Abstract

The purpose of this study was to assess the total fluoride intake and the fractional urinary fluoride excretion (FUGE) relative to the customary daily fluoride (F) ingestion in preschool children between 48-59 months of age.

Total fluoride ingestion, from dietary and toothpaste samples was determined in 120 young children, dwellers of four Colombian cities. A "duplicate plate" technique was used. In Colombia, table salt is fluoridated to a concentration of between 180-220 mg F/kg. Individual (n=96) FUGE values were calculated as the ratio between the total amount of F excreted in the urine and the total amount of F ingested, over a 24-hour period.

The average daily F-intake was 0.098 mg F/kg/day; 95% C.I. = 0.085-0.111 mg F/kg/day. The proportion of fluoride ingestion from toothpaste to the total fluoride intake was higher than 66% in all cities. The average FUGE values of subjects from each of the four Colombian cities under study did not differ significantly (ANOVA; p >0.91). The average 24-hour FUGE value for preschool children was 0.33; 95% C.I. = 0.29-0.37.

The results obtained suggest that preschool children residing in Colombian urban areas are ingesting amounts of fluoride above the upper limit of the proposed safe threshold. FUGE values are similar to those reported in previous studies where daily F-doses were equal or higher than 0.064 mg F/kg.

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