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## Ensuring The Physiological Optimum Of The Body Using Hydro-procedures.

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### ABSTRACT

Dosed water exposure to the skin of the body stimulates their receptors and causes a wide range of nonspecific reactions. It has a stimulating effect on metabolism, blood circulation and lymph circulation, optimizes vascular tone, thermoregulation, immunity, enzymatic activity, various types of regulation, the activity of the central nervous system and internal organs. It also promotes the excretion of degradation products. The result of hydro-influence on the organism strongly depends on the nature of the procedure, the dose, the time of its application, the individual sensitivity of the organism to it. Along with the general non-specific reaction, each hydro-stimulation also causes specific reactions, which can have a calming and stimulating effect. In each particular case, during hydrostatic action, it is necessary to take into account the initial state and the existing features of the organism, the nature of the work previously performed and the degree of fatigue. When choosing for the application of variants of water effects, it is necessary to strictly take into account the individual characteristics of a person and the nature of his daily activities, the volume and intensity of previous physical activities and their possible level in the following days. All procedures (except general hygienic) should be prescribed only by a doctor, assessing a person's condition, his individual sensitivity, degree and nature of fatigue and level of physical activity.

**Keywords:** physiology, hydroexposure, hydraulic procedures, rehabilitation, prevention, health.

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## INTRODUCTION

The functioning of the body is a delicate and very complex process [1, 2]. With the appearance of various negative factors in the environment in the body, dysfunctions often occur in the internal organs [3, 4]. Physiology, medicine and rehabilitology [5, 6] pay great attention to their elimination. To restore health in medicine used a wide range of effects on the body [7]. These include, first of all, specialized nutrition, ergogenic dietetics, vitaminization [8]. Hygienic means are widely used - rational mode and natural forces of nature. Also widely used physical means of recovery [9, 10, 11].

Physical factors with high biological and therapeutic activity are used in medicine for the prevention and treatment of diseases and injuries, hardening of the body, accelerating recovery and increasing efficiency. There are natural factors (sun, air, water) and preformed (acting with the help of special devices), among which for the purposes of restoration are mainly used hydro-effects (various showers and baths), balneological procedures (baths of special composition), thermotherapy and light therapy, oxygen therapy, aeroionization, electric currents of different frequency and voltage, back pressure, various types of massage and baths [12, 13].

Acting through the receptors of the skin and respiratory tract, physical factors cause a wide range of nonspecific reactions in the body, affect metabolism, blood circulation and lymphatic circulation, vascular tone, thermoregulation, immunity and enzymatic activity, nervous and humoral regulation, central nervous system and internal organs, promotes the excretion of degradation products. Thus, physical factors increase the body's defenses, its resistance to the action of various adverse environmental factors, relieve fatigue, and accelerate recovery [14, 15].

Considering the importance and effectiveness of hydroprocedures on the human body, the goal was set in the work: to summarize information about the health potential of hydro actions on the human body in different functional states.

The result of hydro-effects on the body depends on many factors. It is important to choose the right means of hydroreduction and the timing of their appointment. For example, for urgent recovery in short intervals between loads, the procedure should be carried out immediately after the end of the load. To ensure remote recovery - after 4-6 hours or more. To facilitate recovery at certain stages of physical fitness (after powerful workouts or with an increase in fatigue phenomena), it is advisable to conduct a course of procedures (8-12) daily or every other day. It should be borne in mind that long-term use of the same procedures causes the body to get used to them and reduce their effect. Therefore, it is recommended to vary the nature, duration, combination of procedures. At the same time, no more than 2-3 procedures can be applied, including no more than one procedure of each type in order not to overload the body [16].

Physical factors are well known - showers, common baths, general and hydromassage, baths, means mainly means of general influence, but sometimes they can be localized effects - partial baths. The latter, although they act primarily on certain muscle groups or reflexogenic zones, cause not only local, but also systemic reactions due to the redistribution of blood and changes in cellular metabolism. However, the means of general exposure have a wider range of non-specific effects, and therefore adaptation to them occurs more slowly than to local effects. The means of local impact are assigned with the predominant load on certain groups of muscles, and the means of general impact - after loads of large volume and intensity, accompanied by global or regional fatigue.

Hydro procedures - showers, baths, baths - act on the body with the help of temperature and mechanical factors. By adjusting the temperature and pressure of water, you can achieve different effects. Hydro-procedures are especially important for athletes who train several times a day, the use of the shower is very effective between workouts, allowing you to remove excess tension from the muscles of an athlete, thus accelerating the process of restoring and preparing the body for subsequent training [17].

Soils are hydro procedures, in which water acts on the body in the form of one or several jets with dosed temperature and pressure. When the water temperature is up to 20 °, the shower is considered cold, 20-33 ° cool, 34-36 deg - indifferent, 37-38 deg - warm, 40 deg and higher - hot [18].

Taking a warm shower (5-7 min) after a workout has a hygienic and soothing effect and is an essential component of the training regimen. After 20-30 minutes after a workout, before a day rest and a night's sleep, the shower can be longer - it reduces anxiety, improves metabolism, the function of muscles and internal organs. Cool and indifferent souls tone up, hot ones can be used during supercooling and after massage [19].

