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METHODS OF ENSURING THE HIGHEST LEVEL OF MUSCLE STRENGTH IN VOLLEYBALL PLAYERS

Kazakov Azat Radjapovich
Associate Professor of the Department of Sports Sciences
Nukus State Pedagogical Institute named after Ajiniyaz

Abstract:
The methods of ensuring the highest level of muscle tension during these trainings have been highlighted. In addition, it is reflected the possibility of training other qualities by training the quality of strength from physical qualities. In the process of educating the quality of strength of schoolchildren, learning theoretical knowledge and effective implementation of practical exercises through them, the collection of information on teaching theoretical and practical knowledge of the basics of sports training by using pedagogical technologies is reflected. new pedagogical technologies were used in his work.

Keywords: Strength capacity, muscles, maximum, training process, method of isometric attempts, method of isokinetic attempts, method of dynamic attempts, limit loads, technique of movements.

Introduction

It should be noted that this naming of methods is widespread in the theory and practice of strength training. Their advantage is their brevity. However, from a scientific point of view, this naming of methods for developing strength is not entirely correct, since the methods of maximum isometric and isokinetic attempts also belong to the class of repetition exercises. Dynamic muscle contraction is characteristic not only of the method of dynamic attempts, but also of many other methods.

The method of maximum attempts. This method is based on training with submaximal, maximum and supermaximal weights. Each exercise is repeated several times. The number of repetitions of the exercises, overcoming the limit

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and superhigh resistance in one attempt, that is, with a weight of 100% and more, can be 1-2, maximum 3 times. The number of attempts is 2-3, rest between repetitions in an attempt is 3-4 minutes, between attempts from 2 to 5 minutes. When performing exercises with resistance close to the limit (with a weight of 90-95% of the maximum), the number of repetitions of movements in one attempt is 5-6, the number of attempts is 2-5. The rest time between repetitions of exercises is 4-6 minutes. And between attempts is 2-5 minutes. The pace of movements is free, the speed is at least up to the maximum. In practice, there are different ways of this method, based on which there are different ways of increasing weights.

It should be borne in mind that limit loads make it difficult to control the technique of movements, increase the risk of injury and overtraining, especially in children and beginners. Therefore, it is the main, but not the only, method in the training of highly qualified athletes. It is used 2-3 times a week. Large weights are used, in some cases, once every 7-14 days. Exercises with loads exceeding 100% are performed with the help of partners or using special devices. This method is not recommended for children under 16 years of age.

The method of repeated maximum attempts is considered the main one for increasing maximum dynamic force without a significant increase in muscle volume. The athlete must be prepared in advance for its use. This method may be based on control tests conducted to assess the strength level of adolescents.

Control exercises, for example,

pulling the barbell from the floor;

lifting the barbell while lying horizontally;

sit with a barbell on your shoulders.

The method of repeated non-limit attempts. Meaning - repetition of non-limit external resistance until severe fatigue or "to the end". In each approach, exercises are performed without a break. 2-6 series are performed in one training session. 2-4 approaches in one series. The break between exercises is 2-8 minutes, between series 3-5 minutes. During the training, the magnitude of external resistance is 40-80% of the maximum. The speed of movements is not high.

When the number of repetitions with a large weight is small, mainly maximum strength is developed or a simultaneous increase in strength and muscle volume occurs, and, conversely, when the number of repetitions is large and the amount

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of weight is small, mainly endurance quality increases. When using this method, the effect of training is achieved at the end of each series of repetitions of exercises. In the last repetitions, the number of working motor units reaches a maximum, their synchrony is observed, and the physiological process becomes as if overcoming great resistance.

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There are three main ways of the “to the end” method:

1. Exercises are performed “to the end” in one workout, the number of approaches is not “to the end”.
2. Exercises are performed “to the end” in several attempts, the number of approaches is not “to the end”.
3. Exercises are performed “to the end” in each attempt, the number of approaches is “to the end”.

Although working in the “to the end” method is less energy-efficient, it is widely used in practice. It allows you to better control the technique of movements, avoid injuries, and promote muscle hypertrophy. Finally, this method is the only one for training beginners, since the development of strength does not depend on the magnitude of resistance. It is advisable to use it in cases where the magnitude of force plays a decisive role, and the speed of its manifestation is not of great importance.

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Isometric exercise method. It is characterized by performing short-term maximum loads. The duration of isometric loads is usually 5-10 seconds. The magnitude of the load can be 40-50% of the maximum, and statistical strength complexes should consist of 5-10 exercises aimed at developing the strength of different muscle groups. Each exercise is performed 3-5 times, with a break of 30-60 seconds. Rest before performing the next exercise is 1-3 minutes. Isometric exercises can be included in the training up to 4 times a week, it is enough to allocate 10-15 minutes for them. The complex of exercises can be used without changes for about 4-6 weeks, then it is updated due to changes in some initial conditions.

When performing isometric exercises, the position of the body or the angle of the joints is of great importance. Training at a large angle of the shoulder flexor joints produces little strength gain, but has a positive effect on the joints that are not being trained. Isometric tension has a greater effect on the growth of the trunk flexors at a joint angle of 900, compared to 1200 and 1500.

