TACSM Abstract

Establishing the Learned Effect of Repeated Wingate Anaerobic Tests

JOSEPH R. SECREST, KYLIE-ANN LOUW, ERIC J. JONES, and MALCOLM T. WHITEHEAD

Human Performance and Fitness Laboratory; Department of Kinesiology and Health Sciences; Stephen F. Austin State University; Nacogdoches, TX

Category: Masters

ABSTRACT

The Wingate anaerobic test (WAnT) is a recognized and well established tool used to measure power output, muscular endurance and fatigue. Changes within the aforementioned variables attributable to a learning effect could reduce the reliability of these measures. The purpose of this study was to establish the number of WAnT trials needed to produce a learned effect and reliability of that effect. Ten apparently healthy college-aged males participated in five trials of 30-second cycle ergometer sprints separated by a minimum of 72 hours. Resistance for trials was calculated at 7.5% of each respective subjects' weight. This study tracked the changes in Peak Power (PP), Mean Power (MP) over time. Paired samples t-test using 2 tails revealed PP increased on all trials (2-5) when compared to trial 1 (+57W, +69W, +68W, +48W) ($p=0.02$, $p=0.03$, $p=0.04$, $p=0.14$) respectively, and indicated peak wattage at trial 3. MP also increased on all trials (2-5) when compared to trial 1 (+32W, +49W, +39W, +32W) ($p=0.01$, $p=0.01$, $p=0.02$, $p=0.05$) respectively, demonstrating mean peak wattage at trial 3. These results suggest that a learning effect is present within PP and MP until the third trial of the WAnT. All but 30% subjects elicited peak PP and MP during trial 3. Thereby, suggesting that when performing WAnT, utilizing less than 3 practice trials might elicit significant power increase due to this learned effect. Further research should be conducted in order to support the findings from the present investigation.