

Clinical Update

Review supports vitamin K's fracture reducing power

High dose supplements of vitamin K are effective for reducing the risk of fractures in post-menopausal women, according to a new review of the 'reliable literature'.

(Nutrition Research, April 2009)

Japanese scientists, led by Jun Iwamoto from Keio University School of Medicine in Tokyo, reviewed seven randomized clinical trials for vitamin K1 and K2 in relation to bone health in post-menopausal women.

"Despite the lack of a significant change or the occurrence of only a modest increase in bone mineral density, high-dose vitamin K1 and vitamin K2 supplementation improved indices of bone strength in the femoral neck and reduced the incidence of clinical fractures," wrote the researchers in *Nutrition Research*.

"The review of the reliable literature confirmed the effect of vitamin K1 and vitamin K2 supplementation on the skeleton of postmenopausal women mediated by mechanisms other than bone mineral density and bone turnover."

K definitions

There are two main forms of vitamin K: phyloquinone (vitamin K1) and menaquinones (vitamins K2). K1 is found in green leafy vegetables such as lettuce, broccoli and spinach, and makes up about 90% of the vitamin K in a typical Western diet.

K2 makes up about 10% of consumption and can also be obtained from the diet. Menaquinone-4 (MK-4) can be found in animal meat, while MK-7, MK-8, and MK-9 are found in fermented food products like cheese, and natto is a rich source of MK-7.

Review details

The randomized clinical trials identified by the researchers involved at least 50 subjects, with vitamin K1 doses ranging from 200 micrograms to 5 milligrams per day, or vitamin K2 doses of 45 milligrams per day.

According to the results, found that both forms of the vitamin reduced blood levels of undercarboxylated osteocalcin levels regardless of dose. Osteocalcin is a vitamin K-dependent protein and is essential for the body to utilize calcium in bone tissue. Without adequate vitamin K, the osteocalcin remains inactive, and thus not effective.

"The most important findings in this review are that although supplementation with lower doses of vitamin K may be sufficient to reduce serum ucOC levels, supplementation with higher doses may be required for optimal bone health," wrote the reviewers.

Source: www.nutraingredients.com