Introduction: When fluoride is taken with foods containing appreciable amounts of divalent or trivalent cations such as calcium, the degree of fluoride absorption from the gastro-intestinal tract may be reduced. However, there are limited data on the impact of dietary calcium on fluoride absorption and retention in young children.

Aim: The aim of this study was to investigate the relationship between fractional urinary excretion of fluoride (FUEF) and calcium intake in 33 children aged 6 years who had lived continuously in fluoridated or low fluoride areas of north east England.

Method: Dietary intakes of calcium and fluoride were measured using a 3-day dietary diary. Total daily fluoride intake (TDFI) was estimated from fluoride ingestion from diet and during toothbrushing. Twenty-four hour urinary fluoride excretion (UFE) was also measured. FUEF(%) was estimated by the following formula: (UFE/TDFI)x100. Pearson’s correlation was used to investigate the relationship between FUEF and calcium intake.

Results: Twenty-nine children completed all aspects of the study. The mean TDFI was 0.82 ± 0.70 mg/day and the mean calcium intake was 844 ± 260 mg/day. The mean FUEF was 41% ± 30%. The Pearson’s correlation coefficient for the FUEF(%) against dietary calcium(mg/day) was +0.02. (p=0.9)

Conclusion: No significant relationship was found between calcium intake and the proportion of ingested fluoride which was excreted in the 6 year olds studied.

Fluoride, calcium, urine, children, diet

Poster