ABSTRACT

Title: Effect of Arm Work Intensity on Energy Expenditure in Nordic Walking.

Objectives: The aim of study is to assess energy expenditure of walking, Nordic Walking with low and high intensity of arm work.

Methods: We tested 14 men in average age 24,1 ± 1,8 years, body mass 74,3 ± 6,4 kg and height 179,1 ± 5,4 cm on laboratory treadmill. We used indirect calorimetry for assess energy expenditure influenced by intensity of arm work and different slopes. Descriptive statistics was used for basic evaluation. Analysis of varince with repeated measures (2x3) was used to assess statistical differences. The significance level was set at alfa ≤ 0,05.

Results: We observed significant increase in the energy expenditure of Nordic Walking with high intensity in slopes 0 % and 10 % (39,60 ± 3,65 kJ.min⁻¹; 58,79 ± 4,63 kJ.min⁻¹) of arm work compared with Nordic Walking with low intensity of arm work (33,32 ± 3,64 kJ.min⁻¹; 53,52 ± 4,78 kJ.min⁻¹) and walking (31,26 ± 2,71 kJ.min⁻¹; 52,66 ± 3,81 kJ.min⁻¹). Increasing the energy expenditure of Nordic Walking with low intensity of arm work (33,32 ± 3,64 kJ.min⁻¹; 53,52 ± 4,78 kJ.min⁻¹) compared with walking (31,26 ± 2,71 kJ.min⁻¹; 52,66 ± 3,81 kJ.min⁻¹) in slopes 0 % and 10% did not reach significant difference. There was a significant increase in all parameters observed in 10% slope.

Conclusion: Different arm work intensity significantly affects the oxygen consumption and consequently energy expenditure in Nordic Walking. The level intesity of arm work appears to be a factor that is linked to the high variability of the potential for increased energy expenditure of Nordic Walking.

Keywords: Nordic Walking, energy expenditure, arm work