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# TOOLS AND METHODS USED TO EDUCATE ENDURANCE IN SWIMMERS

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**Annotation:**
This article explains about methods used to educate endurance in swimmers. Targeted use of external environmental factors - air temperature, relative humidity, ultraviolet light, atmospheric pressure, etc. - to increase endurance allows you to increase the effectiveness of exercise. As well as any change in climatic conditions causes physiological changes in the body.

**Keywords:** Endurance development, General endurance, exercise, complex, oxidation, aerobic, fatigue, speed, strength, loads specific

Introduction

Tools for developing resilience vary. Various exercises and their combinations can be used to develop general endurance. They must meet the following requirements: relatively simple execution technique; active functioning of most skeletal muscles; high activity of functional systems that limit the visibility of durability; ability to adjust and manage training load; the ability to perform for long periods of time (from a few minutes to several hours).

Great results can also be achieved with the help of acyclic exercises that meet the requirements for the development of general endurance. Usually, their effectiveness is ensured not only by performing a particular exercise, but also by repeating different exercises many times. In return, it has the necessary influence on the leading functional systems. It is advisable to use breathing exercises as an aid to the development of complex endurance: to control the speed, depth and rhythm of breathing; pulmonary hyperventilation and maintenance of normal breathing; synchronization of respiration with movement phases; different types: selective use of mouth and nose, chest and abdomen breathing.

Any change in the conditions of the body causes physiological changes in the body. It does not matter if the organism adapts to any climatic conditions. Adaptation to climate change increases the reactivity of the autonomic nervous system, speeds up respiration and blood circulation, enhances redox processes, and increases endurance.

The maximum oxygen consumption of trained skilled swimmers increases by 70 ml (kg), while that of a Level III swimmer does not exceed 50 ml (kg). The process of special training can lead to 10-20% of aerobic development in 6-12 weeks.

**Main part :**

Intermediate and distance methods are used in training to increase aerobic capacity. In order to increase the level of aerobic development, the use of the intermediate method should be based on the following principles. This is mainly based on physiological orientation and includes:

The swimming time of some swimming parts is 1-2 minutes should not exceed;

depending on the length of the distance sections, the duration of rest intervals is 45-90 sec;

during the exercise it is necessary to take into account the heart rate, determining the intensity of the work. It is not considered expedient to increase the heart rate above 180 by 11 at the end of work, and at 120-130 by 11 at the end of the work, and to reduce it to less than 120 at the end of rest.

In both cases, there is a decrease in heart rate. Therefore, it is necessary to follow this method in moderation, and swimmers should be under constant medical supervision.

The use of the distance method helps to improve practically all the basic properties of the body (oxygen endurance in the practice of sports is determined by the time taken to swim a long distance in 1000 m. During the distance training, the following basic conditions should be observed: intense work should ensure a high heart rate and the level of consumption, as much as possible. In this case, the duration should be from 10 to 60-90 m. In swimming, this distance is 80 to 5,000 m, and the heart rate should be 145-175 beats per minute. Respiratory capacity is not very specific and does not depend on the external form of movement. If, for example, it increases its aerobic capacity in swimming, it will affect other activities - swimming, running. In the process of training endurance, a number of tasks are required comprehensively increase the functional properties of the organism, which determine the specific types of general endurance. Endurance training is accompanied by hard work, endurance that contributes to large volumes and extreme fatigue.

Athletes increase their endurance only when they feel a certain amount of fatigue during training. In this case, the body becomes accustomed to a similar situation. This is reflected in the increase in endurance from the outside. The magnitude of the adaptive change depends on the level and nature of the reactions that occur as a result of the training load.

In developing endurance, it is important to consider not only the length of the distance, but also the personal characteristics of the students, including their level of physical fitness. It should be noted that the same distance may apply to different power zones, depending on the level of training of the trainees. Maintaining a constant intensity of work, however, makes it easier to achieve good results. Such an ability needs special training. These types of exercises are characterized by constantly changing intensity and forms of movement.

As mentioned above, these parameters depend on the level of power: however, the more resistance you have to overcome, the greater the dependence. Endurance is defined as the duration of the body's ability to work and its level of resistance to fatigue or the effects of the external environment. In recent years, it has been described as a holistic concept consisting of a combination of endurance and its types. For example, strength endurance, general and special endurance, speed endurance, and so on.

Specific endurance is a synthesis of two basic physical qualities - speed and endurance. These two qualities are inextricably linked to the special power with which sportsmanship is developed. Athletes who specialize in the 800, 1,000, and 1,500 meters must be able to maintain the required speed for a long period of time and be very durable at the same time.

Nowadays, it is widely accepted that the leading functions, which qualitatively reflect different types and levels of endurance, are the body's energy capacity. The quality of endurance, as well as the assessment of the quality of training loads on the basis of physiological characteristics, allowed to determine and detail the method of training medium-distance swimmers.

Based on physiological principles, accounting for exercise allows for a clear and categorical list of exercise tools used according to the nature and extent of their effects on the body. In recent years, when it comes to endurance, the combination of pedagogical and physiological concepts can be seen. The concepts of aerobic and anaerobic endurance have entered our daily speech. Sports that require endurance do not clearly define the impact, so endurance is now classified into smaller types. Thus, aerobic endurance is divided into short-term, aerobic, medium and long-term aerobic endurance. The first is 3 to 10 minutes of physical exertion.

The second involves physical exertion that lasts from 10 to 30 minutes. According to this classification, swimming at 1500 m is a type of short-term aerobic endurance.

**Conclusion:**

The bottom line is that training endurance in swimmers is definitely done by giving the exercise load in different ways. Targeted use of environmental factors such as air temperature, relative humidity, ultraviolet light, atmospheric pressure, etc. to develop endurance allows you to increase the effectiveness of exercise, because the influence of climatic and natural factors on the external environment is very important.

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