



BASIC INFORMATION

DESCRIPTION

Calcium is a mineral component of blood that helps regulate the heartbeat, transmit nerve impulses, contract muscles and form bone and teeth. Too much calcium (hypercalcemia) or too little calcium (hypocalcemia) can cause serious, sometimes life-threatening medical problems. Affected are membranes of all body cells, muscles, bones, parathyroid glands and parathyroid hormones (these regulate calcium absorption and utilization).

FREQUENT SIGNS AND SYMPTOMS

Too little calcium:

- Muscle spasms, twitching or cramps.
- Numbness and tingling in the arms, legs, hands and feet.
- Seizures.
- Irregular heartbeat.
- High blood pressure.

Too much calcium:

- Lethargy.
- Appetite loss.
- Vomiting and diarrhea.
- Dehydration and thirst.
- Irregular heartbeat.
- Low blood pressure.
- Depression, delirium, confusion.
- Seizures or coma (worst cases only).

CAUSES

Too little calcium:

- Underactive parathyroid glands from disease or damage during neck surgery.
- Inadequate dietary intake of calcium and vitamin D.
- Malabsorption from the gastrointestinal tract (usually for unknown reasons).
- Severe burns or infections.
- Pancreatitis.
- Kidney failure.
- Decreased blood levels of magnesium.

Too much calcium:

- Overactive parathyroid glands.
- Multiple fractures and prolonged bed rest.
- Multiple myeloma.
- Tumors, benign or malignant, that destroy bone.

RISK INCREASES WITH

Too little calcium:

- Use of certain drugs, including thiazide diuretics and calcium-channel blockers.
- Injury, cancer or surgery of the thyroid gland or parathyroid glands.

- Excess alcohol consumption leading to poor nutrition.

Too much calcium:

- Improper diet, especially over-consumption of milk products or non-prescription antacids that contain calcium.
- Repeated transfusions with citrated blood.
- Chronic kidney disease.
- Inactivity or prolonged bed rest for any reason.

PREVENTIVE MEASURES

- Eat a normal, balanced diet.
- Don't drink more than 1 or 2 alcoholic drinks, if any, a day.
- Don't use non-prescription antacids on a regular basis.

EXPECTED OUTCOMES

Most cases are curable with treatment in 1 week, unless the calcium imbalance is caused by cancer.

POSSIBLE COMPLICATIONS

- Cardiac arrest.
- Fractures of weak bones.
- Kidney stones (high calcium).
- Peptic ulcer (high calcium).



TREATMENT

GENERAL MEASURES

- Diagnostic tests may include laboratory blood studies of calcium levels, ECG (an electrocardiogram measures electrical activity of the heart) and X-rays of bones.
- The underlying cause must be corrected before you can follow a treatment program to prevent a recurrence.

MEDICATIONS

- Intravenous calcium gluconate or calcium carbonate for too little calcium.
- Intravenous saline solution and loop diuretics (furosemide and ethacrynic acid) for too much calcium.

ACTIVITY

After treatment, resume your normal activities as symptoms improve.

DIET

- For a mild, low calcium level, take calcium supplements and vitamin D. Increase your intake of protein, milk and milk products.
- For a mild, high calcium level, restrict consumption of dairy products and calcium-containing antacids.



NOTIFY OUR OFFICE IF

- You or a family member has symptoms of a calcium imbalance.
- Symptoms worsen or don't improve after treatment is initiated.