Intracellular water is related to half-marathon race time

JR. Alvero Cruz, R. Fernández Vázquez.

University of Málaga. Málaga. Spain.

Introduction: Endurance training and competition can induce chronic dehydration, which in turn influences performance. Hydration levels have been classically associated with aerobic performance. However less is known about the relationship between aerobic performance and race time in half marathoners. Bioelectrical impedance analysis (BIA) equations can predict total body water (TBW) and extracellular water (ECW) in athletic healthy populations.

Objective: The aim of this study was to show the relationship between hydration status and performance in half-marathon race time.

Method: Thirty male long distance runners participated in the study and completed fasting body composition assessment by bioelectrical impedance analysis. TBW, and ECW were estimated and ICW was calculated. Pearson correlation coefficients were calculated and stepwise multiple regression were performed. The level of significance was set at $P<0.05$.

Results: Associations with extracellular water and total body water were not significant ($r=-0.24$; $P=0.28$ and $r=-0.36$; $P=0.09$). Intracellular water was related to half-marathon race time ($r=0.46$; $P=0.03$). Stepwise multiple regression shown that ICW explain a 21% of variance of race time ($R2= 0.21$, residual standard deviation: 6.9 min, $P=0.03$). Performance is not related to total body water and extracellular water.

Conclusions: Our findings suggest the importance of hydration status, particularly with ICW, in relation to endurance sports.

Key words: *performance, BIA, intracellular water, half-marathon.*

DOI:10.3305/nh.2015.32.sup2.10405

VALORNUT (920030).