

## THE EFFECTS OF INTERMITTENT HYPOXIC TRAINING ON AEROBIC CAPACITY AND BLOOD COMPONENTS OF ENDURANCE ATHLETES

### **Abstract**

*Aim: The aim of this paper was to evaluate the influence of a three-week intermittent hypoxic training (IHT) on endurance athletes' organism from the point of haematological parameters, aerobic capacity and aerobic efficiency of the organism. Methods: 7 athletes (4 ♀, 3♂) aged 23 – 32 years who practice on a daily basis participated on the research. These athletes completed a 21 – 25-day IHT with three days (every seventh day) without hypoxia. They performed the IHT at rest, which means 90 min before and after the IHT they were not exposed to load. Within the IHT training days the monitored athletes were exposed to hypoxia during the first 6 days for 60 min and every day another 5 min were added up until the 90 min exposure duration was achieved at the end, for the interval of 6 min of hypoxia + 3 min of normoxia (10 repeats at the end altogether). During the IHT the athletes were exposed to a hypoxia on the level of 14 – 8 % O<sub>2</sub> concentration in the air (corresponding to the altitude of 3500 – 7000 a.s.l.). The oxygen saturation of the blood (SpO<sub>2</sub>) during the first week was in a diapason of 90 – 85% and from the second week on decreased down to the level of 75%. Results: Due to the IHT the increase of reticulocytes was observed, the increase was from 5,86 ‰ to 8,14 ‰, which in the absolute expression means the increase of 28,1%. Increase from 3,5 to 4,7 % was also measured in the case of erythrocytes, haemoglobin, and hematocrit. In the case of VO<sub>2</sub>max, VO<sub>2</sub>max.kg<sup>-1</sup>, VO<sub>2</sub>max at ANT, and VO<sub>2</sub>max.kg<sup>-1</sup> at ANT the increase dispersal was between 7,3 – 9,8%. In all observed parameters there was a significant increase (P<0,05, resp. P<0,01).*

**Key words:** endurance, intermittent hypoxic training, aerobic capacity, blood

---