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Manifestation of the physical quality of strength

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Abstract: Portnov, on the other hand, considered the basic methods of increasing strength and training to be the orca of repeatedly lifting weights "to failure", with maximal strengthening, circular training methods, conjugate impact methods, interval, competitive and others. .

According to O.V. Kolodia and others, the level of strength manifestation in athletes depends on the physiological diameter and physiological characteristics of muscles, as well as the levels of excitation of the centers of the nervous system and the frequency of contraction of a certain muscle, the chemical activity of certain tissues and various other processes. is calculated directly and this state is the technique of performance in actions. H. Unter believed that muscles can show strength:

1. Without changing its longitudinal state (static, isometric mode).

2. It is determined by a reduction in length (overcoming, myometric mode).

3. When stretching (bottom, plyometric mode).

According to V. M. Andreyev, the strength of wrestlers depends on two important factors: the first; the physiological diameter of the muscles, and the second is surrounded by the properties of the nervous processes.

According to V. P. Filin, the level of manifestation of muscle strength depends on the level of strength development and the concentration of the nervous process that regulates the activity of the muscle apparatus. An important role is played by the regulation of autonomic functions, the ability of muscles to contract and their physiological diameter. Muscles can exert force without changing their length (isometric mode or static), without reducing their length (myometric mode or overcoming). Matveyev and A.D. The Novikovs demonstrated muscle strength as follows:

1. Carrying out without changing its length (static, isometric mode);

2. Implementation when it decreases (myometric mode, overcoming);

3. When it is extended (plyometric mode, bottom,) implementation.

Effective ways of developing the physical quality of strength have been expressed by different scientists in different ways. The analysis of literary sources shows that most of the authors of literature used the same methods to develop strength. Thus, O.V. We can take the maximal effort method as an example of how Kolodia and others used different methods to develop strength. It is characterized by the following exercises, during the training, it helps the participant to use his maximum strength in this lesson. For example, in barbell training, we need to lift a weight. It is 90-95% of the maximum.

Do 8-10 sets of these weights and lift them 1-3 times per attempt. Usually 2-4 exercises are included in one session. Rest up to 3 minutes between attempts. The value of maximal movement techniques is realized in improving intermuscular and intermuscular coordination.[63]

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The effect of the method of repeated movements is that with repeated lifting of unsatisfactory weights (40-80% of the maximum), muscles are gradually recruited due to the fatigue of motor units during contractions. It should be mentioned that in the last repetitions it was considered necessary to lift the maximum weight of the structure of the motor apparatus.

This method has the greatest effect on the development of strength V.M. Andreyev identifies two main methods of strength development: the first is dynamic exercises and the second is static exercises.

Dynamic exercises help a person to overcome the influence of forces (gravitational force, resistance of a partner, inertia). The nature of dynamic exercises can be different, for example:

a) is observed in relatively small loads (with repetitions until fatigue occurs);

b) with large (limiting and near-limiting) loads, it is performed 1-3 times until fatigue occurs. After a short rest, the exercises are repeated and continued;

c) when changing the loads, first of all, the exercise should be started with a light load, and then with an average load, and finally with a maximum load after the completed loads. There can be a different sequence from the maximum load of physical exercises (1-2 repetitions), and then with a lower load, but with more repetitions.

It helps to be able to resist any forces at a certain time during the performance of static exercises. It arises from the fact that they are able to meet the requirements of any position (base, hanging, corner) and hold it for a certain time, or they strive to move (lift) the weight from place to place to use it higher than their capabilities. Weights are selected according to the state of contractions of different muscles that correspond to their characteristics.

We can see that V. A. Vershin's thoughts reflect the fact that strength development occurs in the process of physical exercise. But it is used in special methods and tools for special development of muscle strength.

In this case, we can see 3 main methods. For example: the first is the "maximum effort" method, and the second is the "to failure" method. Third, we can get isometric movement methods.

