

ScienceBased Health Joins Experts in Questioning Meta-Analysis⁽¹⁾ Conclusion about Vitamin E Safety

A number of experts – from those who evaluate vitamin safety to statisticians at Harvard and UC Berkeley – aren't convinced about the conclusions reached from a meta-analysis that 400 IU of vitamin E could be harmful. The study, widely criticized as flawed, found only a tiny adverse effect – *less than ½ of one percent* – and the New York Times reported that some prominent statisticians found the analysis to be unpersuasive. The study was published online at the Annals of Internal Medicine website.

Meta-analysis, a statistical method for combining results from smaller studies, is given only limited credence by many researchers. Not only is it notoriously difficult to pool findings from many different kinds of studies, but the method is forced to ignore the nuances in each of the individual studies included. One prime example is the AREDS trial. A follow-up examination of all-cause mortality among AREDS participants published earlier this year ⁽²⁾, revealed that people with AMD who took supplemental zinc—whether alone or combined with 400 IU vitamin E and other antioxidants—had significantly improved survival, or lived longer, compared to those who received no zinc. This important association is not reflected in the meta-analysis. In fact 18 of the 19 studies included in this meta-analysis found no statistically significant increase in mortality.

In addition, the meta-analysis on vitamin E and mortality from all causes inappropriately draws conclusions about the safety of vitamin E for the whole population, based on research primarily conducted with people who were already at very high risk of dying to begin with from existing chronic diseases such as cancer, heart disease, Alzheimer's, Parkinson's, and kidney failure.

“It is important to appreciate that these researchers examined only 19 clinical trials comprised of 135,000 patients and did not investigate at all dozens of observational studies involving *millions* of people that show vitamin E supplementation can be beneficial and completely safe” said Dr. Jeffrey Blumberg, a professor of nutrition at Tufts University. Eighteen of the 19 studies included in this meta-analysis found no statistically significant increase in mortality.

The researchers themselves note the limitations of the meta-analysis, stating: “the ability to generalize the results to healthy adults is uncertain”. Yet some in the media made the sweeping statement that vitamin E above 400 IU increases the risk of all-cause mortality and should be avoided, while the study provided no evidence that any harmful effect would occur in healthy people. *The investigators also reported no increased risk at levels of 200 IU daily, and acknowledged that there may be some benefit.*

According to Dr. John Hathcock, former FDA senior scientist and now with the Council for Responsible Nutrition (CRN), “the overall conclusion of this meta-analysis is driven by the results from just a few of the trials that were included – some of which are suspect and/or dated.” He went on to say that after reviewing the entire body of evidence on vitamin E, including all clinical trial data and several large observational studies, “the CRN agrees with the Institute of Medicine in concluding that vitamin E supplements are safe at levels of at least up to 1,000 milligrams (1,500 IU natural vitamin E) for normal healthy adults. The meta-analysis provides no convincing evidence to the contrary”.

“It's troubling that there was no mention of the benefits found in several of the studies included in the meta-analysis – reductions in risk for Alzheimer's disease, some forms of cancer, and age-related macular degeneration for example, said Penelope Edwards, MPH, CNS, nutritionist and science advisor to ScienceBased Health. “It's difficult to assess risk if benefit isn't included in the equation. And it's equally difficult to put the small increase in all cause mortality into proper

perspective when the authors make no mention of what it was that people were dying of—auto accidents, homicide as well as disease?”

OcularProtect[®], ScienceBased Health’s comprehensive multi-nutrient provides maximum support for eye and full body health. It contains 200 IU of natural source vitamin E – a level that this meta-analysis reported to be safe and likely to be of benefit. OcularProtect is an appropriate choice for any individual wanting powerful protection for eye and body health.

ScienceBased Health’s **MacularProtect**[®] product line for at-risk individuals especially concerned about preserving their eyesight include the products: **MacularProtect**[®], **MacularProtect**[®] **Plus** and **MacularProtect**[®] **Complete**. These products provide 400 IU of vitamin E, along with the nutrients: vitamin C, beta-carotene, copper and zinc, which were shown to significantly slow vision loss in the National Eye Institute’s, 10 year-long, AREDS trial. It is important to note that an association with **reduced mortality** was recently reported among AREDS trial participants who took zinc – either alone or *in combination with vitamin E* and the other antioxidants – compared to those who did not take zinc⁽²⁾. The improved survival, or greater longevity, observed in the patients taking zinc alone or with vitamin E and other antioxidants, lends support to the safety of supplements that include AREDS-based levels of vitamins E and zinc, as do these ScienceBased Health supplements.

As with all emerging scientific research, ScienceBased Health, along with its Scientific Advisory Board, will continue to closely monitor all developments in this area. When warranted, ScienceBased Health will make formula revisions, however, bases such decisions on the *totality of the evidence*. “Safety is our foremost concern”, said Ms. Edwards. “At this juncture, the benefits of AREDS-based 400 IU vitamin E supplementation are clear and significant, while the risks appear to be small, if any—an extraordinarily favorable risk/benefit profile for people with AMD”.

1. Miller ER et al. Meta-analysis: High-dosage vitamin E may increase all-cause mortality. Published online Ann of Intern Med, Nov. 10 2004,
2. Clemons TE et al. Associations of mortality with ocular disorders and an intervention of high-dose antioxidants and zinc in the Age-Related Eye Disease Study: AREDS Report No. 13. Archives of Ophthalmol 122:716-26, 2004