

# Magnesium Deficiency Linked to Higher Risk of Osteoporosis

Source: *The Sesame Seed*

Orange, CA, July 26, 2011 - A magnesium deficiency reduces the absorption and metabolism of calcium and prevents the proper amount of calcium being directed toward building stronger bones. According to Dr. Carolyn Dean, MD, ND, magnesium expert and Medical Director of the nonprofit Nutritional Magnesium Association ([www.nutritionalmagnesium.org](http://www.nutritionalmagnesium.org)), the effectiveness and benefits of calcium with respect to bone health and the prevention of osteoporosis are greatly impaired in the absence of adequate levels of magnesium in the body.

"Magnesium keeps calcium dissolved in the blood. Without the proper balance of magnesium to calcium, about a 1:1 ratio, calcium ends up depositing in your kidneys and can create kidney stones, in your coronary arteries resulting in clogged arteries, and in joint cartilage, rather than in your bones where you need it most. The more calcium you take without the balancing effect of magnesium, the more symptoms of magnesium deficiency and calcium excess you are liable to experience," Dr. Dean says.

## Soda Pop and Bone Fractures

It is important to note that osteoporosis begins in the teen years. Girls achieve 42 percent of their total body bone mass between the ages of 12 and 18, and yet according to Dr. Rodger H. Murphree II, DC, CNS, adolescent girls consume only 14 percent of the Recommended Dietary Allowance (RDA) for calcium, 31 percent of vitamin A, and only 18 percent of the RDA for magnesium.

"Adolescence is therefore a crucial time for bone development, and any factors adversely impacting on bone acquisition during this time can potentially have long-standing detrimental effects," comments pediatrician Neville Golden from Albert Einstein College of Medicine in New York.

There are several culprits that are causing most women, both young and old, to have a magnesium deficiency. Our typical Western diet is depleted of minerals due to modern farming practices and food processing procedures, and this fact greatly contributes to the general deficiency in magnesium. An additional reason can be attributed to soft drink consumption, which can leach vital minerals, including magnesium, out of the body.

In a recent Harvard study, researchers examined the relationship between the soda-drinking habits, activity levels, and history of bone fractures of 460 adolescent girls and found that ninth- and tenth-grade girls who drink soda pop have three to five times the risk of bone fractures compared with those who do not drink carbonated drinks.(1) "Our findings have implications both for the health of teenagers and for the health of women at later ages," says Grace Wyshak of the Harvard School of Public Health and Harvard Medical School. Wyshak conducted two earlier studies on soda pop and bone fractures, one on postmenopausal women, the other on teenagers, and reached the same conclusion. In teenagers, she found that two or more sodas a day are enough to cause bone weakening.

## Magnesium and Bone Quality

In an April 2011 study published in the journal *Biological Trace Element Research*, the magnesium intake in healthy young adults and its relation to bone quality was evaluated.(2)

A total of 484 healthy young women in their early twenties were enrolled into the study, which found that "improving dietary intake of magnesium may positively impact bone quality in this population."

"Magnesium is a vital nutrient that works synergistically with both calcium and vitamin D," says Dr. Dean. "Adequate levels of magnesium in the body are essential for the absorption and metabolism not only of vitamin D but of calcium, because magnesium converts vitamin D into its active form so that it can help calcium absorption. Magnesium also stimulates a particular hormone, calcitonin, which helps to preserve bone structure and draws calcium out of the blood and soft tissues back into the bones, impacting the possibility of osteoporosis, some forms of arthritis and kidney stones."

References:

(1) Cromie, W.J. Soda pop increases risk of bone breaks. Harvard Gazette Archives. June 15,2000.

(2) Kim, M. H., J. Y. Yeon, M. K. Choi, and Y. J. Bae. Evaluation of magnesium intake and its relation with bone quality in healthy young Korean women. Biol Trace Elem Res. April 5, 2011.

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