MEANS AND METHODS OF TRAINING IN THE PREPARATION OF SWIMMERS ON LAND AND IN WATER

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ANNOTATION

This article analyzes the physical fitness of swimmers.

KEYWORDS: Swimmers, neuromuscular apparatus, swimming technique, means and methods for preparing swimmers, stage of preliminary sports training, when selecting children for sports swimming.

Swimming lessons occupy a special place in physical education, physical development, health promotion of preschoolers and younger schoolchildren. Favorable conditions for the development of physical qualities and the possibility of preventing dangerous situations on the water put swimming in one of the first places in physical culture and sports.

Swimming is a popular and successfully developing sport. This is due to the exceptionally high health-improving and general developmental impact of swimming on the human body, an extensive program of swimming competitions at the Olympic Games, World Championships and other major competitions.

The ever-increasing level of sporting achievements, competition in the fight for the world championship require constant improvement in the quality and efficiency of the training process. The growth of achievements in swimming is largely determined by the constant improvement of the training systems for qualified athletes. System improvement implies a different approach to dosing loads on the athlete's body.

Sports training is a pedagogical process aimed at achieving the best possible result for an athlete. As mentioned above, education and training is a single pedagogical process, which is carried out with the obligatory consideration of the basic principles of physical education.

In addition, sports training has its own specific patterns: focus on the highest sports achievements, in-depth specialization, the unity of general and special training, continuity, the unity of gradualness and a tendency to maximum loads, the wavelike dynamics of the training load, cyclicity.

Sports training of a swimmer is part of the general system of training athletes, which requires certain conditions for its implementation, appropriate equipment and inventory, evidence-

based nutrition, medical supervision, the use of special means to restore the body after training loads, etc.

In the program of children's sports schools, it is recommended to start swimming lessons from the age of 7-10. At the same time, it is necessary to clearly distinguish between two concepts: the optimal age to start many years of training and the age to master swimming as a necessary life skill. There is no doubt that the sooner a child learns to swim, the better. Swimming can be started even in preschool years - 3-5 years. Sports swimming - from 9 years old.

Swimming is one of those sports where early athletic performance becomes the rule. The rapid progress of young athletes is facilitated by better streamlining and greater buoyancy than adults. The work of the heart is greatly facilitated.

For young swimmers, there are no technical difficulties in mastering the most difficult types of sports swimming. The elasticity of the ligamentous apparatus and high mobility in the joints ensure the technically correct performance of the elements of sports swimming; help to most effectively realize strength capabilities, speed, endurance, master modern swimming techniques.

Sports success in swimming, as in adults, is largely determined by the characteristics of the physique and physical fitness. For success in swimming, height is especially important. This is explained by the fact that every 10 cm of growth reduces the value of the relative surface of the body by 0.13 m, which in turn reduces the counter resistance of water by 5%. The height of an adult can be satisfactorily predicted by the height of children aged 8-12 years. This is explained by the fact that the height and proportions of the body of children aged 8-12 are closest to their indicators in adulthood. Boys reach 86% of their future adult height by the age of 12.

When selecting children for sports swimming, preference should be given to proportionally built children who are taller, lighter in weight, have an indistinctly marked muscle relief, light bones with non-protruding smoothed joints, thin ankles and wrists, large feet and hands.

Stage of preliminary sports training

The optimal age for the start of preliminary sports training in swimming is 7-9 years for girls, and 8-10 years for boys.

In children aged 7-9 years, the processes of maturation of tissues and organs predominate with a decrease in the intensity of their growth. The morphological differentiation of the cells of the cerebral cortex and liver ends, an increased development of skeletal muscles is observed, a moderate increase in the size of the heart, and the structural differentiation of the myocardium ends.

Junior school age is a very favorable period for learning new movements. Approximately 90% of the total volume of motor skills acquired throughout a person's life is mastered at the age of 6 to 12 years. Therefore, learning more new diverse movements is the main requirement for the content of the physical training of children of this age. The more diverse movements

mastered during this period, the better complex technical elements will be mastered in the future. Muscle sensitivity reaches such a level of development at primary school age that it is possible to learn technically complex movements. Children differentiate muscle sensations well, and individual exercises are more accessible for them than for adults.

Indicators of the functional maturity of the neuromuscular apparatus - excitability and lability - by the age of 8-10 are approaching the level of adults.

At this age, children have unstable attention. To maintain sustainable attention, an increased emotional level should be created in the classroom, using game forms of teaching a lesson, assessing the actions of each child, and a method of encouragement.

For children of 7-9 years of age, concrete-figurative thinking is characteristic. Therefore, it is especially important in the classroom for an understandable figurative display and a visual method of explanation.

In children of this age, a relatively "light" bone skeleton and poorly developed muscle groups provide good buoyancy of the body in water, which facilitates the learning of movements for the formation of swimming technique.

