

Do Something About Medication-related Bone Loss

Osteoporosis is a major public health threat for an estimated 44 million Americans, or 55 percent of the people 50 years of age and older, according to the National Osteoporosis Foundation. In the U.S. today, 10 million individuals are estimated to already have the disease and almost 34 million more are estimated to have low bone mass, placing them at increased risk for osteoporosis. While osteoporosis is often thought of as an older person's disease, it can strike at any age.

Yet, it's no secret that everybody needs to be concerned about bone loss as they get older. Besides alcohol, poor diet and inadequate exercise, another one of the most important contributors to bone loss could well end up being the medication your doctor prescribes to treat another condition. In this case, nutrition can definitely help to support your skeletal and bone health.

But before you take any old calcium carbonate supplement, whether for prevention or to shore up mineral deficiency, consider a better form of calcium—especially if you are at risk for medication-related bone loss. If you're taking a medication that is linked with bone loss, you might want to especially consider supplementing with microcrystalline hydroxyapatite concentrate, or MCHC, as it has come to be known.

Unlike calcium carbonate supplements, MCHC supplies all of the bone-building nutrients your body requires. Bone cells use protein and other nutrients to produce collagen. Through a crystallizing process, minerals such as calcium, phosphorus, magnesium and many others attach to the collagen fibers. This hardens and strengthens bones. MCHC provides collagen protein and stimulates crystallization processes. Plus, it's an excellent source of trace elements: boron, copper, zinc and silica, also crucial to building strong bones. Although dietary deficiencies of these trace elements can lead to increased risk for osteoporosis, many women's diets are deficient in these as well.

MCHC FOR GREAT BONE HEALTH

Studies support this special supplement's role in achieving healthy bones, especially if you are at



risk for medication-related skeletal loss. To determine whether MCHC could reduce bone loss or its consequences in patients with chronic active hepatitis on corticosteroid therapy, a controlled trial was conducted in 36 such patients for two years. In this study, the MCHC group had fewer skeletal symptoms (back pain) and fractures, and continued reduction in bone mineral content of the wrist radius (as measured by photon absorptiometry) was halted in those receiving MCHC and there was a non-significant increase in trabecular bone volume. "The results overall were consistent with a beneficial effect from MCHC in corticosteroid-induced osteoporosis."

Current Medical Research and Opinion says that mineral retention was measured in patients with nutritional osteomalacia (in which the essential problem is a lack of available calcium or phosphorus [or both] for mineralization of newly formed bones) or late rickets, a bone disease. "Mineral retention was markedly enhanced by supplementation with MCHC," they reported.

According to a July 1999 report in the *Journal of Reproductive Medicine*, continuous administration of a form of MCHC "prevents bone loss in postmenopausal women, suggesting that this 'drug' may be useful in the management of postmenopausal bone loss." This study showed it outperformed calcium carbonate. (Actually, in the United

States, MCHC is not considered to be a drug but rather a nutritional supplement.)

The aim of a 1995 study, published in *Osteoporosis International*, was to evaluate whether MCHC is more effective than calcium carbonate in preventing further bone loss in postmenopausal women with osteoporosis. Forty osteoporotic patients were monitored for 20 months. The patients were randomly assigned to one of two groups and given 1,400 mg calcium per day, in the form of either MCHC or calcium carbonate. After 20 months, the difference between the groups was statistically significant and showed MCHC “is more effective than [calcium carbonate] in slowing peripheral trabecular bone loss in patients with manifest osteoporosis.”

RECOMMENDED CALCIUM SUPPLEMENT

If you're going to try MCHC, do so with Bone Maximizer™ III from Metabolic Response Modifiers (MRM), which supplies additional important bone building co-factors, including vitamin K₂ and vitamin D₃.

Bone Maximizer III supplies highly bioavailable vitamin K₂. Vitamin K₂ is often obtained from the native fermented Japanese soy food “natto.”

