

## Dosages used to define breakpoints

EUCAST Clinical Breakpoint Tables v. 14.0, valid from 2024-01-01

EUCAST breakpoints are based on the following dosages. Alternative dosing regimens may result in equivalent exposure. The table should not be used as a guidance for dosing in clinical practice as dosages can vary widely by indication. It does not replace specific national, regional or local dosing guidelines. However, if national practices significantly differ from those listed below, EUCAST breakpoints may not be valid. Situations where less antibiotic is given as standard or high dose should be discussed locally or regionally.

Uncomplicated UTI: acute, sporadic or recurrent lower urinary tract infections (uncomplicated cystitis) in patients with no known relevant anatomical or functional abnormalities within the urinary tract or comorbidities.

Penicillins	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<b>Benzylpenicillin</b>	0.6 g (1 MU) x 4 iv	1.2 g (2 MU) x 4-6 iv		<p><b>Meningitis caused by <i>S. pneumoniae</i>:</b> For a dose of 2.4 g (4 MU) x 6 iv, isolates with MIC ≤0.06 mg/L are susceptible.</p> <p><b>Pneumonia caused by <i>S. pneumoniae</i>: breakpoints are related to dosage:</b> For a dose of 1.2 g (2 MU) x 4 iv, isolates with MIC ≤ 0.5 mg/L are susceptible. For a dose of 2.4 (4 MU) g x 4 iv or 1.2 g (2 MU) x 6 iv, isolates with MIC ≤1 mg/L are susceptible. For a dose of 2.4 g (4 MU) x 6 iv, isolates with MIC ≤2 mg/L are susceptible.</p>
<b>Ampicillin</b>	2 g x 3 iv	2 g x 4 iv		<b>Meningitis:</b> 2 g x 6 iv
<b>Ampicillin-sulbactam iv</b>	(2 g ampicillin + 1 g sulbactam) x 3 iv	(2 g ampicillin + 1 g sulbactam) x 4 iv		
<b>Ampicillin-sulbactam oral</b>	None	None	0.75 g x 2 oral	
<b>Amoxicillin iv</b>	1 g x 3-4 iv	2 g x 6 iv		<b>Meningitis:</b> 2 g x 6 iv
<b>Amoxicillin oral</b>	0.5 g x 3 oral	0.75-1 g x 3 oral	0.5 g x 3 oral	
<b>Amoxicillin-clavulanic acid iv</b>	(1 g amoxicillin + 0.2 g clavulanic acid) x 3-4 iv	(2 g amoxicillin + 0.2 g clavulanic acid) x 3 iv		
<b>Amoxicillin-clavulanic acid oral</b>	(0.5 g amoxicillin + 0.125 g clavulanic acid) x 3 oral	(0.875 g amoxicillin + 0.125 g clavulanic acid) x 3 oral	(0.5 g amoxicillin + 0.125 g clavulanic acid) x 3 oral	Amoxicillin-clavulanic acid has separate breakpoints for systemic infections and uncomplicated UTI. When amoxicillin-clavulanic acid is reported for uncomplicated UTI, the report must make clear that the susceptibility category is only valid for uncomplicated UTI.
<b>Piperacillin</b>	4 g x 4 iv	4 g x 4 iv by extended 3-hour infusion		High dosage for more serious infections.
<b>Piperacillin-tazobactam</b>	(4 g piperacillin + 0.5 g tazobactam) x 4 iv 30-minute infusion or x 3 iv by extended 4-hour infusion	(4 g piperacillin + 0.5 g tazobactam) x 4 iv by extended 3-hour infusion		A lower dosage of (4 g piperacillin + 0.5 g tazobactam) x 3 iv, 30-minute infusion, is adequate for some infections such as complicated UTI, intraabdominal infections and diabetic foot infections, but not for infections caused by isolates resistant to third-generation cephalosporins.
<b>Ticarcillin-clavulanic acid</b>	(3 g ticarcillin + 0.1-0.2 g clavulanic acid) x 4 iv	(3 g ticarcillin + 0.1 g clavulanic acid) x 6 iv		
<b>Temocillin</b>	2 g x 2 iv	2 g x 3 iv		The 2 g x 2 iv dose has been used in the treatment of uncomplicated UTI caused by bacteria with beta-lactam resistance mechanisms.
<b>Phenoxyethylpenicillin</b>	0.5-2 g x 3-4 oral depending on species and/or infection type	None		
<b>Oxacillin</b>	1 g x 4 iv	Dosages vary by indication		
<b>Cloxacillin</b>	0.5 g x 4 oral or 1 g x 4 iv	Dosages vary by indication		<b>Meningitis:</b> 2 g x 6 iv
<b>Dicloxacillin</b>	0.5-1 g x 4 oral or 1 g x 4 iv	Dosages vary by indication		
<b>Flucloxacillin</b>	1 g x 3 oral or 2 g x 4 iv (or 1 g x 6 iv)	Dosages vary by indication		<b>Meningitis:</b> 2 g x 6 iv
<b>Mecillinam oral (pivmecillinam)</b>	None	None	0.2-0.4 g x 3 oral	

