Abstract

Title:

Comparison of universal and specific functional stress tests of ski-mountaineers.

Objectives:

The aim of the thesis is to compare maximal functional parameters of ski-mountaineers measured during three functional laboratory stress tests. The functional stress tests were set on a treadmill, bicycle ergometer, and on a ski-mountaineer trainer. Consecutively, there is evaluated the meaning of testing of the functional parameters on the ski-mountaineer trainer.

Methods:

Interindividual and intraindividual descriptive study of 10 ski-mountaineers of middle and high level performance.

Results:

The respondents reached the average value of VO$_2$max 63,3 ml.kg$^{-1}$.min$^{-1}$ on the ski-mountaineer trainer, 67,5 ml.kg$^{-1}$.min$^{-1}$ on a treadmill and 66,5 ml.kg$^{-1}$.min$^{-1}$ on a bicycle ergometer. The average measured HR on the ski-mountaineer trainer was 179 heartbeats/min, on the treadmill 185 heartbeats/min and on the bycicle ergometer 183 heartbeats/min. The average value of R reached the value of 1,09 on the ski-mountaineer trainer, 1,18 on the treadmill and 1, 19 on the bycicle ergometer. The highest measured value of VO$_2$max reached on the treadmill was 79,3 ml.kg$^{-1}$.min$^{-1}$, the bycicle ergometer enabled to reach maximum 76,5 ml.kg$^{-1}$.min$^{-1}$ and the highest value reached on the ski-mountaineer trainer was 76,5 ml.kg$^{-1}$.min$^{-1}$.

Keywords:

Functional stress diagnostics, ski-mountaineering, maximal oxygen consumption (VO$_2$max), heart rate, respiratory quotient (R, RER).