DAILY PHYSICAL ACTIVITY INFLUENCE ON AEROBIC FITNESS, METABOLIC PARAMETERS AND BODY COMPOSITION OF AGED INDIVIDUALS

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Introduction
The purpose of the present work was to study the daily physical activity level influence on aerobic fitness, metabolic parameters and body composition of aged people.

Methods
Seventy subjects (40 female, age=58.0 ± 6.1yr, height=155.0 ± 5.3cm, weight=68.2 ± 9.4kg; and 30 male, age=62.4 ± 7.4yr, height=167.5 ± 8.5cm, weight=75.7 ± 10.7kg) took part in this study. All the participants had been submitted to a test of submaximal effort, according to Bruce protocol, to appreciate the VO2max. Before the test (at rest) and during it (walking and running), Heart Rate (HR) was registered in order to define the slope equation between the VO2max and HR, and after that estimate caloric expenditure. Bearing this in mind, subjects were submitted to one week of caloric expenditure measurement, through the record of HR1 in three days of week and during the weekend, 12 hours per day. Values were expressed in kcal per day. The metabolic parameters (serum total cholesterol, HDL-C, LDL-C, triglycerides and blood glycaemia) were evaluated in Dr. Lange LP20, after 8 hours of fasting. Body composition parameters had been taken through digital stadiometer (SECA) and multifrequency bioelectrical impedance (BIOSPACE InBody 720). A Spearman correlation was performed in order to test variables associations. Significance level was established at 5%.

Results/Conclusions
Our results failed to find a correlation between total daily caloric expenditure (TDCE) (women=1919.4 ± 587.2 kcal; men=2267.8 ± 999.1 kcal) and VO2max (women=30.6 ± 6.4mL/kg/min; men=36.2 ± 6.9mL/kg/min) either among women or men. The lack of a correlation between the VO2max and TDCE can be explained because the modes of physical activity, namely, its intensity/duration, determinants for a high VO2max, wasn’t considered. In the men’s group it was verified a negative but significant correlation between the VO2max and the body mass index (BMI), hip/waist index (HWI) (p<0.05; r= -.451, -.458, respectively) and with body fat mass (BFM) (p<0.01; r=-.531). In the women’s group, it was found a negative but significant correlation between the VO2max and glucose (p<0.05; r=-.390), visceral fat area, BMI, BFM (%) and HWI (p<0.01; -.466, -.445, -.510, -.455 respectively). The results confirm the literature which refer that body composition parameters are inversely correlated with VO2max. The absence of correlation between the TDCE and the metabolic profile may be elucidated considering that we didn’t measure the caloric ingestion; so an imbalance between these two variables might help to explain our results.

References

Keywords: Aerobic Power, Body Composition, Energy Expenditure