

one 24h urinary collection, and coefficient of creatinine was used to validate completeness of urine collections. FWR (measured urine volume minus the obligatory urine volume) was used for characterization of hydration status. Positive values of FWR indicate euhydration, negative values the risk of hypo-hydration.

Results: Median urinary volume excretion was 1100.0 ml/d for boys and 1025.0 ml/d for girls ($p=0.923$). Mean urinary osmolality was 715.7 ± 172.3 mosm/kg for boys and 597.42 ± 193.1 mosm/kg for girls ($p=0.247$). Median FWR (ml/24h) was positive in both sex groups (173.2 ml/d in boys and 373.2 ml/d in girls); however, 40.2% of boys and 31.4% of girls ($p=0.195$) were at risk of hypo-hydration status.

Conclusions: In this sample of adolescents approximately one third was classified as at risk of hypo-hydration status. Preventive measures to increase the level of total water intake should be considered.

Key words: *adolescents, hydration, free water reserve.*

DOI:10.3305/nh.2015.32.sup2.10301

Hydration status using free water reserve in Portuguese adolescents

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Introduction: Few data is available about the hydration status of active adolescents in free living conditions. Cell dehydration may be prevalent in healthy, free-living children at school and they could be in a state of chronic voluntary dehydration.

Objective: This study aims to describe hydration status assessed by Free Water Reserve (FWR) in adolescents.

Method: Two hundred participants (118 girls), aged 13-18 years completed the study. Urinary volume (ml/d) and urinary osmolality (mosm/kg) were measured by