

CALCIUM & MAGNESIUM 2:1

with Vitamin D₂

BIOMED[®]
international

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Osteoporosis

Each year the incidence of osteoporosis in Canada increases. The major public health costs associated with osteoporosis relates to bone fractures, particularly hip fractures. Fractures are most prevalent in older postmenopausal women and research points to a high incidence of mortality within one year of suffering a hip fracture. It is projected that based on current trends and demographics, in forty years Canadians will be experiencing four times the number of hip fractures they are today. The costs to the health care system of addressing this situation will be prohibitive. This suggests that remedial steps should be taken now. One of the essential adjunctive therapies in the treatment of osteoporosis is the use of calcium with magnesium and Vitamin D. Together these minerals and vitamin provide important nutritional building blocks necessary for healthy bones.

A recent study of postmenopausal women aged 45-75 found that calcium supplementation was critical for maintaining bone mass. Another study indicates that supplementation with calcium and vitamin D to institutionalized elderly people could reduce the risk of hip fractures by over 30%. This study concluded that older persons who are deficient in vitamin D experience cortical bone loss. A second French study found that bone mass in older women with vitamin D deficiency increases significantly at the lumbar spine, femur, trochanter, and whole body after calcium and vitamin D supplementation for 1 year, and concomitantly bone markers improved as vitamin D levels returned to normal. A recent US study concluded that osteoporosis is a serious public health concern and that skeletal fragility, leading to spine and hip fractures is a major cause of death. It concluded that adequate calcium intake from childhood to the end of life is critical for the formation and retention of a healthy skeleton.

Many nutritionalists find that a 2:1 ratio of calcium to magnesium is the perfect natural balance. Without magnesium being present when additional calcium is taken, the body is forced to find sources of magnesium and robbing it from other parts of the body. This causes additional stress to the body. When there is a low level of magnesium, the calcium ion mimics and replaces the magnesium ion in the muscle cell causing muscle weakness and spasms. Whereas, for some persons a 1:1 calcium-magnesium formula can result in diarrhea caused by magnesium at higher doses. Health practitioners need to decide which formulation (1:1 or 2:1) is best for their patients.

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Each vegetarian caplet contains: Ingredients:

Calcium(citrate)
(150 mg elemental calcium
from 517.24 mg calcium citrate)

150 mg

Mode of Action

Regulates heartbeat and prevents heart disease
Aids the growth and contraction of muscles
Combats cholesterol by increasing HDL
Reduces the occurrence of kidney stones
Reduces high blood pressure
Prevents muscle cramping
Transmits nerve impulses

Magnesium(citrate)
(75 mg elemental magnesium
from 416.67 mg magnesium citrate)

75 mg

Assists calcium metabolism
Helps maintain arterial health, normal blood pressure
and normal heart rhythm
Works with calcium to form the structure of the bone
Aids the transportation of calcium within the body to
where it is needed the most

Vitamin D₂(ergocalciferol)

200 IU

Increases calcium absorption
Is important in the treatment of osteoarthritis, osteoporosis,
hypocalcemia and in enhancing the immune system.

Excipients: vegetable stearate, silicon dioxide.

Contains no wheat, corn, soy, yeast, dairy, artificial colors or preservatives.

Side effects: May cause diarrhea

Contraindications: Do not use in individuals with known or suspected sensitivity to any of the above listed ingredients.

ADULT DOSAGE: Take two caplets twice a day with meals or as directed by a practitioner.

CALCIUM & MAGNESIUM 2:1

Calcium is important for building strong bones and teeth. Whereas, magnesium assists the body with calcium metabolism. Calcium and magnesium work together, calcium forming the structure of the bone and magnesium aiding in the transportation of calcium within the body to where it is most needed. The addition of Vitamin D to the formula further increases the absorption of calcium, as Vitamin D works with the parathyroid hormone to regulate calcium in the bloodstream.

Although calcium and magnesium can be received from many dietary sources, calcium is the one most commonly deficient substance in North American diets. Arthritis in middle-aged and elderly people is the result of a long-continued shortage of food calcium. Calcium deficiency is most prevalent in women who have had children and have not supplemented their diets with calcium. Seventy percent of the body's calcium is in the bones. The body, in striving to maintain acceptable quantities of these two essential minerals in the blood and tissues, will take required calcium and magnesium from the bones and muscles. Once calcium is lost from the bones signs of osteopenia develop and is often hard to reverse.

Calcium Assimilation

Calcium can be provided in many types of delivery systems: carbonate, lactate, hydroxyapatite, HVP chelate, and citrate. Citrate is considered to be one of the better forms of calcium not only due to its increased solubility (relative to carbonate), but its effect on increasing bone mass in postmenopausal women. In one controlled study, postmenopausal women receiving 400 mg of calcium citrate twice daily for two years prevented bone loss and stabilized bone density in the spine, femoral neck, and radial shaft compared to placebo. A second study comparing calcium citrate to calcium carbonate and a placebo in postmenopausal women showed that calcium citrate was more bioavailable when given with a meal (provided 46 greater peak-basal variation and 94% higher change in area under the curve for serum calcium and 41% greater increment in urinary calcium). A recent study published in the New England Journal of Medicine proved calcium citrate com-

pletely stopped bone loss, improved bone mass and cut the fracture rate by over 50%. The elemental dose used was 500 mg per day.

Calcium offers many other benefits to human health. It plays a strong role in: the growth and contraction of muscles; preventing muscle cramps; regulating heartbeat; transmitting nerve impulses; combating cholesterol, by increasing HDL; activating enzymes, such as lipase; preventing heart disease; reducing high blood pressure; promoting weight loss and reducing the occurrence of kidney stones. Calcium also inhibits the absorption of heavy metals, such as lead, into the bones and teeth and may be protective against colon and breast cancers. A large, rigorous, double-blind, placebo-controlled trial of calcium supplement also demonstrated it to be of significant benefit in the treatment of PMS. A deficiency of calcium can result in: brittle bones, including osteoporosis; sore joints, including rheumatoid arthritis; muscle cramps and numbness in the arms and legs; tooth decay and cracked nails; heart palpitations and high blood pressure; even cognitive impairment and depression.

Magnesium, the second most prevalent mineral in the body, plays an important role in most of the body's systems. Besides assisting with calcium metabolism, it is vital in maintaining arterial health, normal blood pressure and normal heart rhythm [Refer to Biomed's monograph on Mag-Citrate for more information on the benefits of magnesium].

Vitamin D is important in promoting normal growth, in developing strong bones in children, in preventing muscle weakness and in regulating the heartbeat. Vitamin D is also important in the treatment of osteoarthritis, osteoporosis, hypocalcemia and in enhancing the immune system. Adults who are severely deficient of vitamin D can develop osteomalacia (a bone-softening disease), whereas a lacking vitamin D can cause rickets in children. Since vitamin D deficiency is relatively common, especially in older adults, Biomed's Calcium-Magnesium formulas contain a healthy dose of this important vitamin.

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