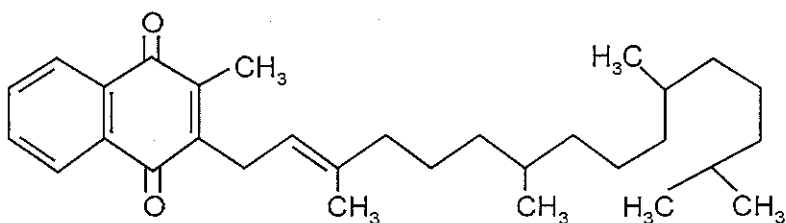


Vitamin K: Phytonadione



- Vitamin K₁ is stable to air and to heat and dilute acid.
- The vitamin is destroyed by reducing agents and ultraviolet radiation and even to diffuse light.
- It is decomposed by alkalis.
- Vitamin K deficiency is uncommon in healthy people.

Principal commercial forms

	Empirical formula	Mol Wt
Vitamin K ₁	C ₃₁ H ₄₆ O ₂	450.68

Vitamin K₁ (phytonadione, phytomenadione) is a yellow liquid, insoluble in water and sparingly soluble in alcohol. It is readily soluble in fats and oils.

Health Effects and Functions of Vitamin K

- Indispensable for maintaining the function of the blood coagulation system
- Plays a role in bone formation and metabolism
- Catalyzes the biosynthesis of many proteins found in our bodies

Vitamin K

Vitamin K plays an important role in blood clotting and studies have shown it to maintain strong bones in the elderly. However, dermatologists have recently found vitamin K to be successful for the treatment for dark circles under the eyes and bruising on the face.

Dark circles may be hereditary for some people or simply a part of the aging process, but most people would agree that they are a struggle to conceal. When the fat pad beneath the eye begins to thin with age, it can create a sunken look to the under eye area. Studies have shown that sluggishness of blood flow underneath the eyes may also contribute to dark circles. Vitamin K has been found to diminish the appearance of these dark circles.

A recent study published in *Cosmetic and Toiletries*, included two groups, one that applied an under eye cream containing sunscreen and another that applied an under eye cream containing a combination of vitamin K and retinol. An examination of the under eye color at the beginning of the study and at the end found a significant lightening in the group using the vitamin K and retinol combination.

"Whether dark circles under the eyes are a result of aging, genetics or sun damage, vitamin K has been shown to reduce the puffiness and discoloration associated with this oftentimes troubling problem," said Dr. Baumann. "If patients feel that concealers for the under eye area are no longer covering their circles, they should look for under eye skin treatments that contain vitamin K or a combination of vitamin K plus retinol which has been shown to boost collagen production in the skin."

Vitamin K has also recently been studied for its effects on reducing bruising following certain dermatologic procedures. In a recent study, published in the *Journal of the American Academy of Dermatology*, patients underwent laser treatments to lessen the appearance of spider veins on the face. Since the laser treatment may cause bruising, half the patients applied topical vitamin K to half their faces for two weeks before laser treatment and a placebo cream to the other half of their face. The remaining patients applied the vitamin K to one half of the face and the placebo to the other half, after treatment. While the application of topical vitamin K before the procedure did not seem to affect the severity of bruising, those patients who applied the vitamin K after the procedure noticed a significant reduction in the severity of bruising.

"Topical vitamin K can profoundly reduce the amount of time some patients heal, said Dr. Baumann. "This is especially important for those who are uncomfortable with the often short-term bruising that can be visible following laser treatments."



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