

Hypercalcemia

Hyper: excessive (>11.0)

Calc: prefix for calcium

Emia: blood

Meaning of Hypercalcemia: excessive calcium in the blood

Normal calcium levels in the blood: **8.4 to 11.0 mg/dL** (>**11.0** is hypercalcemia)

Calcium plays a huge **role** in bone and teeth health along with muscle/nerve function, cell, and blood clotting.

Calcium is absorbed in the GI system and stored in the bones and then excreted by the kidneys.

Vitamin D helps play a role calcium absorption.

Causes of Hypercalcemia

Remember “**High Cal**”

Hyperparathyroidism (high parathyroid hormone causes too much calcium to be released into the blood)

Increased intake of calcium (excessive use of oral calcium or Vitamin D supplements)

Glucocorticoids usage (suppresses calcium absorption which leaves more calcium in the blood)

Hyperthyroidism

Calcium excretion decreased with **Thiazide*** diuretics & renal failure, cancer of the bones

Adrenal insufficiency (Addison’s Disease)

Lithium usage (affects the parathyroid and causes phosphate to decrease and calcium to increase)

Signs & Symptoms of Hypercalcemia

“The body is too **WEAK**”

Weakness of muscles (profound)

EKG changes **shortened QT interval** (most common) and prolonged PR interval

Absent reflexes, absent minded (disorientated), abdominal distention from constipation

Kidney Stone formation

Nursing Interventions for Hypercalcemia

Mild cases of Hypercalcemia

- Keep patient hydrated (decrease chance of renal stone formation)
- Keep patient safe from falls or injury
- Monitor cardiac, GI, renal, neuro status
- Assess for complaints of flank or abdominal pain & strain urine to look for stone formation
- Decrease calcium rich foods and intake of calcium-preserving drugs like **thiazides**, supplements, Vitamin D

To help you remember foods high in calcium remember the phrase:

“Young Sally’s calcium serum continues to randomly mess-up”

Yogurt

Sardines

Cheese

Spinach

Collard greens

Tofu

Rhubarb

Milk

Moderate cases of Hypercalcemia

Administer calcium reabsorption inhibitors: **Calcitonin**, Bisphosphonates, prostaglandin synthesis inhibitors (ASA, NSAIDS)

Severe cases of Hypercalcemia

Prepare patient for dialysis