

# SODIUM CHLORIDE 20%

## Newborn use only

2020

<b>Alert</b>	Osmolarity: Sodium chloride 20%: 6846 mOsm/L <sup>1</sup> . High risk of extravasation if administered undiluted. Sodium supplementation is not always appropriate and fluid restriction may be appropriate in the management of hyponatraemia. Treatment should always be tailored to the cause.				
<b>Indication</b>	Treatment of hyponatraemia.				
<b>Action</b>	Sodium is the major cation in extracellular fluid.				
<b>Drug type</b>	Sodium chloride 20% contains 200 g/L sodium chloride, equivalent to 3.4 mmol/mL of sodium.				
<b>Trade name</b>	Sodium chloride 20%				
<b>Presentation</b>	Sodium chloride 20% – 10 mL ampoule. Can be used for both IV and oral routes. Refer to administration section.				
<b>Dose</b>	<p><b><u>Severe hyponatraemia &lt; 120 mmol/L or symptomatic hyponatraemia</u></b></p> <p><b>IV: CAUTION—CANNOT BE GIVEN UNDILUTED. REFER TO PREPARATION/DILUTION SECTION FOR DETAILS.</b></p> <p>Infuse sodium chloride at 0.4 mmol/kg/hour until symptoms abate or sodium ≥ 120 mmol/L.</p> <p>Then infuse sodium chloride at 0.15 mmol/kg/hour for 48 hours or until desired sodium is achieved.</p> <p>Therapeutic goal is to increase sodium by 7 mmol/L/day.</p> <p><b><u>IV supplementation</u></b> Start at 2–4 mmol/kg/day and increase as required.</p> <p><b><u>Oral supplementation</u></b> Start at 2–4 mmol/kg/day (0.6–1.2 mL/kg/day) and increase as required, divided into 3–12 doses.</p>				
<b>Dose adjustment</b>	Therapeutic hypothermia – No information. ECMO – No information. Renal impairment – No information. Hepatic impairment – No information.				
<b>Maximum dose</b>					
<b>Total cumulative dose</b>					
<b>Route</b>	IV, PO				
<b>Preparation</b>	<p><b>IV infusion:</b> Draw up 6 mL (20 mmol sodium) of sodium chloride 20% and add 44 mL of water for injection to make a final volume of 50 mL with a final concentration of 0.4 mmol/mL. Infusion at a rate of 1 mL/kg/hour = 0.4 mmol/kg/hour (9.6 mmol/kg/day).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Infusion Strength</th> <th style="text-align: center;">Prescribed amount</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1 mL/kg/hour = 0.4 mmol/kg/hour</td> <td style="text-align: center;">6 mL of sodium chloride 20% and make up to 50 mL of water for injection</td> </tr> </tbody> </table> <p>*1 mL/kg of 0.4 mmol/mL of sodium chloride will raise serum sodium by 0.8 mmol/L.<sup>2</sup></p> <p><b>Oral:</b> Sodium chloride 20% oral solution (prepared in-house by pharmacy decanting 20% sodium chloride from IV ampoules into bottles for oral dosing).</p>	Infusion Strength	Prescribed amount	1 mL/kg/hour = 0.4 mmol/kg/hour	6 mL of sodium chloride 20% and make up to 50 mL of water for injection
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<b>Administration</b>	<p><b>IV:</b> IV infusion.</p> <p><b>Oral:</b> <b>To be given mixed with feeds.</b></p>				
<b>Monitoring</b>	<p><b>IV:</b> Signs of extravasation at IV insertion site</p> <p><b>Oral:</b> Watch for signs of gastric irritation.</p> <p>Serum sodium as per clinical team's recommendation.</p>				
<b>Contraindications</b>	Oral: Infants who are not taking any enteral nutrition, acute gastrointestinal illness including ileus, necrotising enterocolitis, intestinal obstruction.				

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<b>Precautions</b>	Impaired renal function, cardiac insufficiency, pre-existing oedema with sodium retention.
<b>Drug interactions</b>	No information.
<b>Adverse reactions</b>	Hypernatraemia, volume overload, congestive heart failure, respiratory distress Hyperchloraemia, hypercalciuria Disseminated intravascular coagulation (DIC) is associated with inadvertent injections of sodium chloride into blood vessels of the uterus or placenta due to hypernatraemic shock. Not reported in infants. Osmotic demyelinating syndrome. Fever IV site: Extravasation, phlebitis, venous thrombosis. Oral: Gastric irritation.
<b>Compatibility</b>	<b>IV Fluids:</b> Glucose 5%, glucose 10%, glucose 5% in sodium chloride 0.9%, glucose 5% in sodium chloride 0.45%, sodium chloride 0.9%, sodium chloride 0.45%. <b>Y site:</b> No information.
<b>Incompatibility</b>	<b>IV Fluids:</b> Fat emulsion. <b>Y site:</b> No information. Amino Acid solutions – No information.
<b>Stability</b>	PO: Expiry 8 days from manufacture.
<b>Storage</b>	IV: Store at room temperature, 20–25°C. PO: Refrigerate (2–8°C).
<b>Excipients</b>	
<b>Special comments</b>	Osmolarity of undiluted hypertonic sodium chloride is >1000 mOsm/L, posing the risk of extravasation for peripheral IV solutions. <sup>3,4</sup> So, local consensus was to bring the osmolarity of IV preparation to 2.4% sodium chloride that has 0.4 mmol/L of sodium and an estimated osmolarity of 855 mOsm/L.  Total body water is traditionally calculated as weight x 0.6 in children. Greater total body water content in newborns should be considered and therefore should be calculated as weight x 0.75. <sup>2,5</sup>
<b>Evidence</b>	Refer to full version.
<b>Practice points</b>	Refer to full version.
<b>References</b>	Refer to full version.

VERSION/NUMBER	DATE
Original 1.0	06/09/2017
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<b>REVIEW (5 years)</b>	15/12/2025

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