

Abstract

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Tocotrienol: a review of its therapeutic potential.

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OBJECTIVES: To summarize new knowledge surrounding the physiological activity of tocotrienol, a natural analogue of tocopherol.

RESULTS: The biological activity of vitamin E has generally been associated with its well-defined antioxidant property, specifically against lipid peroxidation in biological membranes. In the vitamin E group, alpha-tocopherol is considered to be the most active form. However, recent research has suggested tocotrienol to be a better antioxidant. Moreover, tocotrienol has been shown to possess novel hypocholesterolemic effects together with an ability to reduce the atherogenic apolipoprotein B and lipoprotein(a) plasma levels. In addition, tocotrienol has been suggested to have an anti-thrombotic and anti-tumor effect indicating that tocotrienol may serve as an effective agent in the prevention and/or treatment of cardiovascular disease and cancer.

CONCLUSION: The physiological activities of tocotrienol suggest it to be superior than alpha-tocopherol in many situations. Hence, the role of tocotrienol in the prevention of cardiovascular disease and cancer may have significant clinical implications. Additional studies on its mechanism of action, as well as, long-term intervention studies, are needed to clarify its function. From the pharmacological point-of-view, the current formulation of vitamin E supplements, which is comprised mainly of alpha-tocopherol, may be questionable.

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