EFFECT OF MOUNTAIN TRAINING ON THE LEVEL OF ANAEROBIC THRESHOLD OF ELITE SPEED SKATERS
Sukhov Sergey, Ivanov Alexander
(National Research and Practical Centre of Physical Culture, Kazakhstan)

Introduction
As it is known, anaerobic threshold (AT) is one of the most important criteria used for setting the physical loads and assessing the effectiveness of athlete’s training. Goal of the study was to assess the effect of training in mountainous area on the level of anaerobic threshold of elite speed skater in the preparatory period.

Methods
AT has been monitored by the blood concentration of lactate and acid-base balance in ten elite speed skaters in the beginning, midst and the end of the preparatory period. The first and third tests were performed in the laboratory, while the second one – during the cycle track practice. There were assessed the reaction of respiratory function and gas exchange on the increasing aerobic loads, including the maximum ones.

Results
The first complex examination was performed prior to training on mid-mountainous level, and the second and third ones – after the mountain practices of length 18 days each. At the first examination, ratio of oxygen consumption varied from 57.4 to 85.4% of the level of AT to maximum oxygen consumption (VO2max), with mean value of 71.1±4.5% that was lower than the model level. The second examination did not detect any notable change of these indicators. The results evidenced to the necessity of increasing the volume of practice exercises contributing to the growth of anaerobic threshold. The third examination demonstrated a substantial increase of oxygen consumption on the level of AT on the level of about 25.2% (p<0.05), and reduction of individual differences. Variations of oxygen consumption on the level of AT did not exceed 10 ml/kg of body mass (49.7-58.5 ml/kg/min-1), at average 53.6±1.4 ml/kg. This effect took place on the background of growth of VO2max by 7.3% (p<0.05) in average. As for the ratio of oxygen consumption on the level of AT to VO2max, by the end of preparation period this indicator in general has increased in the group of speed skaters by 16.9% (p<0.05) (at individual variations from 74.8 to 91.5%) and reached 83.1±2.7%. By the end of preparation period the increment of AT was twice higher than the growth of VO2max. Most of the athletes had the level of anaerobic threshold corresponding to the model indicator. The findings allow assessing positively the effect of highland practice on the performance of speed skaters in the preparation period.

Conclusion
Systematic control of AT level allows correcting loads which contribute to the development of mechanisms of aerobic metabolism.

Keywords: Altitude Training, Anaerobic Threshold