Isokinetic effort method. The peculiarity of this method is that when it is used, not the magnitude of external resistance, but the magnitude of the constant speed of movement is given. Exercises are performed on special simulators that allow you to move at different speeds. For example, in swimming crawl or breaststroke, throughout the entire amplitude of the stroke. This allows the muscles to work with a reasonable load throughout the entire movement. Strength exercises performed on modern simulators using the isokinetic method allow you to change the speed of movement of the joints from 0 to 200 in 1 second. Therefore, this method is used to develop various types of strength abilities - "slow", "fast", "explosive" strength. When using this method, warm-up exercises are not required, and this is how it differs from training with weights.

Dynamic effort method. Exercises are performed with small weights (up to 30%) at maximum speed or pace. It is used to develop speed-strength abilities - "explosive" strength. The number of repetitions in one approach is 15-25 times. Exercises are performed in 3-6 series, with a break between them of 5-8 minutes. The weight of the weight should be such that it does not cause a violation of the technique of movement and does not reduce the speed during the execution of the movement. For example, the best results were shown when using a 2 kg medicine

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ball to develop throwing power in water polo players, and 3 kg in javelin throwers.

"Intensive" method. Based on the intensive stimulation of muscle groups using a falling load or the kinetic energy of body weight. This method is also used mainly to develop the "damping" and "explosive" strength of various muscle groups. As an example, one can cite the exercise of jumping into a pit and jumping out to develop the "explosive" strength of the legs. The damping and the subsequent push-off from the ground should be performed as a single unit. The high efficiency of such an exercise, performed using the following method, has been proven. The exercise consists of "landing" from a height of 70-80 cm with slightly bent knees and jumping up quickly, with great force. Jumps are performed in series of 2-3 series, 8-10 jumps each. The rest time between series is 3-5 minutes. The training is carried out no more than twice a week. Personal weight is used as an additional weight. The transition from damping to jumping should be very fast, a break reduces the effectiveness of the training. There are several ways to use the repetition-set method to gradually develop muscle size.

1. 70-80% of the maximum weight is used: in one approach, the exercises are repeated 5-6 times. One series includes 2-3 approaches. Active rest between approaches is 4-5 minutes, between series - 6-8 minutes. Training consists of 2-4 series.

2. A series of three different approaches is performed:

1) weight 80% of the maximum, in the approach you should strive to repeat the exercise 10 times;

2) weight 90% - 5 times;

3) 92-95% - 2 times with breaks of 3-4 minutes.

3. Between four different approaches, 5-6 minutes. Performed with breaks:

1) weight 70% - 12 times;

2) weight 80% - 10 times;

3) weight 85% - 7 times;

4) 90% – 5 times. 8-10 minutes of training. 21 series are performed with a break.

4. The combination of static and dynamic work of the muscles is envisaged. In this case, the lifting movements are performed with a weight of 75-80%; in the lower position, a break of 2-3 s. is made. Then the overcoming movement is performed at maximum speed. The exercise is repeated 2-3 times in the approach.

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It is advisable to perform 2 series of 2-3 repetitions. The break between approaches is 4-5 minutes, between series 6-8 minutes.

5. As in the previous method, the muscles are supposed to work in a static dynamic mode. The weight is 70-80%. In the first part of the exercise, it is necessary to perform a flat isometric effort with a weight of 40-60%, then move on to a fast overcoming movement. It is recommended to perform 5-6 repetitions in one approach with short breaks; 3-5 approaches in the training, with a break of 4-5 minutes in the interval. Using the repetition-series method, performed in accordance with the specified procedure and requirements, a sharp increase in muscle volume creates the basis for the development of maximum force, manifested at low speed. This method is very effective in initial strength training. There are several different technological ways of performing exercises using the repetition-series method to increase muscle volume.

1. Weight 75-80%. In 10-12 repetitions, movements are performed slowly, until signs of severe fatigue appear. A total of 2-4 approaches are performed, with active rest in between for up to 2 minutes. It is advisable to choose exercises that affect 2-3 muscle groups in one workout.

2. Weight 60-70%. In 3-5 approaches, 15-20 repetitions are performed. Between approaches, a break of 2-3 minutes.

3. Weight 80%. In 3-5 approaches, 8-10 repetitions are performed, affecting one muscle group. Between approaches, a break of 2-3 minutes. In cases of severe fatigue, the break is extended to 5 minutes.

4. Weight 85-95%. In 4-8 approaches, 5-8 repetitions are performed with a break of 3-4 minutes in between.

5. Weight 85-90%, after feeling the signs of severe fatigue, 2-3 additional exercises are performed in the overcoming part with the help of a partner. It is advisable to perform 2 approaches with a break in the interval until you are ready for a new approach.

6. The same number of repetitions are performed, but the weight is lighter in the next approaches. For example: 70x10; 65x10; 60x10. 2 minutes break between approaches. This method helps to train small muscle groups that get tired quickly.

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