

Vitamin E

While vitamin E supplementation was initially supported by evidence and heavily promoted, current research suggests that meeting dietary recommendations with food alone or a low-dose supplement is sufficient to raise circulating vitamin E to health-benefiting levels.

Vitamin E is a powerful antioxidant which works with the body's natural defense system to prevent free radical damage. These unstable molecules are produced during natural reactions in the body and in response to environmental triggers like smoking and sun exposure. They can be destructive and damage cells, contributing to the development of diseases such as cancer.

Research has reinforced the reputation of vitamin E as an important disease-fighting agent, and vitamin E intake has been linked to a reduced risk of Alzheimer's disease, diabetes, heart disease and some cancers.

The results of more recent studies have not shown an association between increasing vitamin E intake or circulating levels and a reduced risk of prostate cancer in the general population². In fact, current smokers and those with poor vitamin E status at baseline seem to be the only groups that benefit from vitamin E supplementation^{3,4}. However, another study reported that long-term supplementation of

vitamin E may be beneficial in preventing the development of advanced disease⁶.

Currently, one well-known trial called the SELECT (the SELEnium and vitamin E prostate Cancer prevention Trial), is trying to determine if selenium and vitamin E is effective in preventing prostate cancer. The study is looking at the effects of vitamin E (400 IU) and selenium (200 mcg) supplementation. Men in the United States, Puerto Rico, and Canada have been invited to participate in this trial. The highly-anticipated results are expected in year 2013.

Although laboratory data suggests a role of vitamin E in slowing the progression of prostate cancer in those diagnosed with the disease, very few clinical studies has been conducted. Further research is needed to establish the effect of vitamin E intake on risk of disease recurrence and survival over time.

While those with low serum (blood) levels may benefit from additional vitamin E, including vitamin E-rich food sources in a healthy, well-balanced diet will promote overall health and is preferable to supplementation.

1. Heinonen OP, Albanes D, Virtamo J, *et al*. Prostate cancer and supplementation with alpha-tocopherol and beta-carotene... J Natl Cancer Inst 1998; 90:440-6.
2. Weinstein SJ, Wright ME, Lawson KA, *et al*. Serum and dietary vitamin E in relation to prostate cancer risk. Cancer Epidemiol Biomarkers Prev 2007; 16:1253-9.
3. Kirsh VA, Hayes RB, Mayne ST, *et al*. Supplemental vitamin E, β -carotene and vitamin C intakes and prostate cancer risk. J Natl Cancer Inst 2006; 98:245-54.
4. Wright ME, *et al*. Higher baseline serum concentrations of vitamin E are associated with lower total and cause-specific mortality...Am J Clin Nutr 2006; 84:1200-7.

The current Recommended Daily Allowance (RDA) for vitamin E is **15 milligrams (mg) per day**. This intake can be achieved through diet alone, but foods high in vitamin E (such as vegetable oils and nuts) are often high in fat and calories as well. If you are concerned about weight gain, choose lower fat sources of vitamin E whenever possible, such as dark green vegetables and whole grains.

Food item	Serving	Vitamin E content	
		mg	IU
Almonds, dry roasted, no salt	¼ cup (60 ml)	9.0	13.4
Sunflower seeds, dry roasted, no salt	¼ cup (60 ml)	8.0	11.9
Wheat germ, toasted	¼ cup (60 ml)	5.2	7.8
Soy milk, enriched	1 cup (250 ml)	3.3	4.9
Tomato paste, canned	¼ cup (60 ml)	3.0	4.5
Canola or olive oil	1 tbsp (15 ml)	2.0	3.0
Salmon, baked or broiled	2.5 oz (75 g)	2.0	3.0
Mango	½ medium	1.5	2.2
Broccoli, cooked	½ cup (125 ml)	1.2	1.8
Red pepper, cooked	½ cup (125 ml)	1.1	1.6
Spinach (raw)	1 cup (250 ml)	1.0	1.5
(cooked)	½ cup (125 ml)	2.0	3.0
Asparagus	½ cup (125 ml)	1.0	1.5
Chickpeas	¾ cup (175ml)	0.57	0.85
All-Bran cereal	1/3 cup (30 g)	0.37	0.55
Rye bread	1 slice	0.10	0.15

Source: Health Canada, Canadian Nutrient File, 2007b version; www.healthcanada.ca/cnf

The average daily intake of vitamin E among North American men aged 60 years and older is just 7 milligrams⁵. If you are unable to meet the vitamin E recommendation through food alone, most multivitamins contain amounts that are both effective and safe, between 50 to 100 International Units (IU), which is equivalent to 22.5 to 45 milligrams of active vitamin E. At this time, there is no considerable evidence to suggest that higher amounts are beneficial; supplementation at 200 IU or higher should be discussed with your doctor or a dietitian.

In high doses, vitamin E can actually act as a pro-oxidant, increasing the risk of cell damage rather than protecting against it. Your daily intake of vitamin E should not exceed 1000 milligrams per day. Men who have high blood pressure, or who are taking aspirin or anticoagulant medication should be extra cautious when it comes to vitamin E supplementation, as it may have a blood thinning effect. It is advised that individuals taking vitamin E talk to their doctor about discontinuing the use of supplements prior to and immediately following surgery or radiation.

The Prostate Education & Research Centre



Summer 2008

Developed by:

Meredith Cushing, RD, MS, MSHSE
Kristin Wiens, BSc (FNH), Diana Trang, BSc (FNH)

For more information, please call (604) 875-5006.
Visit The Prostate Centre on the World Wide Web:

5. Ervin RB, Wright JD, Wang CY, et al. Dietary intake of selected vitamins for the United States population: 1999–2000. US Department of Health and Human Services. NCHS: Advance Data No. 339. 2004.

6. Peters U, Littman AJ, Kristal, AR, et al. Vitamin E and selenium supplementation and risk of prostate cancer in the Vitamins and lifestyle (VITAL) study cohort. Cancer Causes Control. 2008;19:75–87