

Effects of a training season of master runners on maximal and sub-maximal prescription parameters #45

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Maximal oxygen uptake ($\text{VO}_{2\text{max}}$) is considered an important physiological parameter to determinate cardiorespiratory capacity and has been used to predict the performance in middle and long-distance running athletes. Also the ventilatory threshold speed (sVT) and respiratory compensation point speed (sRCP) are important tools to predict performance and for training prescription. The aim of the present study was to demonstrate the changes in $\text{sVO}_{2\text{max}}$, sVT, sRCP and running performance during the 2008 training season. Seven master runners (50.4 ± 8.4 years), six men and one woman, with more than five years experience running training were selected. The training period was divided according to intensity emphasis in: low intensity period - LP (January-May), characterized by endurance training; moderate intensity period - MP (June-July), characterized by endurance with high intensity training and high intensity period - HP (August-September), characterized by endurance with high intensity and with resistance training. The data showed higher improvement (6%) in the sVT after LP ($11.6 \pm 1.0 \text{ Km.h}^{-1}$ to $12.2 \pm 0.9 \text{ Km.h}^{-1}$). The sRCP improved 5% and $\text{sVO}_{2\text{max}}$ improved 3% after HP (13.3 Km.h^{-1} and 16.6 Km.h^{-1} to 14.4 Km.h^{-1} and 17.7 Km.h^{-1} , respectively, $p < 0.05$). The better running performance was observed after MP and HP, with 4% decrease in run time (46.85 ± 5.8 min in LP, 45.05 ± 5.3 min and 45.1 ± 6.8 min, respectively). The results presented here suggest that intensities between sVT and sRCP can improve the sVT. On the other hand, to improve sRCP, $\text{sVO}_{2\text{max}}$ and running performance higher training intensities are necessary, between sRCP and $\text{sVO}_{2\text{max}}$ combined with resistance training.

Key words: $\text{VO}_{2\text{max}}$; ventilatory threshold; respiratory compensation point; running; master runners.