



Vitamin limits hard to set

Vitamins C and E are two of the most commonly used supplements. Often promoted for their function as antioxidants, these nutrients are commonly taken in doses high enough to be considered pharmacological.

We were pleased to see the Food and Nutrition Board of the National Academy of Sciences set recommendations last year for Tolerable Upper Intake Levels for these vitamins. The adult UL for vitamin C was set at 2,000 milligrams per day, and for vitamin E at 1,000 mg per day.

Keep in mind that Recommended Dietary Allowance and UL values are set for the average, normal, healthy person. They cannot account for illnesses that may increase or decrease the body's tolerance for a nutrient. They also do not consider medications or herbal supplements that could interact with nutrients to produce unanticipated adverse effects.

Setting nutrient intake upper limits is difficult. Research is limited on the negative effects of high-level intake. However, upper-limit guidelines are important because of the wide-

spread use of supplements.

Antioxidant nutrients such as vitamins C and E act in concert with a great array of substances. If one antioxidant compound is present in excessive amounts, it can backfire by stimulating the formation of cell-damaging pro-oxidants.

Because it is so difficult to set upper limits, it is not surprising that nutrition scientists are already questioning these values. Just last week, a study in the journal *Science* waved a warning flag about risks of taking too much vitamin C.

This University of Pennsylvania raised the possibility that vitamin C taken at about 200 mg per day could damage DNA and increase the risk of cancer. Since this was a "test tube" type of study, the lead researcher, Ian Blair, has been quoted as saying, "Absolutely, for God's sake, don't say vitamin C causes cancer." Studies like Blair's support the contention that upper-limit values should not be considered goals. Optimal intake for an individual could be significantly lower.

The vitamin E upper limit was questioned this month by Dr.

Max Horwitt in the *American Journal of Clinical Nutrition*. In the 1950s and 1960s, Horwitt published key research on vitamin E that remains the foundation for setting recommended intake levels. When he speaks about vitamin E, researchers tend to listen!

One of his major concerns was that the UL value for vitamin E did not take into account possible complications for people taking daily aspirin or other "blood thinning" drugs. Horwitt thought that combining supplemental vitamin E with drugs could seriously increase the risk of hemorrhagic stroke caused by uncontrolled bleeding into the brain. He was especially concerned about people with high blood pressure.

Horwitt died shortly after submitting his article, but it continues to stir debate. As he indicated, it is important to remember that if a little is good, more is not necessarily better. Although not always feasible, the best practice is to get as many nutrients as possible from a balanced variety of wholesome foods.

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