Abstract

Title of thesis: Physiological Characteristics of Upper Body Speed-Power Skills in Cross Country Skiing.

Aim of the project: Aim of my study was to prepare, develop and evaluate obtained information of anaerobic capacities diagnostic in cross country skiing in different drill periods of the year, and to extract conclusions for training practice of elite trainers and of other coaches.

Method: Measurements passed at the biomedical laboratory of Faculty of Physical Education and Sport in the spring, where monitored cross-country skiers passed the maximal test on a running treadmill and Wingate test on a specialized upper-body ergometer. Results will be recorded and subsequently evaluated according to defined methodology. Next measurement was realized on roller skis in terrain. There were evaluated double poling ski techniques. These fitness tests occurred in spring and in autumn.

Results: The study documented meaning relevance of physiological diagnostic for cross-country skiers at laboratory and terrain. Physiological capacity of double polling in roller skiing and double polling imitation on ergometer, assessed distance and anaerobic capacity overcome, was statistically significant. The higher cross-country skier had effort, the more he achieved to have distance moved. The relation expressed by the coefficient correlation gives 0.593 ($p<0.05$). There is at evaluation of meaning VO_2max and of the number of distance moved (cross-country skiers overcame more metres thanks to higher value of VO_2max), 5 % significance level gives 0.579. Surprisingly, it was not changes at comparison values parameters between spring and autumn endurance terrain test. The present study emphasised the importance of exercise specificity in order to assess the effect of specific training program in competitive cross-country skiers.

Key words: anaerobic capacity, testing, speed-power skills, upper-body fitness, cross country skiing, roller skiing