In the method of maximum movements, it is based on the use of the development of the ability to show great muscle power through the improvement of special nervous system processes and training of the will. This method consists in the emergence of large and maximal strength with the help of short-term rest and repeated and specially selected exercises. Such exercises are usually characterized by maintaining the integrity of the coordinated structure of sports or their elements. In this case, they show maximum strength and want to learn.

The "failure" method used to increase muscle mass consists of performing exercises continuously until the correct movements are broken due to muscle fatigue. The structure of the movements can be more or less similar to the elements and parts of sports in which the athlete specializes. In this case, the power load is high or medium.

Isometric strength method is used to develop specific and absolute strength and affects muscle groups that carry out long-term static loading, for example: neck, back and arm muscles and others.

According to V.D. Evstratov and others, the quality of strength depends on the method of maximum movements (long, close, performing exercises with excessive weight), the method of repetitive movements (doing exercises with unlimited weights, "to failure") and the method of

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dynamic movements (performing the exercise) is developed, performed at high speed with weights of different weights.

Portnov, on the other hand, considered the basic methods of increasing strength and training to be the orca of repeatedly lifting weights "to failure", with maximal strengthening, circular training methods, conjugate impact methods, interval, competitive and others. .

E.P. Stepanenko gave the following methods for developing strength. Dynamic movement method. It creates the necessary conditions and opportunities to increase muscle strength by performing light and medium-weight exercises at maximum speed. If the number of repetitions in the first attempt is 15-40 times, do the exercises in a sequence and rest for 5-8 minutes in between. With this method, we will be able to strengthen not only the maximum strength, but also the ability to quickly manifest it.

Isometric strength training involves performing exercises with maximum muscle tension in a static mode. Exercises are repeated 3-5 times with maximum muscle tension for 4-6 seconds, resting for 30-40 seconds between them.

I.P. Zaletayev and V.P. Sheyanov uses the following methods to develop muscle strength:

Unconstrained weights method with a limited number of iterations. During the class, moderate strength exercises performed "to failure" are used alternating exercises for different muscle groups and body parts. At a low speed, there should be a rest interval of 2-4 minutes between repetitions.

It is combined with strength training and various exercises to develop flexibility and muscle relaxation. Initially, the effectiveness of strength training depends little on the amount of resistance. Therefore, a load equal to 40% of the maximum power is used. This method is the main way to develop strength in students. When physical fitness improves, heavy weight training is used.

A maximal movement technique is when the student overcomes or attempts to overcome maximal resistance, demonstrating maximal muscle movement for that condition. For example, lifting a barbell, pushing on uneven bars with additional weights, etc.

Weights of up to 80% of strength are used.

Skilled practitioners are in training

Dynamic movement method. It is common to operate with low weight, but at high speed. This method involves moving light objects at high speed for a short period of time (within 1-2 seconds). Naturally, such short-term work predetermines the same short-term tension of the neuromuscular apparatus. Therefore, the methods have a relatively small effect on the development of dynamic strength. A group of examples of such work is attributed to various throwing and percussion movements.

A.N. According to Vorobev, the following methods should be used to develop strength. This is the isometric method. Isometric exercises have become very popular in sports as a means of not only developing strength, but also actively restoring normal functions after injuries. The use of these exercises to develop strength is widespread, despite its relatively short duration. During sports practice, 5-10 seconds of maximum voltage up to 55-100% was applied. As the tension increases, the time to hold the pose decreases.

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Isometric (static method). It refers to the static maximum tension of various muscle groups lasting 4-6 seconds. In one lesson, the exercise is repeated 3-5 times for 30-60 seconds with rest after each stress.

The method of electrical processing of muscles. It is done during relaxation. With the help of special electrodes, muscle contraction occurs due to dosed electrical stimuli lasting up to 10 seconds. The greatest effect on the development of strength is three training sessions per week for beginner athletes and 4-5 sessions for skilled athletes.

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