

Vitamin E – Needs and Sources

Vitamin E is a fat-soluble antioxidant that stops the production of ROS formed when fat undergoes oxidation. Scientists are investigating whether, by limiting free-radical production and possibly through other mechanisms, vitamin E might help prevent or delay the chronic diseases associated with free radicals.

Antioxidants protect cells from the damaging effects of free radicals, which are molecules that contain an unshared electron. Free radicals damage cells and might contribute to the development of cardiovascular disease and cancer [5]. Unshared electrons are highly energetic and react rapidly with oxygen to form reactive oxygen species (ROS). In addition to its activities as an antioxidant, vitamin E is involved in immune function and, as shown primarily by *in vitro* studies of cells, cell signaling, regulation of gene expression, and other metabolic processes. Alpha-tocopherol inhibits the activity of protein kinase C, an enzyme involved in cell proliferation and differentiation in smooth muscle cells, platelets, and monocyte.

Vitamin E may play a modest role in altering the course of dementia, say researchers. Compared with participants with the lowest intake, investigators found that those patients with higher vitamin E intake were 25% less likely to develop dementia.

Recommended daily intake

The Food and Nutrition Board at the Institute of Medicine report the following dietary reference intakes for vitamin E:

Age	Males	Females	Pregnancy	Lactation
0-6 months*	4 mg (6 IU)	4 mg (6 IU)		
7-12 months*	5 mg (7.5 IU)	5 mg (7.5 IU)		
1-3 years	6 mg (9 IU)	6 mg (9 IU)		
4-8 years	7 mg (10.4 IU)	7 mg (10.4 IU)		
9-13 years	11 mg (16.4 IU)	11 mg (16.4 IU)		
14+ years	15 mg (22.4 IU)	15 mg (22.4 IU)	15 mg (22.4 IU)	19 mg (28.4 IU)

Dietary sources and supplements

The following foods are rich in vitamin E

Fortified cereals

- Seeds and seed oils, like sunflower
- Nuts and nut oils, like almonds and hazelnuts
- Green leafy vegetables, like spinach, turnip, beet, collard, and dandelion greens
- Tomato products
- Pumpkin
- Sweet potato (0.26 mg/100g)
- Blue crab
- Rockfish
- Mangoes
- Asparagus
- Broccoli
- Papayas

- Olives

Deficiency:

Vitamin E deficiency can cause:

- ataxia
- myopathies
- peripheral neuropathy
- Dementia
- impairment of the immune response

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