MegaQUINONE™

MICROBIOME LABS

It's likely that you've never heard of vitamin K2, but this little-known vitamin can save the life of 2 out of 3 of your patients! Considering its role in calcium and glucose homeostasis, vitamin K2 is one of the most important dietary supplements out there, especially since it isn't found in sufficient quantities in the Western diet.

Some of the early evidence for the beneficial qualities of vitamin K2 came from Japan, where consumption of natto, a naturally fermented soy product rich in K2, is common in Eastern Japan but not in Western Japan. Researchers started to notice that adults in Eastern Japan were much healthier than those in Western Japan and significantly healthier than adults in the US. With over 2000 published studies in the last 10 years, scientists have confirmed that the health benefits experienced by the Eastern Japanese come from this crucial nutrient – vitamin K2.[1]

MegaQuinone™ K2-7 is a high-dose, 100% soy-free formulation of natural vitamin K2 (MK-7) formulated for optimal bone, nerve, and heart health.** This formula includes 320 mcg of vitamin K2 with vitamin K1 and chelated minerals for absorption.

SUPPLEMENT FACTS

Serving Size: 2 Capsules
Servings Per Container: 30

Amount Per Serving		% Daily Value
Vitamin K2 (as menaquinone-7 [MK-7, MenaquinGold®])	320 mcg	†
Vitamin K1	200 mcg	167%
Magnesium (as magnesium glycinate)	145 mg	35%
Zinc (as zinc bisglycinate)	30 mg	273%

† Daily value not established.

OTHER INGREDIENTS: Cellulose, vegetable capsule (hydroxypropyl methylcellulose and water).

DOSING

Ages 5+: Take 1 capsule twice daily with food or as recommended by a healthcare practitioner.

(904) 940-2208 www.microbiomelabs.com info@microbiomelabs.com @microbiomelabs

HEALTHY BONES

Dozens of published clinical studies have shown that vitamin K2 halts bone mineral density loss, especially in older women.[1,2] Vitamin K2 acts an essential cofactor in the activation of Gla proteins in the bone (osteocalcin) and blood vessels (matrix Gla-protein or MGP), which means that K2 is responsible for pulling calcium out of the arteries and tissues, where it can be stored in excess, and drags the calcium back into the bone matrix, where it belongs.**

HEALTHY HEART

Without enough K2, undercarboxylated osteocalcin and MGP can lead to increased calcification of arteries and tissues, ultimately setting the stage for plaque formation.** Over 25 published studies confirm that vitamin K2 supplementation can reduce arterial calcification and that deficiencies are correlated with increased arterial calcification.[3-5]

HEALTHY CELLS

Over 40 published studies have demonstrated the important role of vitamin K2 in supporting healthy cell turnover and mitochondrial function.** In 2012, researchers demonstrated that vitamin K2 is a mitochondrial electron carrier that can rescue mitochondrial function in numerous conditions.[6] A comprehensive animal study of male mice found that vitamin K2 supplementation resulted in a significant inhibition of both hormone-dependent and hormone-independent tumor growth.[7]

HEALTHY GLUCOSE SUPPORT

Osteocalcin is more commonly known for its role in bone metabolism, but it also plays a critical role in glucose homeostasis.** Recent animal studies indicate that osteocalcin increases insulin secretion and sensitivity, reduces blood glucose, and decreases visceral fat in both genders, as well as enhancing testosterone production in males.[8]

THE MEGAQUINONE ADVANTAGE

When it comes to vitamin K2, there are two common forms available in the majority of supplements: menaquinone-4 (MK-4) and menaquinone-7 (MK-7). Most of the research on vitamin K2 has been conducted on MK-4, but focus has started to shift to MK-7 due to bioavailability and efficacy in the last few years, as all forms of vitamin K can be converted to MK-4 in vivo in humans.[9] In fact, a few studies found that 1500 mcg/day of MK-4 was required to improve osteocalcin carboxylation, while only 90 mcg/day of MK-7 was necessary.[10-12] These findings demonstrate that MK-7 is superior to MK-4 (and even vitamin K1) in regards to half-life, bioavailability, efficacy, and safety.[9,13]

