THE PHYSIOLOGICAL AND PSYCHOLOGICAL IMPACT OF INTERMITTENT HYPOXIC TRAINING (IHT) IN THE PREPRATION OF THE GB BIATHLON TEAM FOR THE 2002 OLYMPIC GAMES

Background: The purpose of the present study was to examine the effects of IHT on physiological and psychological measures prior to ascending to altitude. **Methods:** The biathletes (n=8) participated in 2 altitude training camps separated by 6 weeks. Prior to each camp the biathletes completed 7 days of training in either normobaric hypoxia or normobaric normoxia (75mins at an intensity equal to lactate threshold, LT). Prior to and following the sea level training the biathletes performed a physiological profile test (bike, LT to max). At altitude athletes performed a sub-maximal exercise test (bike, first 4 stages of LT test) for the first 5 days. Daily morning monitoring included analysis of red blood cell mass (RBC), hemaglobin (Hb), hematocrit (Hct), and reticulocyte count (Rct), together with a 21-item mood questionnaire to asses anger, depression, fatigue, tension, vigour, happiness and calmness. Results were examined on a case study basis as responses to altitude varied between individuals. **Results:** Daily physiological monitoring suggested that athletes arrived at altitude partially acclimatised following IHT, evidenced by a reduction in HRrest, BPrest, sub-maximal exercise blood lactates, and increases in Hb and Rct. The lactate paradox commonly observed at altitude was absent or reduced following IHT. Psychological assessment revealed significant improvements in mood following pre-acclimation using IHT. This evidence was reinforced by anecdotal evidence from the biathletes. **Conclusions:** Normobaric hypoxic training for 75 min.day^{-1}, for 7 days appears to be a suitable method of pre-acclimation to moderate altitude in elite biathletes. The applied nature of the present study resulted in poor control of a number of potentially confounding variables. It is suggested that there is a need for future well-controlled studies that investigate pre-acclimation using IHT.