Abstracts

Background: Dehydration is acutely associated with a wide variety of adverse outcomes in healthy adults and children.

Objective: To analyze the hydration status assessed by water intake and urine osmolarity in a group of Spanish school children.

Method: This is a cross-sectional study including 278 school children aged 7-11 years selected from various Spanish provinces. All children completed a 3-day “food and drink record” and 262 provided a 24-h urine sample. Total intake and dietary sources of water were calculated using DIAL software and osmolarity was calculated using urine sodium, potassium, and urea.

Results: Mean total water intake was 1,405±437.9 mL/day and 86.3% of the children did not meet adequate intakes of water (IoM, 2005). No differences in total intake and dietary sources of water were observed by sex. Elevated urine osmolarity (>800 mOsm/L) was observed in 50.6% of participants. Boys presented higher urine osmolarity than girls (827.9±208.5 mOsm/L vs. 765.6±198.1 mOsm/L; p<0.05). A linear correlation was found between urine osmolarity and food moisture (excluding beverages) (r=0.147; p<0.05) and soft drinks moisture (r=0.264; p<0.05). In an analysis by sex group, the association between urine osmolarity and food moisture remained only in boys (r=0.237; p<0.01).

Conclusion: The present study reports a high prevalence of elevated urine osmolarity in children, especially in boys. Elevated urine osmolarity was associated with food moisture (excluding beverages) and water from soft drinks.

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Key words: hydration, schoolchildren, urine osmolarity, water.

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