The quality of performing movements in the water and the maximum length of swimming segments in the first year of swimming lessons are primarily influenced by the proper motor abilities of children, which determine the speed and ease of mastering swimming skills in sports ways. The ability to relax muscles, the sense of rhythm, the ability to finely differentiate spatial, temporal and power sensations significantly affect the learning ability of children and mastery of sports methods of swimming. This ability depends on the structure of the analyzer systems and the ability of the nervous processes to proceed, primarily their lability and dynamism. It is in childhood that the nervous system is characterized by a high level of these processes, and with age only the ability to analyze and control movements increases.

Primary school age is a powerful source of prerequisites for further growth of sportsmanship. At the initial stage of learning to swim, the foundation of motor skills and abilities is laid, which form the basis of swimming technique.

There are proper means of sports training - these are various physical exercises that directly or indirectly affect the improvement of the skills of athletes, and additional (technical) means - training devices, special equipment, diagnostic equipment, etc., the use of which stimulates the pace of sports improvement.

The main means of training in swimming are a variety of physical exercises. According to the degree of proximity to the main competitive actions, they are usually divided into 4 groups: general preparatory, auxiliary, special-preparatory and competitive exercises. Each group of exercises has a predominant direction of influence and is used to solve various problems at each stage of training.

General preparatory exercises are aimed at strengthening the health and comprehensive physical development of the athlete's body. For the harmonious development of all muscle

groups of a swimmer, elements borrowed from other sports are included: cross-country running, skiing, rowing, sports and outdoor games, gymnastic general developmental exercises. For beginner swimmers, these exercises are also basic for training in the gym, however, with the growth of sportsmanship, training becomes more focused.

Auxiliary exercises involve motor actions that create a special foundation for further improvement in a particular sports activity.

Special preparatory exercises. Aimed at the development of those muscle groups that carry the main load when swimming. This group includes exercises that increase strength and endurance when working on special rowing machines, swimming with the help of leg or arm movements, with additional weights and braking devices. These exercises are essential for qualified athletes.

The variable method of training consists in alternating loads of different intensity. Having swum a segment (for example, 50 m) at an increased speed, the athlete continues to swim at a much lower speed. After swimming calmly for a certain number of meters, he begins to swim again vigorously, then swim calmly, etc. The ratio of the length of the segments swim at high speed and calmly depends on the preparedness of the swimmer. With an average speed on segments swam with increased intensity, this method contributes to the development of general endurance, and with faster swimming - an increase in special endurance.

The interval training method is characterized by swimming a series of segments of a given length with a certain intensity and a rest interval between them. Rest is selected so as to ensure not a complete, but a partial recovery of the pulse. At the same time, a stimulus for improving the cardiovascular system is also created during rest, when the volume of blood pushed out by the heart in one contraction reaches its highest level.

In the interval training of swimmers, two directions are distinguished - the development of general endurance and the development of special endurance.

Interval training aimed at developing general endurance is characterized by the following: the length of the swim segments and distances - 50, 100 or 200 m; intensity of "portions of work" - pulse rate 26-30 beats per 10 s; rest duration - from 5 to 45 s; repetition of swimming distances for swimmers of the II sports category - 4-10 times, for highly qualified swimmers - more.

Interval training aimed at developing special endurance is characterized by increased swimming intensity, which gives it an anaerobic character. This is usually achieved by increasing the speed while maintaining the length of the rest breaks. The number of swim distances is selected taking into account their length, the preparedness of athletes and the intensity of swimming.

The repeated training method consists in repeating swimming distances of 25, 50, 100, 200, 400 or 800 m with high intensity (90-100%). Rest breaks should provide good recovery and are sometimes up to 10 minutes or more. The number of repetitions is selected taking into

account the length of the distance and the preparedness of the athlete. This method allows an athlete to perform a large amount of work at maximum and near-limit speed during one training session. To prepare swimmers of III-II categories for competitions in swimming at 100 m, training usually includes repeated swimming 6X25 m or 3X50 m with an intensity accessible to the swimmer and sufficiently long rest intervals.

Competitive, or control, method of training is the passage of the main distances at full strength in competitions or in conditions close to them (in a group under the starting team, with a partner). This method is usually used before the competition to check the fitness of the athlete and to improve the passage of the distance (start, turn, uniformity of passage, technique).

In the process of training swimmers, all of the above training methods are used both separately and in various combinations.

In continuous (remote) methods, the length of the distance is usually from 400 to 3000 m. The swimming speed in the uniform continuous method is constant and much lower than the competitive one.

There are several options in the variable continuous method:

1) a constant increase in speed. For example, 1200m as 3x400m; each subsequent segment is faster than the previous one: the first 400 m are swum in 7 minutes, the second - in 6 minutes 30 seconds, the last - in 6 minutes;

2) rhythmic change in speed. The distance is divided into separate segments, the swimming speed on which is different. For example, 900 m as 9x100 m. In these segments, the intensity changes as follows: 100 m - in 1/2 of the force, 100 m - in 3/4 of the force, 100 m - 90% of the maximum; 100m as 10x10m (first 75m free, last 25m fast);

3) "fartlek" (play of speeds). Arbitrary combination of accelerations and low-intensity swimming.

