

Antioxidant supplements do not reduce mortality

Clinical question	How effective are antioxidant supplements on mortality in primary and secondary prevention randomised clinical trials?
Bottom line	Compared to placebo or no intervention, antioxidant supplements (beta-carotene, vitamin A, vitamin C, vitamin E and selenium) did not reduce mortality in trials involving healthy participants (primary prevention) or participants with various diseases (including gastrointestinal, cardiovascular, neurological, ocular, dermatological, rheumatoid, renal, endocrinological or unspecified disease) ¹ . Indeed, vitamin A, beta-carotene, and vitamin E given singly or combined with other antioxidant supplements significantly increase mortality.
Caveat	The review did not assess antioxidant supplements for treatment of specific diseases (tertiary prevention), antioxidant supplements for patients with demonstrated needs for antioxidants, or the effects of antioxidants contained in fruit and vegetables. These findings suggest that antioxidant supplements need to be considered medicinal products and should undergo sufficient evaluation before marketing.
Context	Oxidative stress may play a role in the pathogenesis of cancer and cardiovascular disease, the leading causes of death in middle- and high-income countries ¹ . Several observational studies have shown a significant positive association between higher intake of fruits and vegetables and reduced risk of chronic disease ² . Many people take antioxidant supplements in the belief that they will improve their health ³ .
Cochrane Systematic Review	Bjelakovic G et al. Antioxidant supplements for prevention of mortality in healthy participants and patients with various diseases . Cochrane Reviews 2008, Issue 2. Art. No.: CD007176. DOI: 10.1002/14651858.CD007176. This review contains 67 trials involving 232,550 participants.
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¹. Halliwell B. Lancet 2000 ;344 :721-724.

². Willcox JK et al. Critical Reviews in Food Science and Nutrition 2004 ;44 :275-295.

³. Nichter M et al. Culture, Medicine and Psychiatry 2006 ;30 :175-222.

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