

Relationship between wingate cycle test and 2000m rowing ergometer performance in youth athletes

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During 2000m indoor rowing performances, the estimated aerobic and anaerobic contribution are 65-75% and 25-35%, respectively². In considering that anaerobic power could be an important predictor of performance¹, the aim of this study was to analyse the relationship between the power outputs during a Wingate anaerobic test (WAnT) on a cycling ergometer and a 2000m rowing ergometer performance in young rowers.

In two separate days, 11 young (14.9±1.1yrs) male rowers performed a 2000m indoor rowing ergometer performance and a 30s WAnT on a cycling ergometer. WAnT peak power (PP) and mean power (MP), and 2000m time indoor rowing performance (t2000) were collected. Moreover, PP and MP were normalized with respect to body mass. Pearson correlation coefficients (r) were used to determine the association between t2000 and absolute and normalized PP and MP values.

Absolute PP and MP were 888.1±133.2W and 548.5±74.4W, respectively. The relative picture for normalized values was 13.4±1.5 W·kg⁻¹ and 8.2±0.6 W·kg⁻¹. High associations emerged between t2000 (431.5±19.5s) and absolute PP (r=-0.900, P=<0.05) and MP (r=-0.800, P>0.05) values, whereas no significant relationship was observed for normalized PP (r=-0.585, P=0.058) and AP (r=-0.561, P=0.072) values.

These findings indicate that PP and MP could be considered significant predictors of 2000m rowing ergometer performances, substantiating also the relevance of the anaerobic energy pathways to the 2,000m rowing performance.

References

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Keywords

Anaerobic power, Rowing ergometer, Youth athletes, Wingate test