

CAPACITY OF EXERCISE INCREASED BY INTERMITTENT HYPOXIA IN ATHLETES

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It is known that training of high altitude increased exercise performance. However, some abuse was found in training of high altitude. Now, new way is going up to search for increased capacity of exercise. To know effects of intermittent hypoxia on exercise performance, hypobaric chamber was used to study. Athletes of row (5 males and 5 females) subjects participated in this study. The experiment was at a simulated altitude of 1800m. Training performs 2 or 3 workload in chamber for 2 hours. All subjects take part in the experiment for more intermittent hypoxia training. The study determined the blood lactate, work, and maximal heart rate and oxygen saturation for all sports on the same day. The Review Board on Human Experiments, Shanghai Institute of Physiology was approved this study.

The results show that blood lactate decreased significantly (from 9.45 ± 1.3 mmol/l to 6.67 ± 0.7 mmol/l, $p < 0.01$) under making some workload of 5 male athletes after intermittent hypoxia training. Also rest oxygen consumption decreased from 4.3 ± 0.05 ml/kg/min to 3.6 ± 0.15 ml/kg/min ($p < 0.05$). At keeping some distance work, blood lactate and maximal heart rate of 5 female athletes decreased from 14.24 ± 1.7 mmol/l to 9.39 ± 1.0 mmol/l ($p < 0.05$) and from 182 ± 1.5 to 177 ± 1.0 beats/min ($p < 0.05$) respectively. The study suggested that the athletes of row can decreased blood lactate and increased capacity of performance after intermittent hypoxia. The hypobaric intermittent hypoxia training may be a best way for athletes exercise.