CURRENT POSSIBILITIES OF APPLYING SIMULATED HIGH-ALTITUDE CONDITIONS IN THE THERAPY OF ASTHMA AND ALLERGIC DISEASES OF THE UPPER RESPIRATORY TRACT IN SCHOOL-AGE YOUTH.

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High altitude therapy has been used for over hundred years. Environmental conditions at high altitudes are characterized by dry and clean air, with reduced content of house dust mites (HDM), dust and mold. Numerous scientific studies, uncontrolled and controlled, have demonstrated the beneficial effect of high altitudes on the treatment of children and adolescents with atopic asthma. Recent studies have also shown improvements in the parameters of airway inflammatory markers in non-allergic asthma.

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. This solution avoids all potential side effects associated with changes in atmospheric pressure when using the simulator. The technology used is therefore completely safe for the patient, and the potential benefits of using it are an argument for considering training in simulated high mountain conditions as adjuvant therapy for the treatment of asthma and allergic diseases of the airways also in children.

There is a scientific project run in order to assess the usefulness of exercises in simulated high altitude conditions as an additional tool in the treatment of asthma and allergic respiratory diseases in school-aged youth. It will not only verify the clinical improvement of patients, but also a reliable assessment of the impact of participation in project for pulmonary function tests and biochemical markers of eosinophilia.