This vitamin is expensive and cannot be patented. So it has been largely a Japanese bone health secret for ages until recently. You might see bone health formulas contain vitamin K₁, but the clinical evidence for bone health benefits is for K₂.

Human cell proteins that don't get enough vitamin K can't hold onto calcium, causing this critical nutrient to be lost. According to the “calcium paradox” inadequate vitamin K causes calcium to be deposited in the arteries and soft tissues where it can cause stiffening. The form of vitamin K most active in the bones and arteries is natural vitamin K₂, found in Bone Maximizer III.

One of the most important yet undervalued vitamins for overall bone health is vitamin D. Adequate levels of various forms of this vitamin are needed for calcium absorption. Women can eat all the calcium-rich foods they want but without enough of this hormonally active vitamin, their rate of absorption will be limited. Low concentrations of vitamin D₃ may lead to malabsorption of calcium and bone to an even greater degree in older, housebound people. People with disorders of the liver or kidneys may also suffer from insufficient levels of the body's most potent form of vitamin D, which is also found in Bone Maximizer III.

Boron is one of the most critical components for supporting healthy bone matrix. Without boron,

the absorption of calcium can be limited and often underutilized. Researchers have concluded that boron is an essential factor in facilitating the bone-building effects of key nutrients such as calcium, magnesium, and vitamin D. Numerous studies demonstrate boron is critical to maintaining and improving one's bone health. A deficiency of vitamin D is associated with osteoporosis.

Most women don't realize that calcium blocks absorption of phosphorus. The *Journal of the American College of Nutrition* (2002;21:239-244) reports that individuals taking calcium supplements are at risk of developing phosphorus deficiency. “For an elderly person taking 1,500 mg of supplemental calcium per day, that would translate to approximately a 45 percent reduction in the amount of phosphorus absorbed,” comments physician and nutrition expert Alan Gaby, MD. “Supplementing with large amounts of calcium could lead to a phosphorus deficiency in people who are consuming marginal amounts of the mineral.”

To prevent calcium-induced phosphorus deficiency, the authors of this study recommend that at least a portion of an older person's calcium supplementation be taken in the form of a calcium-phosphate preparation, instead of the more commonly used calcium carbonate or calcium citrate.

The perfect calcium supplement, MCHC can help support the health of people suffering from medication-related bone loss. ■



Resources

Bone Maximizer III from MRM is available wherever the best nutrition supplements are sold. Health food stores and health professionals carry Bone Maximizer III. Visit www.mrm-usa.com or call them toll-free at 800-948-6296.

Beware of These Medications and Bone Loss

Be wary of the side effects of medications. Discuss risks and benefits of any medications you take and about how they may affect your bones. Maintain your treatment and don't change the dose of your medications unless your health care provider says it's safe to do so. Among common medications that can cause bone loss are the following:

- ✦ Aluminum-containing antacids
- ✦ Antiseizure medications (only some) such as Dilantin® or Phenobarbital
- ✦ Aromatase inhibitors such as Arimidex®, Aromasin® and Femara®
- ✦ Cancer chemotherapeutic drugs
- ✦ Cyclosporine A and FK506 (Tacrolimus)
- ✦ Glucocorticoids such as cortisone and prednisone
- ✦ Gonadotropin-releasing hormone (GnRH) such as Lupron® and Zoladex®
- ✦ Heparin
- ✦ Lithium
- ✦ Medroxyprogesterone acetate for contraception (Depo-Provera®)
- ✦ Methotrexate
- ✦ Proton pump inhibitors (PPIs) such as Nexium®, Prilosec® and Prevacid®
- ✦ Selective serotonin reuptake inhibitors (SSRIs) such as Lexapro®, Prozac® and Zoloft®
- ✦ Tamoxifen® (premenopausal use)
- ✦ Thiazolidenediones (Actos® and Avandia®)
- ✦ Thyroid hormones in excess