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Change in submaximal physiological markers in senior male rowers through winter preparation phase training

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Introduction: While performance in rowing is dependent on a multitude of factors such as anaerobic power, technique and tactics it is predominantly dependent on aerobic physiological adaptations. Data regarding physiological adaptations to training is known for elite athletes, but is currently lacking within non-elite cohorts. The study aimed to analyse physiological data [VO2, HR, and BLa] at two sub-maximal workloads [160W &240W] in non-elite rowers over a standard winter training phase derived from laboratory-based graded incremental tests (GXT). **Methods**: Senior male rowers (n=25); M±SD age=23.2±4.2yr; height=1.9±0.1m; body mass=83.1±5.5kg; body fat=13.5±3.0% performed GXTs on a CII rowing ergometer in winter training phase to establish physiological responses of oxygen uptake (VO_2), heart rate (HR) and blood lactate (BLa). Data at two sub-maximal loads, 160 and 240W was analysed. Rowers undertook individualised training plans based on baseline testing for three months and then underwent repeat testing. **Results**: M±SEM data at 160W were; [VO2] 37.0±1.0 and 36.3±0.9mL.kg-1.min-1; [HR] 142±4 and 136±4 beats.min-1 and [BLa] 1.1±0.1 and 0.7±0.1mM, for GXT1 and GXT2 respectively. M±SEM data at 240W were; [VO2] 48.8±0.8 and 48.9±1.2mL.kg-1.min-1; [HR] 165±3 and 164±3 beats.min-1; and, [BLa] 2.9±0.3 and 1.9±0.3mM, for GXT1 and GXT2 respectively. BLa data showed highly significant reductions ($P<0.01$; effect size =0.97) across time at both workloads, however there was no significant change in VO_2 or HR. **Conclusion**s: Early winter training emphasising aerobic endurance, resulted in improvements in BLa profile where training intensity was targeted.