Abstract

Title: Physiological responses of walking on high obstacles

Objectives: The aim of this thesis was to determine the effect of height on the physiological response of the organism when crossing an obstacle.

Methods: In this experimental study, the energy demand of crossing an obstacle was assessed using the method of indirect calorimetry. 27 probands were crossing a low obstacle for 4 minutes and an high obstacle for 4 minutes, the monitored parameters were heart rate (HR), minute ventilation (V_E), oxygen consumption (VO_2), respiratory rate (RR), tidal volume (VT)

Results: Crossing high obstacle raised physiological response compared to crossing low obstacle. V_E parameter increased by an average of 87%. VO_2 increased by 70%, RR by 39%, HR by 33%, VT by 27%.

Conclusion: Walking high above the ground reflects the subjectively perceived risk with a physiological response. The height of the obstacle, which subjectively perceived risk, increases the metabolic demand of walking by 2/3.

Kewords: balance, walking high above the ground, stress, energy expenditure