



AMOXICILLIN

Indication	<ul style="list-style-type: none"> • Treatment of infections due to susceptible gram-positive and gram-negative organisms¹ • Empiric treatment of early onset sepsis • Urinary tract infection (UTI) prophylaxis² • Meningitis²
-------------------	--

ORAL	Presentation	<ul style="list-style-type: none"> • Oral powder for reconstitution: 100 mg in 1 mL 											
	Dosage ³	<ul style="list-style-type: none"> • 25 mg/kg (frequency by day of life) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Current gest age (weeks)</th> <th style="width: 33%;">Day of life (day)</th> <th style="width: 33%;">Frequency</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">37+0 or more</td> <td style="text-align: center;">0–7</td> <td style="text-align: center;">every 12 hours</td> </tr> <tr> <td style="text-align: center;">8 or more</td> <td style="text-align: center;">every 8 hours</td> </tr> </tbody> </table>				Current gest age (weeks)	Day of life (day)	Frequency	37+0 or more	0–7	every 12 hours	8 or more	every 8 hours
	Current gest age (weeks)	Day of life (day)	Frequency										
	37+0 or more	0–7	every 12 hours										
		8 or more	every 8 hours										
Dosage (UTI prophylaxis)	<ul style="list-style-type: none"> • 15 mg/kg once per day 												
Preparation	<ul style="list-style-type: none"> • Follow instructions on the bottle 												
Administration	<ul style="list-style-type: none"> • Shake well before use • Draw up prescribed dose into oral/enteral syringe • Oral/OGT/NGT 												

INTRAVENOUS	Presentation	<ul style="list-style-type: none"> • Vial: 1 g 																					
	Dosage ^{3,4}	<ul style="list-style-type: none"> • 50 mg/kg (frequency by current gestational age and day of life⁵⁻⁷) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Current gest age (weeks)</th> <th style="width: 33%;">Day of life (day)</th> <th style="width: 33%;">Frequency</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">29+6 or less</td> <td style="text-align: center;">0–28</td> <td style="text-align: center;">every 12 hours</td> </tr> <tr> <td style="text-align: center;">29 or more</td> <td style="text-align: center;">every 8 hours</td> </tr> <tr> <td rowspan="2" style="text-align: center;">30+0–36+6</td> <td style="text-align: center;">0–14</td> <td style="text-align: center;">every 12 hours</td> </tr> <tr> <td style="text-align: center;">15 or more</td> <td style="text-align: center;">every 8 hours</td> </tr> <tr> <td rowspan="2" style="text-align: center;">37+0 or more</td> <td style="text-align: center;">0–7</td> <td style="text-align: center;">every 12 hours</td> </tr> <tr> <td style="text-align: center;">8 or more</td> <td style="text-align: center;">every 8 hours</td> </tr> </tbody> </table>				Current gest age (weeks)	Day of life (day)	Frequency	29+6 or less	0–28	every 12 hours	29 or more	every 8 hours	30+0–36+6	0–14	every 12 hours	15 or more	every 8 hours	37+0 or more	0–7	every 12 hours	8 or more	every 8 hours
	Current gest age (weeks)	Day of life (day)	Frequency																				
	29+6 or less	0–28	every 12 hours																				
		29 or more	every 8 hours																				
30+0–36+6	0–14	every 12 hours																					
	15 or more	every 8 hours																					
37+0 or more	0–7	every 12 hours																					
	8 or more	every 8 hours																					
Meningitis dosage ⁴	<ul style="list-style-type: none"> • 100 mg/kg (frequency by day of life) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Days of life (day)</th> <th style="width: 33%;">Frequency</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0–6</td> <td style="text-align: center;">every 12 hours</td> </tr> <tr> <td style="text-align: center;">7–28</td> <td style="text-align: center;">every 8 hours</td> </tr> <tr> <td style="text-align: center;">29 or more</td> <td style="text-align: center;">every 6 hours</td> </tr> </tbody> </table>			Days of life (day)	Frequency	0–6	every 12 hours	7–28	every 8 hours	29 or more	every 6 hours												
Days of life (day)	Frequency																						
0–6	every 12 hours																						
7–28	every 8 hours																						
29 or more	every 6 hours																						
Preparation	<ul style="list-style-type: none"> • Add 4 mL water for injection to 1 g vial • Withdraw entire contents and make up to 20 mL total volume with water for injection <ul style="list-style-type: none"> ◦ Concentration now equal to 50 mg/mL 																						
Administration	<ul style="list-style-type: none"> • IV injection: (dose 50 mg/kg) <ul style="list-style-type: none"> ◦ Draw up prescribed dose ◦ IV injection over 3–5 minutes⁸ • IV infusion: (50 mg/kg dose or meningitis dose 100 mg/kg) <ul style="list-style-type: none"> ◦ Prime the infusion line and reduce total syringe volume to prescribed dose ◦ IV infusion via syringe driver pump over 30 minutes⁸ ◦ On completion, disconnect syringe and infusion line ◦ Flush access port at same rate as infusion 																						

