

What You Really Need To Know About Calcium!

Lyle Loughry -- Copyright 2005,

This article is a composite of a number of articles and research by several noted calcium researchers on the subject of calcium. It is unlikely that any one article you may have ever read on the subject contained as much information as this one.

Calcium is the most abundant and the most important mineral in the body, yet it is the most difficult for the body to absorb, assimilate and utilize. Calcium is not the white powdery substance most people believe. Calcium is a metal, a bright shiny metal like all other metals. The white powdery substance often associated with calcium is actually calcium carbonate, calcium lactate or another compound of calcium, with calcium making up much less than half of its total molecular weight.

Calcium is used more than any other mineral in the body. Calcium is the MAIN BUFFER used to neutralize acids, and to maintain the proper pH throughout the body. The body fluids of healthy people are mildly alkaline (high pH), whereas the body fluids of the sick are acidic (low pH). There are 179 different known uses for calcium in the human body. Other really important uses are:

- 1) Formation and maintenance of strong bones and teeth
- 2) Prevents bone loss associated with osteoporosis
- 3) Control muscle contraction and with magnesium muscle relaxation
- 4) Required for muscle growth
- 5) Important in the maintenance of regular heart beat
- 6) Transmission of nerve impulses
- 7) Transfer of information between brain cells
- 8) Controls the formation of enzymes and hormones.

Nearly 99% of the body's calcium is deposited in the bones and teeth. The remaining 1% is present in body fluids, equally divided between *diffusible* calcium and non-diffusible calcium. Hypocalcemia (chronic calcium deficiency) is responsible for approximately 150 different degenerative diseases and conditions, and other problems that can be harmful or dangerous to the body. All degenerative diseases, such as diabetes, cancer, heart disease, gallstones, kidney stones, arthritis, osteoporosis, and many more have been scientifically linked to deficiencies in calcium.

It is interesting to note that kidney stones are included. Kidney stones are a buildup of calcium in the kidney. Kidney stones are caused, not because of too much calcium in the body, but rather by a lack of calcium in the diet. When too much of the wrong kind of calcium is ingested into the body, and it cannot utilize it, the body becomes acidic. The body then leaches calcium out of the bones to neutralize the acid and to keep the pH from dropping below the level that supports life. Unfortunately, calcium from the bones is not very bioavailable, and only a small percentage is actually used to correct the acidic situation; the rest starts to accumulate in the kidney, or other places. Fully 100% of the kidney stones and bone spurs came from the calcium leached out of the bones in order to neutralize the acids in the body fluids.

The average American diet of meats, refined grains (cereal), and soft drinks (high in phosphorus) has been documented to contribute to increased bone loss in adults. Acidity, sugars, and artificial flavors and sweeteners can shorten life. It would take 32 glasses of alkaline water at an alkaline pH of 9 to neutralize the acid from one 12 oz. cola or soda. Drinking a cola or soda causes the body to use up reserves of its own stored alkaline buffers (mainly calcium from the bones and DNA) to restore the body's alkalinity levels. Acidic levels cause death, and there are enough acids in one soda to kill, if there is no mechanism to neutralize them

**“USP” SUPPLEMENTS--
NOT A GOOD SOURCE OF CALCIUM!**

Minerals are either organic or inorganic. The question is, Would you rather get your calcium from concrete or green salad? This fact will help you answer correctly ... **The body cannot get proper nutrition from inorganic minerals.** It is designed to get nutrition from living plants. For human consumption, minerals from food are superior to minerals from soil. Female athletes and women experiencing menopause need greater amounts of organic calcium due to lower estrogen levels. Normally, the body requires, and will only assimilate 12.5 mg of *organic* calcium, daily.

FACT: Virtually no over-the-counter calcium product is *organic*.

The vast majority of vitamins and minerals available today are supplied by a few extremely large and powerful chemical companies. The “nutrients” produced by these companies fall under the labeling of USP (United States Pharmacopoeia). These companies either break food down, and extract each vitamin separately, or grind up rock to extract the minerals. These are known as “isolates,” isolated chemical nutrients. Once this happens, they are no

longer natural; are not food that the body recognizes; and are not usable by the body.

