

Alert	<p>If sodium bicarbonate is used during prolonged resuscitation, it should be given only after adequate ventilation and circulation is established with CPR.</p> <p>Rapid infusion of sodium bicarbonate is associated with increased incidence of intraventricular haemorrhage in preterm infants.</p> <p>Conversion factor for sodium bicarbonate: 1 mmol = 1 mEq</p> <p>Avoid simultaneous administration of sodium bicarbonate and catecholamines through the same IV catheter or tubing as the sodium bicarbonate solution will inactive the catecholamine.</p>
Indication	<p>Metabolic acidosis</p> <p>Chronic renal failure</p> <p>Renal tubular acidosis</p> <p>Prolonged resuscitation</p>
Action	Neutralises excess hydrogen ion and raises pH of the blood. Increases the excretion of free bicarbonate ions in urine, raising urinary pH.
Drug Type	Electrolyte, alkalinising agent
Trade Name	Sodium Bicarbonate Injection 8.4% w/v BP [Phebra]; Sodium Bicarbonate Infusion [Baxter]
Presentation	8.4% (1 mmol/mL) 10 mL injection
Dosage/Interval	<p>Usual dose: 1–2 mmol/kg</p> <p>To calculate dosage required based on base deficit: Sodium bicarbonate dose (mEq) = 0.3 x weight (kg) x base deficit (mEq/L) (Administer half of the calculated dose, then assess need for remainder)</p> <p>Dilute to a maximum concentration of no greater than 0.5 mmol/mL (osmolality = 1000 mOsm/L).</p>
Route	<p>IV</p> <p>PO</p>
Preparation/Dilution	<p>IV: Draw up 10 mL (10 mmol) and add 10 mL of water for injection to make a final volume of 20 mL with a concentration of 0.5 mmol/mL. It can also be diluted with sodium chloride 0.9%, dextrose 5% or other standard electrolyte solutions.</p> <p>PO: IV ampoules may be used orally. Draw up 10 mL (10 mmol) and add 10 mL of water for injection to make a final volume of 20 mL with a concentration of 0.5 mmol/mL.</p>
Administration	<p>IV: Infuse over at least 30 minutes (via central IV line if possible).</p> <p>Maximum rate in a medical emergency is 10 mmol/minute.</p> <p>PO: Administer 1–3 hours after feeds.</p>
Monitoring	<p>Monitor acid-base balance.</p> <p>Monitor local infusion site for signs of extravasation.</p>
Contraindications	Respiratory or metabolic alkalosis.
Precautions	Hypercarbia or hypernatraemia
Drug Interactions	<p>Concurrent use of ketoconazole may decrease ketoconazole exposure.</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>
Adverse Reactions	<p>Hypernatraemia, hyperosmolality, hypocalcaemia, hypokalaemia.</p> <p>May increase intracellular acidosis.</p> <p>If administered during inadequate ventilation, PaCO₂ may rise — thereby exacerbating acidosis.</p> <p>Rapid correction may be associated with IVH.</p> <p>Local tissue necrosis — thrombosis at site of administration</p> <p>Metabolic alkalosis and tetany.</p> <p>Abdominal cramping, nausea, vomiting.</p>
Compatibility	<p>Fluids: Glucose 5%, glucose 10%, glucose in sodium chloride solutions, sodium chloride 0.9%, sodium chloride 0.45%.</p> <p>Y site: Aciclovir, amifostine, amikacin, atropine, aztreonam, bivalirudin, ceftaroline fosamil, ceftazidime, dexamethasone, dexmedetomidine, digoxin, doripenem, fentanyl, filgrastim, fluconazole, furosemide, gentamicin, granisetron, heparin sodium, hydrocortisone sodium</p>

	succinate, ibuprofen lysine, indometacin, insulin, lignocaine, linezolid, metronidazole, morphine, penicillin G, phenobarbitone, potassium chloride, ranitidine, remifentanyl, vancomycin.
Incompatibility	Amino acid solution, adrenaline (epinephrine) hydrochloride, amiodarone, amoxicillin, amphotericin B, ampicillin, anidulafungin, atracurium, azathioprine, buprenorphine, calcium folinate, calcium salts, caspofungin, cefotaxime, ceftazidime, clindamycin, chlorpromazine, clonazepam, diazoxide, dobutamine, dolasetron, dopamine, ganciclovir, glycopyrrolate, haloperidol lactate, hydromorphone, imipenem-cilastatin, ketamine, labetalol, lipid emulsion, magnesium salts, metoclopramide, midazolam, mycophenolate mofetil, noradrenaline (norepinephrine), ondansetron, pentamidine, pethidine, promethazine, streptomycin, suxamethonium, thiopentone, ticarcillin-clavulanate, vancomycin, verapamil.
Stability	
Storage	Store vials below 30°C. Diluted solutions may be stored for up to 24 hours at 2–8°C.
Special Comments	Rapid onset of action after IV administration.
Evidence summary	As per NMF Consensus Group. Refer to reference manual or electronic version.
References	As per NMF Consensus Group. Refer to reference manual or electronic version.

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