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Cephalosporins	Standard dosage	High dosage	Uncomplicated UTI	Special situations
Cefaclor	0.25-0.5 g x 3 oral depending on species and/or infection type	1 g x 3 oral		<i>Staphylococcus</i> spp.: Minimum dose 0.5 g x 3 oral
Cefadroxil	0.5-1 g x 2 oral	None	0.5-1 g x 2 oral	
Cefalexin	0.25-1 g x 2-3 oral	None	0.25-1 g x 2-3 oral	
Cefazolin	1 g x 3 iv	2 g x 3 iv		
Cefepime	1 g x 3 iv or 2 g x 2 iv	2 g x 3 iv		Severe <i>P. aeruginosa</i> infections: 2 g x 3 with extended 4-hour infusion
Cefiderocol	2 g x 3 iv over 3 hours	None		
Cefixime	0.2-0.4 g x 2 oral	None	0.2-0.4 g x 2 oral	Uncomplicated gonorrhoea: 0.4 g oral as a single dose
Cefotaxime	1 g x 3 iv	2 g x 3 iv		Meningitis: 2 g x 4 iv <i>S. aureus</i> : High dose only
Cefpodoxime	0.1-0.2 g x 2 oral	None	0.1-0.2 g x 2 oral	
Ceftaroline	0.6 g x 2 iv over 1 hour	0.6 g x 3 iv over 2 hours		<i>S. aureus</i> in complicated skin and skin structure infections: There is some PK-PD evidence to suggest that isolates with MICs of 4 mg/L could be treated with high dose.
Ceftazidime	1 g x 3 iv	2 g x 3 iv or 1 g x 6 iv		
Ceftazidime-avibactam	(2 g ceftazidime + 0.5 g avibactam) x 3 iv over 2 hours			
Ceftibuten	0.4 g x 1 oral	None		
Ceftobiprole	0.5 g x 3 iv over 2 hours	None		
Ceftolozane-tazobactam (intra-abdominal infections and UTI)	(1 g ceftolozane + 0.5 g tazobactam) x 3 iv over 1 hour	None		
Ceftolozane-tazobactam (hospital acquired pneumonia, including ventilator associated pneumonia)	(2 g ceftolozane + 1 g tazobactam) x 3 iv over 1 hour	None		
Ceftriaxone	2 g x 1 iv	2 g x 2 iv or 4 g x 1 iv		Meningitis: 2 g x 2 iv or 4 g x 1 iv <i>S. aureus</i> : High dose only Uncomplicated gonorrhoea: 0.5-1 g im as a single dose
Cefuroxime iv	0.75 g x 3 iv	1.5 g x 3 iv		
Cefuroxime oral	0.25 g x 2 oral	0.5 g x 2 oral	0.25 g x 2 oral	

