



# Looking at Vitamin E

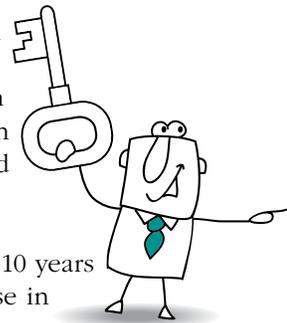
by Margy Squires

**Does anybody really need to take vitamin E?** Lately it has been missing from research headlines, overshadowed by vitamin D deficiency scares and mega news on probiotics. But just when you think this antioxidant is replaceable, the National Institutes of Health report most Americans are below the recommended daily intake (DRI).<sup>1</sup> This is alarming given that the DRI is a mere 28.4 IUs for adults over the age of 14.

Vitamin E falls within the class of fat soluble antioxidants that protect cells and tissue from the effects of free radicals. Although there are eight chemical forms of E, the most well-known and researched is alpha tocopherol. The alpha tocopherol form is also the one used as the basis for the DRI.

Every day your body naturally creates free radicals when it converts food to usable energy. If free radicals react with oxygen (another common element in your body), damaging reactive oxygen species (ROS) form from the union. Vitamin E helps protect you from these internal ROS. Likewise, external exposure to environmental toxins such as pollution, UV radiation, and cigarette smoke add to the free radical pool.

According to the NIH Health Professional Fact Sheet, “vitamin E 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.”<sup>1</sup> Additionally, vitamin E’s activities include boosting immune function, cell signaling involving gene expression, fortifying blood vessels to resist platelet aggregation and helps vessel dilation.



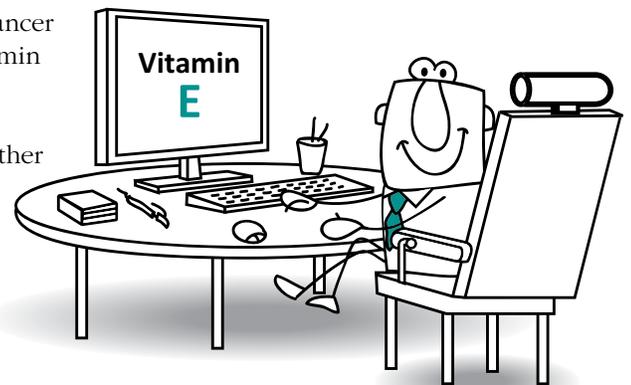
Unlocking E’s potential. One representative study with 40,000 healthy women followed for an average of 10 years who took an average of 400 IUs of natural vitamin E found those over the age of 65 had a 26% decrease in nonfatal heart attacks and a 49% decrease in cardiovascular deaths. Another cited study involved cataracts. Participants who took vitamin E supplements and those with the highest blood levels of the antioxidant had superior lens clarity, showing E’s ability to protect against oxidative damage, the principle cause of cataracts. Vitamin E was also part of the Age-Related Eye Disease study which showed a 25% reduction in developing advanced age-related macular degeneration for those at risk. Another study looked at E’s effect on decreasing oxidative stress in exercise induced asthma, with improved lung function taking 300 IU of E and 500 mg of vitamin C. As usual, antioxidants have a synergistic effect when taken together.<sup>2</sup>



| Vit E Tolerable Upper Intake Levels <sup>6</sup> |          |          |           |           |
|--|----------|----------|-----------|-----------|
| Age  | Male     | Female   | Pregnancy | Lactation |
| 1-3 years  | 300 IU   | 300 IU   |           |           |
| 4-8 years  | 450 IU   | 450 IU   |           |           |
| 9-13 years                                       | 900 IU   | 900 IU   |           |           |
| 14-18 years                                      | 1,200 IU | 1,200 IU | 1,200 IU  | 1,200 IU  |
| 19+ years  | 1,500 IU | 1,500 IU | 1,500 IU  | 1,500 IU  |

Supplementing with vitamin E improves liver activity in non-alcoholic fatty liver disease (NAFLD) the leading cause of chronic liver disease (20-30%) in the U.S.<sup>3</sup> Taking E 400 IU for 4 weeks reduced menopausal hot flashes.<sup>4</sup> Other areas of research relate to pregnancy and prostate cancer risks when levels of vitamin E are found low.

The DRI for E and other nutrients are developed by the Food and Nutrition Board at the Institute of Medicine of The National Academies. Note that these reference values are set for *healthy* people. The Board’s value for E is for alpha tocopherol only, the form maintained in plasma. According to three national surveys, the diets of most Americans provides less than the recommended level of E.<sup>5,6</sup> An interesting comparison to the upper intakes reported (see diagram),<sup>7</sup>



Continued

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Vitamin E can be found in nuts, seeds, fruits and vegetables but typically at 1-10 mg at most per serving, making it difficult to reach optimal levels. Since E is absorbed with the help of fat via the small intestines, those with GI disorders such as Crohn's and celiac may have E deficiency. So supplement to keep this antioxidant working for you. Remember to avoid the dl or DL synthetic form as you'll need 50% more. Take natural alpha tocopherol which the body recognizes and utilizes to your antioxidant advantage. Look for alpha mixed in with the rest of the tocopherols (such as TyH's Vitamin E, 100% Natural Mixed Tocopherols) as an optimal, balanced formula.

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## Resources

1. The National Institutes of Health Office of Dietary Supplements. Vitamin E Fact Sheet for Health Professionals. <https://ods.od.nih.gov/factsheets/VitaminE-HealthProfessional/#en6>
2. Kurti SP et al. Improved lung function following dietary antioxidant supplementation in exercise-induced asthmatics. *Respir Physiol Neurobiol.* 2016 Jan;220:95-101.
3. Hannah WN Jr, Harrison SA. Lifestyle and Dietary Interventions in the Management of Nonalcoholic Fatty Liver Disease. *Sci* 2016 May;61(5):1365-74.
4. Ziaei S et al. The effect of vitamin E on hot flashes in menopausal women. *Gynecol Obstet Invest.* 2007;64(4):204-7.
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6. Interagency Board for Nutrition Monitoring and Related Research. Third Report on Nutrition Monitoring in the United States. Washington, DC: U.S. Government Printing Office, 1995.
7. Institute of Medicine. Food and Nutrition Board. Dietary Reference Intakes: Vitamin C, Vitamin E, Selenium, and Carotenoids. Washington, DC: National Academy Press, 2000.

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