

### Medication Names

**Prototype Med**      calcium citrate (Citracal  
calcium carbonate (Tums; Os-Cal)

**Action:** provide a non-dietary source of calcium

### Therapeutic Use

Hypocalcemia

Gastric hyperacidity

Clients who have, or are at risk for, experiencing a calcium deficiency

Adolescents

Women who are pregnant, breastfeeding, or postmenopausal

Men and women at risk for osteoporosis due to age or lactose intolerance

### Adverse Drug Reactions

Hypercalcemia secondary to hyperparathyroidism      More likely to occur when taking large amounts of vitamin D

More likely to occur with long-term therapy

Nausea, vomiting, and constipation—may occur as adverse effects or secondary to calcium toxicity

Kidney stones—in clients with hypercalcemia or a history of kidney stones

### Interventions

Monitor serum calcium periodically.

Monitor clients for signs of decreased gastric and intestinal motility.

Monitor clients for urine output in excess of intake.

Monitor clients for signs of decreased gastric and intestinal motility

Monitor clients for flank pain and blood in urine.

### Administration

Can be given orally or intravenously.

Give calcium supplements 1 hr before or 1 to 2 hr after glucocorticoids, thyroid supplements, and tetracycline and quinolone antibiotics.

Give calcium-based antacids 1 hr after meals and at bedtime      Chewable tablets should be chewed before swallowing

Give clients glass of water after swallowin

### Patient Education

Teach clients signs of hypercalcemia (constipation, nausea and vomiting, increased urine output, depression).

Instruct clients to take calcium supplements as prescribed by provider, and not to take additional doses

Instruct clients to report nausea and vomiting to provider.

Instruct clients to eat high-fiber diet and take laxative as necessary for constipation

Instruct clients to report flank pain or blood in urine to provider.

Instruct clients to take calcium supplements 1–2hrs before or after taking other medications such as: glucocorticoids, thyroid supplements, and tetracycline and quinolone antibiotics

Instruct clients to take calcium-based antacids 1 hr after meals and at bedtime.      Chew tablet before swallowing

Drink glass of water after swallowing

Don't take more than 600 mg at one time

Compare dose with bioavailable amount of calcium in product.

### Contraindications

Hyperglycemia

Kidney stones

Low phosphate levels

Cardiac dysrhythmias

### Precautions

Low gastric motility

### Interactions

Thiazide diuretics cause decreased excretion of calcium, which may result in hypercalcemia

Calcium supplements decrease absorption of many other medications, such as thyroid hormones, tetracycline and quinolone antibiotics, and glucocorticoids.

Avoid taking calcium with foods such as cereals, rhubarb, and spinach