Carbapenems	Standard dosage	High dosage	Uncomplicated UTI	Special situations
Doripenem	0.5 g x 3 iv over 1 hour	1 g x 3 iv over 1 hour		HAP/VAP* due to non-fermenting Gram-negative pathogens (such as <i>Pseudomonas</i> spp. and <i>Acinetobacter</i> spp.) should be treated with 1 g x 3 iv over 4 hours.
Ertapenem	1 g x 1 iv over 30 minutes	None		
Imipenem	0.5 g x 4 iv over 30 minutes	1 g x 4 iv over 30 minutes		
Imipenem-relebactam	(0.5 g imipenem + 0.25 g relebactam) x 4 iv over 30 minutes	None		
Meropenem	1 g x 3 iv over 30 minutes	2 g x 3 iv over 3 hours		Meningitis: 2 g x 3 iv over 30 minutes (or 3 hours)
Meropenem-vaborbactam	(2 g meropenem + 2 g vaborbactam) x 3 iv over 3 hours			

\* HAP/VAP = hospital-acquired pneumonia/ventilator-associated pneumonia

Monobactams	Standard dosage	High dosage	Uncomplicated UTI	Special situations
Aztreonam	1 g x 3 iv	2 g x 4 iv		Severe <i>P. aeruginosa</i> infections: 2 g x 4 with extended 3-hour infusion

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Fluoroquinolones	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<b>Ciprofloxacin</b>	0.5 g x 2 oral or 0.4 g x 2 iv	0.75 g x 2 oral or 0.4 g x 3 iv		<b>Meningitis:</b> 0.4 g x 3 iv
<b>Delafloxacin</b>	0.45 g x 2 oral or 0.3 g x 2 iv	None		
<b>Levofloxacin</b>	0.5 g x 1 oral or 0.5 g x 1 iv	0.5 g x 2 oral or 0.5 g x 2 iv		
<b>Moxifloxacin</b>	0.4 g x 1 oral or 0.4 g x 1 iv	None		<b>Meningitis:</b> 0.4 g x 1 iv
<b>Norfloxacin</b>	None	None	0.4 g x 2 oral	
<b>Ofloxacin</b>	0.2 g x 2 oral or 0.2 g x 2 iv	0.4 g x 2 oral or 0.4 g x 2 iv		

Aminoglycosides	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<b>Amikacin</b>	25-30 mg/kg x 1 iv	None		
<b>Gentamicin</b>	6-7 mg/kg x 1 iv	None		
<b>Netilmicin</b>	6-7 mg/kg x 1 iv	None		
<b>Tobramycin</b>	6-7 mg/kg x 1 iv	None		

Glycopeptides and lipoglycopeptides	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<b>Dalbavancin</b>	1 g x 1 iv over 30 minutes on day 1 If needed, 0.5 g x 1 iv over 30 minutes on day 8	None		
<b>Oritavancin</b>	1.2 g x 1 (single dose) iv over 3 hours	None		
<b>Teicoplanin</b>	0.4 g x 1 iv	Dosages vary by indication		
<b>Telavancin</b>	10 mg/kg x 1 iv over 1 hour	None		
<b>Vancomycin</b>	0.5 g x 4 iv or 1 g x 2 iv or 2 g x 1 by continuous infusion	None		Based on body weight. Therapeutic drug monitoring should guide dosing.

Macrolides, lincosamides and streptogramins	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<b>Azithromycin</b>	0.5 g x 1 oral or 0.5 g x 1 iv	None		<b>Uncomplicated gonorrhoea:</b> 2 g oral as a single dose
<b>Clarithromycin</b>	0.25 g x 2 oral	Dosages vary by indication		In some countries clarithromycin is available for intravenous administration at a dose of 0.5 g x 2, principally for treating pneumonia.
<b>Erythromycin</b>	0.5 g x 2-4 oral or 0.5 g x 2-4 iv	Dosages vary by indication		
<b>Roxithromycin</b>	0.15 g x 2 oral	None		
<b>Telithromycin</b>				
<b>Clindamycin</b>	0.3 g x 2 oral or 0.6 g x 3 iv	Dosages vary by indication		The high exposure dosing regimen pertains to the severity of the infection or drug exposure at the site of infection.
<b>Quinupristin-dalfopristin</b>	7.5 mg/kg x 2 iv	Dosages vary by indication		