Confusion surrounds dietary practices, fueled partly by the food industries advertising campaigns. Health professionals acknowledge that humans are not supposed to consume soil as a food source for minerals, but most of them will overlook this fact where mineral supplementation is involved. When they recommend Tums, Rolaids or Oyster Shell Tablets, they demonstrate their ignorance of how very little of the calcium in those products becomes available to the cells in our bodies. Calcium is a prime example of how dangerous these forms of minerals can be. Calcium supplements are taken by millions of women. American women take more calcium supplements than anywhere else in the world, yet they have one of the highest rates of osteoporosis.

Read the labels of your calcium supplement. Most calcium is sold in the form of calcium carbonate. This is an inorganic form of calcium, typically ground up oyster shells, chalk or extracted from rocks. If the label says Calcium Citrate - you might think it comes from oranges - NO, its calcium carbonate mixed with Citric Acid! If the label says Calcium Lactate - you might think it comes from milk - NO, its calcium carbonate mixed with Lactic acid! A critical aspect of the transport of minerals into the human body is the necessity of protein "chaperones" found in all foods. Without a protein "chaperone," these supplements wander aimlessly within the body, settling in places such as the heart, arteries (plaque) and in other organs.

One laboratory describes what happens when isolated inorganic mineral salts (without protein chaperones) are consumed, as follows: "It is after digestion when other mineral forms (mineral salts) have their mineral cleaved from their carriers. In this situation, these minerals become charged ions, and their absorbability becomes in jeopardy. These charged free minerals are known to block the absorption of one another, or to combine with other dietary factors to form compounds that are not absorbable" The absorption factor of these inorganic, chemical isolates ranges from less than 1% to 5%. For example, studies prove that about 2% of the popular calcium carbonate is absorbed (not assimilated) by the body! Where does the other 98% go? Significant amount of unabsorbed calcium left in the body will interact with other inorganic compounds to form stones.

Calcium also cannot be properly absorbed and assimilated unless other trace minerals are present along with it. Calcium requires boron, chromium, copper, iron, magnesium, manganese, phosphorus, silicon, strontium, and zinc to be absorbed to its full potential. Few, if any, over-the-counter calcium products offer any of these important trace minerals. University studies show that the

bioavailability of *organic/ ionic* minerals, found in food and a few good supplements, is greater than that of isolated inorganic mineral salts or chelates, some **8.79 TIMES greater!** Taking USP forms of isolated nutrients is the equivalent to sending your mail without addressing the envelope. The nutrients never get to where they're needed.

Most Mineral Supplements: Industrial Chemicals Disguised as “Chelated” Minerals

Chelated minerals, as a rule, are crushed, biological, industrial rocks, processed with one or more acids. The following list will describe what many mineral salts/chelates used in supplements actually are, and what they are used for when they're not used in supplements:

1. ***Boric acid*** is the rock known as sassolite. Used in weatherproofing wood, fireproofing fabrics, and as an insecticide.
2. ***Calcium ascorbate*** is calcium carbonate processed with ascorbic acid and acetone. It is a manufactured product used as a non-food supplement.
3. ***Calcium Carbonate*** is the rock known as limestone or chalk. It is used in the manufacture of paint, rubber, plastics, ceramics, putty, polishes, insecticides, and inks; and as a filler for adhesives, matches, pencils, crayons, linoleum, insulating compounds and welding rods.
4. ***Calcium Chloride*** is calcium carbonate and chlorine, and is the product of the Solvay ammonia-soda process. It is used for antifreeze, refrigeration, and fire extinguisher fluids. It is also used to preserve wood and stone. Other uses include cement, coagulant in rubber manufacturing, and dust control of unpaved roads, freeze proofing coal and increasing traction in tires.
5. ***Calcium citrate*** is calcium carbonate processed with lactic and citric acids. It is used to alter the baking properties of flour.
6. ***Calcium gluconate*** is calcium carbonate processed with gluconic acid (which is used in cleaning compounds). It is also used in sewage purification and to prevent coffee powders from caking.
7. ***Calcium glycerophosphate*** is calcium carbonate processed with di-alpha-glycerophosphates. It is used in dentifrice's, baking powder, and as a food stabilizer.
8. ***Calcium hydroxyapatite*** is crushed bone and bone marrow, It is used as a fertilizer.

