
The Possible Benefits of Full Spectrum Vitamin K™, a Dietary Supplement

- Provides important nutrients for healthy bone metabolism*
- May provide nutritional support for arterial and cardiovascular health*
- May provide powerful antioxidant protection, inhibiting lipid peroxidation*
- Includes the important K2 part of the Vitamin K family

Description

Full Spectrum Vitamin K™ is a comprehensive vitamin K formula containing three forms of vitamin K, as well as representative forms of the other fat soluble vitamins, vitamins A and D, and vitamin E as gamma and delta tocotrienols. Vitamin D and K are particularly typical deficiencies, due to inadequate sun exposure (vitamin D) and low amounts in the diet (both).* The delta and gamma tocotrienols are many times stronger than delta and gamma tocopherols, as antioxidants and in relationship to their varied functions.*

Vitamin K is a generic term for a group of substances which contain the 2-methyl-1, 4-naphthoquinone ring structure. These substances support healthy coagulation properties (the term 'vitamin K' derives from the German word 'koagulation'.)* In addition to its antihemorrhagic activity, vitamin K is involved in bone metabolism, the cardiovascular system, and antioxidant activity.*

Vitamin K1 (phylloquinone) is found in green leafy vegetables and some vegetable oils. Forms of vitamin K2 (menaquinones) are found in egg yolk, butter, liver and some other foods, and can also be produced by friendly bacteria in the gastrointestinal (GI) tract. (Vitamin K3 or menadione is a synthetic compound used in animal feed.) All forms of Vitamin K are fat-soluble. The forms of vitamin K2 (menaquinones) are characterized by the number of isoprene residues that make up the characteristic side chain, and are designated by the number of isoprene residues in the structure. For instance, menaquinone-4 (MK-4) possesses

four isoprene residues in the side chain, and MK-7 has seven isoprene units.

Vitamin K, especially in the form of K2, helps calcium to get into the blood and bones where it belongs, and studies indicate that it potentially supports both bone mineral density and vascular elasticity within normal levels.* Vitamin K is required for the gamma-carboxylation of glutamyl residues on many bone and other proteins. Gamma-carboxylation is catalyzed by the vitamin K-dependent gamma-carboxylases. When vitamin K is in short supply in the body, these proteins are formed without the gamma-carboxy glutamic acid (GCGA) component.

The tissues of the liver, bones, cartilage and arterial vessel walls all receive vitamin K from the blood. However, the uptake into the liver is much greater than for other tissues, and it appears that the liver's production of clotting factor takes priority over other vitamin K-dependent processes. The current dose recommendations for vitamin K are based solely on the liver's requirements. The enzymes that do not receive GCGA because of a vitamin K1 or K2 deficiency will be under-carboxylated and unable to support proper calcium metabolism.* This may not be optimal for the bones, the cardiovascular system and the cartilage.*

According to the Food and Nutrition Board of the National Academy of Sciences National Research Council, the requirements of vitamin K ranges from 5 micrograms (µg) for infants, up to 80 µg for adult males and 65 µg for adult females. However, in November 2002, a number

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of European experts in the fields of vitamin K research, bone metabolism and cardiovascular function met to review all the available scientific data on dietary and supplemental vitamin K. They concluded that for optimal bone and vascular health, daily intake of between 200 and 500 µg/day of vitamin K through food sources may be required for optimal health.*

In vitro studies have demonstrated that vitamin K2 inhibits the production of bone resorbing substances, including prostaglandin E2 and interleukin-6.* In vitro and animal studies indicate potential enhancement of osteoblast-induced mineralization.* Besides vitamin K, optimum calcium nutrition depends on the interplay of a number of related compounds, including magnesium and vitamin D3.*

Research also shows that vitamin K has antioxidant activity comparable to vitamin E and CoQ10.* In addition, animal studies in Japan found that vitamin K potentially supports blood sugar within normal levels.* The pancreas contains the second highest concentration of vitamin K in the body.

The absorbability of K2 from GI tract bacteria is uncertain, and the absorption of K1 from vegetables can be as low as 10%. Both K1 and K2 are well absorbed from supplements as long as they are taken with some dietary fat to stimulate bile secretion. Intakes up to 1 mg/day of K1 and 45 mg/day of vitamin K2 have been used with no observed side effects. Supplemental vitamin K has no hemostatic activity in those who are not vitamin K-deficient.

Serving Size: 1 Softgel

Servings Per Container: 90

Amount Per Serving:

Vitamin A (from Cod Liver Oil)	200 IU
Vitamin C (as Ascorbyl Palmitate)	25 mg
Vitamin D3 (90% from Cod Liver Oil, 10% from Skipjack and Tuna Liver Oil)	400 IU
Vitamin K	4050 µg
Vitamin K1 Phytonadione	1000 µg
Vitamin K2 Menaquinone-4	3000 µg
Vitamin K2 Menaquinone-7	50 µg
Tocotrienols (as DeltaGOLD® Tocotrienols containing 90% delta-tocotrienols and 10% gamma-tocotrienols)	5 mg

Other ingredients: Sunflower oil, gelatin, glycerin, water, yellow beeswax, carob extract, lecithin, zinc oxide.

Suggested Use: As a dietary supplement, 1 softgel one or two times daily with meals, or as directed by a healthcare practitioner.

Precautions: High levels of vitamin K supplementation may interfere with oral anticoagulant medications such as warfarin, which are antagonists of vitamin K. Those taking oral anticoagulant treatment should not use vitamin K supplements, unless specifically prescribed by their healthcare practitioner. Pregnant women and nursing mothers should not take more than RDA amounts (65 micrograms daily) unless higher amounts are prescribed by their healthcare practitioner. This product should not be taken at the same time as cholestyramine, colestipol, mineral oil, orlistat, salicylates, olestra and squalene.



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