HYGIENIC BASICS OF PHYSICAL EXERCISE

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Abstract:

This article describes the hygienic basics of physical exercise. Physical exercise is an important part of hygiene measures. Protecting and promoting people's health is the most important state task. Preventive care is fundamental in healthcare. Prevention is a set of measures aimed at ensuring a high level of people's health, their creative longevity, eliminating various causes of diseases, increasing the body's defenses, improving working and living conditions, recreation of the population, and environmental protection. It is carried out through comprehensive programs that include various socio-economic, health and public activities to protect people's health.

Анотация:

В данной статье описывается гигиенические основы физических упражнений. Физические упражнения являются важной составной частью гигиенических мероприятий. Охрана и укрепление здоровья людей – важнейшая государственная задача. Профилактическое направление является в здравоохранении основополагающим. Профилактика представляет собой комплекс мероприятий, направленных на обеспечение высокого уровня здоровья людей, их творческого долголетия, устранение различных причин заболеваний, повышение защитных сил организма, улучшение условий труда и быта, отдыха населения, охрану окружающей среды. Она осуществляется путем комплексных программ, включающих различные социально-экономические, медико-санитарные и общественные мероприятия по охране здоровья людей.

Keywords: *hygiene, daily routine, physical exercises, morning exercises, hardening, performance, fatigue, hygienic massage.*

Ключевые слова: *гигиена, режим дня, физические упражнения, утренняя гимнастика, закаливание, работоспособность, утомление, гигиенический массаж.*

Physical exercise is an important part of hygiene measures that should be carried out by a person throughout his life.

Hygiene is a branch of medicine (from the Greek word "hygieinos" - bringing health). Hygiene studies the influence of living conditions on human health, develops measures aimed at preventing diseases and creating conditions that ensure the preservation of health.

Each person needs to develop the correct daily routine, based on compliance with the rules of personal and public hygiene. The hygienic regime involves compliance with standards and the proper organization of work, rest, nutrition, sleep, etc. Strict adherence to the established regime day after day leads to the formation of a number of conditioned reflexes, which makes the body's work and its interaction with the external environment more harmonious. For example, when the set time for eating comes, the activity of the digestive glands in the stomach and intestines is activated, aimed at the complete processing of food and its subsequent absorption by the body. Constant violation of eating hours leads to disruption of the gastrointestinal tract and impairs the digestibility of food.

It is important to go to bed and wake up at the same time every day. Compliance with a certain regime affects all manifestations of human life, and even minor deviations from it lead to a decrease in performance. Important elements of personal hygiene are such well-known skills as regular washing of the body, keeping clothes and home clean, etc. Physical exercise should occupy a significant place in a person's daily routine. The working day should begin with morning hygienic exercises or, as it is also called, exercises. What is the effect of exercise on the body? During sleep, widespread inhibition occurs in the cerebral cortex. Metabolism decreases. The activity of the circulatory and respiratory organs slows down. Muscle tone is relaxed. Skin blood vessels dilate. Immediately after waking up, the body cannot quickly get back to work, and there is lethargy and decreased performance. Physical exercise promotes rapid disinhibition of the cerebral cortex.

Impulses from the working muscles send to the motor zone in the motor analyzer zone of the cerebral cortex. From there the excitation is transmitted to other centers. Inertia in the activity of the cardiovascular system and respiratory organs is overcome. The whole body switches to the working rhythm faster.

Depending on the type of nervous activity, which is characterized by the strength, balance and mobility of nervous processes, different people switch from sleep to wakefulness in different ways and with unequal speed. Therefore, the selection of exercises and their dosage should be individualized. When selecting exercises for non-athletes, consider the following points. The exercises should not be complicated; it is not recommended to include the use of apparatus in the complex. When performing exercises, you can use a chair, table, headboard and other household items. Exercises need to be selected for different muscle groups. The set of exercises should be built on the principle of gradually increasing the load and decreasing it in the final part. Typically, a complex of morning hygienic gymnastics consists of 7-9 exercises. It is recommended to include muscle stretching exercises, breathing exercises, corrective exercises to correct defects in posture, etc. Athletes can be recommended to include exercises to develop certain physical qualities.

Morning hygienic exercises can be performed either individually or in a group of methods (for example, in a student dormitory). Morning hygienic exercises must be carried out in a ventilated room or even better in the fresh air. Classes should end with a water procedure and self-massage. An important component of the physical education system is the hardening of the human body. Hardening is understood as a system of measures that increase the body's ability to ensure balance between the external and internal environment of the body. Hardening is based on the process of formation of conditioned reflexes, with the help of which the most perfect adaptation of the body to change constantly environmental conditions is achieved. The essence of hardening is that under the influence of the systematic use of temperature stimuli, addiction to them occurs. The nerve endings located in the skin and sensing temperature become less sensitive and the body becomes able to tolerate even sudden cooling or overheating. For hardening purposes, they are exposed to air, water and sun. The basic principles of hardening are: systematicity, consistency, varying intensity, variety of hardening means. Successful hardening is only possible if hardening measures are applied continuously, frequently, for many months and years. Hardening should be carried out from early childhood to old age. Long breaks in hardening weaken the strength of conditioned reflex connections and even nullify the developed resistance to environmental factors.

