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Effects of moderate-intensity endurance and high-intensity intermittent training on anaerobic capacity and VO2max.

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This study consists of two training experiments using a mechanically braked cycle ergometer. First, the effect of 6 wk of moderate-intensity endurance training (intensity: 70% of maximal oxygen uptake (VO2max), 60 min.d-1, 5 d.wk-1) on the anaerobic capacity (the maximal accumulated oxygen deficit) and VO2max was evaluated. After the training, the anaerobic capacity did not increase significantly (P > 0.10), while VO2max increased from 53 +/- 5 ml.kg-1 min-1 to 58 +/- 3 ml.kg-1.min-1 (P < 0.01) (mean +/- SD). Second, to quantify the effect of high-intensity intermittent training on energy release, seven subjects performed an intermittent training exercise 5 d.wk-1 for 6 wk. The exhaustive intermittent training consisted of seven to eight sets of 20-s exercise at an intensity of about 170% of VO2max with a 10-s rest between each bout. After the training period, VO2max increased by 7 ml.kg-1.min-1, while the anaerobic capacity increased by 28%. In conclusion, this study showed that moderate-intensity aerobic training that improves the maximal aerobic power does not change anaerobic capacity and that adequate high-intensity intermittent training may improve both anaerobic and aerobic energy supplying systems significantly, probably through imposing intensive stimuli on both systems.

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