

Abstract

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Association of serum carotenoids and tocopherols with atopic diseases in Japanese children and adolescents.

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OBJECTIVE: The present study assessed whether serum carotenoids and tocopherols are associated with atopic diseases (eczema and asthma) in 10- and 13-yr-olds in a Japanese community.

METHODS: Of 2796 students attending schools in Shunan, Japan, in 2006, 396 students were randomly selected for this study using nested case-control design. Atopic diseases and dietary food intake were assessed using self-administered questionnaires, and serum antioxidants were analyzed using high-performance liquid chromatography.

RESULTS: We found no associations between serum carotenoids and atopic diseases. However, odds ratios (OR)s for the third and fourth quartiles of serum alpha-tocopherol with atopic eczema were 0.33 (95% confidence interval: 0.15-0.73) and 0.36 (0.14-0.89), respectively, and the trend was negatively significant ($P(\text{trend}) = 0.048$). We did not find a significant association for asthma.

CONCLUSIONS: In conclusion, serum alpha-tocopherol was negatively associated with the prevalence of eczema. Serum carotenoids did not show definitive protective effects in Japanese youth.

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