

Calcium Citrate

300 mg

Tablets



Product Summary:

Calcium is needed to form strong bones and teeth, healthy gums, and maintain regular heart beat and nerve impulse transmission. Calcium helps in the development and maintenance of bones and teeth especially in childhood, adolescence and young adulthood. Calcium supplementation addresses osteoporosis prevention and treatment.

Properties/Uses:

The claim as approved by the *Natural Health Products Directorate* (NHPD): Helps in the development and maintenance of bones and teeth. Calcium intake, when combined with sufficient vitamin D, a healthy diet, and regular exercise, may reduce the risk of developing osteoporosis.



MUSCULAR
& SKELETAL



Pharmacology:

Osteoporosis is a disease in which bone mass loss and deterioration of bone tissue occurs. Osteoporosis Canada states that 1 in 4 women and 1 in 8 men over the age of 50 have osteoporosis.¹ The best defense against osteoporosis in the senior years is thought to be the attainment of maximal bone mineral density in the early life years before 20 25. Both male and female teenagers and young adults should focus on early maximal bone mineral density.

This disorder is not principally due to a lack of calcium, but to an imbalance in the bone remodeling actions of the osteoclast cells that break down bone, and the osteoblast cells that build up new bone. Remodeling imbalance presents a wider therapeutic issue that mineral supplementation cannot in itself address. However, achieving optimal mineral conditions is a critical step. Other factors like lifestyle or hormonal therapy will address remodeling imbalance.

Calcium intake provides strong bone development during the younger years and the acquired bone density needed to get us through our latter years without osteoporosis, which causes bones to become brittle and fragile. Adequate, lifelong dietary calcium intake is necessary to reduce the risk of osteoporosis—a disorder principally due to an imbalance in the bone remodeling action of osteoclast cells that break down bone, and osteoblast cells that build up new bone.

All calcium deficiencies if uncorrected will lead to bone disorders, especially in growing children, but not all cases of osteoporosis are the direct result of dietary calcium deficiency. Other considerations are important beyond calcium, and life style is central. The typical North American diet has the potential for causing excessive bone calcium “mobilization” that can lead to calcium wastage via urine excretion. High phosphate intake via meats and soft drinks, high sugar intake, and excessive plasma amino acid concentrations from excessive protein intake call for calcium buffering, represent chronic drains on calcium bone density.

Two other important lifestyle factors that influence the mineral density of bones are exercise and smoking. Many adults who work in sedentary jobs stop exercising in meaningful ways early in life. Yet, daily minimal weight-bearing exercise is able to drive bone formation, assuming dietary needs are met. Smoking is thought to ultimately lead to the potential for lower blood pH due to compromised CO₂ venting in the lungs, thus allowing higher levels of carbonic acid to accumulate in the blood. Accordingly, more bone minerals will be mobilized to buffer the blood.





Perhaps no mineral has gained greater recognition and acceptance than that of calcium. We are constantly admonished to, «take calcium», in order to have strong bones now, and the acquired bone density needed for our latter years to avoid bone fractures due to osteoporosis. Osteoporosis concerns are well founded in North America, where approximately 1.3 million women suffer fractures each year as a result of osteoporosis. And to add concern, the rate of osteoporosis fractures has been going up over the past three decades in a manner that cannot be fully explained simply by the increase in an aging population.²

Part of the problem in curbing the incidence of osteoporosis is a widespread singular focus on calcium, with little or no emphasis on magnesium and vitamin D, and often only lip service to other critical mineral factors and meaningful exercise.

Avoiding osteoporosis is much more complex than simply increasing calcium intake, or even relying on appropriate supplementation alone. Exercise and meaningful reductions in calcium wastage are central to maintaining optimal conditions for arresting bone decline. It is important to realize that osteoporosis is an infrequent disease in the so called third world, where calcium supplementation, and milk consumption for that matter, is virtually non-existent and daily dietary calcium intake is typically below the average intake of North Americans.² However, the level of weight-bearing exercise is consistently higher.

Calcium is important to more than just bone and tooth health. Calcium supplementation has also been helpful in cases of salt-sensitive high blood pressure, as well as in pregnancy induced high blood pressure.³⁻⁵





Manufactured product information:

Manufacturer:

WN Pharmaceuticals Ltd

Size / UPC:

120's7 77747 10330 0

NPN:

80003855

Expiry Date:

60 months from date of manufacture

Active Ingredient:

Each tablet contains:

Calcium (Citrate)300 mg

Non-Medicinal Ingredients (in descending order):

Coating (carbohydrate gum, glycerin), croscarmellose sodium, magnesium stearate.

Appearance:

White oval clear coated tablet.

Packaging:

300 cc white round bottle with safety seal under a 38 mm white induction sealed cap with vented interior seal and a label applied to the bottle. Lot number and expiry date are printed on the label applied to the exterior of the bottle.

Storage:

Store in tight, light-resistant containers in a cool, dry place.





Dose:

According to the NHPD for children and adults, the appropriate dosage of calcium is 65-1,500 mg per day.⁶

Directions:

(Adults): 2–5 tablets daily, a few hours before or after taking other medications, or as recommended by a physician.

