



NEONATAL

SODIUM BICARBONATE

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




Unrestricted: Any prescriber may initiate treatment as per guideline

NOTE: Sodium Bicarbonate is incompatible with a number of medications. Separate Infusion line is recommended where possible/appropriate.

<p>Presentation</p>	<p>Vial: 8.4% 10 mL Vial: 8.4% 100 mL</p> <p>Oral Solution: 8.4% (1 mmol/mL) Each 1ml contains: 1mmol Sodium ions 1mmol Bicarbonate ions</p>
<p>Classification</p>	<p>Alkalinising agent that dissociates to provide bicarbonate ions.</p>
<p>Indication</p>	<p>For correction and treatment of metabolic acidosis. Prolonged cardiopulmonary resuscitation.</p>
<p>Dose</p>	<p><u>Cardiopulmonary Resuscitation</u></p> <p>IV/ Umbilical arterial/venous: Sodium bicarbonate is not recommended in a resuscitation situation unless it has progressed greater than 10-15 minutes and a blood gas has demonstrated a severe metabolic acidosis.</p> <p>Dose: 1-2 mmol/kg over 30 minutes of 4.2% sodium bicarbonate. (see preparation section) The dose is to be repeated according to arterial blood gas analysis.</p> <p><u>Correction of pH:</u> IV: To be used for correcting metabolic acidosis if pH<7.2, BE> -10, and a normal PCO₂</p> <p>Dose (mmol) = $\frac{0.3 \times \text{weight (kg)} \times \text{Base deficit}}{2}$</p> <p>The above calculation is a HALF correction. Administer dose and assess needs for a subsequent doses.</p> <p>Dilute to a concentration of 0.5mmol/mL prior to administration</p>

	<p><u>Maintenance of pH</u></p> <p>IV: Bicarbonate may be infused at a prescribed rate to slowly elevate pH. A rate of 1 – 2 mmol/kg/hour of 4.2% Sodium bicarbonate may be infused peripherally. (see <i>preparation section</i>) 8.4% Sodium bicarbonate must be given into a central vein only where possible Once desired pH is reached this infusion may be ceased.</p> <p><u>Supplementation</u></p> <p>Oral: Infant must have reached full feeds 1 mmol/kg/dose every 8 hours</p>
Monitoring	<p>Monitor acid-base balance.</p> <p>Monitor local infusion site for signs of extravasation.</p>
Compatible Fluids	<p>Glucose 5%, glucose 10%, sodium chloride 0.9%, sodium chloride 0.45%.</p>
Preparation	<p><u>IV/Umbilical arterial/venous</u></p> <p><i>Dilution to prepare a HALF strength sodium bicarbonate solution</i></p> <p>Draw up 10 mL (10 mmol) and add 10 mL of compatible fluid to make a final volume of 20 mL</p> <p>Concentration is $10\text{mmol}/20\text{mL} = \underline{0.5\text{mmol/mL}}$</p>
Administration	<p><u>IV:</u> For correction of metabolic acidosis, infuse dose over 2 to 8 hours (usually slower infusions for smaller babies)</p> <p>Maximum rate in a medical emergency is 10 mmol/minute.</p> <p><u>Oral:</u> May be given at any time with regard to feeds only if on full feeds.</p>
Adverse Reactions	<p>Common: alkalosis- dyspnoea, restlessness, muscle weakness, myocardial depression, convulsions, coma</p> <p>Serious: hypernatraemia, increased risk of intraventricular haemorrhage, extravasation may cause tissue necrosis</p>
Storage	<p>Store vials below 30°C.</p> <p>Diluted solutions may be stored for up to 24 hours at 2–8°C.</p>

Interactions	<p>Sodium Bicarbonate is not stable with a number of medications. Contact pharmacy for further information.</p> <p>Avoid simultaneous administration of sodium bicarbonate and catecholamines (dopamine, dobutamine, adrenaline (epinephrine), noradrenaline (norepinephrine)) through the same IV catheter or tubing as the sodium bicarbonate solution will inactive the catecholamine.</p>
Notes	<p>Usually not used in the acute phase of resuscitation - ensure adequate ventilation.</p> <p>Discard vial immediately after use</p>
References	<p>Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index : a universal resource for clinicians treating pediatric and neonatal patients. 24th ed. Hudson (Ohio): Lexicomp; 2401. 2, p1815</p> <p>Truven Health Analytics. Sodium Bicarbonate. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2017 [cited 2019 May 08]. Available from: https://neofax.micromedexsolutions.com/</p> <p>Society of Hospital Pharmacists of Australia. Sodium Bicarbonate. In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2017 [cited 2019 May 15]. Available from: http://aidh.hcn.com.au</p>

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