

CALCIUM Facts



1. Calcium is the most abundant mineral in your body, with 99% of it stored in your teeth and bones.
2. You need calcium for muscle contraction, blood vessel function, hormone and enzyme secretion, and for sending messages through your nervous system.
3. When your calcium level is low, bone breakdown occurs because your body needs the calcium stored in your bones for other body functions. This depletion is Osteoporosis.
4. Osteoporosis is the most common bone disease, affecting over 1.4 million Canadians and one quarter of all women over 50.
5. Magnesium is added to many calcium supplements not to increase absorption, but to counteract negative side effects of low-quality calcium!
5. Both Bones and Calcium from Easy Vitamins & Minerals offer exceptionally high absorption, solubility, bioavailability and are easy to take.

Calcium & Bones 101

By Joel Thuna, M.H.

There are many types of calcium supplements available. Although the different forms of calcium have similar names, they are not the same. Choosing the right supplement can be confusing if you don't have the facts about solubility and absorption.

Easy Vitamins & Minerals Calcium uses the latest clinical results to provide the highest quality, most soluble, and best absorbed calcium anywhere.

Calcium is essential in maintaining total body health. You need it every day to keep your bones and teeth strong, and to ensure proper functioning of muscles and nerves. It even helps blood clotting.

Research links calcium deficiency to many different diseases. In addition to osteoporosis, inadequate calcium intake may increase the risk for hypertension, high cholesterol, pre-eclampsia, colon cancer, obesity, kidney stones, premenstrual syndrome, and polycystic ovary syndrome.

Most people believe that they are getting enough calcium each day - but in reality they do not. Calcium deficiency is usually due to an inadequate intake of calcium. The average person loses 400 to 500 mg of calcium per day. When blood calcium levels drop too low, your body will "steal" the calcium from your bones to use for other functions. In the long term this can reduce your bone strength and lead to osteoporosis, a potentially crippling disease causing thin and fragile bones.

Osteoporosis can make your bones so weak, that they can break with little more than a handshake. Because people often do not get enough calcium, osteoporosis is now a major health concern that affects over 1.4 million Canadians.

Taking calcium every day is key to preventing and treating calcium deficiency. So how much daily calcium do you need? How much do you get? What form of calcium is best? This article is a great resource to help you learn more about calcium and its importance to everyone's health.

A nutrient's effectiveness depends on its "bioavailability", which means how well your body can absorb and utilize it. Studies show you only absorb 10-30% of the calcium in your diet. Several different factors influence this level, including the type of calcium, the calcium's solubility, the dosage form and the added absorption enhancers.

Different types of calcium

If you take calcium to support bone health, the type of calcium you're taking could make a big difference.

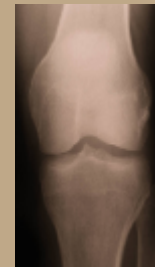
"What's a good calcium?" is somewhat complicated. Let's start by recognizing that all calcium is either organic or inorganic. Organic forms include gluconate lactate, orate, fructoborate and aspartate. Inorganic forms include sulphate, phosphate and carbonate.

Organic forms of calcium are superior to inorganic ones. Organic forms are significantly smaller molecules, which

Where does your Calcium go?



Most calcium tablets,
capsules and liquids are
poorly absorbed and end up
in the bowl.



Easy Vitamins & Minerals Calcium & Bones



Bones Picture

Organic Calcium
most absorbable & most bioavailable
taste-free & soluble
call for your free sample
800.887.6009

www.EasyVitaminsandMinerals.com

continued from page 1

are better absorbed by your body and easier on your digestive system. Inorganic calcium can be accepted into the body, but not easily assimilated or integrated into bone.

For calcium to be absorbed it has to meet two requirements: first, it has to remain soluble; second, it has to present itself as an ionic entity so that it will be able to penetrate the mucous membrane and be absorbed. Organic calciums meet these requirements while inorganic sources do not.

Each calcium source is not 100% calcium; there is a percentage of 'other stuff' attached to the molecule. The amount of the compound that's actually calcium is referred to as the 'elemental calcium'. The more elemental calcium you get, the better

Easy Vitamins & Minerals Bones and Calcium both use high elemental, highly soluble, organic calcium..

Absorption enhancers

Rarely will you find supplements that contain only calcium. They often contain other items claiming to increase the absorption of calcium.

Magnesium

Magnesium is added to most calcium. Many people will tell you magnesium is required to absorb calcium. This is blatantly untrue. Clinical trials do not support this claim. Magnesium is actually added to inferior inorganic calcium in an effort to counteract the negative side effects.

Inorganic forms of calcium can bind to magnesium, resulting in complexes which precipitate out of your small intestine and end up being eliminated from your body. This process causes reduced calcium absorption and can result in magnesium deficiency.

