PERFORMANCE IN ALPINE SPORTS

Mountain sports activities and related environmental conditions represent very effective stimuli for aerobic exercise performance in amateur and elite athletes as well. An Olympic gold medal winner in cross-country skiing demonstrated maximal oxygen uptake (VO2max) of 90.6 mL/min/kg (45 s average; 26 METs; 5.7 L/min). (9) But even more impressive than VO2max was his ability to exercise at a VO2 of 65 mL/min/kg (71.4% VO2max) at a lactate level of 1.6 mmol/L. At the self-selected maximal lactate steady state he consumed 78 mL O2/min/kg (85.7% VO2max) with a corresponding lactate level of 4.4 mmol/L. (Fig. 2). These values rank among the highest ever demonstrated in human beings. (9)

Long- and short-term exposures to altitude/hypoxia are used by athletes to improve exercise performance. Intermittent exposures of runners to hypoxia (2 h at rest on 3 days per week for 2 x 5 weeks) was accompanied by a more distinct response of running economy at the beginning of the pre-season compared to the beginning of the competition season. This may have practical implications on the planning of training. (10)

REFERENCES