CALCIUM CITRATE IS SUPERIOR TO CALCIUM CARBONATE

The following came through my e-mail system, and I was so excited about its content! Dr. Howard Heller of the Center for Mineral Metabolism and Clinical Research at the University of Texas Southwestern Medical Center in Dallas published the results of his study on ***calcium citrate*** (test sample was Citracal) ***versus calcium carbonate*** (as in Os-Cal). **We have known that calcium citrate is better, but this study points out just how much better!**

- Jim Cox, DC

MY CONDENSED VERSION

Calcium citrate is better than Calcium Carbonate because of its …
- superior bioavailability (2.5 times more than calcium carbonate*)
- protection against bone loss
- suppression of the serum parathyroid hormone (PTH) by more than 50% **
- better absorption

* This holds true even when calcium carbonate was taken with a meal, the best method of ensuring calcium carbonate absorption.

** PTH is responsible for age-related bone loss.

Recommended Calcium Requirements * and Osteoporosis Protection:
- Calcium -- 1200 to 1500 mg/day **
- Vitamin D -- 600 to 800 IU/day **
- Healthy, well-balanced diet
- Regular weight-bearing exercise

* One serving of dairy provides about 300 mg of calcium and up to 100 IU of Vitamin D, so supplementation is usually necessary.

** Such findings influence the formulation of my ***Formula #2 Non-Phosphorous Calcium Citrate with Vitamin D3*** supplement.

[from Calcium citrate shown to have superior bioavailability and protects against bone loss. J Clin Pharmacol 2000; 40:1237-1244 (medscape Nov 21, 2000)]

An important follow up study that reaffirms calcium citrate's superior bioavailability when compared with calcium carbonate also provides new evidence of calcium citrate's role in portecting against bone loss.

The study, published in the November issue of the *Journal of Clinical Pharmacology*, used 3 measures to determine calcium bioavailability – serum calcium, urinary calcium, and serum parathyroid hormone (PTH). This randomized crossover study compared the single-does bioavailability and effects on PTH of commercial calcium citrate 250 mg (Citracal, Mission Pharmacal) and calcium carbonate (Os-Cal, Smith-Kline Beecham) supplements in postmenopausal women.

"The initial study we conducted in 1999 showed that calcium citrate is more readily available to the body than calcium carbonate," Howard J Heller, MD, author of the study explained. "… calcium citrate … was more bioavailable than calcium carbonate, even when given with a meal. Several studies have established that calcium citrate is more bioavailable than calcium carbonate when the subject is fasting; however, some authors have previously suggested that the two forms of calcium are equally bioavailable when given with a meal."

"Moreover, calcium citrate produced greater suppression of serum PTH by more than 50% over calcium carbonate. … Calcium citrate may be particularly advantageous in those who absorb calcium poorly from calcium carbonate."

The study reported in the November 1999 issue of the *Journal of Clinical Pharmacology* was the first direct comparision of commercially available calcium supplements. In that study, it was proven that the calcium supplement formulation calcium citrate was 2.5 times more

bioavailable than calcium carbonate, even when given with a meal, the optimum method of ensuring calcium carbonate absorption.

It is very important for postmenopausal women to have sufficient intake of calcium (1200 to 1500 mg/day) and vitamin D (600 to 800 IU/day) in combination with a healthy, well-balanced diet and regular weight bearing exercise. There is an important difference in bioavailability between calcium supplements in postmenopausal women.