9. **Calcium iodide** is calcium carbonate processed with iodine. It is an expectorant.

10. **Calcium lactate** is calcium carbonate processed with lactic acid. It is used as a dentifrice and as a preservative.

11. **Calcium oxide** is basically burnt calcium carbonate. It is used in bricks, plaster, mortar, stucco, and other building materials. It is also used in insecticides and fungicides.

12. **Calcium phosphate**, tribasic is the rock known as oxyapatite or bone ash. It is used in the manufacture of fertilizers, milk glass, polishing powders, porcelain, pottery and enamels.

13. **Calcium chloride** is a preparation of hex hydrates. It is used as a corrosion inhibitor and waterproofing agent.

14. **Chromium picolinate** is chromium III, processed with picolinic acid. Picolinic acid is used in herbicides.

It's unlikely that these minerals marketed as "chelated" could pass for food concentrates!

The biggest difference in minerals now, compared to 45 years ago, is that some companies have decided to industrially produce human-made versions of minerals, attached to peptides, and drug stores sell tons of them to unsuspecting victims (customers)! Aside from being the worst form of "junk food," these cheap substitutes are no bargain, either.

Is Dairy a good source of Calcium?

The Dairy Industry and milk processors invest hundreds of millions of dollars each year to guarantee that Americans will continue to drink milk and eat dairy products; investing their money to continually let Americans know that milk tastes good, and that the intake of milk and dairy products must continue to insure good health. However, the high animal protein content, fat, pesticides, and bovine growth hormones in the milk make it less than desirable to consume, and that's an understatement. **Nations with the highest rates of bone disease also have the highest milk consumption rates.** The highest rates of osteoporosis are to be found in Denmark, Holland, Norway and Sweden. Evidence is prevalent worldwide. The key to Osteoporosis is not how much calcium you eat, it's how much calcium you prevent from leaving your bones.

Why does Calcium Leave Bones?

Most American diets are heavy in protein; meats, dairy, etc. Eating foods containing too much protein will cause the blood to become acidic. The body is forced to leach calcium out of the bones to neutralize the acid. An abundance of scientific documentation confirms this fact:

“Even when consuming 1,400 mg of calcium daily, one can lose up to 4% of his or her bone mass each year while consuming a high protein diet.” **American Journal of Clinical Nutrition 1979; 32**

“Increasing ones protein intake by 100% may cause calcium loss to double.” **Journal of Nutrition, 1981; 111**

In 1988, N.A. Breslau and his colleagues identified the relationship between protein rich diets and calcium metabolism, noting that protein caused calcium loss. His work was published in the **Journal of Clinical Endocrinology (1988;66:140-6)**

“Consumption of dairy products, particularly at age 20 years were associated with an increased risk of hip fractures ... metabolism of dietary protein causes increased urinary excretion of calcium.” **American Journal of Epidemiology 1994;139.**

“Women with high animal to vegetable protein ratios are heavier, and have higher intake of total protein. These women have a significantly higher rate of bone loss than those who ate only vegetable protein. Women consuming higher rates of animal protein have higher rates of bone loss and hip fracture by a factor of four times.” **American Journal of clinical Nutrition, 1995; 61.**

A publication in the February, 2003 issue of the **American Journal of Clinical Nutrition (Vol. 77, No. 2, 504-511)** clearly demonstrates that eighteen years of milk consumption did not prevent hip fractures for post-menopausal women. 72,737 subjects participated in that study.

Milk has been called the “liquid meat.” Ironically the dairy Industry promotes the cause of bone disease as the cure.

One must wonder why Asians traditionally did not get bone-crippling osteoporosis ... that is, until they adopted the “American Diet,” a diet of milk and dairy products. The dairy industry owns the psychological exclusive rights to calcium in foods found in super markets. Few food manufacturers would dare to compete with the dairy message which infers that 'no other foods contain the calcium contained in milk,' and without the milk and dairy

products, you're certain to end up with bone-crippling osteoporosis. Other than orange juice and baby food, no visible claim to calcium is made by any food manufacturer.

