

Sodium Bicarbonate

Indications: Metabolic Acidosis (severe hypoxia, late cardiac arrest), Hyperkalemia, Tricyclic or Phenobarbital Overdose, Crush Syndrome

Contraindications: Avoid in the Pediatric DKA patient except in cardiac arrest.

Concentration: 1 mEq/mL

ADULT DOSING

Indication	Dose	Rate & Route	Note
Cardiac Arrest	100 mEq 100 mL	IV/IO Push	
TCA / Phenobarbital Overdose	50 mEq 50 mL	IV/IO Push	Bolus 50 mEq (50 mL), then begin maintenance infusion of 100 mEq (100 mL) in 1.0 L of LR wide open.
	100 mEq	IV/IO Infusion	
Chlorine Gas Exposure	2 mEq	Nebulizer	Mix 2 mEq (2 ml) with 2 ml sterile water to nebulize May repeat q 20 min with max of 2 doses
Crush Injury	50 mEq	IV Infusion	Mix 50 mL into 1 L isotonic and run wide open

ADULT DOSING

PEDIATRIC DOSING

Indication	Dose	Rate & Route	Note
Acidosis	1 mEq / kg	IV/IO Push	
TCA / Phenobarbital Overdose			

PEDIATRIC DOSING

Pediatric Dosing Sodium Bicarbonate

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

**Sodium Bicarbonate
Concentration: 1 mEq/ml**

3 mL	4 mL	5 mL	6.5 mL	8.5 mL	10.5 mL	13 mL	16.5 mL	21 mL	26.5 mL	33 mL
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Adverse/Side Effects	Alkalosis, Hyperirritability, Seizures, Tetany (electrolyte imbalance), Cardiac & respiratory arrest, Lowering of serum potassium, Decreased fibrillation threshold.		
Class	Alkalinizing Agent		
Mechanism of Action	In the presence of hydrogen ions, sodium bicarbonate dissociates to sodium and carbonic acid, the carbonic acid picks up a hydrogen ion changing to bicarbonate and then dissociates into water and CO ₂ , functioning as an effective buffer and alkalinizing the blood. In summary, increases plasma bicarbonate, which can buffer metabolic acids and move TCAs and phenobarbital off receptor sites and back into circulation.		
Onset of Action	Rapid	Peak Effect	Fast
			Duration of Action 8 – 10 minutes