IM	Presentation	<ul style="list-style-type: none"> Vial: 1 g 		
	Dosage ^{3,4}	<ul style="list-style-type: none"> 50 mg/kg (frequency by current gestational age and day of life) 		
		Current gest age (weeks)	Day of life (day)	Frequency
		29+6 or less	0–28	every 12 hours
			29 or more	every 8 hours
30+0–36+6		0–14	every 12 hours	
	15 or more	every 8 hours		
37+0 or more	0–7	every 12 hours		
	8 or more	every 8 hours		
Preparation	<ul style="list-style-type: none"> Add 3 mL of water for injection or lidocaine (lignocaine¹) 1% Withdraw contents and make up to 4 mL total volume with water for injection or lidocaine(lignocaine)1% <ul style="list-style-type: none"> Concentration now equal to 250 mg/mL 			
Administration	<ul style="list-style-type: none"> Draw up prescribed dose Intramuscular injection into thickest part of the vastus lateralis in the anterolateral thigh (maximum 0.5 mL per site)⁹ 			



Special considerations	<ul style="list-style-type: none"> IV amoxicillin is an alternative if IV ampicillin not available Powder volume differs by brand, follow preparation instructions above Rapid IV administration may result in convulsive seizures⁸ Amoxil and Ibiamax contain 3.3 mmol of sodium. Fisamox contains 2.6 mmol of sodium IM route only if IV route not available UAC route: consult with neonatologist/paediatrician prior to use and refer to Queensland Clinical Guideline: <i>Neonatal medicines</i>¹⁰ If co-prescribed with aminoglycoside, give the antibiotic with shortest duration of administration first (so antibiotic cover commences asap) <ul style="list-style-type: none"> Do not mix in the same injection or infusion solution; flush before and after
Monitoring	<ul style="list-style-type: none"> Renal and hepatic function FBC during extended duration of treatment¹ Potential for extravasation¹
Compatibility	<ul style="list-style-type: none"> Fluids <ul style="list-style-type: none"> 5% glucose⁸, 0.9% sodium chloride⁸
Incompatibility	<ul style="list-style-type: none"> PN and fat emulsion: incompatible with amoxicillin (evidence limited) Fluids <ul style="list-style-type: none"> Blood products⁸ Drugs <ul style="list-style-type: none"> Aminoglycosides⁸, ciprofloxacin⁸, imipenem-cilastatin⁸, midazolam⁸, potassium chloride⁸, rocuronium⁸, sodium bicarbonate⁸
Interactions	<ul style="list-style-type: none"> IV aminoglycosides are inactivated by IV cephalosporins, penicillins and teicoplanin¹¹
Stability	<ul style="list-style-type: none"> Vial <ul style="list-style-type: none"> Store below 25 °C¹. Protect from light⁸ Reconstituted oral solution¹² <ul style="list-style-type: none"> Use within 14 days Store between 2–8 °C
Side effects	<ul style="list-style-type: none"> Hypersensitivity reactions: rare in neonates. May present as erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques)¹³⁻¹⁶ Blood pathology⁴: anaemia, thrombocytopaenia Digestive⁴: vomiting, diarrhoea
Actions	<ul style="list-style-type: none"> Bactericidal by interfering with cell wall synthesis⁴ Hydrolysed by beta-lactamases and therefore not effective against penicillinase-producing bacteria¹²
Abbreviations	ASAP: as soon as possible, FBC: full blood count, IV: intravenous, IM: intramuscular, OGT: oral gastric tube, NGT: nasogastric tube, PN: parental nutrition UAC: umbilical artery catheter,