Caution:

The caution as approved by the *Natural Health Products Directorate* (NHPD): KEEP OUT OF THE REACH OF CHILDREN. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF INNER SEAL IS BROKEN OR MISSING.

Deficiency Symptoms:

The bones and teeth contain greater than 99% of the calcium in the human body.⁷ Calcium deficiency can lead to reduced bone density resulting in rickets, osteomalacia or osteoporosis. A deficiency can also lead to muscle cramps.



Drug Interactions/Contraindications:

Calcium absorption is dependent on the presence of adequate vitamin D.

The use of calcium without also supplementing magnesium may be a risk factor for developing magnesium depletion over time.

Quinolones and tetracyclines combine with calcium, magnesium or other minerals. Concurrent use will render the antibiotics less effective. Minerals should be taken at least two hours apart from these antibiotics. Used long term, these antibiotics may produce mineral deficiencies.⁸

Loop diuretics may cause the loss of calcium and magnesium from the body, frustrating efforts to address osteoporosis.⁸

Thiazide diuretics cause mineral losses, including calcium and magnesium. Long term use could deplete the body of these and other minerals. Since many of those using thiazides could also be osteoporotic, supplementation of minerals may be necessary.⁸

Corticosteroids interfere with calcium absorption and metabolism. Long term use may contribute to or exacerbate osteoporosis.⁸

Etidronate (Didronel) reacts with calcium and magnesium interfering with its absorption, if the respective dosing are not separated by at least two hours. However, this drug also alters vitamin D metabolism so that calcium deficiencies may result.⁸

Calcium interferes with iron absorption.⁸

Isoniazid alters vitamin D metabolism with possible reduction in calcium absorption. Supplementation with vitamin D at the optimal dose for individual needs should be advised.⁸

High doses of magnesium, zinc, fiber, and oxalates interfere with calcium absorption.⁸

Caffeine, alcohol, phosphates (soft drinks, meat, many can goods), protein (amino acids), sodium, and sugar lead to increased calcium excretion.⁸

Digitalis may adversely affect magnesium status. Magnesium depletion is associated with an adverse heart impact, including arrhythmias and coronary spasms.^{9,10}

Patients with hyperparathyroidism or cancer should not supplement with calcium unless directed by a physician.⁷

Supplementing with calcium in some people may increase the risk of forming calcium kidney stones. Co-use of at least half as much magnesium lowers the risk of kidney stones.⁷





Toxicity/Adverse Reactions:

Calcium supplements are usually well tolerated in daily dosages up to 2000 mgs. Higher intakes may contribute to kidney stone formation and soft-tissue calcium deposits.^{3,11} However, magnesium supplementation reduces the risk for kidney stone formation, especially magnesium citrate, increasing the solubility of calcium in urine formation.^{2,3} Using more than 2000 mg per day is unlikely to make a significant clinical contribution unless deemed to be warranted by a clinician.





Allergen Content/Ingredient Sensitivity:

| NO | YES |
|--------------------------|-----|
| Artificial Color | |
| Artificial Flavor | |
| Artificial Sweeteners | |
| Corn Products | |
| Egg Products | |
| Fish | |
| Gluten | |
| Hydrolyzed Plant Protein | |
| Lecithin | |
| Milk Products | |
| Peanuts | |
| Preservatives | |
| Sesame Products | |
| Shellfish | |
| Soy Products | |
| Starch/Modified Starch | |
| Sulphites | |
| Tartrazine | |
| Tree Nuts | |
| Wheat Products | |
| Yeast | |

ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTIONS:

Free of animal products

NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTIONS:

Kosher





References:

1. Osteoporosis Canada [www.osteoporosis.ca]
2. Gaby AR. Preventing and Reversing Osteoporosis. Prima Publishing, Rocklin CA, 1994.
3. Murray MT. Encyclopedia of Nutritional Supplementation. Prima Publishing, Rocklin CA, 1996.
4. Belizan JM, et al. Calcium supplementation to prevent hypertensive disorder of pregnancy, New Engl J Med. 1991; 325: 1399-1405.
5. Knight KB, et al. Calcium supplementation on normotensive and hypertensive pregnant women, Amer J Clin Nutr. 1992; 55: 891-895.
6. Health Canada, Calcium Monograph, Accessed October 2011 [Available from: <http://www.hc-sc.gc.ca>]
7. Natural Medicine Comprehensive Database (NMCD), Calcium Monograph, Accessed November 2010 [Available from: <http://www.naturaldatabase.com/>]
8. Graedon J, Graedon T. Deadly Drug Interactions. St. Martin Griffin, New York NY, 1995.
9. Teo KK, et al. Role of magnesium in reducing mortality in acute myocardial infarction: A review of the evidence, Drugs. 1993; 46: 347-359.
10. Turlapaty P, et al. Magnesium deficiency produces spasms of coronary arteries: Relationship to etiology of sudden ischemic heart disease. Science. 1980; 208: 199-200.
11. Whitaker, Julian. Dr Whitaker's Guide to Natural Healing. Prima Publishing, Rocklin, CA, 1995

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