

# Vitamin D+K

VITAMIN D+K 2000 IU • VITAMIN D+K 5000 IU • VITAMIN D+K LIQUID

## Vitamin D+K 2000

### Supplement Facts

Serving Size: 1 Capsule

Servings Per Container: 120 & 240

	Amount Per Serving	%Daily Value
Vitamin D3 50 mcg (2000 IU) (as cholecalciferol)		250%
Vitamin K2 70 mcg (as menaquinone-7)		58%

## Vitamin D+K 5000

### Supplement Facts

Serving Size: 1 Capsule

Servings Per Container: 60 & 180

	Amount Per Serving	%Daily Value
Vitamin D3 125 mcg (5000 IU) (as cholecalciferol)		625%
Vitamin K2 140 mcg (as menaquinone-7)		117%

**BOTH PRODUCTS: Other Ingredients** [order may vary]:

Hypromellose (capsule), microcrystalline cellulose, L-leucine, silicon dioxide. **Does not contain gluten.**

**SUGGESTED USE:** 1 CAPSULE PER DAY OR AS DIRECTED BY YOUR HEALTHCARE PROFESSIONAL.

## Vitamin D+K Liquid

### Supplement Facts

Serving Size: 4 drops (0.12 ml)

Servings per container: 250

	Amount Per Serving	%Daily Value
Vitamin D3 50 mcg (2,000 IU) (as cholecalciferol)		250%
Vitamin K2 60 mcg (as menaquinone-7)		50%

**Other Ingredients:** Medium chain triglyceride oil (MCT oil), olive oil, steam-distilled peppermint oil, potassium sorbate (preservative). **Does not contain gluten.**

**SUGGESTED USE:** FOUR DROPS PER DAY OR AS DIRECTED BY YOUR HEALTHCARE PROFESSIONAL.

**WARNING:** IF YOU ARE TAKING MEDICATION, HAVE A MEDICAL CONDITION OR AN UPCOMING MEDICAL PROCEDURE, OR ARE PREGNANT, OR NURSING, CONSULT A PHYSICIAN BEFORE USE. IF ADVERSE REACTIONS OCCUR, DISCONTINUE USE & CONSULT YOUR HEALTHCARE PRACTITIONER.

- Essential vitamin D3 support for proper calcium metabolism.\*
- Benefits immune health and multiple physiological systems.\*
- Vitamin K2 provides synergistic bone & vessel support.\*
- Featuring MK-7, the most potent and bioactive form of K2.\*

VITAMIN D supplementation is critical for many individuals due to widespread deficiency of this essential nutrient. Moss Nutrition Vitamin D+K supplements, featuring vitamin K2 as *menaquinone-7* (MK-7), are provided in a selection of potencies and forms to help address individual patient needs.

### Understanding Vitamin D

While most vitamins function primarily as antioxidants or enzyme co-factors, vitamin D functions as a pro-hormone. This means that once it is converted into 25-hydroxy vitamin D (25-OHD), its bioactive form, vitamin D has specific hormone-like effects in the body. The fact that almost every cell in the body has receptor sites for vitamin D may explain the wide range of functions and benefits attributed to this important, fat-soluble nutrient.

Vitamin D promotes bone mineralization and remodeling by enhancing intestinal absorption of calcium and phosphorus, boosting calcium and phosphorus reabsorption in the kidney, and regulating their levels in serum. In addition to supporting bone health, vitamin D also helps modulate inflammation, insulin sensitivity, and immune function (possibly by working in tandem with insulin and cortisol). Additional vitamin D benefits suggested by clinical research include direct anti-viral activity, improved balance and reduction of falls in the elderly, and inhibition of uncontrolled cell proliferation.

### Active/Inactive Forms of Vitamin D

Whether in the form of vitamin D3 (cholecalciferol, the animal-derived form) or vitamin D2 (ergocalciferol, made by plants), the vitamin D obtained from food, supplements and sunlight exposure is inactive until converted into 25-OHD. This conversion is carried out in liver and kidney cells with the aid of cytochrome p450 detoxification enzymes. People with fat malabsorption and those suffering from impaired liver/kidney function, toxicity syndromes or inflammatory conditions, including obesity, may require higher amounts of supplemental vitamin D and/or additional strategies to maintain 25-OHD levels within the healthy range.

Based on new findings underscoring the importance of vitamin D, many experts suggest that previously accepted minimum values of serum 25-OHD be raised

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This product is not intended to diagnose, treat, cure or prevent any disease.



from 25 nmol/L to 50 nmol/L. Although vitamin D deficiency is common, a serum blood test is required to determine a patient's actual need for supplementation, and to establish baseline levels.

## Synergistic Vitamin K Effects

Research suggests vitamin K plays a strong role in supporting bone and vascular health due to its synergistic relationship with calcium and vitamin D. This relationship can be summarized as follows: Vitamin D helps increase serum calcium levels by enhancing the intestinal absorption and kidney reabsorption of calcium; vitamin K helps guide circulating calcium into bone tissue. Vitamin K operates in this regard by serving as a cofactor in the carboxylation of specific glutamic acid proteins, namely *osteocalcin*, which directs circulating serum calcium into bone tissue, and *matrix Gla protein* (MGP), which inhibits the deposition of calcium into blood vessels. In the absence of adequate vitamin K to activate osteocalcin and MGP, incomplete carboxylation of these two Gla proteins permits free calcium to be deposited into soft tissues (such as blood vessel walls) rather than into bone tissue, thereby increasing the risk of bone loss and vascular calcifications. Vitamin K also promotes healthy blood clotting; therefore, people taking anticoagulant medications are generally advised to avoid the use of vitamin K supplements.

Vitamin K is found in numerous forms. Vitamin K1 (*phylloquinone*) is the form which occurs naturally in plants, notably green vegetables such as parsley, kale and broccoli. Vitamin K2 exists in multiple forms, identified as a series of *menaquinones* (MKs). K2 is produced by bacteria in the human intestine, and also is found in fermented foods such as sauerkraut, cheese and natto.

Research suggests that vitamin K2 is used preferentially in the gamma-carboxylation of osteocalcin, making it an important nutrient for bone and vessel health. **Vitamin D+K** contains K2 as *menaquinone-7* (MK-7), the most bioactive and absorbable form of K2 for use in supplements. MK-7 is more potent and exhibits a longer half life than the less costly MK-4. In clinical studies on postmenopausal women, low dose MK-7 (180 mcg/day) was shown to help promote the retention of bone mass, and to help support healthy arterial flexibility. In other research, MK-7 has been suggested to help prevent vascular calcifications.

## REFERENCES

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