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**ФІЗИЧНА РЕАБІЛІТАЦІЯ ТА
ЗДОРОВ'ЯЗБЕРЕЖУВАЛЬНІ ТЕХНОЛОГІЇ: РЕАЛІЇ
ТА ПЕРСПЕКТИВИ**

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**PHYSICAL REHABILITATION AND HEALTHSAVING
TECHNOLOGIES: REALITIES AND PERSPECTIVES**

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It is known that AD is associated with chronic itching, skin pain, sleep deprivation, depression, and anxiety, all of which contribute to reduced physical activity. The link between AD and decreased physical activity is likely multifactorial and bidirectional. Several human and animal studies have shown that sweating and physical exercise can exacerbate AD. Patients with AD may consciously or unconsciously avoid physical exercise or other forms of moderate to intense activity to minimize disease flare-ups.

On the other hand, AD is also associated with chronic sleep disturbance, daytime sleepiness, fatigue, and symptoms of depression and anxiety, which can limit patients' physical activity. Nonetheless, reduced physical activity can be an important factor contributing to the development of comorbidities in AD patients .

There is undeniable evidence of the effectiveness of regular physical activity in the primary and secondary prevention of several chronic diseases (e.g., cardiovascular disease, diabetes, cancer, hypertension, obesity, depression, and osteoporosis) and premature death. A linear relationship exists between physical activity and health, such that increased physical activity and fitness lead to further health improvements. Studies have demonstrated an association between AD and overweight or obesity in children and adults, hypertension, cardiovascular risk, depression, anxiety, and general deterioration of physical health. In fact, all these associations were more frequent in severe forms of AD, contributing to the development of these comorbidities.

Other studies have confirmed a relationship between stress and physical activity among Korean adolescents with atopic dermatitis, based on data from the 2018–2019 Korea Youth Risk Behavior Web-Based Survey. The authors noted that stress levels in adolescents with AD were significantly higher than in those without AD, while in the group with regular physical activity, stress levels were significantly lower. Overall, AD symptoms and psychological stress interact with each other, forming a vicious cycle. Some studies reported that stress influences the development and progression of AD and worsens its symptoms by stimulating the hypothalamic–pituitary–adrenal axis.

In a study by O'Dougherty et al., it was shown that in the group diagnosed with AD, patients who engaged in regular physical activity for one year had a 30% lower risk of developing stress compared to the inactive group. These results demonstrate that physical exercise helps relieve mental tension in adults and adolescents with allergic diseases such as AD.

Among the various measures to maintain health, regular physical activity is the best way to improve physical function and reduce stress levels. Patients with atopic dermatitis, especially those with moderate to severe disease, should increase their physical activity to improve overall health and reduce the risk of cardiovascular diseases.

Boholiub M., Flörsheim am Main; **Iashkina I.**, Hatterheim am Main, Studying in Hochhheim am Main, a school named Heinrich-von-Brentano Schule.

Levkov A., candidate of Medical Science, docent *National University «Yuri Kondratyuk Poltava Polytechnic»*

EMERGENCY CARE FOR THERMAL INJURIES

Burns are one of the most common household injuries affecting both adults and children. This issue is particularly acute in the context of childhood injuries, as according to statistics from the World Health Organization, up to 40% of household burn cases involve children under the age of five. The main causes of such injuries include exposure to boiling water, steam, hot oil, flame, or chemicals. Burns also frequently occur as a result of accidents, disasters, or military actions, where timely assistance is critically important. It is pre-medical aid – that is, the initial actions taken before the arrival of medical professionals – that often determines the victim's condition, the depth of the injury, and the prognosis for recovery. A lack of timely or appropriate response can lead to complications, wound infections, or even death. Therefore, it is crucial not only to recognize the type and degree of a burn but also to know how to act in the first minutes after the injury.

According to the European classification, burns are categorized as:

- Superficial – do not penetrate beyond the upper layers of the skin and heal without surgical intervention;
- Deep – involve the dermis and subcutaneous layers, often requiring surgical treatment and skin grafting.

