

Maximal oxygen uptake changes during judoist's periodization training

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Abstract:

Background and study aims: to assess the maximal oxygen uptake ($\dot{V}O_{2max}$) of judoists in consecutive training periods: a) GPP, b) SPP, c) CP.

Material and methods: Fifteen male judoists aged of 22 ± 7 years participated in this study. Their sport levels varied from departmental (group D, $n = 7$) to inter-regional (group IR, $n = 8$) experience. The standing height was measured with a wall-mounted wooden stadiometer. An electronic weighing scale was used to assess the body mass (W) in each period of preparation. The $\dot{V}O_{2max}$ was assessed using the multistage 20- meters shuttle run test.

Results: The sport level had a statistically significant bearing ($p < 0.001$) of judo competitors weight, but not with the time factor. The pattern of changes in weight in both groups IR and D was different during the training period. We also noticed that the weight of group D members decreased in SP period and increased in CP. We didn't observed a significant difference of $\dot{V}O_{2max}$ between group D and IR (95% Tukey HSD intervals are overlapping). The competition level affects significantly the HRmax ($p < 0.001$). Group D presented higher HRmax values in three testing periods (GPP, SP and CP) than IR group. The time factor was close to reach significance level.

Conclusion: The $\dot{V}O_{2max}$ of judoists changes in consecutive training periods. The HRmax is linked to the sport level but it less sensitive at workload variations than the HRmax. A moderate aerobic state doesn't imply a low judo performance. Tests more specifically related to judo could be projected to provide more information about this aspect.

Keywords: $\dot{V}O_{2max}$ – Heart rate –training period – Judo -Weight reduction