Hence the need to supplement with magnesium when you take inorganic calcium. You can avoid this problem

by switching from inorganic calcium sources to high quality organic calcium sources.

“Many people will tell you magnesium is required to absorb calcium. This is blatantly untrue.”

Vitamin D

All forms of supplemental calcium have something in common: they produce calcium ions when dissolved. The difference lies in where the calcium dissolves. Most calcium products dissolve in the stomach giving off ions when they react with stomach acid. The calcium ions move into the small

continued on page 3

continued from page 2

intestine, where they are actively absorbed into the body by passing through the cells in the intestinal wall. This is known as transcellular absorption. Calcium supplements which rely exclusively on transcellular absorption require additional vitamin D to facilitate any absorption.

Both Easy Vitamins & Minerals Calcium and Bones dissolves in water. Therefore when you drink them, the calcium is already in ionic form. This allows it to be actively absorbed both through the intestinal cells (transcellular absorption) and between the cells (paracellular absorption).

Passive sites (those involved in paracellular absorption) are quite small in size and are located throughout your small intestine while active sites (those

involved in transcellular absorption) are large in size and are located only in one tiny area of your small intestine. There are over 10 times as many passive sites as there are active sites. Active sites require vitamin D to function while passive sites do not. Both sites can absorb at the same rate. Easy Vitamins & Minerals Calcium is small enough to be absorbed at both active and passive sites while other calciums are too large for the passive sites and so can only be absorbed through active sites.

Both Easy Vitamins & Minerals Calcium and Bones high solubility and their dual absorption (both transcellular and paracellular) mechanisms make them highly bioavailable. In fact, by switching to Either Easy Vitamins & Minerals Calcium or Bones you may be able to increase your calcium absorption tenfold.

Calcium Fructoborate

Calcium Fructoborate is the patented new addition to premium calcium products. It is the only form of calcium naturally bound to boron. Extracted from wild blueberries, calcium fructoborate is the absorption enhancer of choice for high quality calcium supplements including Easy Vitamins & Minerals Calcium.

Calcium Fructoborate has several modes of action to increase calcium uptake. First, it is the most bioavailable source of boron. Boron acts to increase the amount of calcium actually deposited into your bones. By increasing the density of the calcium strands (or lattice) found in your bones, boron effectively allows more actual calcium to be packed into the same area. Boron also helps to prevent calcium (and other minerals) from being excreted in your urine, a normal bodily function which can decrease calcium stores.



Calcium Fructoborate also has an impact on vitamin D. It has been shown in clinical trials to increase vitamin D levels by 20% without any supplementation. It has the unique ability to overcome even serious vitamin D deficiency, and to enhance calcium absorption beyond the abilities of vitamin D. Although not required for passive absorption, this assists in active calcium absorption. Calcium Fructoborate also has a marked effect on calcium deposition in bones and bone density. In clinical trials Calcium Fructoborate was

shown to increase bone mass by 6% in just 9 weeks.

Fiberrific

Fiberrific is a 100% natural, soluble plant fiber. The key ingredient in Fiberrific, partially hydrolyzed inulin, has been extensively studied for its multitude of health benefits including calcium absorption and retention, as well as bone mineralization across multiple age groups.

Studies have concluded that calcium absorption was significantly greater in the group taking Fiberrific than in the placebo group both in the short term (8 weeks) and long term (1 year). Researchers found up to a 42% absorption increase in the group taking Fiberrific.

These findings echo previous studies on calcium retention benefits, which are thought to be a result of Fiberrific's ability to lower pH within the colon, dramatically improving calcium's solubility.

Solubility

Solubility is a key factor in calcium absorption. Nutrients must be in a solution in order for your body to absorb them. Those that are not in a solution end up falling (precipitating) out of solution and are excreted from your body without being absorbed. You could say "if it doesn't stay in solution, it doesn't stay in you."

Dosage Form

Traditionally supplements, including calcium, have been in tablet or capsule forms because they are well recognized and inexpensive to manufacture. Unfortunately, in addition to calcium, they also contain undesired ingredients necessary to the manufacturing process but with no medicinal value (gelatin, sorbitol, silicon dioxide, carmellose sodium, microcrystalline cellulose, vegetable stearin). These ingredients offer no health benefit, and may actually hamper calcium absorption.

continued on page 4

continued from page 3

Both Easy Vitamins & Minerals Calcium and Bones are soluble in liquids. All other forms of calcium must be broken down with stomach acid before your body can make use of them. This is why you need to take other forms of calcium with meals, when stomach acid levels are high, and why other forms of calcium are also sold as antacids.

Tablets and capsules also present another issue: disintegration. Manufactured under extreme pressure, often they compress to the point where they do not want to come apart. Tablets and capsules regularly pass through your system before they can be dissolved and used.

In studies at the University of Alberta, less than 50% of tablets dissolved. Capsules fared only slightly better with 60% dissolving. Unless they dissolve, none of their nutrients can be absorbed.

