

REHABILITATION OF CHILDREN WITH RESPIRATORY DISEASES

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Abstract. *Rehabilitation of children with respiratory diseases is the application of exercises under the supervision of the quality of life of patients with chronic respiratory diseases. For many children with chronic diseases of the respiratory system, drug therapy only partially mitigates the symptoms and complications of the disease. Although pulmonary rehabilitation is most often performed in a hospital or clinic, alternative strategies include home care, remote rehabilitation, online programs, and programs that require minimal resources. Some programs combine cardiac and pulmonary rehabilitation. Clinical trials are currently underway to determine the effectiveness of these models. Respiratory diseases in children, their timely treatment, rehabilitation and prevention are one of the most pressing problems and have both medical and social significance. Statistical indicators of the morbidity of preschool children in the Russian Federation over the past 20 years, observations, indicate a steadily leading position of respiratory diseases in the structure of pediatric morbidity. Respiratory diseases annually account for about half of all diseases peculiar to the child's body.*

Keywords: *rehabilitation, chronic diseases, chronic respiratory, retrospective cohort study, COPD.*

Pediatric rehabilitation is a form of treatment that results from the coordinated and complementary work of various medical and non-medical specialties used to identify and develop children's abilities, rehabilitate identified diseases and ensure the independence of the child at the highest level. In pediatric rehabilitation, child care is combined with rehabilitation, which makes it easier for the child to do his daily work. At the same time, rehabilitation is aimed at improving these functions. Early treatment increases the chances of success. The goals should be realistic, and depending on the age, they are aimed at obtaining such functions as first holding the head in an upright position, then sitting, crawling, walking, grabbing hands. After that, training, social skills, adaptation and personal care should be included. Prevention of respiratory diseases in children is to minimize the effects on the body of factors that increase the risk of developing diseases, as well as to strengthen general and local immunity.

A comprehensive pulmonary rehabilitation program can lead to significant clinical improvement:

- Reduction of shortness of breath
- Increased exercise tolerance
- To a lesser extent, reducing the number of hospitalizations

A retrospective cohort study showed that in patients with COPD, the initiation of pulmonary rehabilitation within 3 months after discharge from the hospital significantly reduced the risk of mortality during the year. Due to the possibility of error, the results require confirmation in a prospective randomized clinical trial.

Positive effects of medical rehabilitation of children who have suffered from diseases of the respiratory system:

- restoration of the body's adaptation reserves;
- increased endurance to physical activity;
- increasing the body's resistance to diseases;
- providing a restorative effect on all organs and systems of the body;
- restoration of the function of external respiration, strengthening of the respiratory muscles, restoration of proper breathing mechanics;
- improvement of bronchial conduction, increased chest excursion.

Remember that a healthy lifestyle ensures high resistance of the human body to adverse external factors, improves the functioning of both local and general immunity. It includes:

- physical activity (walking in the fresh air, daily physical education, swimming, cycling, swimming as the best way to improve not only lung function, but also the condition of the heart and blood vessels or any other loads);
- a rational work and rest regime (overwork does not benefit anyone; timely rest and a healthy 7-8 hour night's sleep make our body stronger and affect the immune system in the same way);
- a rational and balanced diet (containing all the nutrients, vitamins, trace elements, amino acids, and so on necessary for the full functioning of the body);
- tempering;

Studies conducted in patients with COPD have shown that pulmonary rehabilitation should be started before COPD becomes severe (which is determined by the degree of airflow restriction), since there seems to be a poor correlation between the severity of the disease and physical exertion. In addition, even patients with a less severe form of the disease are likely to benefit from reduced shortness of breath, increased exercise tolerance, improved muscle strength, ventilation, improved heart and lung health, reduced dynamic hyperinflation and psychosocial benefits that result from pulmonary rehabilitation. Chronic lung diseases, along with heart disease, cancer and other ailments, are among the main causes of increased mortality worldwide. The importance of preventing chronic lung diseases during the COVID-19 pandemic is especially relevant. Although the virus can affect not only the lungs, but also the heart, liver and even brain cells, the greatest danger to health is a violation of the functions of the respiratory system. Maintaining lung health is the most important task for any person. Contraindications are relative and include concomitant diseases (for example, untreated angina pectoris, left ventricular dysfunction), which may complicate attempts to increase the patient's physical activity level. However, these concomitant diseases do not exclude the use of other components of pulmonary rehabilitation.

The pulmonary rehabilitation program should be applied for at least 8 weeks (24 sessions in total). Since the results are lost when you stop training, the exercise habit should continue. Patient education and smoking cessation work, bronchial hygiene and controlled breathing techniques, individual exercise programs, diet planning, and psychosocial support can be provided. These programs are designed for 8-12 weeks, at least 3 days a week, with each lesson lasting an average of 1-2 hours. Patients can be admitted to the program both inpatient and outpatient. Patients with chronic respiratory diseases with shortness of breath can safely exercise through pulmonary rehabilitation programs. Lack of activity in daily life caused by shortness of breath and/or fatigue in patients with chronic lung diseases; This causes a decrease in bone and muscle content, heart and lung functions, and mobility. With physical exertion, muscle strength increases, muscle endurance increases, you can walk long distances, muscles and joints move better, this

provides relaxation, feels stronger and more energetic, improves heart function, reduces shortness of breath.

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