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Tetracyclines	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<a href="#">Doxycycline</a>	0.1 g x 1 oral	Dosages vary by indication		
<a href="#">Eravacycline</a>	1 mg/kg x 2 iv	None		
<a href="#">Minocycline</a>	0.1 g x 2 oral	None		
<a href="#">Tetracycline</a>	0.25 g x 4 oral	Dosages vary by indication		
<a href="#">Tigecycline</a>	0.1 g loading dose followed by 50 mg x 2 iv	None		

Oxazolidinones	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<a href="#">Linezolid</a>	0.6 g x 2 oral or 0.6 g x 2 iv	None		<b>Meningitis:</b> 0.6 g x 2 iv
<a href="#">Tedizolid</a>	0.2 g x 1 oral or 0.2 g x 1 iv	None		

Miscellaneous agents	Standard dosage	High dosage	Uncomplicated UTI	Special situations
<a href="#">Chloramphenicol</a>	1 g x 4 oral or 1 g x 4 iv	2 g x 4 oral or 2 g x 4 iv		<b>Meningitis:</b> 2 g x 4 iv
<a href="#">Colistin</a>	4.5 MU x 2 iv with a loading dose of 9 MU	None		
<a href="#">Daptomycin</a> (cSSTI** without concurrent <i>S. aureus</i> bacteraemia)	4 mg/kg x 1 iv	None		
<a href="#">Daptomycin</a> (cSSTI** with concurrent <i>S. aureus</i> bacteraemia; right-sided infective endocarditis due to <i>S. aureus</i> )	6 mg/kg x 1 iv	None		<b>Enterococcal bloodstream infection and endocarditis</b> , see <a href="https://www.eucast.org/eucastguidancedocuments">https://www.eucast.org/eucastguidancedocuments</a> .
<a href="#">Fidaxomicin</a>	0.2 g x 2 oral	None		
<a href="#">Fosfomycin iv</a>	16-18 g/day divided in 3-4 doses	Dosages vary by indication		
<a href="#">Fosfomycin oral</a>	None	None	3 g x 1 oral as a single dose	
<a href="#">Fusidic acid</a>	0.5 g x 2 oral or 0.5 g x 2 iv	Dosages vary by indication		
<a href="#">Lefamulin</a>	0.15 g x 2 iv or 0.6 g x 2 oral	None		
<a href="#">Metronidazole</a>	0.4 g x 3 oral or 0.4 g x 3 iv	Dosages vary by indication		
<a href="#">Nitrofurantoin</a>	None	None	50-100 mg x 3-4 oral	Dosing is dependent on drug formulation.
<a href="#">Nitroxoline</a>	None	None	0.25 g x 3 oral	
<a href="#">Rifampicin</a>	0.6 g x 1 oral or 0.6 g x 1 iv	None		
<a href="#">Spectinomycin</a>	2 g x 1 im	None		
<a href="#">Trimethoprim</a>	None	None	0.16 g x 2 oral	
<a href="#">Trimethoprim-sulfamethoxazole</a>	(0.16 g trimethoprim + 0.8 g sulfamethoxazole) x 2 oral or (0.16 g trimethoprim + 0.8 g sulfamethoxazole) x 2 iv	(0.24 g trimethoprim + 1.2 g sulfamethoxazole) x 2 oral or (0.24 g trimethoprim + 1.2 g sulfamethoxazole) x 2 iv	(0.16 g trimethoprim + 0.8 g sulfamethoxazole) x 2 oral	<b>Meningitis:</b> (5 mg/kg up to 0.48 g trimethoprim + 25 mg/kg up to 2.4 g sulfamethoxazole) x 3 iv

\*\* cSSTI = complicated skin and skin structure infection