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FACTORS DETERMINING THE DEGREE OF DEVELOPMENT AND MANIFESTATION OF POWER QUALITIES OF CADETS

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Annotation: *Qualities of strength, their manifestation occurs as a result of the influence of the organism, it occurs on the basis of the qualities of mental, muscle, motor, vegetative, hormonal functions and other physiological systems of the organism. Derived from these, power qualities are a broader concept in scope than the simplified concept of "muscle power". Muscle strength is a developmental component of every movement activity. It can have a qualitative description, depending on the speed of manifestation, external resistance and duration of work.*

Keywords: *strength, physical qualities, vegetative, hormonal functions, muscle, Sports, Physical Fitness, pliometric order, isometric order.*

Muscle strength as an indicator of a person's physical capabilities is the quality of overcoming or resisting external resistance caused by muscle tension.

In cases where the qualities of strength are developing in the direction of active sports, it should be borne in mind that the effect of training depends on the strength at which the maximum is spent and the time of its manifestation. The technology of applying training tension in the development of strength qualities can be based on the manifestation of various possibilities such as the rapid or sluggish speed of training exercises against small or large external resistance in one - time, return, periodic or non-normal work from different initial-relaxed or tense States of the muscles.

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One of the important aspects that determine muscle strength is the way the muscles work. In the process of performing movement actions, muscles can show strength:

✓ when reducing its length (overcoming, i.e. myometric procedure, for example lifting a barbell lying down);

✓ in its stretching (lateral, that is, pliometric arrangement, sitting with a barbell on the shoulder or chest, for example);

✓ without changing the length (Holder, that is, isometric arrangement, for example, holding dumbbells in stretched hands, bent for 4-6 s);

✓ change in length and muscle tension (mixed, i.e., auxotonic arrangement, such as ascending to the rings while resting, stretching the arms while resting (“crest”), and holding the “crest”).

The first two procedures are characterized by dynamic muscle work, the third –static, and the fourth - statodynamic work. These routines of muscle work are defined by the terms” dynamic force “and” static force".

The highest magnitude of the force is manifested in landing performance, in some cases twice as high as isometric indicators.

In any order of muscle use, strength can manifest slowly and quickly. This is a description of their performance the force manifested in different movements in the landing order depends on the speed of movement and the force will also be greater as the speed becomes greater.

Under isometric conditions, the force is zero in which the force is much less than the magnitude of the force in the pliometric order. The muscles develop less force in the overcoming order compared to static and landing procedures. With an increase in the speed of movements, the magnitude of the manifested force decreases.

In sluggish movements, i.e., when the speed of movement comes close to zero, under isometric conditions, the force magnitude does not differ from the strength indicators.

At some times, the isometric mode of operation is observed in cases of forceful lengthening of the muscles in the side movements. This is manifested, for example, when jumping from high altitude to the ground in amortizing stages, as well as in other jumps in which it is necessary to launch the kinestic power of the falling object. In cases of forceful extension of muscle length within the framework of a combustible procedure, a force much larger (1.5-2) than that manifested in the isometric order of performance may manifest.

The possibilities of manifestation of muscle forces in the overcoming order are less than in the isometric and landing procedures. It should be borne in mind that the greater the speed of muscle contraction, the less pronounced and vice versa, that is, there will be an inverse proportional relationship between the manifested force and the force of muscle contraction.

In the technology of strength development, it is necessary to take into account the maximum strength, which is manifested in isometric conditions, as well as the peculiarities of the relationship between strength and speed in exercises with weights.

There is the following rule – a muscle that does not receive a load, contracts with maximum speed. If the weight or resistive force gradually increases, the muscle force will increase in line with the size (whether weight mass or resistive magnitude), but until a certain time. This condition comes when weight or resistance does not increase the strength of the muscles that are working as they enlarge.

As an example, a rubber ball and 0.5-1 kg.li we can bring the iron ball the power in firing the rubber ball will be less than the power in firing the iron ball. As the ball weight is gradually weighted, the force exerted on the body becomes independent of the ball weight, and the moment comes when the isometric force in the joints is determined by the degree of development.

