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HYGIENIC BASICS OF HARDENING OFTEN ILLNESS CHILDREN OF PRESCHOOL AGE

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Abstract
The morbidity of preschool children remains high, despite the successes of preventive medicine. The structure of morbidity is dominated by acute respiratory viral infections [1,3,9,12,14,15]. It is well known that the best means of preventing colds is hardening. There is an extensive literature devoted to this, characterized by many conflicting recommendations [1,5,6,7]. Therefore, the choice of adequate hardening methods should be based on a comprehensive study of the morphofunctional development of children.

Keywords: often sick children, hardening, principles of hardening, health procedures.

Introduction

The age of 5-7 years is characterized by complex morpho-functional rearrangements at the level of various systems and is identified by many authors as one of the critical stages of development [2,4,6,8]. One of the physiological features of critical periods is high sensitivity to weak external influences, which include hardening. According to hygienic studies, 5-year-olds are characterized by increased sensitivity to the effects of environmental factors, which leads to a greater prevalence of functional abnormalities in somatic and neuropsychic health at this age [3,4,5,10,13].

After birth, a person finds himself in a completely new environment, and his development and health, which are directly dependent on the environment, will largely depend on adaptation to new conditions. The external environment has a constant and direct impact on the human body. The main external factors that influence the physiological reactions of the body include natural forces: air, water, solar radiation, soil, etc. These factors can play both a positive and negative role in the life of a child, help strengthen or weaken the health of those who are often ill preschool children.

Improving and facilitating the body's adaptation is ensured by hardening. Hardening is a system of measures that increase the body's resistance and resistance to harmful environmental influences, temperature fluctuations and other meteorological changes. Hardening is an integral part of the physical education of children and adolescents. Hardening affects the activity of the nervous and endocrine systems, which affects the regulation of all physiological processes. The initial stages of hardening are accompanied by increased activity of the pituitary gland, adrenal glands and thyroid gland. As the body adapts, the tension in the endocrine system decreases [11,14,17,18,21]. A hardened body is less susceptible to diseases, especially colds; inflammatory processes of the upper respiratory tract, influenza, tonsillitis, pneumonia, and childhood infectious diseases [16,17,22,23,25].

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A hardened child gets sick less or tolerates illness more easily. Hardening helps to develop a strong, solid character, develops will, the ability to overcome difficulties, be resilient and courageous [20,24,29,33,36].

Thermoregulation and its basic mechanisms. A constant body temperature is maintained by chemical and physical regulation. Regulation is associated with the intensity of metabolism, at which the formation of heat in the body decreases or increases. All organs take part in this process, but significant changes in heat generation are associated with muscle work. Heat generation in muscles compared to the value at rest increases by 50-80% with light physical activity and by 400-500% with heavy muscular work [24,28,31,39,41,42].

Physical thermoregulation ensures the transfer of heat from the body to the environment through heat radiation, heat conduction (contact of the body with an object), evaporation of water from the surface of the skin and during respiration. Thermoregulation is carried out reflexively. Temperature receptors that sense cold and heat are located in the skin, hypothalamus, reticular formation and spinal cord; in the hypothalamus - centers that regulate chemical and physical thermoregulation. The body reacts to the effects of cold by constricting blood vessels and reducing the surface of the skin, as a result of which heat is retained in the body. At the same time, heat production increases.

As the ambient temperature rises, the blood vessels of the skin expand, warm blood excites the heat transfer centers, resulting in an increase in sweat production and the amount of circulating blood and heat transfer increases. In addition to the nervous system, there are humoral mechanisms of thermoregulation. The thyroid gland and adrenal glands take part in this process. When cooled, thyroid hormones stimulate metabolism, which leads to increased heat production. Adrenaline (adrenal hormone) causes vasoconstriction and stimulates heat generation processes in muscles and tissues.

In children, heat loss is greater than in adults due to the following features: the surface of a child's body per 1 kg of his weight is almost twice as large as that of an adult (for a child 0.069 sq.m., for an adult 0.025 sq.m.) skin of a child very thin, skin vessels, nerves and muscles of their walls are not sufficiently developed.

The amount of heat produced per 1 square meter of body surface in children is also less than in adults. With age, thermoregulatory functions improve; along with the already existing reaction of vasodilation, a reaction of vasoconstriction develops. Full improvement of functions occurs by 10-12 years, which is largely facilitated by hardening [7,30,33,41,45].

The essence of hardening is the training of thermoregulatory mechanisms by changing temperature influences. Unlimited means of hardening are sun, air and water. Hardening is training, improving the processes of chemical and physical thermoregulation. Hardening can be successful only if certain principles and the correct methodology are followed.

Principles of hardening. Crucial importance for positive hardening procedures is adherence to certain principles [8,31,40,44,46].

1. All first procedures must be strictly dosed in strength and duration and not cause large functional changes in the body to which the body is not yet adapted. As you get used to it, you can carefully increase the dosage. The most favorable season for starting hardening is summer.

2. Systematicity. It is important to carry out hardening procedures constantly, without interruption. This helps to consolidate the positive changes already developed. Unfortunately, the hardening

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effect is destroyed very quickly if it is not consolidated and after a break you have to start again with small doses.

3. Complexity. The results of hardening procedures can be achieved if they are carried out as a whole.

Children who are often ill should spend a lot of time outdoors, play outdoor games, do physical work, and not wrap themselves up. Hardening will be more energetic if you combine air solar and water procedures, and in the summer, swimming in open water is recommended.

4. Taking into account the individual characteristics of frequently ill children. Before you begin systematic hardening, you need to consult a doctor about the choice of procedure and method of its implementation.

When choosing hardening, all children can be divided according to their health into three groups [21,22,36,38].

