




NEONATAL Medication Monograph

# NORADRENALINE (Norepinephrine)

This document should be read in conjunction with this [DISCLAIMER](#)





**Restricted:** Requires Neonatologist or Cardiologist review within 24 hours of initiation

 **HIGH RISK Medication**

<b>Presentation</b>	Vial: 4 mg/4 mL = 1000 microgram/mL
<b>Description</b>	Noradrenaline stimulates beta <sub>1</sub> -adrenergic and alpha-adrenergic receptors. This causes increased contractility and heart rate as well as vasoconstriction to increase systemic blood pressure and coronary blood flow.
<b>Indications</b>	Vasopressor activity for vasodilatory shock, e. g septic shock <i>Note: Usually used in conjunction with dopamine to treat profound hypotension, in the setting of sepsis when other inotropes have failed.</i>
<b>Contraindications</b>	Hypotension from hypovolaemia except as an emergency measure to maintain cerebral and coronary perfusion until volume replaced
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Ensure adequate circulatory volume to minimise need for vasoconstrictors.</li> <li>• Avoid hypertension: close monitoring of BP and adjustment if needed.</li> <li>• Use with extreme caution in patients with profound hypoxia or hypercarbia may produce ventricular tachycardia or fibrillation use with extreme caution.</li> <li>• Flows &lt;2 mL/hr may cause swings in blood pressure.</li> </ul> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;">  Use extreme caution when titrating dosage and changing lines/fluids as sudden changes to rates can result in blood pressure fluctuations.         </div>

<b>Dosage</b>	<p><b><i>Dose stated as noradrenaline base</i></b></p> <p><b>IV Infusion:</b>  <i>Initial Dose</i>  0.05 to 0.1 microgram/ kg/ minute</p> <p><i>Titrate dose in small increment as below:</i>  0.05 to 0.5 microgram/ kg/ minute</p> <p>Higher doses up to a <b>maximum of 2 microgram/ kg/ minute</b>; have been used as per neonatologist or cardiologist</p>
<b>Dosage Adjustment</b>	Titrate initial dose in small increments as required
<b>Adverse Reactions</b>	<b>Common:</b> anxiety, palpitations, headache, extravasation which may cause local tissue necrosis.
	<b>Serious:</b> hypertension which may be associated with bradycardia. Prolonged use of high doses can result in renal impairment and reduced peripheral tissue perfusion.
<b>Interactions</b>	Benzylpenicillin, ganciclovir, indomethacin, insulin, sodium bicarbonate, phenobarbitone Check Y-site compatibility with Pharmacy
<b>Compatible Fluids</b>	Glucose 5%, Sodium Chloride 0.9%
<b>Preparation</b>	IV available from CIVAS (KEMH and PCH)  <b>Infusion Calculation:</b> <b><i>Dilute</i></b> 300 microgram (0.3 mL) of noradrenaline base per kilogram of baby's weight and dilute to 50mL with compatible diluent.  <b>Concentration = 1mL/hr = 0.1 microgram/kg/minute</b>  <b>E.g</b> To prepare an infusion for a 780 g infant Weight = 0.78 kg Dose in Infusion = 300 microgram x 0.78 = 234 microgram Dilute 234 microgram ( $\approx 0.23\text{mL}$ ) to 50 mL with compatible fluid.
<b>Administration</b>	Infuse into a central venous catheter using a rate-controlled infusion device
<b>Monitoring</b>	Continuous blood pressure monitoring Monitor IV site for extravasation
<b>Storage</b>	Store at room temperature, below 25°C Protect ampoules from light.

<b>Notes</b>	<ul style="list-style-type: none"> <li>• Do not cease infusion abruptly</li> <li>• Correct hypovolaemia before commencing noradrenaline</li> </ul>
<b>Related clinical guidelines</b>	<p><b>CAHS Neonatology Guidelines:</b></p> <p><a href="#">Congenital Diaphragmatic Hernia (CDH)</a></p> <p><a href="#">Cardiac: Neonatal Circulation Changes / Unbalanced Circulation</a></p> <p><a href="#">Cardiac: Routine Post-Operative Care</a></p> <p><a href="#">Hypoxic Ischaemic Encephalopathy (HIE) and Therapeutic Hypothermia</a></p> <p><a href="#">Sepsis: Neonatal</a></p>
<b>References</b>	<p>Takemoto CK, Hodding JH, Kraus DM. Pediatric &amp; neonatal dosage handbook with international trade names index: a universal resource for clinicians treating pediatric and neonatal patients. 23rd ed. Hudson (Ohio): Lexicomp; 2017. 2,401 p.1445</p> <p>Truven Health Analytics. Norepinephrine. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2020 [cited 2020 Apr 06]. Available from: <a href="https://neofax.micromedexsolutions.com/">https://neofax.micromedexsolutions.com/</a></p> <p>Australian Medicines Handbook. Children's Dosing Companion. Noradrenaline (norepinephrine) In: Australian Medicines Handbook Children's Dosing Companion [Internet]. Adelaide (South Australia): Australian Medicines Handbook Children's Dosing Companion; 2019 [cited 2020 Apr 06].</p> <p>Shann F. Drug doses. Seventeenth ed. Parkville (Victoria): Collective P/L; 2017. 75</p> <p>Society of Hospital Pharmacists of Australia. Noradrenaline (Norepinephrine). In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2020 [cited 2020 Apr 06]. Available from: <a href="http://aidh.hcn.com.au">http://aidh.hcn.com.au</a></p>

Keywords:	Norepinephrine (noradrenaline)		
Publishing:	<input checked="" type="checkbox"/> Intranet <input checked="" type="checkbox"/> Internet		
Document owner:	Head of Department - Neonatology		
Author / Reviewer:	KEMH & PCH Pharmacy / Neonatology Directorate		
Version info	V3.1 – titration precaution added (11/2024)		
Date first issued:	March 2008	Version:	3.1
Last reviewed:	April 2020	Next review date:	April 2025
Endorsed by:	Neonatal Directorate Management Group	Date:	April 2020
Standards Applicable:	NSQHS Standards: 1  Governance, 3  Infection Control, 4  Medication Safety, 8  Acute Deterioration		
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