These undissolved pellets can cause digestive difficulty including constipation, cramps, gas and bloating.

Liquid mineral supplements also have their pitfalls. Due to their nature all liquid mineral supplements require preservatives. These preservatives, along with undesirable flavours, sweeteners and suspension agents lessen the amount of calcium in the product and can significantly reduce absorption.

Organic soluble powders like Easy Vitamins & Minerals Calcium and Bones avoid dissolution and digestive issues. They are soluble and immediately available to your body. Your stomach can instantly act on

the calcium and rapidly absorb it.

Conclusion

Both Easy Vitamins & Minerals Calcium and Bones are optimal blends of bioavailable, soluble and organic nutrients for calcium absorption and bone health. They are the only bioavailable sources of calcium blended with the proven absorption enhancers Fiberrific and Calcium FructoBorate to create total solutions for you and your family.

Easy Vitamins & Minerals Calcium is ideal for individuals in need of maximum calcium, while Easy Vitamins & Minerals Bones is ideal for individuals who are magnesium deficient and in need of calcium.

Joel Thuna is a 4th generation Master Herbalist from Toronto, Ontario. He is a frequent lecturer and author on health.

References:

Brink EJ (1999) Calcium absorption from calcium L-lactate and other calcium sources in postmenopausal women. TNO report, V99.840

Brink EJ, Van den Heuvel EGHM, Muijs T (2003) Comparison of six different calcium sources and meal type on true fractional calcium absorption in postmenopausal women, Current topics in Nutraceutical Research, 1 (2) pp161-168. De Luca H. Fructoborate, Vitamin D / Steroid Hormone Homeostasis, and Bone Ash Accumulation. Dept. Biochemistry, University of Wisconsin Madison, April 2002.

Levenson DI, Richard S, Bockman MD (1994) A review on calcium preparations. Nutrition Reviews, 52 (7), pp221-232

Lobenberg R, Steinke W Investigation of vitamin and mineral tablets and capsules on the Canadian market. J Pharmaceutical Sci 9(1):40-49, 2006

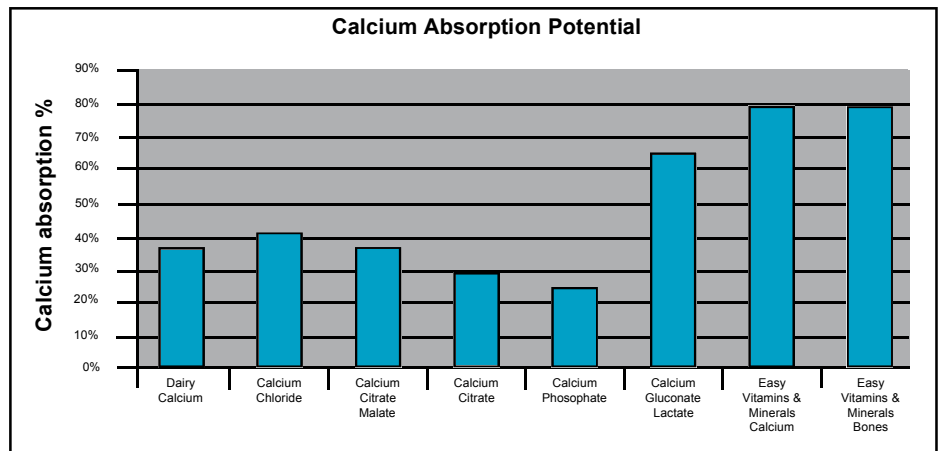
Miljkovic N. Vitamin D/ Steroid homeostasis and calcium fructoborate supplementation. Dept. of Orthopedic Medicine, University of Novi Sad March 2002.

Roberfroid M, Cumps J, and Devogelaer J Dietary Chicory Inulin Increases Whole-Body Bone Mineral Density in Growing Male Rats. J. Nutr. 132:3599-3602, December 2002

Schaafsma G (1997) Bioavailability of calcium. Bulletin of the IDF 322, pp20-24

Venema K (2003) Availability for absorption of calcium from four calcium supplements during passage through a dynamic gastrointestinal model (TIM-1). TNO report V 4552

YY Kim, KH Jang, Ey Lee, Y Cho, SA Kang, WK Ha and RW Choue The effect of chicory fructan fiber on calcium absorption and bone metabolism in korean postmenopausal women Nutritional Science 7 (3): 151-157 2004



Optimal Health is published quarterly copyright © 2006 by Global Botanical Corporation Limited. No portion of this publication may be reproduced, in its entirety, in part or electronically unless prior written permission has been obtained from Global Botanical Corporation Limited. The statements contained in this document have not been evaluated by the food and drug administration. These products are not intended to diagnose, treat, cure or prevent any disease.

Available at:

