

## TEXAS AMERICAN COLLEGE OF SPORTS MEDICINE 2009 CONFERENCE

**Comparison of Retrofit Facemask to Mouthpiece for Metabolic Measures and Flow Rates**

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*Int J Exerc Sci* 2(1): S35, 2009. **PURPOSE:** To compare metabolic measures ( $VO_2$ ,  $VCO_2$ ) and flow rates ( $V_E$ ) between use of a retrofit preVent™ neoprene mask (MA) and mouthpiece (MP) with nose clip. **METHODS:** Thirty healthy subjects [males ( $n = 18$ ,  $22.0 \pm 2.5$  years) and females ( $n = 12$ ,  $25.0 \pm 6.3$  years)] underwent four different intensity stages; rest (R), low (L), moderate (M) and high (H). Each stage had two, six minute sub stages, one with MA and the other with MP. Comfort and preference of the breathing apparatus (MA or MP) were rated by each participant. A separate 2 (MA & MP)  $\times$  4 (R, L, M & H) repeated measures ANOVA was used on each of the dependent variables ( $VO_2$ ,  $VCO_2$ ,  $V_E$  & HR) to determine differences between use of retrofit MA and MP. **RESULTS:**  $VO_2$ ,  $VCO_2$  and  $V_E$  were significantly ( $p < 0.05$ ) lower when retrofit MA was used. HR significantly increased ( $p < 0.05$ ) from one stage to another however, it was not significantly ( $p > 0.05$ ) different between use of retrofit MA and MP within a stage. Twenty eight (93%) participants found retrofit MA comfortable and two (6%) found MP comfortable. Twenty three (76%) participants preferred retrofit MA and seven (23%) preferred MP. **CONCLUSION:** Use of retrofit MA as an alternative to MP is not recommended due to possible air leakage.

