolin), OR
- > if major blood loss occurs, following fluid resuscitation

#### Obese patients

- > Consider increased dose of cefazolin (3g) if patient is obese (>120kg). Consult ID for advice.

**Duration of prophylaxis** should not exceed 24hrs, irrespective of presence of drains or catheters.

### Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
<b>Internal fixation of large bones</b>	<p><b>cefazolin 2g IV</b> (child &lt;12 years: 30mg/kg up to 2g)</p> <p>THEN</p> <p>repeat 8-hourly for 2 further doses.</p> <p><b>(Max 3 doses</b> irrespective of the presence of surgical drains)</p> <p><u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>	<p><b>vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>), may be repeated 12 hours after initial dose</p>
<b>Other (closed) internal fixation</b>	<p><b>cefazolin 2g IV</b> (child &lt; 12 years: 30mg/kg up to 2g)</p> <p><u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>	<p><b>vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>), may be repeated 12 hours after initial dose</p>
<b>Arthroscopic and other clean procedures not involving foreign material (e.g. pins, plates)</b>	Prophylaxis NOT recommended	
<b>Lower limb amputation</b>	<p><b>cefazolin 2g IV</b> (child &lt; 12 years: 30mg/kg up to 2g)</p> <p>THEN</p> <p>repeat 8-hourly for up to 2 further doses</p> <p><u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p> <p>If limb is <b>ischaemic</b> <b>ADD</b> to above <b>metronidazole 500mg IV</b> infusion (child &lt; 12 years: 12.5mg/kg up to 500mg) , may be repeated after 12 hours</p>	<p><b>vancomycin 1g IV</b> infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>), may be repeated after 12 hours</p> <p>PLUS</p> <p><b>gentamicin 5mg/kg</b> (adults and children) IV, 15-30 minutes before surgical incision</p>

## Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
Spinal procedures	<b>cefazolin 2g IV</b> (child < 12 years: 30mg/kg up to 2g) <u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients > 80kg <b>actual body weight</b> )	<b>vancomycin 1g IV</b> infusion (1.5g for patients > 80kg <b>actual body weight</b> ), may be repeated after 12 hours

## Post-Operative Care

Except where included above, post-operative antibiotics are NOT indicated unless infection is confirmed or suspected, regardless of the presence of surgical drains

If infection is suspected, consider modification of antibiotic regimen according to clinical condition and microbiological results.

## Definitions / Acronyms

<b>DRESS</b>	Drug rash with eosinophilia and systemic symptoms
<b>ID</b>	Infectious Diseases
<b>IV</b>	Intravenous
<b>MRSA</b>	Methicillin-resistant <i>Staphylococcus aureus</i>
<b>SJS / TEN</b>	Stevens-Johnson syndrome / Toxic epidermal necrolysis

\* High Risk penicillin/cephalosporin allergy: History suggestive of high risk (eg. anaphylaxis, angioedema, bronchospasm, urticaria, DRESS/SJS/TEN)

## References

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