

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 via supplementation 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.

The SELECT (the SELEnium and vitamin E prostate Cancer prevention Trial)⁷, looked at the effectiveness of supplementation of selenium and vitamin E in preventing prostate cancer. Results from this study definitively demonstrated that selenium, vitamin E, or selenium + vitamin E did not prevent prostate cancer in generally healthy men. A statistically nonsignificant increased incidence of prostate cancer was actually observed in the vitamin E supplementation group.

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 have 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. 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.

2. 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.

3. 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.

4. 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

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



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Developed by:

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

For more information, please call (604) 875-5006.
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5. Lippman SM, Klein EA, Goodman PJ, et al. Effect of selenium and vitamin E on risk of prostate cancer and other cancers the selenium and vitamin E cancer prevention trial (SELECT). JAMA. 2009;301(1):39-51.

6. 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.