

Abstract

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Vitamin E revisited: do new data validate benefits for chronic disease prevention?

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PURPOSE OF REVIEW: Vitamin E benefits in human health and chronic disease prevention are evaluated with respect to established alpha-tocopherol functions during vitamin E deficiency, adequacy, and excess.

RECENT FINDINGS: Baseline vitamin E status of the 29 092 Finnish men participating in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention study showed that the men in the highest compared with the lowest quintile of serum alpha-tocopherol had significantly lower incidences of total and cause-specific mortality. New findings from the Women's Health Study support a role for vitamin E supplements in decreasing the risk for sudden death from cardiovascular disease and from thromboembolism. We speculate that a potential mechanism may involve vitamin E interference in vitamin K activation.

SUMMARY: alpha-Tocopherol acts as a peroxy and alkoxy radical scavenger in lipid environments, and thus it prevents lipid peroxidation in lipoproteins and membranes, especially nervous tissues. Decreased chronic disease incidence is associated with lifelong generous dietary vitamin E intakes, but more than 90% of Americans do not consume the recommended dietary amounts (15 mg/day). Vitamin E supplements can have beneficial effects on health beyond those from dietary amounts, perhaps because pharmacologic levels also upregulate hepatic xenobiotic pathways.

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