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#### USE OF A PHYSIOLOGICAL MONITORING SYSTEM TO DETERMINE VENTILATORY THRESHOLD

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*Abstract:*

The exertion of athletes during training can lead to an improvement in performance. However, repeated exertion or exertion beyond what is desired within a training program can lead to a lack of gains, stagnation or overtraining. Bringing a large number of individuals in for physiological testing can be a logistical challenge, especially with the constraints placed upon college athletes. Many field tests have been developed to estimate ventilatory threshold (VT), however these tests have a degree of error associated with them. Therefore, a device to assess an individual's VT in the field with numerous athletes tested at once is more desirable. **PURPOSE:** The purpose of this study was to compare the ability of a chest worn physiological monitoring system to a gas analysis system to determine VT. **METHODS:** Eight ( $n=8$ ) trained individuals were tested in a laboratory setting using a ramped exercise protocol to determine their VT using both a gas analysis system (GA) and a chest-worn physiological monitoring system (PM). The protocol used was a modified Conconi with an initial speed of 6 kph with an increase in speed of 1 kph at every odd minute and an increase in incline of 2% at each even minute. A paired sample  $t$ -test was run using the time at which VT occurred from both systems;  $p<0.05$ .

**RESULTS:** The time at which VT occurred from both systems was not significantly different from each other (Mean + standard deviation: GA: 362.0 s + 85.1, PM: 428.1 s + 102.5;  $p=0.11$ ). **DISCUSSION:** Laboratory testing allows for few individuals to be tested at one time. As the chest-worn physiological monitoring system produced values similar to that of a gas analysis system, it can be used in the field to assess the VT of multiple individuals. **PRACTICAL APPLICATIONS:** While there are benefits to conducting laboratory testing, not all teams have the access to a performance laboratory for testing. A physiological monitoring system that can be used to initially assess VT and then track individuals in training and competitions would seem to be useful for coaches in preparing teams.

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