

MAGNESIUM: Expected Reference Ranges

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

HYPOMAGNESEMIA: Risk Factors

| | Medications |
|----------------------------|----------------------------|
| GI loss | |
| 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

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

HYPOMAGNESEMIA: Interventions

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| 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

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

HYPERMAGNESEMIA: Manifestations

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

HYPERMAGNESEMIA: Interventions

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|--|-------------------------------------|
| 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 | |

