

# Kittitas County Prehospital EMS Protocols

**SUBJECT:     MAGNESIUM SULFATE**

**ACTION:**

An electrolyte necessary for normal function of the nervous and cardiovascular systems. 50% of the element is deposited in bone, 45% exists as an intracellular cation, and 5% is in the extracellular fluid.

**INDICATIONS:**

- Eclampsia (including eclamptic seizures).
- Cardiac dysrhythmias:
  - Torsades de Point (drug of choice).
  - Ventricular fibrillation.
  - Ventricular tachycardia.
- Digoxin toxicity (may help with second and third degree heart block).
- Tricyclic overdose with associated cardiac dysrhythmias. Mag should only be used after Sodium Bicarbonate and Lidocaine have been found ineffective.
- Known or suspected hypomagnesaemia.
- Refractory Asthma

**CONTRAINDICATIONS:**

- Second degree heart block Type II.
- Third degree heart block.

**\*\*EXCEPTION\*\*:** if the patient is taking digitalis and there is a high likelihood of digitalis toxicity, magnesium sulfate may be useful in treating Second and Third degree heart block.

**PRECAUTIONS:**

- Renal disease (magnesium is excreted solely by the kidneys).
- Give slowly in an awake patient to avoid hypermagnesemia.

**SIDE EFFECTS:**

- Large doses may lead to respiratory depression, cardiac arrest and CNS depression.
- Hypermagnesemia (rare) resulting in muscle weakness, ECG changes, hypotension and confusion may occur with magnesium administration.
- Nausea and diarrhea

**DOSAGE:**

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- Cardiac dysrhythmias, digitalis toxicity, and hypomagnesaemia: 2 - 4 g IV/IO Pediatric: 25-50 mg/kg IV/IO, to a max of 2 g
- Eclampsia: 2 - 4 g IV/IO or IM; may repeat to 10 g total
- TCA overdose 1-2 g IV/IO
- Refractory Asthma 2 g IV/IO peds 25-50 mg/kg
- Reduce the dose in patients with known renal impairment

**ROUTE:** IV, IM, IO