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Reliability of the Talk Test as a Surrogate of Ventilatory and Respiratory Compensation Thresholds

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LETTER TO EDITOR REFERENCES

Dear Editor-in-chief

Maximal exercise testing with respiratory gas analysis is the reference technique for determining exercise capacity, allowing for measurement of VO_{2max}, ventilatory threshold (VT) and respiratory compensation threshold (RCT). Such testing is often impractical because of the cost and technological sophistication required for respiratory gas analyses. Within the past decade, the Talk Test (TT) has been shown to be a useful surrogate of gas exchange thresholds in a variety of populations (Dehart-Beverley et al., 2000; Foster et al., 2008; Recalde et al., 2002; Voelker et al., 2002). Cannon et al., 2004 demonstrated that when patients who subsequently developed exertional ischemia were able to speak comfortably, they are unlikely to have ECG evidence of myocardial ischemia. This suggests the potential of the TT to minimize the risk of catastrophic events during exercise training. Further, the TT has been shown to be useful for 'translating' incremental exercise test results into absolute training intensities in a variety of populations including cardiac patients, sedentary individuals and well-trained individuals (Brawner et al., 2006; Foster et al., 2009). These data suggest that the TT is a safe, valid, and simple way of determining exercise intensity in populations where the use of maximal exercise testing may be impractical or where gas exchange technology is unavailable. Despite the strength of data supporting its use, there are no data on the reproducibility of the TT. The purpose of the present study was to determine the reproducibility of the TT compared to respiratory gas exchange measurements.

Healthy volunteers (10 ♂: PPO = 280 ± 33W, 14 ♀: PPO = 211 ± 24W) provided written informed consent to the protocol which was approved by the university ethics committee. Each performed 4 randomly ordered cycle ergometer exercise tests (25W + 25 W per 2 min). Two tests included measurements of respiratory gas exchange and two used the TT. Respiratory gas exchange was measured using open circuit spirometry with a mixing chamber based system, using 30s data integration (AEI, Pittsgurgh, PA). VT and RCT were defined using both v-slope and ventilatory equivalents. At 1.5 min into each stage of the TT protocols, the subject was asked to recite the "Pledge of Allegiance", a standard speech provoking paragraph familiar to most individuals in the US (Foster et al., 2008). They were asked, "Can you speak comfortably?" and were instructed to give responses of "Yes," (POS) "Yes…but," (EQ) or "No", (NEG). All tests were continued to fatigue. Statistical comparisons of the reproducibility

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