

## **Serum antioxidant vitamins and risk of cataract.**

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**OBJECTIVE:** To investigate serum concentrations of alpha tocopherol, beta carotene, retinol, and selenium for their prediction of end stage cataract. **DESIGN**—A case-control study, nested within a cohort study, based on the linkage of records of subjects aged 40-83 from a health survey with those from the national Finnish hospital discharge register.

**SUBJECTS:** 47 patients admitted to ophthalmological wards for senile cataract over 15 years and two controls per patient individually matched for sex, age, and municipality. **MAIN OUTCOME MEASURE**—Concentration of serum micronutrients, development of cataract according to whether operation was performed.

**RESULTS:** Low serum concentrations of antioxidant vitamins predicted the development of senile cataract, the odds ratio between the lowest third and the two higher thirds of the distribution of serum concentrations of alpha tocopherol and beta carotene being 1.9 (95% confidence interval 0.9 to 4.1) and 1.7 (0.8 to 3.8), respectively. Patients with both alpha tocopherol and beta carotene concentrations in the lowest third had an odds ratio of 2.6 (1.0 to 6.8) of cataract compared with subjects in the top two thirds. The associations were strengthened by adjustment for potential confounding factors such as occupation, smoking, blood pressure, serum cholesterol concentration, body mass index, and diabetes. No association was found between the serum concentrations of selenium, retinol, and retinol binding protein and the risk of cataract.

**CONCLUSIONS:** Low serum concentrations of the antioxidant vitamins alpha tocopherol and beta carotene are risk factors for end stage senile cataract. Controlled trials of the role of antioxidant vitamins in cataract prevention are therefore warranted.

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**Basse concentrazioni seriche delle vitamine antiossidanti alfa-tocoferolo e beta-carotene sono fattori di rischio per le fasi terminali della cataratta.**