

# Influence of diet on dental erosion in 14-year-olds

*Dental erosion in a group of British 14-year-old school children Part II: Influence of dietary intake* by Y. H. Al-Dlaigan, L. Shaw and A. Smith *Br Dent J* 2001; 190: 258-261

## Objectives

The aims of the present study were first to investigate the dietary intake pattern of UK teenagers and secondly to determine the relationship, if any, between dental erosion and dietary intake in these children.

## Methods

The study group consisted of a cluster random sample of 14-year-old school children in Birmingham, UK: 418 children were examined from 12 different schools; 209 were male and 209 female. Data on the rate and frequency of consumption of drinks, foods, and fruits were obtained from a self-reported questionnaire supplemented by a structured interview. The data were analysed using SPSS with Chi-square, and Spearman correlation analysis.

## Results

Over 80% of the teenagers regularly consumed soft drinks but approximately half of these children had a relatively low weekly consumption. However, 13% and 10% respectively had more than 22 intakes per week of cola and other carbonated drinks. Almost a quarter of these 14-year-olds had alcoholic drinks, with significantly more males than females involved (Chi-square  $P < 0.05$ ). Girls had a greater intake of fruits. Statistically significant correlations were found between the prevalence of erosion and the consumption of soft drinks, carbonated beverages, alcohol drinks, fresh fruits, Vitamin-C tablets and foodstuffs (Spearman correlation analysis  $P < 0.05$ ).

## Conclusion

It was concluded that consumption particularly of soft drinks was high and common in teenage school children in Birmingham, UK. In addition there was a relationship between dental erosion and acidic dietary intake. Further investigation of the erosive potential of these drinks and foods is required.

## In brief

- The aims of the present study were first to investigate the dietary intake pattern of UK teenagers and secondly to determine the relationship, if any, between dental erosion and dietary intake in these children.
- Data on the rate and frequency of consumption of drinks, foods, and fruits were obtained from a self-reported questionnaire supplemented by a structured interview to 418 children (209 male, 209 female).
- Over 80% of the teenagers regularly consumed soft drinks, but approximately half of these children had a relatively low weekly consumption. Almost a quarter of these 14-year-olds had alcoholic drinks, with significantly more males than females involved.
- Consumption of soft drinks was high and common in teenage school children in Birmingham, UK.
- There was a relationship between dental erosion and acidic dietary intake.

## Comment

This is the second of two papers from the well-respected research team in Birmingham that have done much of the seminal work on dental erosion in the UK. The first paper sought to establish the relationship between dental erosion and socio-economic influence and the second, the influence of extrinsic sources of acid on the prevalence of dental erosion in a population of young people.

This paper aims to ascertain 14-year-olds intake of potentially erosive foods and relate these to the individual's prevalence of dental erosion that was documented in the first paper. The details of the contents of the dietary questionnaire are given but it is not clear if there were questions about medicines, which may be erosive, included. As in the national Diet and Nutrition Survey of

4-18-year-olds, increasing consumption of acidic foods (to include beverages) was associated with an increased prevalence of erosion in this study population.

The paper hints at the tantalising prospect of being able to decide what may be the safe threshold for soft drinks consumption when the authors divide their sample into amounts consumed per week and relate these to the prevalence of dental erosion. The authors allude also to the dilemma facing health professionals in advice about healthy eating — increase fruit and vegetable consumption and risk dental erosion? No risk for the amazing 14% who claim to eat no fruit at all. Not even a tomato on their pizza? The quantity of alcohol consumed by the young people is significant for some; it may be that some of it, cider in par-

ticular, may contribute to the erosive challenge faced by some of the young people.

The conclusions in the second paper quite rightly assert that dental erosion is multifactorial. I am sure, as the authors indicate, in years to come our analysis of aetiological factors will appear naive when we really begin to address the very complex interactions between host and external factors.

We probably have enough information to be able to target our health promotion activities for the majority — a recent, very excellent health promotion forum in Cork, Ireland pointed to the dangers of only targeting so-called vulnerable groups.

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