

MAGNESIUM: Expected Reference Ranges

Magnesium	1.3 - 2.1 mEq/L
Hypomagnesemia	< 1.3 mEq/L
Hypermagnesemia	> 2.1 mEq/L

HYPOMAGNESEMIA: Risk Factors

GI loss	Medications
Alcohol use disorder	Cisplatin
Hypocalcemia	Cyclosporine
Hypokalemia	Aminoglycoside antibiotics
Diabetic ketoacidosis	Diuretics
Hyperparathyroidism	Amphotericin B
Malabsorption	
Total parenteral nutrition	
Laxative abuse	
Acute MI	

HYPOMAGNESEMIA: Manifestations

Paresthesias	Dysrhythmias
Trousseau's sign	Chvostek's sign
Agitation	Confusion
Hyperreflexia	Hypertension
Insomnia	Irritability
Anorexia	Nausea
Vomiting	Dysphagia

HYPOMAGNESEMIA: Interventions

Seizure precautions	Monitor swallowing
Dietary measures & education	Monitor urine output
Monitor respirations	Administer medications: IV magnesium sulfate, PO magnesium salts
Monitor for signs of magnesium toxicity with IV replacement, and treat with calcium gluconate	

HYPERMAGNESEMIA: Risk Factors

Renal failure	Excessive Mg++ therapy
Adrenal insufficiency	Laxative overuse
Lithium toxicity	Extensive soft tissue injury or necrosis

HYPERMAGNESEMIA: Manifestations

Hypotension	Drowsiness
Bradycardia	Bradypnea
Coma	Cardiac arrest
Hyporeflexia	Nausea
Vomiting	Facial flushing

HYPERMAGNESEMIA: Interventions

Mechanical ventilation	IV fluids (lactated Ringer's or NS)
Monitor respirations and BP	Monitor deep-tendon reflexes
Administer meds: IV calcium gluconate, loop diuretics	
Magnesium should not be administered to pts in renal failure	