Keywords

Amoxycillin, Amoxicillin, Amoxil, antibiotic

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References

1. Therapeutic Goods Administration (TGA). Amoxil parenteral: product information. [Internet]. Canberra: Australian Government; October 2017 [cited 2020 May 05]. Available from: <https://www.tga.gov.au>.
2. IBM Micromedex®Neofax®. Amoxicillin. In: IBM Micromedex® NeoFax®/Pediatrics (electronic version). IBM Watson Health, Greenwood Village, Colorado, USA. April 2019 [cited 2019 March 13]. Available from: <https://www.micromedexsolutions.com>.
3. Australian Medicines Handbook Children's Dosing Companion. Amoxicillin. [Internet]. Adelaide: Australian Medicines Handbook Pty Ltd; January 2019 [cited 2019 May 13]. Available from: <https://amhonline.amh.net.au>.
4. British National Formulary for Children (BNFC) online. Amoxicillin. [Internet]: Royal Pharmaceutical Society; September 2018 [cited 2019 May 13]. Available from: www.medicinescomplete.com.
5. Tang BH, Wu YE, Kou C, Qi YJ, Qi H, Xu HY, et al. Population Pharmacokinetics and Dosing Optimization of Amoxicillin in Neonates and Young Infants. *Antimicrob Agents Chemother* 2019;63(2).
6. Charles BG, Preechagoon Y, Lee TC, Steer PA, Flenady VJ, Debuse N. Population pharmacokinetics of intravenous amoxicillin in very low birth weight infants. *J Pharm Sci* 1997;86(11):1288-92.
7. Pullen J, Stolk LM, Nieman FH, Degraeuwe PL, van Tiel FH, Zimmermann LJ. Population pharmacokinetics and dosing of amoxicillin in (pre)term neonates. *Ther Drug Monit* 2006;28(2):226-31.
8. Australian Injectable Drugs Handbook. Nicolette Burrridge, Keli Symons, editors. Amoxicillin. 7th ed. [Internet]. New South Wales: Society of Hospital Pharmacists of Australia (SHPA); April 2019 [cited 2019 March 8]. Available from: <https://aidh.hcn.com.au>.
9. Hockenberry M, Wilson D. Wong's Nursing Care of Infants and Children. 10th ed. USA: Elsevier; 2014.
10. Queensland Clinical Guidelines. Neonatal medicines. Guideline No. MN19.54-V1-R24. [Internet]. Queensland Health. 2019. [cited 2021 January 15]. Available from: <https://www.health.qld.gov.au/gcg>
11. Australian Injectable Drugs Handbook. Nicolette Burrridge, Keli Symons, editors. Gentamicin. 7th ed. [Internet]. New South Wales: Society of Hospital Pharmacists of Australia (SHPA); June 2021 [cited 2021 August 05]. Available from: <https://aidh.hcn.com.au>.
12. MIMS Online. Amoxicillin Sodium. [Internet]: MIMS Australia; December 2017 [cited 2019 March 8]. Available from: www.mimsonline.com.au.
13. Carder KR. Hypersensitivity reactions in neonates and infants. *Dermatol Ther* 2005;18(2):160-75.
14. Lohmeier K, Megahed M, Schulte KW, Stannigel H, Mayatepek E, Schroten H. Toxic epidermal necrolysis in a premature infant of 27 weeks' gestational age. *Br J Dermatol* 2005;152(1):150-1.
15. Martini S, Alessandrini R, Arcuri S, Faldella G. Vancomycin-induced red man syndrome presentation in a preterm infant. *Pediatr Dermatol* 2018;35(6):e408-e9.
16. Maulidi H, Godambe S, Chow P. Suspected drug reaction with piperacillin/tazobactam, in a premature infant. *Br J Clin Pharmacol* 2008;65(6):971-2.

Document history

ID number	Effective	Review	Summary of updates
NMedQ20.045-V1-R25	21/08/2020	21/08/2025	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)
NMedQ20.045-V2-R25	13/08/2021	21/08/2025	<ul style="list-style-type: none"> • Removed UAC icon and amended instructions for administration via UAC • Amended instructions for co-prescription with aminoglycosides to clarify order of administration

QR code