

BENZYL PENICILLIN

Trade Name	Penicillin G Sodium Injection™ (Sandoz distributed by Novartis)																		
Class	Beta-lactam antibiotic																		
Mechanism of Action	Inhibits bacterial cell wall synthesis through interaction with penicillin-binding-proteins.																		
Indications	<p>Treatment of Group B Strep infection</p> <p>Congenital syphilis</p> <p>For treatment of other infections - consult the Pharmacist for organism specific dosing as dosing regimens vary</p>																		
Contraindications	<p>Hypersensitivity to penicillins.</p> <p>Large doses may cause hypokalaemia and hypernatraemia.</p>																		
Supplied As	600mg vial (1 Mega Unit)																		
Dilution	<p>IV:</p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Water Added</th> <th>Final Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>600mg</td> <td>5.6mL</td> <td>6mL*</td> <td>100mg/mL</td> </tr> </tbody> </table> <p>IM:</p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Water Added</th> <th>Final Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>600mg</td> <td>1.6mL</td> <td>2mL*</td> <td>300mg/mL</td> </tr> </tbody> </table> <p>No data available on stability of drawing up with lignocaine *600mg of Penicillin G Sodium powder displaces 0.4mL of diluent.</p>			Drug	Water Added	Final Volume	Concentration	600mg	5.6mL	6mL*	100mg/mL	Drug	Water Added	Final Volume	Concentration	600mg	1.6mL	2mL*	300mg/mL
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Dosage	<p>GBS bacteraemia or congenital syphilis: 30 mg/kg/dose</p> <p>GBS meningitis or severe sepsis: 0-7 days of age: 90 mg/kg/dose >7 days of age: 75 mg/kg/dose</p>																		
Interval	<p>GBS bacteraemia or congenital syphilis:</p> <table border="1"> <thead> <tr> <th>Day of life</th> <th>Interval (hourly)</th> </tr> </thead> <tbody> <tr> <td>0-7</td> <td>12</td> </tr> <tr> <td>8-45</td> <td>8</td> </tr> <tr> <td>>45</td> <td>6</td> </tr> </tbody> </table> <p>GBS meningitis or severe sepsis:</p> <table border="1"> <thead> <tr> <th>Day of life</th> <th>Interval (hourly)</th> </tr> </thead> <tbody> <tr> <td>0-7</td> <td>8</td> </tr> <tr> <td>>7</td> <td>6</td> </tr> </tbody> </table>			Day of life	Interval (hourly)	0-7	12	8-45	8	>45	6	Day of life	Interval (hourly)	0-7	8	>7	6		
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Administration	<p>IV: Slow push or 15-30 minute infusion in sodium chloride 0.9%</p> <p>IM: Inject into a large muscle (buttock, thigh) immediately after being prepared to decrease risk of hypersensitivity from degradation products.</p> <p>IM dose volume should be kept between 0.5-1mL if possible to decrease the pain for the baby.</p> <p>See IM drug guideline in Drugs folder and Handbook</p>
Compatible With	<p>0.9% sodium chloride</p> <p>Y site compatibility with: Acyclovir, adrenaline, amikacin, amiodarone, atropine, aztreonam, caffeine citrate, calcium chloride, calcium gluconate, cefotaxime, cefoxitin, ceftazidime, cefuroxime, chloramphenicol, cimetidine, clarithromycin, clindamycin, dexamethasone, dopamine, enalaprilat, erythromycin lactobionate, esmolol, fluconazole, furosemide, gentamicin, heparin, hydrocortisone succinate, imipenem/cilistatin, indomethacin, insulin, lidocaine, magnesium sulfate, metronidazole, midazolam, morphine, nicardipine, potassium chloride, prostaglandin E₁, ranitidine and sodium bicarbonate, TPN, Lipid.</p>
Incompatible With	<p>Aminophylline, amphotericin B, diazoxide, dobutamine, ganciclovir heparin, methylprednisolone, metoclopramide, netilmicin, phenobarbitone, phenytoin, sulphamethoxazole + trimethoprim, tobramycin, vancomycin</p>
Monitoring	<p>Weekly urea, creatinine and electrolytes</p>
Stability	<p>Freshly prepared solutions of benzylpenicillin should be used immediately because even at refrigeration temperatures aqueous solutions of benzylpenicillin rapidly disintegrate</p>
Storage	<p>Powder – maintain at room temperature; protect from light and moisture.</p> <p>Reconstituted solution – discard immediately after use.</p>
Adverse Reactions	<p>Anaphylaxis and both immediate and delayed hypersensitivity reactions. High doses can cause CNS toxicity and seizures.</p>
Metabolism	<p>Renal excretion.</p>
Comments	<p>Each 600mg dose of benzylpenicillin contains 1.68 mmol of sodium</p> <p>Benzylpenicillin can cause false positive urinary glucose tests.</p> <p>Neofax states compatibility with IV dextrose 5% and 10% but this information is not included in the NZ Penicillin G data sheet.</p>
References	<ol style="list-style-type: none"> 1. Medicines for Children (1999) 2. Penicillin G Sodium product information sheet 3. Neofax 2009 4. Neonatal Formulary for the Northern Network 11th Edition 2000 5. NZHPA Notes on Injectable Drugs 6th edition. 2010 6. Red Book 2018, American Academy of Pediatrics 7. Starship Neonatal Guidelines www.starship.org.nz/guidelines/

Updated By	A Turnbull P Schmidt, B Robertshawe A Lynn, B Robertshawe, F Robertson A Lynn, B Robertshawe A Lynn, M Wallenstein, B Robertshawe	November 2001 September 2006 May 2009 (new pumps) June 2012 (re-order profile) Aug 2020
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