

Dissertation for the degree of Doctor of Medical Science in Geriatrics  
presented at Uppsala University in 1996

#### ABSTRACT

Öhrvall, M. 1996. Vitamin E and risk for coronary heart disease. Acta Universitatis Upsaliensis. *Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine* 597. 69 pp. Uppsala. ISBN 91-554-3716-8.

Low concentrations of serum alpha tocopherol, the most prevalent form of vitamin E, have been found to be associated with an increased prevalence of coronary heart disease. A suggested explanation for this relationship is that tocopherol may protect low-density lipoproteins from peroxidation, thereby preventing the development of atherosclerosis.

In the present investigation the average alpha tocopherol concentration in a reference population of 900 Swedish men and women was found to be similar to the concentrations in countries with a coronary heart disease incidence corresponding to that in Sweden.

The plasma concentration of the lipid oxidation product malondialdehyde was inversely correlated to the serum content of linoleic acid, indicating that a diet rich in linoleic acid, through its content of antioxidants, might protect the fatty acids against oxidation.

Gamma - but not alpha - tocopherol levels in serum were reduced in subjects with coronary heart disease compared with healthy controls. The serum fatty acid composition was found to be a predictor for the development of myocardial infarction during 19 years of follow-up of 50-year-old men, while alpha tocopherol concentrations were not.

After administration of 600 mg vitamin E daily to 29 elderly men with decreased insulin sensitivity, the concentration of malondialdehyde was decreased and the total antioxidative capacity increased, but glucose metabolism was not improved.

It is still difficult to give conclusive answers regarding the possible need of supplementation even in persons at risk. However, a well composed diet is important not only for obtaining an adequate intake of several vitamins but also for improving lipoprotein levels and thereby reducing the risk of developing coronary heart disease.

*Key words:* tocopherol, antioxidant, coronary heart disease, malondialdehyde, lipoprotein, fatty acids.

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ISSN 0282-7476

ISBN 91-554-3716-8

Printed in Sweden by Reprocentralen, HSC, Uppsala 1996