The first group - a full range of hardening procedures is allowed for practically healthy children and adolescents.

The second group is the limitation of hardening. This group includes children who have just been ill or are prone to frequent illnesses.

The third group - this group consists of children with fever, acute and chronic inflammatory processes, and heart defects. Hardening procedures in conditions of mass use are contraindicated for these children. But this does not mean that these children do not need to be hardened. They are recommended to use milder treatments. For example, replace the shower with rubbing, sunbathing with air, shorten the procedure time, etc.

In all groups of children, the hardening effect is enhanced by their conscious and interested attitude towards health, the desire to be strong, strong, and resilient. Parents, teachers, and educators play a major role in the development and maintenance of interest in hardening. In the summer, the kindergarten is responsible for conducting mass recreational activities.

Air hardening. The air, both indoors and in the atmosphere, is in constant motion. Gusts of wind take away either more or less heat and moisture from the surface of the skin, which, in turn, causes alternating narrowing and expansion of skin vessels. This is the training of thermoregulatory mechanisms to changes in temperature and, in particular, vasomotor centers, under the influence of air baths. As a result of systematic exposure to air, the ability to quickly, economically and expediently adapt the blood supply to the skin depending on the required intensity of heat transfer is developed [12,16,17,41,43,45].

It is necessary to accustom a frequently ill child to the air from early childhood. Children should wear lightweight clothing at home in the winter and outside in the summer. Do morning exercises in a T-shirt, shorts and slippers. Walking barefoot is very useful, but you need to get used to it gradually. In winter, the room must be ventilated at least 3-4 times a day; in the warm season, windows and vents must be open constantly. Special air baths should be started in comfortable conditions at a temperature not lower than 20-24 degrees Celsius, gradually lowering to 15-14 degrees Celsius.

In the summer, children should be outdoors all day. In cold winter and autumn, in cloudy weather, children should stay outdoors for at least 2-3 hours. It is advisable to combine time in the air with outdoor and sports games, which makes hardening more energetic. Air hardening is a milder factor and is allowed for children of all health groups [5,9,12,15].

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Hardening with water. Water has a physiological effect on the body similar to air and is a more powerful hardening agent. Possessing high thermal conductivity, it removes more heat from the body than air. Only healthy children can be hardened with water procedures. Water hardening includes the following procedures: skin baths, washing, rubbing, dousing, showering and bathing. Systematic washing of feet with cool water (for preschool children 25-20 degrees Celsius, reducing to 15 degrees) helps prevent respiratory diseases.

Studies have shown that a minute after immersing your feet in cold water, the temperature of the nasal mucosa decreases. Short-term water procedures have a good effect on children, on their muscular, nervous and vascular systems, on metabolism and mood, relieve lethargy, improve appetite and sleep [3,9,30,38].

Rubbing should be done all year round, preferably after a night's sleep. For wiping, you can use a piece of flannel, a terry cloth mitten, or the end of a clean towel, soaked and then wrung out well. Rubbing is carried out in the following order: first the arms, then the legs, chest, stomach and back. After wiping, you need to rub the skin well with a dry towel. The initial water temperature is 34 - 35 degrees Celsius. After 3-4 days, the water temperature can be lowered by 1 degree and increased to 16-18 degrees Celsius for preschool children. General douche and shower are more powerful hardening procedures, affecting the entire body at once. You need to start with 35-36 degrees Celsius, after 2-3 days reduce it by 1 degree Celsius and bring it to 18 degrees Celsius. The duration of the douche or shower is no more than 1-2 minutes [42,44,45].

Swimming in open water is an even more powerful water hardening agent. When bathing, light, air, water and movement are simultaneously exposed, activating the physiological mechanisms of all body systems. The duration of the first baths is 3-5 minutes, gradually increasing the time to 20 minutes. The air temperature when swimming should not be lower than 24-25 degrees Celsius, the water temperature for preschool age is 25-27 degrees Celsius. The best time for swimming is the second half of the day, after 16:00, as the water warms up well. You cannot swim on an empty stomach, and also no earlier than 1-1.5 hours after eating [3,8,11,14,42].

Sea bathing is especially useful, since in addition to temperature and mechanical irritations there are also chemical ones that have a beneficial effect on the body. You can swim after sunbathing, after cooling down in the shade. When choosing a place for swimming, you need to pay attention to the bottom of the reservoir (the depth should not exceed 50-60 cm), fence off the swimming area and the beach with a rope, the water should be running. You cannot swim below sewage water, near cattle farms, hospitals.

In water, children should not jump, without having to call for help, push, dive in an unknown place, or go further than the specified place. For one adult in the water who knows how to swim, and one teacher on the shore, a group of children of 6-8 people is allowed [31,32,38,41,44,46].

Sun hardening. Sunbathing is a powerful factor and inappropriate use can cause significant harm to health. Exposure to the sun without covering your head can cause sunstroke or overheating. The result is dizziness, weakness, insomnia, loss of appetite, increased irritability, eye diseases and sunburn.

Sunbathing is possible only with the permission of a doctor. You can sunbathe no earlier than 1.5-2 hours after eating. You need to start with 4-5 minutes, increasing your time in the sun by 1 minute every day. For preschool children, the stay can be increased to 30 minutes. When sunbathing, you need to protect your eyes with glasses with dark lenses. After sunbathing, it is good to rub down, douse or swim in compliance with all hygienic rules [12,15,19,27,33,38].

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Conclusions

Thus, hardening is an integral part of the physical education of children and adolescents, aimed at training the body's defenses, increasing its resistance to environmental factors, ensuring a good mood and motivating children to perform hardening procedures not only in a children's institution, but also at home.

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