

## Vitamin E (Alpha-tocopherol)

Vitamin E (alpha-tocopherol) is a fat soluble vitamin with antioxidant properties against the peroxidation of lipids. Vitamin E is indicated for patients with alpha-TTP deficiency and fat malabsorption syndrome. Since bleeding is a side effect of vitamin E, limit vitamin E doses to  $\leq 200$  IU/day. Excess levels increases the risk of hemorrhagic stroke. Dietary sources of vitamin E include vegetable oils, nuts, and whole grains.



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### Mechanism

#### Antioxidant

##### Ant-tie-ox

Vitamin E has antioxidant properties that help protect against lipid peroxidation. The vitamin acts against free radical damage. As a fat soluble vitamin, it also protects the cell membrane from oxidative damage.

### Indications

#### Fat Malabsorption Syndrome

##### Fat Intestinal-mallet

Since fat soluble vitamins require the presence of fat to be absorbed, patients with fat malabsorption syndrome require vitamin E supplementation. Fat malabsorption syndromes include Crohn's disease and celiac disease.

#### Alpha-TTP Deficiency

##### Afro-guy with T-TP Deficiency

Although vitamin E deficiency is rare, supplementation is indicated for patients with alpha-TTP deficiency. Symptoms of vitamin E deficiency include ataxia, sensory neuropathy, areflexia, and muscle hypertrophy.

### Side Effects

#### Bleeding

##### Bleeding

Since vitamin E suppresses coagulation, excessive amounts increases the risk of bleeding and may cause hemorrhage. Vitamin K promotes synthesis of clotting factors and counteracts bleeding caused by vitamin E. Patients with vitamin K deficiency have an increased risk of bleeding.

### Considerations

#### Increased Risk Hemorrhagic Stroke

##### Up-arrow Risk of Hemorrhage-hammer Stroke-crew

Vitamin E increases the risk of bleeding and hemorrhagic stroke. Excessive amounts of vitamin E can suppress coagulation and increase prothrombin time.

#### Limit Doses $< 200$ IU per Day

##### Limit-sign with Less-than (2) Tutu (100) Dollar-bills

Excessive doses of vitamin E increases the risk of heart failure, cancer progression, and mortality. Daily doses exceeding 200 IU/day may increase the risk of death in older patients with additional risk factors.

### **Nuts and Whole Grains**

#### [Nuts and Grains](#)

Dietary sources of vitamin E include nuts, whole grains, mustard greens, and wheat germ. Almonds and hazelnuts are examples of nuts containing vitamin E.

### **Vegetable Oils**

#### [Vegetable Oil](#)

Vitamin E is found in vegetable oils such as corn oil, olive oil, cottonseed oil, safflower oil, and canola oil. The fats found in oils enhance the body's ability to absorb vitamin E.