

## K2-D3

### With Astaxanthin

#### DESCRIPTION

K2-D3 supplies a significant amount of biologically active vitamin K2 in the form of menaquinone-7 (MK-7) with Vitamin D-3 for cardiovascular and bone health.† The addition of Astaxanthin, a powerful antioxidant, helps to further support healthy oxidative stress biomarkers to the vascular and systemic systems.†

Douglas Labs' Vitamin K2 as menaquinone-7 is soy-free and derived from geraniol and farnesol. Geraniol is the primary part of rose oil, palmarosa oil, and citronella oil. Farnesol is present in many essential oils such as citronella, lemon grass, rose, and musk. This nature-identical form of menaquinone-7 has been extensively tested for molecular identity and bioequivalence when compared to menaquinone-7 from fermented soybeans (natto). It is the all-trans form, thus providing a pure, biologically active form.

#### FUNCTIONS

Vitamin D and Vitamin K both play important roles in maintaining healthy calcium balance in the vascular system by supporting the carboxylation of matrix Gla-protein (MGP), a key protein involved in calcium homeostasis. Research indicates that the combination of vitamin K and D provides synergistic support to the health of the blood vessels and skeletal system.†

**Vitamin D**, also known as the “sunshine vitamin” is an essential vitamin that plays many important roles in the proper functioning of the body. Though classified as a vitamin, vitamin D is actually a key regulatory hormone for calcium and bone metabolism. Besides bone support, vitamin D has many other roles in the body, including modulation of cell growth, neuromuscular and immune function and regulatory support. † Vitamin D helps to facilitate calcium absorption and transport. Vitamin D can increase the expression of osteocalcin and other important compounds from osteoblasts to help support bone formation; it can also help to break down bone and mobilize calcium to other tissues in the body. Numerous scientists now feel that supplementation with vitamin D at levels greater than previously thought necessary is critical to helping maintain healthy bone remodeling and healthy vitamin D plasma levels.†

**Vitamin K** is needed to activate osteocalcin (carboxylated), which functions to take calcium out of the vessels and deposit it into the bones. Therefore, consuming sufficient amounts of dietary calcium is not enough for bone and cardiovascular health; the body needs to distribute and utilize the calcium properly with aid of Vitamin K. Vitamin K2 (as MK-7) is more bioactive and has proven more effective than vitamin K1 and other menaquinones. A study showed MK-7 to be eight times the half-life of vitamin K1 in a 24-hour serum concentration level after 1 mg of each form was ingested. Thus, MK-7 can be administered in low dosages only once a day, typically 1/1000 that of a MK-4 dose. Furthermore, the study showed better utilization and improved osteocalcin carboxylation for MK-7 after 6 weeks. Numerous studies reveal long-chain menaquinones, such as MK-7 to be more effective in supporting arterial health than vitamin K1 menaquinones.†

**Astaxanthin**, the most powerful carotenoid sourced naturally from *Haematococcus pluvialis* algae, is increasingly popular due to its' numerous health benefits, and has been studied for cardiovascular and immune health and systemic regulatory balance.† Astaxanthin is a potent antioxidant and free radical scavenger, even more potent than lutein and zeaxanthin in certain systems. It has also been shown to cross the blood-brain barrier and the blood-retinal barrier. Studies show that astaxanthin supports healthy oxidative stress biomarkers in addition to LDL cholesterol, ApoB, nitric oxide synthase (NOS), prostaglandin E2 (PGE2) and tumor necrosis factor (TNF)-α. Furthermore, astaxanthin helps to protect against lipid peroxidation and may improve vascular elastin and reduce arterial wall thickness by modulating the oxidative condition.†

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#### INDICATIONS

K2-D3 is indicated for individuals desiring a high dose of vitamin K and vitamin D for blood vessel or bone health, with the added systemic health benefits of astaxanthin.

#### FORMULA (#202114-30X)

##### Serving Size 1 Vegetarian Capsule

Vitamin D-3 (cholecalciferol).....2,500 IU  
Vitamin K-2 (as menaquinone-7\*).....180 mcg  
Astaxanthin .....2 mg  
(Supercritical CO<sub>2</sub> extract of *Haematococcus pluvialis*, entire plant)

Other ingredients: Hydroxypropyl methylcellulose (capsule), cellulose, vegetable stearate.

\*MK-7 is soy-free

#### SUGGESTED USE

Adults take 1 capsule daily with a meal or immediately following a meal, or as directed by your healthcare professional.

**Warning:** This product contains Vitamin K, which interferes with the prescription drug Coumadin (Warfarin) and blood thinners. Consult your physician before taking this product.

**Note:** People consuming more than 2,000 IU per day should have their vitamin D blood levels monitored by a healthcare professional.

#### SIDE EFFECTS

No adverse effects have been reported.

#### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

#### REFERENCES

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**For more information on K2-D3 visit [douglaslabs.com](http://douglaslabs.com)**

† These statements have not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure, or prevent any disease.

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