

## Vitamin K for Bone Health

When it comes to bone health, you may think of nutrients such as calcium and vitamin D or minerals including magnesium, boron and zinc, which can be beneficial for protecting bones from fracture. However, there is another nutrient that often flies under the radar although it is equally important in long-term bone health: vitamin K.

Vitamin K is a fat-soluble vitamin that is known for its role in maintaining a healthy blood coagulation system. In fact, the blood thinner Coumadin (warfarin) works by inhibiting vitamin K.

Vitamin K also has an important role in bone metabolism. It works by regulating osteoclasts, which are the cells that increase bone turnover to prevent bone demineralization. Vitamin K also helps in the production of the bone protein osteocalcin, which is vital for the uptake of calcium and for maintaining bone mineral density.

The foods with the richest source of vitamin K are leafy green vegetables such as kale, spinach, collard greens, Swiss chard and broccoli. In fact, 1 cup of boiled kale provides more than 1,000 percent of your recommended adequate intake of vitamin K. These foods pack an extra punch since they are also rich in calcium and other minerals that are important for bone health. Other good sources of vitamin K are tomatoes, carrots, strawberries and bell peppers. Fermented soy foods such as miso and natto are also rich sources of vitamin K. In addition, we can produce our own vitamin K from healthy bacteria in our gut.

The National Academy of Sciences recommends a daily adequate intake of vitamin K at 90 mcg for adult women and 120 mcg for adult men. These levels are the minimum recommended amount. As there have been no reports of vitamin K toxicity from natural food sources, consumption of this nutrient above those levels, especially in fruits and vegetables, is very safe.

People who have inflammatory bowel disease, celiac disease or who have had gastrointestinal surgeries may have decreased levels of vitamin K, due to the compromise of the endogenous ability to produce the vitamin. Certain medications, such as antibiotics, some seizure medications, and drugs containing salicylate also may decrease vitamin K. Discuss vitamin K with your doctor if any of those conditions apply to you. If you are taking warfarin, it's especially important to talk with your doctor before making any changes in diet and/or supplementation.

For more information on supplementing with vitamin K in diet or supplement form or recommendations on maximizing bone health, make an appointment with Dr Flatland at Boulder Natural Medicine Clinic. Our office phone number is (303)447-1339. Be well!