



UNIVERSITY OF
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Dietary Factors and Dental Caries Among Adolescents: Eight-year Follow-up study

The aim of the study

The aim was to investigate longitudinally associations of changes in dietary factors with changes in caries experience among Finnish children and adolescents participating in the Physical Activity and Nutrition in Children (PANIC) study in Kuopio, in Eastern Finland.

Methods

From 487 children included at baseline at the age of 6-8 years, 406 were re-examined at 2-year follow-up and 202 at 8-year follow-up. Food consumption, nutrient intake and eating frequency were assessed using 4-day food records, diet quality using the Baltic Sea Diet Score and eating behaviour using the Children's and Adult's Eating Behaviour Questionnaires. At baseline and 2-year follow-up, caries findings were recorded using the World Health Organisation guidelines and at 8-year follow-up using the International Caries Detection and Assessment System criteria. Generalized linear mixed-effects regression analyses were used.

Results



Over 8 years from childhood to adolescence:

- Improved diet quality ($\beta=-0.017$, $p=0.046$) and increased consumption of butter and butter-oil mixtures ($\beta=-0.009$, $p=0.044$) were associated with decreased caries experience.
- Increased number of snacks ($\beta=0.072$, $p=0.032$), increased consumption of sour milk products ($\beta=0.001$, $p=0.039$) and salty snacks ($\beta=0.006$, $p=0.010$), and increased calcium intake ($\beta=2.41 \times 10^{-4}$, $p=0.022$) were associated with increased caries experience.
- Increased enjoyment of food was associated with decreased caries experience ($\beta=-0.121$, $p=0.046$) and increased slowness in eating ($\beta=0.113$, $p=0.051$) and food fussiness ($\beta=0.140$, $p=0.009$) were associated with increased caries experience.

Conclusions

A healthy diet is vital for oral health among children and adolescents. Dietary behaviours developing from childhood to adolescence seem to associate with caries experience in adolescence. Dietary counselling aiming at improving dental health from childhood to adolescence should include avoiding frequent snacking, strengthening healthy eating behaviour, and composing good overall diet quality.

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