

Comparison between glucose threshold and critical velocity for aerobic capacity determination in men #38

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The blood glucose threshold (GT) and critical velocity (CV) has been used for the assessment of the aerobic capacity for trained individuals in replace the blood lactate and ventilatory parameters for anaerobic threshold determination. But, there are few studies with physically active subjects. The purpose of this study was to measure, compare and correlate the running velocities associated with the GT and CV of a group of untrained men. Fifteen adult men (23 ± 3.74 years old; 72 ± 10.97 kg; 1.76 ± 0.07 m; 21 ± 5.36 % fat mass) performed the following tests: 1) 500m and 3km time trial (V_{m500} and V_{m3km}); 2) Incremental test on treadmill for of GT identification. The CV was obtained from linear regression (distance x time on 500m and 3km test). Normality was verified through Shapiro-Wilk, GT and CV was compared through dependent t-test and correlation by product moment Pearson. A high correlation was verified for V_{m3km} and CV ($r=0.99$ and $R^2=0.99$), V_{m3000} and GT ($r=0.91$ and $R^2=0.82$), and between CV and GT ($r=0.89$ and $R^2=0.79$). Differences were observed between GT and CV (138.8 ± 19.9 and 170.6 ± 27.8 m.min⁻¹, respectively) ($P < 0.001$). In conclusion, the study shows that CV can not be used for anaerobic threshold estimation, because this parameter overestimated the GT, despite the high correlation with GT and V_{m3000} .

Key words: blood glucose threshold; critical velocity; anaerobic threshold.