A COMPARISON OF EXERCISE PERFORMANCE USING DIFFERENT TYPES OF ERGOMETERS IN COMPETITIVE CYCLISTS, RUNNERS, ROWERS AND SWIMMERS

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PURPOSE: The purpose of the study was to compare Vo2 max readings during different modes of maximal exercise testing.

METHODS: Four different groups each of five athletes and a group of five recreational athletes performed incremental exercise tests using Bicycle, Treadmill, Rowing and Swim-Bench Ergometers. Aerobic variable (VO2 max) was measured using a Quark b2 gas analyzer. The data were analyzed, for differences between groups, with repeated ANOVA test, and for differences between ergometers with paired t-test.

RESULTS: The data suggested differences in VO2 max obtained using different modes of exercise. Caution is suggested when training guidelines and physiological assessment is made with athletes of different event specialization tested on various exercise modes.

CONCLUSIONS: The entire group of subjects had higher values of VO2 max on the Treadmill, compared with the other Ergometers. Although there were indications of differences because of specificity, those differences were not statistically significant. The only significant differences found were on the Treadmill and the Cycle Ergometer and this can be most probably attributed to the high values of Runners and Low values of Rowers.

The highest values of VO2 max were obtained when the subjects were tested with an Ergometer Specific to their specialization activity. The above data supports the concept of training Specificity and that testing for aerobic variables has to be sport specific or at least as close as possible to the sport in which the athletes are trained.

Keywords: Ergometry