

## Antioxidant Summary of Recent Studies

1. Both the **American College of Cardiology** and **American Heart Association (AHA)** in **2002** and the **AHA** again in **2004** state that "the scientific data do not justify the use of antioxidant vitamin supplements for CVD risk reduction."
2. In addition, the 2004 "**Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women (AHA)**" concludes that antioxidant vitamin supplements should not be used to prevent CVD.
3. **The American College of Cardiology/American Heart Association 2002 Guideline Update** concludes that there is no basis for recommending that patients take vitamin **C** or **E** supplements or other antioxidants for the express purpose of preventing or treating coronary artery disease.
4. The **2001 HDL-Atherosclerosis Treatment Study (HATS)** showed that the addition of the antioxidant vitamins blunted the expected rise in the protective **HDL-2 cholesterol** and **apolipoprotein A1** subfractions of HDL.
5. The **2002 Women's Angiographic Vitamin and Estrogen Study(WAVE)** showed some evidence of potentially adverse effects of antioxidant supplements on CVD with increased mortality and CVD.
6. **The Alpha Tocopherol Beta Carotene Cancer Prevention Trial** reported an increase in **cerebral hemorrhage** for participants who were taking 50 mg of vitamin E daily. Reported in the July 23, 2003 issue of the *Journal of American Medical Association*.
7. **A 2005 meta-analysis of 19 clinical trials** concluded that **high-dosage (400 IU/d) vitamin E supplements may increase all-cause mortality and should be avoided (Miller)**.
8. A meta-analysis of 15 studies in **2003** showed that **clinical trials have failed to demonstrate a beneficial effect of antioxidant supplements on CVD morbidity and mortality (Vivekananthan)**.
9. **A 2005 study** showed that there is enough evidence from large, well-designed studies to discourage the use of vitamin E in **Parkinson's disease, cataract, and Alzheimer's disease (Pham)**.
10. **A 2005 study** showed that available data do not support the supplementation of vitamin E in cardiovascular disease and cancer prevention (Pham).
11. In **2002**, the **American Diabetes Association** published a consensus statement which states, "**There is no clear evidence of benefit from vitamin or mineral supplementation in people with diabetes who do not have underlying deficiencies. Routine supplementation of the diet with antioxidants is not advised because of uncertainties related to long-term efficacy and safety.**"
12. In a 2003 statement the **U.S. Preventive Services Task Force (USPSTF)** recommended that **people do not take beta-carotene supplements to lower their chances of developing CVD or cancer. The USPSTF recommends neither for nor against taking**

**vitamins A, C or E; multivitamins with folic acid; or combinations of these vitamins for the primary purpose of preventing CVD or cancer. The USPSTF recommends against the use of beta-carotene supplements, either alone or in combination, for the prevention of cancer or cardiovascular disease. In 2 trials restricted to heavy smokers, beta-carotene supplementation was associated with higher incidence of lung cancer and higher all-cause mortality.**

13. A separate 2003 meta-analysis reported by researchers at **Oregon Health and Science University** who are affiliated with the Preventive services Task Force **also found no evidence that vitamins are useful in preventing cardiovascular disease** (Annals of Internal Medicine 2003;139:56-70)
14. As of 2003, the American Cancer Society does not recommend taking antioxidant vitamin supplements. **“Overall, current knowledge makes it premature to generalize and make specific recommendations about antioxidant usage for those at high risk for cancer or undergoing treatment.”**
15. In 2004, the Nutrition Committee of the American Heart Association Council on Nutrition, Physical Activity, and Metabolism concluded that **the existing scientific database does not justify routine use of antioxidant supplements for the prevention and treatment of CVD.**
16. A variety of other large trials failed to show effect or actually suggested **increased mortality with B-carotene in the -tocopherol and B-carotene (ATBC) trial(25,563 men), the B-carotene and Retinol Efficacy Trial (CARET) (18,314 persons), and in studies of vitamin E including the ATBC trial, the Cambridge Heart Antioxidant Study (CHAOS) (2002 persons), the Gruppo Italiano per lo Studio della Sopravvivenza nell’Infarto miocardico (GISSI) (11,324 persons; this trial did, interestingly, show benefit of dietary supplementation with n-3 polyunsaturated fatty acids), and the Heart Protection Study (HPS) (20,536 persons).** Please refer to section 2.6.5
17. **Surviving Antioxidant Supplements** Goran Bjelakovic, Christian Gluud **Editorials (JNCI Vol.99, Issue 10| May 16, 2007**
18. **In 2007 JAMA reported the on the largest ever Meta-Analysis of antioxidant peer-reviewed studies entitled Mortality in Randomized Trials of Antioxidant Supplements for Primary and Secondary Prevention** Systematic Review and Meta-analysis pp: **842-857** JAMA, February 28, 2007—Vol. 297, No 8. Their conclusions state: “In 46 low-bias trials with 180,938 participants, the antioxidant supplements significantly increased mortality. In low-bias risk trials, after exclusion of selenium trials, beta carotene (RR, 1.07; 95% CI, 1.02-1.11), vitamin A (RR, 1.16;95% CI, 1.10-1.24), and vitamin E (RR, 1.04; 95%CI, 1.01-1.07), singly or combined, significantly increased mortality.” Also stated in conclusion: “Treatment with beta carotene, vitamin A, and vitamin E may increase mortality.”
19. **In 2007, The Journal of American Society of Nutrition** reported on a French study with the title **Antioxidant Supplementation Increases the Risk of Skin Cancers in Women but Not in Men.** A study that included 13,000 participants showed that women taking the antioxidant supplements had a 68% increase skin cancer. For melanoma, the deadliest form of skin cancer, there was a 400% increase among the women taking antioxidant supplements. The Supplementation in Vitamins and Mineral Antioxidants trial recruited 7,876 women ages 35 to 60 and 5,141 men ages 45 to 60. Participants were randomly assigned to take either a

daily capsule containing 120 mg of ascorbic acid, 30 mg of vitamin E, 6mg of beta carotene, 100 mcg of selenium, and 20 mg of zinc or placebo. Participants were followed-up for a median of 7.5 years. The authors had previously reported that supplementation with antioxidants (beta carotene, ascorbic acid, vitamin E, selenium and zinc) did not reduce cancer incidence, cardiovascular disease, or all cause mortality compared with placebo. (**Arch Intern Med. 2004; 164: 2335-2342**)

**20. Results of a 9 year study following over 8,000 women published in the Aug. 13, 2007 issue of *Archives of Internal Medicine* show "no value in preventing cardiovascular disease in women". The Women's Antioxidant Cardiovascular Study (WACS) traced the cardiovascular impacts of vitamins C, E, and beta-carotene supplements on **8,171 high risk women for over 9 years**. All were over 40 years old, had a history of heart disease and at least three risk factors. **The study was a randomized, double-blind, placebo-controlled study. These WACS finding echo a 2004 American Heart Association (AHA) advisory that said research from 1994 to 2002 did not support the use of antioxidant supplements for the prevention or treatment or heart disease.****