Gradualization should be carried out by changing the conditions, the duration of individual hardening procedures and their dosage. The first hardening procedures should be carried out at a higher temperature, then gradually lower it. The duration of the procedures should also gradually increase. The systematic use of a specific irritant increases the body's resistance only to this irritant. Therefore, habituation to the adverse effects of low temperatures does not simultaneously increase the body's resistance to high temperatures, and vice versa. Hardening measures should include regular use of both cold and thermal stimul of varying intensity. The duration of a sunbath should start from 5 minutes and extend each subsequent one by 3-5 minutes (the best time in the middle zone of the country is from 8 to 12 noon). You should not take a sunbath earlier than 2 hours after eating. After sunbathing, it is useful to take a shower or other water procedure.

One should take into account its temperature, humidity and speed of movement when hardening with air. The hardening effect occurs if the air temperature is significantly lower than the skin temperature. Air baths are divided into cold (up to 10°), cool (11-18°) and lukewarm (above 19°). Hardening should begin with lukewarm baths and gradually move to cold ones. Air hardening is more affordable. The rational use of clothing also has a hardening effect.

Hardening with water can be carried out in the form of rubbing, dousing, showering, bathing. Water procedures are divided into hot (above 40°), warm (32-40°), lukewarm (24-32°), cool (16-24°) and cold (below 16°). You can start rubbing at 20-

24°, lowering the water temperature by 1° every 2-3 days. When the water temperature is brought to room temperature, you can proceed to dousing. It is best to start hardening with water in the summer.

The using of various means of hardening in combination with physical exercise, as well as physical exercise in light special clothing in the open air, has a hardening effect. Sports such as skiing, speed skating, mountaineering, hiking, etc. have a good hardening effect. For the effectiveness of physical exercise, it is necessary to comply with the hygienic requirements for places of exercise, sports equipment, clothing, shoes of those involved, etc. These hygienic requirements are regulated by special sanitary rules.

When constructing sports facilities, the specifics of individual sports should be taken into account. The inner surface of the walls and ceiling should not contribute to the accumulation of dust and should be convenient for securing and placing gymnastic equipment. When determining the estimated capacity of a gymnasium, it should be taken into account that the standard area per student is 4 m2. The halls should have good natural light or artificial lighting of at least 100-120 lux. The air temperature in gymnasiums should be 14°. The air temperature in the hall may vary depending on... nature of the exercises. The best artificial ventilation system is supply and exhaust. To avoid contamination, only people wearing special suits and shoes are allowed into the hall, which are put on before the start of classes and taken off immediately after they are finished.

Sports equipment must be stored in a special room. Sports equipment must be in good working order, well reinforced, and not have any nicks that could cause sports injuries. Clothing for physical education and sports should be selected taking into account the type of sport and time of year.

In summer, the main sportswear is shorts and T-shirts. In winter, woolen clothing is recommended, taking into account meteorological conditions. In low temperatures and strong winds, you should wear a shirt and trousers made of lightweight windproof material over your tracksuit, and headphones and a woolen cap on your head. Sportswear should only be worn during sports activities. An athlete's shoes must be appropriate for a particular sport. The best material for shoes is leather, which has porosity that allows sweat to evaporate, elasticity and low thermal conductivity. For volleyball, basketball and other indoor sports, it is better to have shoes with rubber soles. Runners are advised to place a sponge under their heels when running on a treadmill to prevent bruises. Choosing the right shoes and keeping them clean are important to prevent scuffs and sweaty feet.

One of the conditions for high performance of an athlete is rational nutrition. The higher energy consumption during physical exercise must be covered by the delivery of more energy substances to the body. The amount of energy expenditure depends on the nature of professional activity and the type of sport. The total amount of energy

expended in this case is determined using special tables. Energy expenditure must be replenished by consuming carbohydrates, proteins and fats; it is known that 1 g of proteins when burned in the body gives 4.1 kcal, 1 g of fats - 9.3 kcal and 1 g of carbohydrates - 4.1 kcal. Knowing how much fat, protein and carbohydrates are included in various foods, you can calculate their calorie content. The qualitative composition of an athlete's diet is mainly carbohydrate-oriented, but depending on the type of sport it has some features. The carbohydrate orientation should be especially pronounced during sports activities that require high endurance (long-distance running, etc.).