The reason, of course, is that milk holds the monopoly. They hold title to and make claim to America's calcium perception. Few would argue that claim. American women have been drinking an average of two (2) pounds of milk, or eating the equivalent milk in dairy products per day, for their entire lives. Doctors recommend calcium intake for increasing and maintaining bone strength and bone density which they call bone mass. According to this regimen recommended by doctors and milk executives, women's bone mass should approach that of prehistoric dinosaurs. **FACT: Twenty-five million American women have osteoporosis.**

In order to absorb calcium, the body needs at least comparable amounts of another mineral element, magnesium. Milk and dairy products contain only small amounts of magnesium. Without the presence of magnesium, the body can absorb only a small percent of the available dairy calcium content. The remainder of the calcium spells trouble. Without magnesium, excess calcium will be utilized by the body in injurious ways. As reported earlier in the article, the body uses the calcium to build the mortar on arterial walls which becomes atherosclerotic plaques. Excess calcium is diverted by the kidneys into painful kidney stones, blocking our urinary tracts, and excess calcium contributes to arthritis. This painful calcium buildup is also frequently manifested as gout.

The USDA has formulated a chart of recommended daily intakes of vitamins and minerals. The term that the FDA uses is Recommended Daily Allowance (RDA). The RDA for calcium is 1500 mg. The RDA for magnesium is 750 mg. The panel that established the various RDA's was composed of lawyers, not nutritionists or scientists. Society stresses the importance of calcium, but rarely gives equal billing to magnesium. Yet, magnesium is absolutely vital to all enzymatic activity. In addition to insuring proper absorption of calcium, magnesium is critical to proper neural and muscular function, and necessary in maintaining proper pH balance in the body. Magnesium, along with vitamin B6, helps to dissolve calcium phosphates which often accumulate from excess dairy intake.

To impress upon you the foolishness of this overemphasis on calcium, nature itself points us to the truth. In nature, organic magnesium is 17-34 TIMES more prevalent than calcium! Good sources of magnesium include beans, green leafy vegetable like kale and collards, whole grains and orange juice. Non-dairy sources of calcium include green leafy vegetables, almonds, asparagus, broccoli, cabbage, oats, beans, parsley, sesame seeds and tofu. Osteoporosis is

NOT a problem that should be associated with lack of calcium intake.
Osteoporosis results from calcium loss.

The massive amounts of protein in milk result in a 50% loss of calcium in the urine. In other words, by doubling your protein intake there will be a loss of 1 - 1.5% in skeletal mass, per year, in post menopausal women. If a post menopausal woman loses 1 - 1.5% bone mass per year, what will be the effect after 20 years? When osteoporosis occurs, levels of calcium (being excreted from the bones) in the blood are high. Milk only adds to these high levels of calcium which is excreted or used by the body to add damaging atherosclerosis, gout, kidney stones, etc. Bone mass does not increase after age 35. This is a biological fact that is not disputed by scientists. However, this fact is ignored by marketing geniuses in the milk industry who make certain that women this age and older are targeted consumers for milk and dairy products. At least one in four women will suffer from osteoporosis, with fractures of the ribs, hip or forearm.

In 1994, University of Texas researchers published results of an experiment indicating that supplemental calcium is ineffective in preventing bone loss. Within 5 years of the initial onset of menopause, there is an accelerated rate of loss of bone, particularly from the spine. During this period of time, estrogen replacement is most effective in preventing rapid bone density loss.

As part of Walter Willett's Harvard Nurses Study, investigator Diane Feskanich performed statistical tests of significance for 18 years of data, including dietary intake of calcium (dairy and supplements) to determine her findings. The conclusion reached from this analysis is that **dietary calcium plays little or no role in preventing bone loss.** Drinking milk does not prevent osteoporosis. As a matter of fact, just the opposite was found to be true. Women consuming greater amounts of calcium from dairy foods suffered significantly increased risks of hip fractures. (**American Journal of Public Health 1997;87**).