The average daily intake of vitamin K2 in the West is only 24 mcg per day, which is far below the level required to carboxylate proteins.[14] A 2012 study, which aimed to determine the most effective dose of MK-7, tested a dosing range from 10mcg to 360 mcg.15 Study authors found that only the highest dosage (300+ mcg) was able to confer the most health benefits. The 300+ mcg dose would be the most effective dose on the market and reflects the average consumption of K2 in the Eastern Japanese populations—a dose that has been shown to be very effective for health maintenance.**

1. Kaneki M, Hodges SJ, Hosoi T, et al. Japanese fermented soybean food as the major determinant of the large geographic difference in circulating levels of vitamin K2: possible implications for hip-fracture risk. Nutrition. 2001;17(4):315-21. 2. Emaus N, Gjesdal CG, Almas B, et al. Vitamin K2 supplementation does not influence bone loss in early menopausal women: a randomised double-blind placebo-controlled trial. Osteoporos Int. 2010; 21:1731–40. 3. Gelejinse J, Vermeer C, Grobbee D, et al. Dietary intake of menaquinone is associated with a reduced risk of coronary heart disease: The Rotterdam Study. J Nutr. 2004; 134:3100-3105. 4. Gast GCM, et al. A high menaquinone reduces the incidence of coronary heart disease in women. Nutr Metab Cardiovasc Dis. 2009; 19:504-510. 5. Knapen MHJ, Braam LAJL, Drummen NE, Bekers O, Hoeks APG, Vermeer C. Menaquinone-7 supplementation improves arterial stiffness in healthy postmenopausal women: double-blind randomised clinical trial. Thromb Haemost. 2015; 19(5):113. 6. Lamson DW, Plaza SM. The anticancer effects of vitamin K. Altern Med Review. 2003;8(3). 7. Nimptsch K, Rohrmann S, Linseisen J. Dietary intake of vitamin K and risk of prostate cancer in the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Heidelberg). Am J Clin Nutr. 2008 Apr;87(4):985-92. 8. Choi HJ, Yu J, Choi H, et al. Vitamin K2 supplementation improves insulin sensitivity via osteocalcin metabolism: a placebo-controlled trial. Diabetes Care. 2011 Sep;34(9):e147. 9. Sato T, Schurgers LJ, Uenishi K. Comparison of menaquinone-4 and menaquinone-7 bioavailability in healthy women. Nutrition Journal. 2012; 11:93 10. Takeuchi A, Masuda Y, Kimura M, et al. Minimal effective dose of vitamin K2 (menaquinone-4) on serum osteocalcin concentration in Japanese subjects and safety evaluation of vitamin K2 supplemented in calcium tablet. J Jpn Soc Clin Nutr. 2005; 26:254–260. 11. van Summeren MJ, Braam LA, Lilien MR, et al. The effect of menaquinone-7 (vitamin K2) supplementation on osteocalcin carboxylation in healthy prepubertal children. Br J Nutr. 2009; 102:1171–1178. 12. Brugè F, Bacchetti T, Principi F, et al. Olive oil supplemented with menaquinone-7 significantly affects osteocalcin carboxylation. Br J Nutr. 2011: 106:1058–1062. 13. Schurgers LJ et al. "Vitamin K-containing dietary supplements: comparison of synthetic vitamin K1 and natto-derived menaquinone-7." Blood. 2007;109(8):3279-3283. 14. Beulens JWJ, van der A DL, Grobbee DE, et al. Dietary Phylloquinone and Menaquinones Intakes and Risk of Type 2 Diabetes. Diabetes Care. 2010; 33(8), 1699–1705. 15. Theuwissen E, Cranenburg EC, Knapen MH. Low-dose menaquinone-7 supplementation improved extra-hepatic vitamin K status, but had no effect on thrombin generation in healthy subjects. British Journal of Nutrition. 2012;108:1652–1657.