

Hypocalcemia

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FOR MORE

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- ▶ Anemia
- ▶ Basophilia
- ▶ Decreased Total Thyroxine
- ▶ Eosinophilia
- ▶ Epistaxis
- ▶ Erythrocytosis
- ▶ Hypercalcemia
- ▶ Hypercholesterolemia
- ▶ Hyperglobulinemia
- ▶ Hyperkalemia
- ▶ Hypoalbuminemia
- ▶ Hypocholesterolemia
- ▶ Hypoglycemia
- ▶ Hypokalemia
- ▶ Hypophosphatemia
- ▶ Increased & Decreased Blood Urea Nitrogen
- ▶ Increased & Decreased Creatinine
- ▶ Increased Total Thyroxine
- ▶ Lymphocytosis
- ▶ Lymphopenia
- ▶ Monocytosis
- ▶ Neutropenia
- ▶ Panting

Most (~99%) calcium in the body is stored in the bones. The remaining calcium is stored in extracellular fluid and is composed of 3 parts: protein-bound, complexed, and unbound/ionized (active form) calcium. As a result, protein concentrations can affect total calcium; however, formulas to correct for albumin concentration should not be used, as they are often inaccurate. Any decrease in total calcium should be rechecked and an ionized calcium test performed if calcium is still decreased.

Following are differential diagnoses for patients presented with hypocalcemia.

- ▶ Acute pancreatitis
- ▶ Acute tumor lysis syndrome
- ▶ Artfactual hypocalcemia
 - EDTA or citrate contamination of serum sample
- ▶ Critical illness (likely multifactorial), including sepsis
- ▶ Drug-induced effect
 - Bicarbonate infusion
 - Bisphosphonates
 - Enrofloxacin
 - Furosemide
 - Phosphate enema
 - Tetracyclines
- ▶ Eclampsia
- ▶ Ethylene glycol toxicity
- ▶ Hyperthyroidism
- ▶ Hypoalbuminemia (most common cause)
- ▶ Hypomagnesemia
- ▶ Massive blood transfusion (excessive citrate)

- ▶ Medullary thyroid carcinoma (increased calcitonin)
- ▶ Metabolic (eg, secondary to protracted vomiting) or respiratory (eg, hyperventilation) alkalosis
- ▶ Postsurgical correction of primary hyperparathyroidism or hyperthyroidism
- ▶ Primary hypoparathyroidism
- ▶ Protein-losing enteropathy
- ▶ Renal secondary hyperparathyroidism
 - Chronic or, less commonly, acute renal failure
- ▶ Secondary hyperparathyroidism due to nutritional (eg, vitamin D) deficiencies
- ▶ Severe rhabdomyolysis or soft tissue trauma
- ▶ Snake envenomation
- ▶ Urethral obstruction
- ▶ Vitamin D-resistant rickets (types I and II) ■

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