



To E or Not to E

Vitamin E was discovered at UC Berkeley more than 80 years ago and has been a star among nutrients for two decades now. In 1994, reacting to promising research, the Wellness Letter began recommending vitamin E supplements as a possible way to reduce the risk of heart disease, cancer, and other disorders. Many people, especially when following a low-fat diet, don't get much vitamin E from food. We saw no evidence of harm, and the theory that antioxidants such as vitamin E could prevent or delay chronic diseases was plausible and exciting. In 2001, however, after reviewing subsequent clinical trials that had yielded disappointing or conflicting results, we softened our endorsement of E supplements and halved our recommendation to 200-400 IU a day. Then in 2003, after still more disappointing studies were published, we backed off even more. Now we are withdrawing our recommendation altogether.

This change, however, is *not* based on the much-publicized meta-analysis published last November, which concluded that high doses of vitamin E (more than 400 IU a day) taken long term may slightly increase the overall risk of dying—by about 4%. Lower doses (200 IU or less) did not increase the risk of dying—and may even have had a small protective effect, though the researchers raised doubts about this. That analysis, done at Johns Hopkins Medical Institutions, did not involve any new research. Instead, it combined and re-analyzed data from 19 clinical trials on vitamin E supplements from the last decade. Its results made headlines and caused shock waves, especially among the 13% of Americans who take this vitamin to protect their health, many of whom tossed their bottles of E.

No proof of harm

The Hopkins meta-analysis has not convinced us that vitamin E is dangerous. **If you've been taking E pills, don't fear that you've harmed yourself** on the basis of this paper. Many researchers have raised questions about the way the analysis was done. Much of the press coverage overstated the results.

Moreover, there has been no solid evidence of harm from vitamin E. Of the 19 studies in the analysis, only one found a statistically significant risk. Three other recent meta-analyses on E found no increased risk. And after evaluating hundreds of studies, the Institute of Medicine of the National Academy of Sciences, which devises the recommended dietary allowances (RDAs) and safe upper limits for nutrients, concluded that the upper limit for vitamin E is 1,000 milligrams (about 1,500 IU) a day. It set the RDA, however, at just 15 milligrams (about 23 IU) a day.

But no benefits either

What is clear from the four meta-analyses and Institute of Medicine report mentioned above is that there's **little or no clinical research showing that vitamin E supplements are beneficial**. Nearly all the clinical trials on E from the past few years have yielded negative, inconclusive, or neutral results. "Any time it takes so many studies to find a benefit, you have to be skeptical," says Dr. John Swartzberg, the head of our Editorial Board.

Other important studies on E are still underway, and some of them probably will find benefits. Indeed, in September we reported on a study that found that vitamins C and E, taken together, seem to decrease the risk of Alzheimer's. Nevertheless, we can no longer recommend vitamin E pills—or any other antioxidant supplements. There are simply too many unanswered questions: Is one form of vitamin E supplement preferable? What dose is best? Should E be taken with other antioxidants? Do you have to start taking it when you're still healthy? Is it possible that only the vitamin E in food is beneficial?

The best way to get E: Do **eat foods rich in vitamin E—nuts, seeds, vegetable oils, whole grains, and leafy greens.** The first three are high in “good” fats, but also calories, so don't go overboard. There is promising research showing that the E in foods is healthful. And these foods contain other important nutrients as well. We do advise most people to take a basic multivitamin, which typically contains a little more than the RDA for vitamin E.

UC Berkeley Wellness Letter, February 2005