Additionally, burns are classified by etiology:

- Heat burns – caused by high temperatures (flame, boiling water, hot objects). These account for up to 95% of cases;
- Chemical burns – caused by acids, alkalis, or heavy metal salts;
- Electrical burns – occur when electrical current passes through the body;
- Radiation burns – rare, associated with radiation exposure.

The algorithm for providing pre-medical assistance depends on the type, area, and depth of the burn. The primary task is to eliminate the harmful factor: extinguish flames, remove the chemical agent, or take off hot clothing.

In the case of heat burns, the victim should be removed from the danger zone. The affected area should be cooled with cool (not cold!) water for 10-15 minutes. This reduces tissue temperature and limits burn depth. Ice must not be used, as it can worsen the condition. Next, apply a sterile moist dressing or clean cloth. Do not apply oils or other substances to the burn. If the pain is severe, administer a painkiller. Arrange transportation to a medical facility.

In case of chemical burns, contaminated clothing should be removed. The affected area should be rinsed with running water for at least 15 minutes. Depending on the chemical, apply an aseptic dressing with a suitable neutralizer (for example, a 3-4% solution of sodium bicarbonate for acids; citric or acetic acid for alkalis). After wound treatment, the victim must be urgently transported to a medical facility or a burn center.

Inhalation of hot air or smoke can also damage the respiratory system. It is necessary to immediately clear the airways and ensure access to fresh air. If needed, perform cardiopulmonary resuscitation (CPR).

In conclusion, pre-medical aid for burns is the first and most crucial step in the rescue chain. The speed and correctness of the assistance provided determine not only the victim's immediate condition but also the overall recovery outlook. This is especially important in situations where professional medical help may be unavailable – such as during accidents, disasters, or in war zones. Acquiring basic first aid knowledge should be a mandatory component of training for teachers, parents, students, and anyone who may find themselves in a life-saving situation.

Dudchenko Tetyana, *pediatrician, candidate of medical sciences*
Jordan Ministry of Health, Amira Basma Hospital, Amman, Jordan

THE EFFECTIVENESS OF PHYSICAL EXERCISE IN THE REHABILITATION OF CHILDREN WITH BRONCHIAL ASTHMA

Asthma is one of the most common chronic diseases among adults and children worldwide. It is a heterogeneous disease characterized by chronic airway inflammation and airway hyperresponsiveness. This chronic inflammation causes airway hypersensitivity, leading to recurrent wheezing, coughing, shortness of breath, and chest tightness, which often worsen at night and early in the morning. Approximately 300 million people of all ages suffer from asthma and its complications, and about 250,000 people die from asthma each year.

Medication has long been the main method of asthma control, but physical therapy is another effective approach. However, exercise-induced asthma is a major reason why many parents prohibit their children with asthma from engaging in physical activity. In the past, the effects of exercise on lung function in children with asthma were controversial. However, an increasing number of published studies show that children with asthma can benefit from regular physical training. Still, the proportion of children with asthma who engage in regular physical activity is significantly lower compared to their healthy peers, which is often attributed to 'health-related restrictions'.

The aim of our study was to evaluate the effectiveness of physical exercise in the rehabilitation of children with bronchial asthma based on data from modern scientific publications.

Among rehabilitation specialists, there is no consensus regarding which exercise program is most beneficial for children with asthma. Therefore, subgroup analyses of different exercise models and cycles were used in this study. The authors examined the effects of swimming, aerobic exercise, ball games, and high-intensity interval training on lung function in children with asthma. It was found that swimming and aerobic exercise significantly improved lung function indices in asthmatic children, whereas ball games and intensive training had only minor effects. The authors recommend that children with asthma perform aerobic exercise and swimming for 30–40 minutes per session, maintaining this regimen for 8 weeks.

Asthma is characterized by variable airflow limitation due to airway narrowing and thickening, as well as mucus accumulation. Airway narrowing results from chronic inflammation caused by the influx of inflammatory cells (such as eosinophils, neutrophils, lymphocytes, macrophages, and mast cells), which