The isotopic order of muscle performance is characterized by a contraction of the muscle under the influence of constant tension or external

loading. In this order, the lower the load, the greater the speed of muscle contraction, or the opposite can happen.

This procedure is typical for exercises to overcome external resistance (dumbbells, barbells, crates, weights on block devices). The specific peculiarity of exercises in the isotonic order is that the magnitude of the force exerted on the projectile changes according to the trajectory.

When performing exercises performed with external weights, it should be remembered that in exercises performed on a dumbbell or barbell with high speed, the maximum strengthening of the muscle in the head of movement gives speed to the projectile. And the next work is performed mainly against the background of the emerging inertia of the projectile movement. In this regard, exercises of this type of weighting do not give the expected effect for the development of speed, dynamic strength. If these exercises are performed at a slow or medium pace in one rhythm, as well as taking into account the amount of weight, the maximum strength and growth of muscle mass will effectively develop. In general, the exercises performed with dumbbells and barbells are easy to perform as they are comfortable for everyone, including they will be very useful for general physical development.

In accordance with the given regimes and the peculiarity of muscle activity, the qualities of human strength are distinguished into two types;

1. Qualities of personal strength, manifested in conditions of static and sluggish movements.

2. The qualities of speed - strength, which are manifested in the performance of especially fast movements, both overcoming and burning, or in the rapid transition from landing to overcoming work.

The qualities of a person's personal strength are manifested in holding the weight that has reached the norm for a certain period of time with the maximum strengthening of the muscles (static peculiarity of work) or moving objects of great weight.

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In the last case, the speed hardly matters, while the movements reach their maximum. (the focus of the work is sluggish, dynamic on sports terminology). In accordance with this peculiarity of work, muscle strength can be static and sluggish dynamic.

Speed-strength qualities are manifested in situations where, in addition to strength, the speed of movement is also necessary.

In this case, the higher the external weighting, the stronger the description of the movement the less the weight, the faster the movement.

The forms of manifestation of speed - strength qualities depend on the description of muscle strengthening in one movement or another. This character manifests itself in an increase in power in different movements, in its magnitude and in the speed of developing its duration.

An important type of Speed - Force qualities is the" blast " force. The power of the" explosion " is the qualities of the manifestation of high indicators of strength in less time.

It is important in sprinter running start, shot put, boxing and other types.

As you can see, the master of sports not only has a high degree of manifestation of strength, but most importantly he achieves a high magnitude of strength in a very short time.

The components of the bursting action are three, determined by the following peculiarities of neuromuscular activity:

High muscle strength, the quality of the rapid demonstration of external movement at the onset of muscle strengthening (starting force), the quality of the growth of working movement in the process of accelerating the mass being excited - accelerating force. As it turned out, these peculiarities are talkative to each person to one degree or another, regardless of his age, gender, activity in sports, type of movement activity.

To show high strength, the muscles need time after 0.3 seconds from the start of the stopped movement as determined, the muscle will show a strength equal to 90% of the maximum. At the same time in sports there are a lot of

movements that do in less than 0.3 seconds. For example in the strongest sprinters 100-60 M/s to the pre-run thrust, in the long jump 150m/s “fosbyury-flop” method 180m/s in the high jump, in the ski spring 200-180m/s, in the javelin throw 150m/s.

In these cases, a person does not have time to show maximum strength. Therefore, the leading factor of power qualities is not the magnitude of the manifested force, but its growth rate, that is, the force gradient.

This can be evidenced by the decrease in the time spent on spring-throwing movements, pushing the core, running, jumping pushups as athletes ' qualifications increase.

Thus, an increase in maximum strength in speed - strength exercises may not lead to an improvement in the result. So, athletes with low strength indicators, but high gridient indicators, can win an opponent with larger strength opportunities.

The greater strength and lower strength gridient in a single athlete is the opposite while in a second athlete, the higher strength capabilities of the power gridient is not the greater. In the long duration of the movement, when both athletes have time to show their maximum strength, the first athlete shows an advantage. The advantage is shown by the second athlete if the execution time is too short.

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