ACUTE PHYSIOLOGICAL ADAPTATIONS TO DIFFERENT WALKING TRAILS PERFORMED BY SEDENTARY AND TRAINED AGING PEOPLE

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Introduction
Almost 70% of Portuguese people do not meet the minimal physical activity recommendations for health. Walking trails (WT) may be particularly effective at reaching populations with high risk for inactive behaviours. However, sparse information exists in respect to quantify the acute physiologic adaptations induced by different WT this may be chiefly important between senior people bearing in mind the decline in recover capacity from physical efforts as age grows up. Considering this, the aim of this study was to examine the effects of different WT on acute physiological adaptations of aging people.

Methods
33 healthy women (62.5 ± 7.4 years) and 30 healthy men (58.2 ± 5.8 years) participate in this study and perform 4 distinct WT: WT1 (distance=3874.6m and altimetry=75m); WT2 (distance=5644.2m and altimetry=50m); WT3 (distance=6092.0m and altimetry=105m); WT4 (distance=6925.5m and altimetry=60m). Heart rate (HR) and caloric expenditure estimated through the HR relationship with VO2max, previously evaluated through Bruce protocol, was continuously recorded in all WT. Before (U1) and immediately after (U2) each WT, a capillary blood sample was collected to analyze blood urea (mg/dL) concentration and estimate protein catabolism, especially important in this population once the protein turnover decreases with age.

Results/Conclusions
Our results suggest that women perform most of the WT with more intensity, as it can be seen through the mean values of relative HR (between 71.6 ± 9.5 and 76.3 ± 8.6 bpm for women and between 66.0 ± 7.4 and 67.2 ± 8.8 bpm for men), as well as by the similar values in the speed (between 4.9 ± 0.4 and 5.4 ± 0.6 km.h-1 for both groups). At first glance, only in the WT1 women were faster than man, which seem to have influenced the protein catabolism. However, considering that women are shorter than man, the close values in speed represent a higher stride frequency for females than males, and so the intensity. Having in mind the characteristics and the acute physiological adaptations to each WT, we may say that the distance influence a lot the protein catabolism. Besides this variable, it seems important to consider the speed, especially between the women group, once the WT1 (the shorter WT) have also induced an increase in urea concentration as opposed to WT3 (longer and with more slope variation).

In conclusion, we may advance that although the distance tends to stimulate more acute physiological adaptations, the speed and the slope variation should also be considered.

Keywords: Ageing, Walking, Applied Physiology

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