In light of these findings, the dairy industry's "Drink Milk" campaigns have been proven to be one enormous deception. **Bones break because women eating the wrong foods create an acid condition in their own bloodstream's, which must be neutralized by available calcium, and you can take that to the bank!** The body achieves balance by taking calcium out of its own bones. People eating the greatest amount of animal protein, especially dairy products, are the ones experiencing accelerated rates of bone loss.

Calcium Absorption:

Calcium cannot be absorbed and utilized in our bodies without certain trace minerals, including magnesium and boron, and many others being present. The

full complement of these trace minerals is not found in most calcium tablets and are lacking to a great degree in the typical American diet. These trace minerals are important, not only to facilitate the absorption of calcium (as in magnesium), but they are also needed by the body for the millions of biochemical reactions that are taking place every day. Calcium absorption needs an acid environment in the stomach for proper digestion, and people over 60 years of age produce only approximately 25% of the stomach acid they produced when they were 20 years old. In addition, it is a known fact that as many as 40 percent of post menopausal women lack sufficient stomach acid for proper calcium absorption. Maintenance of a positive calcium balance by the body depends on dietary intake and the efficiency of absorption of the calcium ion from the intestinal tract.

The Paradox of Coral Calcium:

For years, coral calcium vendors have tried to connect coral calcium to the longevity of Okinawans. The truth is most coral calcium supplements are made directly (“uncut”) from coral reefs. The only calcium source found in coral reefs is calcium carbonate, the same calcium compound that is easily found in other rocks and limestone, and has been available for commercial use for decades. Not all coral calcium is the same. While any coral calcium from Okinawa can give you some benefits because the chemical analysis is nearly identical to human bone ... it is still *inorganic* and not a food. There is some coral calcium, even from Okinawa, that contains harmful materials such as lead, mercury, arsenic, and more. The secret of the benefits attributed to coral calcium lies in the waters of Okinawa, not the inorganic coral reefs that most coral calcium products are made from. It is the algae that grows in the porous coral that produces the highly soluble organic calcium compounds. If you are in search of “coral calcium from algae” it might be best to drink the water from Okinawa.

If a solid form like a pill is used, the acidity in the stomach will cancel out the alkalinity. If it is in the capsule or caplet form it will always damage the digestive process. *Ionic* calcium, on the other hand, needs no stomach acid to be absorbed and assimilated. Ionic calcium in water is the best form to use. Because ionic calcium is the only physiologically active form of this element, any source of this mineral must be broken down to its ionic form before it can be used by the body for any of the functions listed above.

The following is a brief summary which addresses how much calcium is actually available to the human body from commonly available calcium products. Calcium carbonate is known as Caltrate, Oyster Shell calcium, Tums, or generic. For every 1,000 mg of calcium carbonate, there is only 40 mg of usable calcium. Tribasic Calcium Phosphate is known as Posture. For every

1,000 mg of calcium phosphate there is only 39 mg of usable calcium. Calcium Lactate is commonly found in dairy products. For every 1,000 mg of calcium lactate, there is only 105 mg of usable calcium. Calcium Citrate is known as Citrical. For every 1,000 mg of calcium citrate there is only 105 mg of usable calcium. But remember, the usable calcium in each instance is *inorganic* calcium, and the body won't utilize inorganic minerals, so it's of no real benefit to the body, anyway.

Ionic calcium is 100% organic calcium. Scientists tell us that 98% of the ionic calcium is absorbed and assimilated. It becomes obvious that consuming large amounts of calcium tablets to achieve the desired absorption can have serious negative results. When non-biologically, active forms of minerals are used, older people, especially, are put at risk because the minerals will neutralize the stomach acids and damage the digestive process. This makes the ionic form the only logical choice for anyone who wants to be healthy.

The newest breakthroughs in liquid, ionic, organic, frequency-infused minerals are OR-ION minerals, and you can read all about them on the **Nutritional Supplements** section of this website. If you have questions, please call me at 800-829-9913 or e-mail me at ultrahealth@cs.com.