



A Brief Note on Source and Deficiency of Vitamin E

Jin Biang*

Department of Medicine, Peking University, Beijing, China

Description

Vitamin E is a fat-soluble vitamin of several types, but alpha-tocopherol is the only one used by the human body. Its main role is to act as an antioxidant, releasing loose electrons called “free radicals” that can damage cells. It also improves the immune system and prevents clots from forming in the arteries.

Antioxidant vitamins, including vitamin E, came to public attention in the 1980’s when scientists began to realize that major free radicals were involved in the early stages of artery-clogging atherosclerosis, and could contribute to cancer, vision loss, and many more chronic conditions.

Vitamin E has the ability to protect cells from free radical damage and to reduce the production of free radicals in some cases. However, conflicting research results have diminished the promise of using high doses of vitamin E to prevent chronic diseases.

All forms of vitamin E are powerful antioxidants as they absorb lipid peroxy radicals by donating hydrogen from the phenolic group in the chromanol ring. Due to having the same phenolic moiety, all forms of vitamin E are considered to be powerful antioxidant activities.

Food Sources

Vitamin E is found in plant-based oils, nuts, seeds, fruits, and vegetables.

- Wheat germ oil
- Sunflower, safflower, and soybean oil
- Sunflower seeds
- Almonds
- Peanuts, peanut butter
- Beet greens, collard greens, spinach
- Pumpkin
- Red bell pepper

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- Asparagus

- Mango

- Avocado

Vitamin E and Health

Heart disease: For some time, vitamin E supplements seemed to be an easy way to prevent heart disease. Major observational studies have shown benefits from vitamin E supplements, while controlled clinical trials have produced mixed results.

Age-related vision diseases: A six-year study found that vitamin E, combined with vitamin C, beta carotene, and zinc, provided some protection against the development of macular degeneration associated with growth, but not the cataracts, in people at high risk of the disease. On its own, however, vitamin E does not appear to provide significant benefits against cataract.

Deficiency

Low levels of vitamin E can lead to:

Muscle weakness: Vitamin E is essential for the central nervous system. It is one of the body’s main antioxidants, and deficiency causes oxidative stress, which can lead to muscle weakness.

Coordination and walking difficulties: Deficiency can cause certain neurons, called Purkinje neurons, to break down, impairing their ability to transmit signals.

Numbness and tingling: Damage to nerve fibers can prevent the nerves from transmitting signals properly, resulting in these sensations, which are also called peripheral neuropathy.

Vision deterioration: Lack of vitamin E can weaken light receptors in the retina and other cells in the eye. This can lead to loss of vision over time.

Immune system problems: Some studies show that vitamin E deficiency can inhibit immune cells.

Complications

Excessive levels of vitamin e may cause abnormal bleeding, muscle aches, diarrhoea, and vomiting. The bleeding can increase the risk of stroke and early death. Too much vitamin e can also interact with blood thinners such as warfarin and

chemotherapy medications. Common vitamin E side effects may include:

- Nausea
- Tired feeling
- Headache
- Mild rash