

## **EFFECTS OF SIMULATED HIGH-ALTITUDE CONDITIONS ON RESPIRATORY TRACT FUNCTION IN SCHOOL-AGE YOUTH.**

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High altitude therapy has been used for over hundred years now. Environmental conditions at high altitudes are characterized by dry and clean air, with reduced content of house dust mites (HDM), dust and mold. Recently a technology has been presented that allows to simulate high-altitude conditions without the need to change atmospheric pressure. The use of normobaric hypoxia technology allows to reduce the partial pressure of oxygen and reduce the oxygen concentration in the artificially created atmosphere, without changes in gas pressure.

The aim of the study is to assess the effects of training in simulated high-altitude on respiratory tract functions in school age youth.

A group of 52 children aged 10 – 15 (mean 12,53) took part in the preliminary part of the study. 31 were included in two week training period run in simulated high altitude conditions on the altitude of 2500 meters. The training protocol included ten sessions of training, with the use of treadmill and exercise bike. 21 children took part in control group. The spirometry test and FeNO test were performed before and after the training period.

The results showed a slight increase in the FeNO levels (11,62 ppm before and 17,75 ppm after the exercise), compared to control group (4,5 ppm before and 2,72 ppm after two weeks without training) and FEV1% (84,24% before and 71,23% after the training) compared to control group (82,40% before and 76,81% after two weeks without training)