

Magnesium Sulfate 50%

Indications: V-Fib or Pulseless V-Tach(pVT) Cardiac Arrest, Wide Complex Tachycardia with a Pulse, All Torsade de Pointes, Respiratory Distress or Failure, OB Seizures (eclampsia)

Contraindications: Hypotension, third degree AV block, routine dialysis patients, known hypocalcemia.

Concentration: 500 mg/mL

ADULT DOSING

Indication	Dose	Rate & Route	Note
V-fib or pVT Cardiac Arrest	2 g 4 mL	Slow IV/IO Push	Place into 50 ml NS to infuse over 5 minutes 600 gtts/min with 60 gtts set
Wide Complex Tachycardia WITH a Pulse (Torsade de Pointes)		IV/IO Infusion	
Respiratory Distress/Failure			
OB Seizures	4 g 8 mL		

ADULT DOSING

PEDIATRIC DOSING

Indication	Dose	Rate & Route	Note
V-fib or pVT Cardiac Arrest	50 mg/kg Max dose: 2 g	Slow IV/IO Push	q 5 minutes to max dose of 2 g
Wide Complex Tachycardia WITH a Pulse (Torsade de Pointes)		IV/IO Infusion	Place into 50 ml NS to infuse over 5 minutes 600 gtts/min with 60 gtts set
Respiratory Distress/Failure			

PEDIATRIC DOSING

Pediatric Dosing Magnesium Sulfate 50%

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

IV/IO Push for VF/pVT in Cardiac Arrest

Concentration = 500 mg/ml

0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1.0 mL	1.3 mL	1.6 mL	2.1 mL	2.6 mL	3.0 mL
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IV/IO Infusion over 5 Minutes

Place above ml dose (\leq 4 ml) in 50 ml NS, use IV burette 60 gtts set, then infuse at 600 gtts/min
Concentration = 500 mg/ml

Precaution

Magnesium Sulfate should be administered slowly to minimize side effects. Use with caution in patients with known renal insufficiency. In hypermagnesemia Calcium Chloride should be available as an antidote if serious side effects occur

Adverse/Side Effects Class

Hypotension, cardiac arrest, respiratory/CNS depression, flushing, sweating, bradycardia, decreased deep tendon reflexes, drowsiness, respiratory depression, arrhythmia, hypothermia, itching, and rash.
Antiarrhythmic (Class V), Electrolyte

Mechanism of Action

Magnesium Sulfate is a salt that dissociates into the Magnesium cation and the sulfate anion. Magnesium is an essential element in numerous biochemical reactions that occur within the body. Magnesium Sulfate acts as a calcium channel blocker and blocks neuromuscular transmission. Hypomagnesemia can cause refractory ventricular fibrillation. Magnesium Sulfate is also a central nervous system depressant used for seizures associated with eclampsia and it is also a bronchodilator.

Onset of Action

Immediate

Peak Effect

Fast

Duration of Action

30 minutes