The diet of athletes whose activities place increased demands on the central nervous system (boxing, gymnastics, sports games) should be rich in protein. The nutrition of athletes whose activities are related to the development of strength (weightlifting, wrestling) should also be rich in proteins necessary both to maintain high excitability of the nervous system and to build muscle proteins. In addition, athletes' food should be rich in vitamins (C, group B, etc.). For the normal functioning of the body, diet is important. Important elements of the diet are regularity and consistency of meal times. Food should be taken 3-4 times a day. Before going to bed, food should be taken at least 17-2 hours before going to bed; it should be small in volume and not contain many proteins that increase the excitability of the nervous system. While playing sports, damage is possible, although rare. Russian researchers I. A. Kryachko and A. M. Landa established the following causes of sports injuries (as a percentage of the total number of sports injuries):

1. Lack of preparedness (insufficient training and technique)—46.4%.
2. Insufficient material and technical support (unsatisfactory condition of training places, gymnastic equipment, shoes, protective equipment) - 20.9%.
3. Disadvantages in the organization and methods of training (lack of insurance, collisions)—14.3%.
4. The general condition of the trainees (overload, illness, lack of warm-up) - 8.2%.
5. Incorrect behavior of students (inattention, rudeness)—6.6%
6. Adverse weather conditions - 1.7%.
7. Other reasons—1.9%.

With proper training, sports injuries can be avoided. When practicing certain sports (boxing, fencing, hockey, football, cycling and motorsports) the use of special protective equipment is required. Prevention of sports injuries should be based on a thorough analysis and elimination of its causes.

As a result of performing significant physical activity, one should distinguish between fatigue, overexertion and overtraining.

Fatigue is a state of the body characterized by a temporary decrease in performance due to the work done. Studies by Russian physiologists I.M. Sechenov,

I.P. Pavlov and others indicate the leading role of the nervous system in the occurrence of fatigue. Fatigue due to muscle work is associated with a decrease in the excitability of the cerebral cortex as a result of intense activity of the body. Fatigue is expressed in the appearance of a feeling of tiredness, drowsiness, a feeling of inability to continue working, deterioration in coordination of movements, a decrease in muscle strength and other signs. Fatigue during sports activities is a natural phenomenon. It comes after every workout and especially after competitions. The degree of fatigue depends on the magnitude of the load and the athlete's preparedness for its implementation. Physical activity, accompanied by emotional uplift and the consciousness of achieving a high goal as a result, causes a lesser feeling of fatigue. After sufficient rest, fatigue goes away, and performance even exceeds the initial level (according to the law of supercompensation of functions), which is typical for increasing fitness. Fatigue should not be confused with overexertion and overtraining. Overexertion occurs in undertrained individuals as a result of excessive tension during training or, more often, competition. Acute overexertion is characterized by: severe weakness, dizziness, vomiting, severe shortness of breath, rapid pulse, drop in blood pressure, pain in the heart, sometimes fainting and some other signs indicating a dysfunction of the body systems. The cause of overexertion can also be participation in competitions in a painful state (flu, sore throat, etc.).

Unlike fatigue, overexertion causes a more significant and prolonged decrease in performance, the restoration of which requires a change in the training regimen, and sometimes long-term rest and therapeutic measures.

In well-trained athletes, very large and frequently repeated loads can lead to overtraining, which, along with a decrease in athletic performance, is accompanied by some changes in the condition of the athletes' bodies. Most often, a disorder occurs in the activity of the central nervous and cardiovascular systems. An overtrained state is characterized by a violation of the dynamics of nervous processes, a breakdown or collision occurs (I. P. Pavlov) of nervous processes and the correspondence between the processes of inhibition and excitation in the central nervous system is disrupted. Overtraining can be considered a state of neurosis. With pronounced changes in the functional state of the body due to overtraining, hospital treatment is sometimes required. It is important to promotly detect the first signs of overtraining and eliminate it by changing your training regimen. One of the means to improve the health of an athlete is sports massage. Sport massage is understood as a set of massage techniques that promote the physical improvement of an athlete, aimed at eliminating fatigue, and also used for sports injuries.

Depending on when and for what purpose massage is used, it is divided into: hygienic, training, preliminary, restorative, massage for sports injuries. The form of massage can be general and local.

Hygienic massage is usually applied in the morning, after hygienic gymnastics. A training massage is done during the training period. Preliminary massage is prescribed before sports competitions. Restorative massage is done to quickly restore the performance of tired muscles. Massage techniques are usually arranged in the following sequence: they start with stroking, then move on to rubbing and squeezing, kneading, chopping, effleurage, etc., and end the massage with active-passive movements. The main massage techniques are performed in the direction from the periphery to the center along the lymphatic vessels. The physiological effect of massage on the body is largely associated with irritation of receptors located in the skin, muscles and reflex toning of the central nervous system. Different massage techniques have different effects on the nervous system. Some of them irritate and excite her (tapping, chopping, shaking), while others calm her (stroking, rubbing). The effect of massage on the circulatory and lymphatic systems is expressed in accelerating the outflow of venous blood and lymph. Breathing becomes deeper and deeper under the influence of massage. Metabolism increases slightly. Skin temperature increases. In order to make massage more accessible, self-massage techniques should be used more widely. All movements of massaging hands during self-massage should also be made along the lymphatic pathways towards the nearest lymph nodes. When performing self-massage, it is necessary to choose a starting position that ensures complete muscle relaxation. Those who perform self-massage are subject to the same hygienic requirements as massage therapists, namely, the skin must be clean and free of skin rashes (lichen, eczema, boils, etc.). For self-massage, you can use talcum powder and boric vaseline. The massage begins by massaging the foot and Achilles tendon, then moves on to other parts of the body.

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