By increasing the intensity of the mechanical effects on the body of the soul can be listed in the following order: dust, needle, fan, circular, jet. The most powerful influence is exerted by high pressure souls. In a jet shower (Charcot, Scottish), a large jet of water from a hose is successively supplied to different parts of the body, in a circular and fan - in small jets simultaneously to many parts of the body. In contrast showers, 2 jet streams are fed with alternating hot and cold water. The duration of procedures is from 1-2 to 3-4 minutes [20,21].

To restore the health, fresh, gas, aromatic, mineral-chloride baths are used. Warm baths (36-38 °) have a calming and relaxing effect; they are prescribed before bedtime, after training or competitions with a heavy load, no more than 2-3 times a week. Indifferent (34-35 °) and cool (21-23 °) short baths tone the body and increase metabolism; they are used mainly in cases where the athlete in the recovery period is dominated by inhibitory processes. Hot baths tire and (except in cases of hypothermia) are not recommended in order to restore [22-25].

Contrast baths (2 baths with a difference in water temperature from 5–10 to 20 ° C) and vibration baths (general or local effects of water and vibration) have a more pronounced effect. They relieve fatigue, tone up the body, increase efficiency. Vibration baths, in addition, have an analgesic effect. In order to restore, they are appointed no earlier than 1 hour after training, 10-12 baths per course with a gradual increase in the temperature difference and the strength of vibration. Of the gas baths, carbon dioxide and pearl baths are most common in sports medicine. In carbon dioxide baths, in addition to temperature and mechanical factors, the chemical factor also acts on the body — carbon dioxide. This helps to improve the tone of the nervous system, improve the function of the heart, blood vessels, the formation of biologically active substances in the skin, accelerate the excretion of lactic acid. These baths are 2-4 times a week, not earlier than 1 hour after exercise and not later than 3 hours before it, followed by a 30-60 minute rest (10-12 baths per course) [26-28].

In pearl baths the water is enriched with air injected under pressure of 0.5-1.5 atmospheres that irritate thermoreceptors and tactile receptors in the skin and the reflex has a tonic effect on the body. They are recommended for use mainly after competitions and training, accompanied by considerable nervous tension. Appoint 12 to 15 treatments, 3-4 times a week, the water temperature is not more than 35-36° [29-33].

Sodium chloride baths use natural mineral water (seas, springs) or made from salt. The bath has a tonic effect, improves oxygen utilization, and works well in case of disorders in the regulation of vascular tone and changes in the musculoskeletal system. Appointed no earlier than 30 minutes before the workout and no later than 2 hours after it. Alkaline (soda) baths also contribute to the restoration of the musculoskeletal system.

Of the aromatic baths, coniferous baths (with the addition of coniferous extract or tablets to fresh water) are the most widely spread. They reduce the excitability of the nervous system, improve sleep, and normalize the functions of various organs and systems that have been changed due to fatigue. For the preparation of pine bath in 50 liters of fresh water dissolve 50-70 mg of extract.

Baths (steam and dry air - sauna) are widely used to restore sports performance. Steam (Russian) and dry-air (Finnish) baths differ in temperature and humidity. The steam room is characterized by high humidity (up to 70-100%) and relatively low air temperature (40-60 °), dry air - high temperature (up to 70-100 °, sometimes more) and low humidity (within 5-15%). Sauna is transferred easier. It has less danger of overheating, impaired thermoregulation and body functions. Therefore, it is very widely used. The optimal temperature in the sauna should be considered 70-80 °, humidity - 5-15%, air movement - 0.3-0.5 m / s. Bathing procedure should not overwork, it should be accompanied by well-being, normal sleep, a sense of cheerfulness and a surge of strength [34,35].

The mode of the sauna depends on the nature of the previous load [36]. If the bathing procedure is carried out on the day of training, the time spent in the sauna should be reduced to 5-7 minutes, and the number of visits to 3, in the following days you can increase your stay to 10-15 minutes (but not more than 25

minutes) and the number of visits to 4-5 with intervals between calls - 5-15 minutes. The effectiveness of the sauna increases with its combination with contrasting temperature effects (cool or cold shower or pool) in the intervals between visits and subsequent massage. At the same time it is necessary to observe hygienic recommendations. In practice, portable thermal cameras are often used successfully.

### CONCLUSION

The result of hydro-influence on the organism strongly depends on the nature of the procedure, the dose, the time of application, the individual sensitivity of the organism to them. Along with the general non-specific reaction, each hydro-stimulation also causes specific reactions, which can have a calming and stimulating effect. This means that in each case it is necessary to take into account the state and characteristics of the organism, the nature of the work carried out and the manifestations of fatigue. When choosing options for water effects, it is necessary to strictly take into account the individual characteristics of a person and the characteristics of his activity, the volume and intensity of previous physical activities and the tasks to be solved in the following days. All procedures (except general hygienic) should be prescribed only by a doctor, taking into account a person's condition, individual sensitivity, degree and nature of fatigue and level of physical activity.

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