

Calcium – ORAL

Newborn Use Only

2019

Alert	Multiple forms of calcium exist with varying amounts of elemental calcium expressed in varying units. Therefore careful attention is required in prescription and administration of calcium to avoid over- or under-dosing. Conversion factor for elemental Ca: 1 mg = 0.025 mmol = 0.05 mEq. Do not give calcium solutions and sodium bicarbonate simultaneously by the same route to avoid precipitation. Do not mix with any medication that contains phosphates, carbonates, sulfates or tartrates. Separate doses of the following by at least 2 hours: phosphate, iron, thyroxine and phenytoin.
Indication	Oral calcium supplement to prevent / treat calcium deficiency. Asymptomatic hypocalcaemia.
Action	Calcium is essential for the functional integrity of the nervous, muscular, skeletal and cardiac systems and for clotting function.
Drug Type	Mineral.
Trade Name	CalSource Ca1000 effervescent tablets (Novartis). If required: Calcium Gluconate Injection (Phebra) (calcium 0.22 mmol/mL). Calcium Chloride Injection (Phebra) 10% (calcium 0.68 mmol/mL).
Maximum Dose	Oral – 5.5 mmol/kg
Presentation	Calcium carbonate, calcium lactate gluconate (CalSource Ca1000) effervescent tablets contain calcium carbonate 1.8 g, calcium lactate gluconate 2.3 g (equivalent to 1 g or 25 mmol of elemental calcium) and sodium 136.9 mg (5.95 mmol). If required: Calcium gluconate 10% 10 mL vial contains 0.22 mmol/mL of elemental calcium. Calcium chloride 10% 10 mL vial contains 0.68 mmol/mL of elemental calcium.
Dosage/Interval	Dose can vary. Estimate the calcium intake from all sources before prescribing oral calcium. Recommended total daily intake of elemental calcium from all sources: 120–200 mg/kg/day (3–5 mmol/kg/day). Usual starting oral calcium dose: 20 mg/kg/day (0.5 mmol/kg/day). Can increase up to 80 mg/kg/day (2.0 mmol/kg/day). Divide the daily dose into 2-4 doses mixed with feeds (Do not mix with Phosphate – See Drug Interactions).
Route	Oral
Preparation/Dilution	Calcium – oral Dissolve one calcium 1000 mg effervescent tablet in 10 mL of sterile water to make a 2.5 mmol/mL solution.
Administration	Calcium – oral Administer with feeds. If required, calcium IV vials may be given orally (must be diluted at least 1:4 with sterile water).
Monitoring	Monitor calcium, phosphate and magnesium. Measurement of ionised calcium preferred over total calcium. Correct hypomagnesaemia if present.
Contraindications	Caution in patients with renal or cardiac impairment
Precautions	Do not mix with any medication that contains phosphates, carbonates, sulfates or tartrates.
Drug Interactions	Do not mix with any medication that contains phosphates, carbonates, sulfates or tartrates. Separate doses of the following by at least 2 hours: Phosphate, iron, ²¹ thyroxine and phenytoin. Digoxin (serious risk of arrhythmia and cardiovascular collapse), thiazide diuretics (increased risk of hypercalcaemia), ketoconazole (decreased ketoconazole effect).
Adverse Reactions	Nephrolithiasis with long term use. Gastric irritation, diarrhoea and NEC have occurred during oral therapy with hyperosmolar preparations (must dilute with water)
Compatibility	
Incompatibility	Do not mix with any medication that contains phosphates, carbonates, sulfates or tartrates.
Stability	Oral solution: Discard remaining after use.

	Calcium gluconate is a supersaturated solution and may precipitate in the vial at room temperature. Inspect the vial before use.																																														
Storage																																															
Special Comments	<p>Hypocalcaemia defined as a serum total calcium concentration below 1.875 mol/L [7.5 mg/dL] or ionized calcium less than 1.2 mmol/L.[1]</p> <p>Blood gas machines measure ionised calcium directly and are more accurate than the main pathology laboratory which calculates the ionised calcium from a complex formula. Corrected calcium is calculated (when albumin < 40 or > 45) by the formula: Measured Ca (mmol/L) + (40 – albumin (g/L) x 0.025)</p> <p>Calcium salt equivalents of elemental calcium</p> <table><tr><th>Salt</th><th colspan="3">Elemental Ca</th></tr><tr><td>Calcium chloride 10% 1 mL</td><td>1.36 mEq</td><td>27.3 mg</td><td>0.68 mmol</td></tr><tr><td>Calcium gluconate 10% 1 mL</td><td>0.46 mEq</td><td>9.3 mg</td><td>0.23 mmol</td></tr><tr><td>Salt 1g</td><td></td><td></td><td></td></tr><tr><td>Calcium Acetate</td><td>12.6 mEq</td><td>253 mg</td><td>6.30 mmol</td></tr><tr><td>Calcium Carbonate</td><td>19.9 mEq</td><td>400 mg</td><td>9.96 mmol</td></tr><tr><td>Calcium Citrate</td><td>10.5 mEq</td><td>211 mg</td><td>5.26 mmol</td></tr><tr><td>Calcium Chloride</td><td>13.6 mEq</td><td>273 mg</td><td>6.80 mmol</td></tr><tr><td>Calcium Glubionate</td><td>3.29 mEq</td><td>66 mg</td><td>1.64 mmol</td></tr><tr><td>Calcium Gluceptate</td><td>4.08 mEq</td><td>82 mg</td><td>2.04 mmol</td></tr><tr><td>Calcium Gluconate</td><td>4.65 mEq</td><td>93 mg</td><td>2.32 mmol</td></tr></table>			Salt	Elemental Ca			Calcium chloride 10% 1 mL	1.36 mEq	27.3 mg	0.68 mmol	Calcium gluconate 10% 1 mL	0.46 mEq	9.3 mg	0.23 mmol	Salt 1g				Calcium Acetate	12.6 mEq	253 mg	6.30 mmol	Calcium Carbonate	19.9 mEq	400 mg	9.96 mmol	Calcium Citrate	10.5 mEq	211 mg	5.26 mmol	Calcium Chloride	13.6 mEq	273 mg	6.80 mmol	Calcium Glubionate	3.29 mEq	66 mg	1.64 mmol	Calcium Gluceptate	4.08 mEq	82 mg	2.04 mmol	Calcium Gluconate	4.65 mEq	93 mg	2.32 mmol
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Evidence summary	Refer to full version.																																														
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