4) "locomotive" ("pyramid"). Alternating free and fast swimming; the length of the segments gradually increases or decreases.

For example, a distance of 900 m is sailed like this: 50 m fast + 50 m free, 100 m fast - 100 m free; further similarly 150 + 150, 100 + 100.50 + 50;

5) alternating swimming of segments of the distance with the help of movements of the legs, arms and in full coordination.

In the control method, the distance is equal to or less than the competitive one, the speed is maximum.

The uniform interval method is characterized by constant values of the segment length, rest intervals and swimming speed. An example of the so-called "straight series" are 10 - 20x50 m, 8 - 15x100 m.

The variable interval method has a large number of options:

1) a constant increase in speed. Each subsequent segment swims faster than the previous one;

2) rhythmic change in speed. A series of 12x50 m is performed as 3x4x50 m with an increase in speed from the 1st segment to the 4th, from the 5th to the 8th, etc.;

3) serial (interval-repeated). A series of 12x50 m is carried out as 3 series of 6x50 m; rest intervals between segments - 20 s, between series - 5 min;

4) increasing rest intervals. A series of 18x50 m is divided into 3 - 6 segments in each: 6x50 m in 50 s mode + 6x50 m in 1 min mode + 6x50 m in 1 min 20 s mode. The increase in rest intervals should be accompanied by a significant increase in speed;

5) decreasing rest intervals. A series of 20x50 m is performed as 10x50 m in mode I min 30 s + 5x50 m in mode 1 min 10 s + 5x50 m in mode 45 s. This option is more difficult than the previous one; it also needs to improve results - for example, from 40 to 35 s;

6) "simulator" (fractional swimming). The competitive distance is divided into 3-4 segments with short (10-20 s) rest intervals: a) 800 m = 400 + 200 + 100 + 100 m; rest intervals - 15 +10 + 5 s; b) 400 m = 200 + 100 + 100 m; rest intervals - 10 + 5 s; c) 200 m = 100 + 50 + 25 + 25 m; rest intervals - 10 + 5 + 5 s; d) 100 m = 50 + 25 + 25 m; rest intervals - 5 s. It is used to work out the optimal schedule for passing the competitive distance. The first leg is usually half the distance; each subsequent one is either equal to the previous one or less than it;

7) "slide" (changing length of the segment). In such exercises, the length of the segment, speed, and sometimes rest intervals vary. Typical examples of "hills": a) 200 + 150 + 100 + 75 + 50 m; b) 4x400 m, rest intervals - 20 s + 4x200 m, rest intervals -10 s + 4x100 m, rest intervals - 10 s; c) 100 + 200 + 300 + 400 + 300 + 200 + 100 m, rest intervals - from 30 to 60 s, depending on the length of the segment; the speed in the second half of the series is higher; d) 2x400 m in 5 min 20 s mode + 4x200 m in 2 min 40 s mode + 8x100 m in 1 min 20 s mode + 16x50 m in 40 s mode.

Swimming only in water cannot prepare an athlete to achieve high results. In order to achieve outstanding results these days, it is necessary to devote a lot of time to strength training on land. The training uses exercises with weights and resistances, which are aimed at achieving a high level of special strength training and maintaining it.

The task of general strength training is: strengthening the muscular-ligamentous apparatus; education of the ability to show optimal efforts in a wide range of movements in unity with dexterity, speed, flexibility; harmonious development of the entire muscles of the athlete.

This division is not strict enough, since all modes, except for isometric, have various options for the work of a dynamic nature. However, clear differences in methodology, training equipment and effectiveness contributed to the spread of such a division and streamlined the process of strength training of qualified swimmers, and also gave rise to the selection of independent methods.

Isometric method. When using the isometric mode of muscle work, an increase in strength is observed only in relation to that part of the movement trajectory that corresponds to the exercises used. It should also be taken into account that the strength acquired as a result of

training in this mode does not apply to work of a dynamic nature and requires a period of special strength training aimed at ensuring the realization of strength qualities when performing movements of a special nature. When training in the isometric mode, the increase in strength qualities is accompanied by a decrease in the speed capabilities of athletes, which is reliably manifested after a few weeks of strength training. This requires a combination of strength work with speed exercises.

The isotonic method can be subdivided into two independent ones: concentric, based on the performance of motor actions with an emphasis on the overcoming nature of the work, and eccentric, which involves the performance of motor actions of a yielding nature with load resistance. When performing exercises in dynamic mode with traditional weights (for example, with a barbell), the resistance is constant throughout the entire movement. At the same time, the power capabilities of swimmers in different phases change significantly due to the change in the magnitude of the force application levers, and the maximum resistance of the muscles is experienced only at the extreme points of the movement amplitude.

Isokinetic method. The method is based on the mode of motor actions, in which, at a constant speed of movement, the muscles overcome resistance, working with maximum tension, despite a change in the ratio of levers or torques in different articular angles.

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