



Vitamin E as a Source of Antioxidant and some Diseases

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Commentary

Vitamin E is naturally found in most of the foods, and is available as a dietary supplement. Vitamin E is a fat soluble compound with distinctive antioxidant activities and it protects cell membrane from reactive oxygen species. Vitamin E is also known to be α -Tocopherol, which has a group of eight lipid soluble compounds synthesized by plants, tocopherols and tocotrienols. About 90% of the vitamin E accounts for α -Tocopherol in human tissues and acts as an antioxidant (it stops the chain reaction of free radicals producing more free radicals). Vitamin E helps in protecting the cell membranes, proteins, and DNA from oxidation and thereby contributes to cellular health. In to the blood Vitamin E is transported by plasma lipoproteins and erythrocytes.

Sources of Vitamin E and Storage

It is stored in the liver and even at high intake of Vitamin E is safe. The α -Tocopherol form of Vitamin E is found in edible vegetable oils, especially wheat germ, sunflower oil and rapeseed oil. Leafy green vegetables (spinach, chard), nuts (almonds, peanuts) and nut spreads, avocados, sunflower seeds, mango and kiwifruit are other good sources of vitamin E. Almonds is one of the best source of vitamin E. Other excellent sources of vitamin E include animal products like cheese and eggs or plant oils.

Deficiency of Vitamin E

This deficiency is usually not common. In case the Vitamin E deficiency occurs it leads to red blood cell breakage and it causes nerve damage. Recent studies from Bangladesh states, due to less amount of vitamin E in blood levels there will be a higher risk for miscarriage. Supplementation of vitamin E has been successfully used for the treatment of non-alcoholic fatty liver disease, this condition widespread in overweight and obese people. From food the excessive

intake of vitamin E is very rare.

When can Vitamin E Deficiency Occur?

Generally this Vitamin E deficiency is very rare in humans. Vitamin E deficiency is likely to occur in three specific situations. It is certainly seen in the persons who cannot absorb dietary fat, has been found in premature, very low birth weight infants, and it is seen in individuals with rare disorders of fat metabolism. Due to poor nerve conduction this deficiency is usually characterized by neurological problems.

Who Need Extra Vitamin E To Prevent Deficiency?

Vitamin E supplement is required for those who cannot absorb fat because some amount of dietary fat is needed for the absorption of vitamin E from the gastrointestinal tract. Anyone diagnosed with cystic fibrosis need vitamin E supplement. This disease associated with vitamin E deficiency can cause problems such as poor transmission of nerve impulses, muscle weakness, and degeneration of the retina that that leads to blindness. Any person with abetalipoproteinemia should be prescribed with special vitamin E supplements by a physician to treat this disorder.

Vitamin E and Heart Disease

From recent preliminary research there is a belief that vitamin E may help prevent or to delay coronary heart disease. Researchers are fairly definite that the oxidative modification of LDL cholesterol promotes blockages in coronary arteries which can lead to atherosclerosis and heart attacks. By limiting the oxidation of LDL cholesterol, Vitamin E may help to prevent or delay coronary heart disease and also helps in preventing the formation of blood clots, which may lead to a heart attack. Observational studies have associated that with higher vitamin E

intake the lower the rate of heart disease.

Vitamin E and Cancer

Vitamin E antioxidant helps to protect the damaging effects of free radicals, which may lead to the development of chronic diseases (cancer).

The formation of nitrosamines may also be blocked with Vitamin E, which are carcinogens formed in the stomach from nitrites those consumed in the diet. By enhancing the immune function, Vitamin E may also protect against the development of cancers. Unfortunately, the human trials and surveys that tried to associate vitamin E with incidence of cancer have been generally inconclusive. Some evidences states that higher intake of vitamin E lead to decreased incidence of prostate cancer and breast cancer.

Vitamin E and Cataracts

A cataract is a clouded vision that grows on the lens of the eye. The risk of disability and blindness in

aging adults will be increased with this. Antioxidants are being studied to determine whether or not they can help to prevent or delay cataract growth. Keen studies have found that lens clarity, was better in regular users of vitamin E supplements and in persons with higher blood levels. A study of middle aged male smokers, however, didn't demonstrate any effect from Vitamin E supplements on the incidence of cataract formation.

Vitamin E was first used as a supplement by physicians in Canada. Based on the positive results achieved, they began using it regularly in their practices. Since then, well designed experimental and clinical studies have been progressed steadily and increased our knowledge about vitamin E. The anti oxidative properties of vitamin E have been found to play a vital role against various diseases such as atherosclerosis, oxidative stress, cancer, cataract and AD, among others.