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Fluid intake in children

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Abstract

Introduction

We monitored fluid intake in children. The hydration of children during morning school classes and on consumption of high-calorie drinks. Subclinical dehydration, expressed as urine osmolarity above 800 mmol / kg, may result in lack of concentration and less effective listening.

Population and methodology

The population included 3,360 children aged as follows: a) 6–35 months, b) 4–6 years, c) 7–10 years d) 11–14 years. 103 children aged 10.3 ± 1 years were included in the study regarding body hydration. The evaluation looked at the intake of food and fluids consumed by children in full-day diet over a period of 3 to 5 days and recorded by the Nutridan program. Child hydration was assessed using three urine osmolarity samples taken at bedtime, in the morning and just before lunch break. The data was evaluated statistically against the reference values for nutrient intake of DACH.

Results and discussion

The median water intake in children was 101–103% of the Dietary Reference Values (DRV). In the b, c, d groups, the median was 81% - 82%, i.e 75% of DRV. 10% of 4 to 6-year-old children had water intake below 49% of DRV, 10% of 7 to 10 year-olds less than 54% of DRV and 10% of 11 to 14-year-olds less than 50% of DRV. A study regarding school children has showed that only 70% of the children drink at breakfast. 27% of the children do not consume any fluids in the morning. The mean urine osmolarity was 724 in the morning and 738 mmol / kg just before lunch. Children who had drunk less than 250 ml of water during breakfast or less than 400 ml of water during breakfast and second breakfast had a urine osmolarity of 910 and 850 mmol / kg respectively just before lunch. In school children, the proportion of sugars received from sweetened beverages accounted for 19.1% of their total calorie intake. 10% of the children in groups c) and d) had this value higher than 28.2 and 30.4% respectively. The results based on full-day diet show that sweetened drinks account for 79% of fluids consumed by children at school, whereas only for 72% at home.

The results of our studies have identified the areas where it is necessary to provide education regarding nutrition of children, to raise awareness of the importance of fluid intake, particularly focusing on the systematic approach and the choice of appropriate beverages ensuring adequate fluid intake.

Conflict of Interest

There is no conflict of interest