



Calcium and Other Minerals Do You Know What's In Your Supplement?

For over the last 30 years or more calcium supplements have been the number one selling supplement in the United States. This is in part due to the fact that women who suffer from bone loss or thinning bones, also known as osteoporosis, have been told to get as much calcium as they can in their diet. And as added insurance many women take calcium supplements thinking that if they can't gain new bone at least they can perhaps prevent further bone loss.

How has this approach been working? Not too well. It's interesting to note that as calcium sales have risen every year so has bone loss. Now there are many reasons for this and I am not going to go into detail about all of them in his article but I am going to relate some research about how you can increase the effectiveness of your calcium supplementation.

Many people are under the impression that ingesting high dosages of calcium is all that is required. But we have to remember that bone tissue is made up of more than one mineral. If you do any research of your own about how bone tissue is built you will quickly realize that there are other cofactors or nutrients required. Also, the form of the calcium is critical for absorption, retention, and effectiveness.

Two Year Double-Blinded Placebo Controlled Trial

In this study (1) the researchers wanted to evaluate the effectiveness of calcium supplementation on bone loss with and without added trace minerals in healthy postmenopausal women over a two year period.

One group of women was given only 1,000 mg of elemental calcium in the form of citrate malate per day, while a second group also received 1,000 mg of the same type of calcium per day along with the following trace minerals, zinc 15 mg, manganese 5 mg, and copper 2.5 mg. A third group of women received a placebo.

Results of Two Year Study

In the placebo group bone loss relative to the base line value continued. In other words these women did not prevent or stop any bone loss but continued to lose bone over the two year period. The women who took only the calcium did show some slowing of bone loss, while the women who received the calcium plus the trace minerals stopped the bone loss process.

Another Study to Determine How Calcium Load Affects Absorption

For years people have been told to take most of their calcium at night before going to bed for the highest absorption. But a study (2) conducted in 1990 revealed that this wasn't true. In this study healthy women were given calcium dosages with meals ranging from as small as 15 mg to 500 mg. It was discovered that at the lowest dosage the absorption averaged 64% and that the highest was 26%. After experimenting with different dosage levels the researchers were able to determine the following calcium absorption efficiencies: (Please see chart on next page.)

Calcium Absorption Efficiency Chart			
Calcium Dose	Number of Times Taken to Equal Calcium Dose Daily	Average Amount of Calcium Per Dose	Absorption Efficiency
500 mg	one daily dose	500 mg	29%
500 mg	two daily doses	250 mg	36%
500 mg	three daily doses	166.66 mg	40%
2000 mg	once a day	2000 mg	14%

The chart shows that taking 2,000 mg of calcium at one time would allow only 14% absorption, or a daily total of 280 mg. When this same 2,000 mg of calcium however is taken in 4 equal doses of 500 mg the chart shows a 29% absorption efficiency, or a daily total of 580 mg of calcium. That is an increase of 50%, or 300 mg more calcium available to the body.

Supplements Should Be Based on Real Science and Quality Ingredients

The results of the study helps us to appreciate that supplementation cannot be a haphazard affair. Besides a healthy eating program and lifestyle, our supplements need to be based on scientific formulations and high quality ingredients. Many of the bone support and other types of supplements do not meet these criteria.

Wrong Forms of Minerals

If you are taking supplements such as a multiple, bone support formula, or extra minerals examine the ingredients under the Facts Panel of the labels. Many of you will find that the minerals such as calcium are in the carbonate or chloride form or have carbonate and chloride as part of a mixture. The magnesium will be in an oxide form or part of a mixture as well. The other minerals may be in a chloride, gluconate or sulfate form. Calcium, magnesium, and the other minerals cannot be in the forms of carbonate, oxide, sulfate, chloride, and gluconate as they are poorly absorbed and can have negative side effects such as gas, bloating, constipation, diarrhea, nausea, prevent absorption of other nutrients, and increase the risk of kidney and gallstones.

More Effective Forms of Minerals

For minerals to be absorbed and effective they must be in forms such as ascorbates, aspartates, citrates, malates, citrate-malates, with true chelates being the best of all. And the only manufacturer who meets the scientific definition for a true chelated mineral as put out by the NNFA in 1996 is Albion Laboratories. So if your minerals read chelated but do not have the Albion Laboratories patented numbers listed on the label they are not true chelates.

Also, the calcium, regardless of the form it is in, needs to be in smaller amounts and taken more frequently, 3 or 4 times, throughout the day for more efficient absorption. I bring this out because supplement manufacturers want to try and make it convenient to take your calcium in one large dose a day. And as the study demonstrates this is not a very efficient way to take your calcium supplements.

Supplements Based on Quality and Scientific Formulation

Most of the supplements in the health food industry use minerals that are made in whole or part with carbonates, oxides, sulfates, chlorides, gluconates, and other inferior combinations because the raw material costs considerably less than the better absorbed minerals. For the supplement producers this is good for three reasons;

1. Larger amounts of the mineral can be put into the formula making it look more appealing to the consumer to increase sales even though there are decreased absorption and negative side effects.
2. To increase their profit margin as the better forms of minerals are more expensive.
3. They can lower the price to compete with other companies to get the consumer to buy their supplement. (You get what you pay for.)

While these three things may help the supplement producer the consumer, however, does not get a very good bargain. When putting anything into our bodies we always want to make sure of its positive benefits, in this case well formulated mineral supplements. It does us little good if we take in poorly formulated supplements which may provide little if any nutritional support and could possibly contribute to a health problem or make one worse. When you examine the supplements at www.livewellnaturally.com that contain minerals you will not find a single one with carbonate, oxide, sulfate, chloride, gluconate, or picolinate as part of the ingredients.

References:

1. Spinal Bone Loss in Post Menopausal Women Supplemented with Calcium and Trace Minerals, Straise, L. et al., Journal of Nutrition 124(7): 1060-1064, July 1994
2. Heany, R.P.. et. al, Journal of Bone and Mineral Research, 5:11, 1990 p. 1135-1137

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