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Physiological Characteristics Of Physically Exercising People In The Post-Stroke Period.

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ABSTRACT

The development of stroke causes a number of irreversible disorders in the brain, which requires great attention to the rehabilitation process of such patients. A very effective means of rehabilitating these patients is considered to be various physical activities that help to improve the oxygen supply of the tissues. Their effectiveness is based on ensuring the acceleration of blood flow in the brain, which improves the flow of all the necessary nutrients into it, including oxygen. It should be remembered that physical exertion should be moderate. Older people need to limit such physical activities, but you can not completely abandon physical training. In any case, in such a category of patients after a stroke, it is always necessary to carry out rehabilitation actively to the fullest possible recovery of cognitive and motor functions of the body. It sometimes takes years. In rare cases, recovery from a stroke goes quickly and after a couple of months the patient can return to his work. To achieve the fullest possible rehabilitation in post-stroke patients, both passive and active physical exertion, as well as rational mental training aimed at stimulating the nervous tissue and enhancing the nervous-muscular transmission, should be applied simultaneously. The success of the rehabilitation of post-stroke patients is largely due to the consistency and rationality of the scheme for the use of rehabilitation measures in each particular patient.

Keywords: sport, health, rehabilitation, stroke, physical activity.

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INTRODUCTION

The body of any mammal has a large margin of safety and resistance to the adverse effects of any nature [1, 2]. This is ensured by the launch of various adaptation and compensatory mechanisms, as well as the activation of the systems integrating the organism, including blood [3-6]. In spite of this, different pathologies often arise in the human body [7-10]. Very often it is associated with vascular disorders [11, 12]. A serious proportion among them has a stroke, which, if not fatal, can lead to pronounced negative consequences that require serious and consistent rehabilitation [13]. One of its options is physical training.

It is recognized that for this you can not visit the hall, and it is quite enough to make daily walks at a distance of several kilometers [14, 15]. Rehabilitation becomes even more effective if a complex of exercises is added to walking to improve the oxygen supply of the tissues [16]. Their effectiveness is based on ensuring the acceleration of blood flow in the brain, which improves the flow of all the necessary nutrients into it, including oxygen [17, 18]. It should be remembered that physical exertion should be moderate [19]. Statistics state that the maximum stroke occurs at the beginning and end of the garden season [20]. Older people in this period of time experience serious physical exertion, which often becomes the main cause of the development of this disease. All this makes the problem of rehabilitation of such patients very acute.

Objective: to consider the dynamics of the functional characteristics of a person in the post-stroke period against the background of regular physical exertion.

BASICS OF POST-STROKE REHABILITATION

The most important after a stroke is the first month. At this time, a person undergoes intensive therapy to restore blood flow in the brain, the rheological properties of blood, and also to avoid the development of hypoxia. At this time, special attention should be paid to the use of antioxidants, as well as antihypoxants [21].

Then begins the second phase of recovery after the disease. This is where you should start to play sports. This is due to the fact that moderate exercise helps to restore muscle tissue, which is very important after a stroke [22].

Of course, you need to be very careful in going to the gym and doing bodybuilding or another type of fitness at this time. At this time, a set of specially designed exercises will be useful. The load should increase gradually [23, 24]. Classes should be regular, otherwise they will not be able to bring positive results [25].

It should consult with the doctor who will select the desired load. This is very important, because the muscles have been inactive for a long time and it is necessary to gradually restore their working capacity [26]. First, you should do it under the supervision of a specialist [27]. In consequence, simple exercises can be performed independently.

It is desirable to spend more time in the fresh air [28]. This will ensure a complete oxygen supply of the cellular structures of the brain [29]. In this case, they will have the most positive impact on the work of the nervous system. Moderate exercise helps to reduce excitability, increases the body's resistance to stress [30]. In addition, physical exercise after a stroke has a positive effect on the work of the heart. This leads to an increase in overall endurance and improved blood flow in the tissues [31]. Normalization of the respiratory system is also developing. This is due to an increase in the useful volume of the lungs. As a result, a person can consume more oxygen. Gradually, with regular loads, dyspnea disappears and a general strengthening of the body is noted [32].

Gymnastics after a stroke can have a number of extremely positive effects on the patient's body. It preserves the mobility of the joints and normalizes muscle tone, and also prevents the formation of pressure sores in the area of the feet, back and those places on which the greatest pressure. Gymnastics helps to restore the work of brushes. It also helps relieve the symptoms of paralysis by restoring the functions of the limbs and the body. Removes hypertonicity of muscles, normalizes the work of affected muscles [33].

BASICS OF PASSIVE LOADS

Before performing a set of passive exercises, massage is performed for post-stroke patients. It is based on a number of principles. Performed a physical impact with light stroking circular movements. Massage is done starting from the upper parts (head, collar area). Then go to the feet. The impact on the back is carried out with tapping movements. The pectoral muscles are affected, starting from the center of the chest and moving to the armpits. Hands and feet are massaged in this sequence. Hands: shoulders, forearms, wrists, fingers. Legs: buttocks, thighs, legs, feet, toes. Massage begins on the healthy side (left, if the right is affected and vice versa) [34].

After completing the massage, you can begin therapeutic physical training at home.

The following exercises are used for this [35]:

- Take a rounded object, place it in the patient's hand. Help hold the object in your hands. Such exercises for fine motor skills of hands should be performed more often, they will help restore the work of the hand and fingers.
- Bend and straighten legs. It is necessary to make movements so that the limb straightened itself, having gone on the surface of the bed. Even in passive exercises, patient participation is important.
- Squeeze and unclench the affected hand.
- Raise and lower the arms (movement occurs at the shoulder joint).
- The leg or arm should be hung on a towel or elastic bandage. Now you need to make rotational movements, as well as move the limb to the right and left [36].

Passive exercises for recovery after a stroke are designed to prepare the patient for a complete exercise. They are performed 2-3 times a day. The duration of the exercise is about half an hour.

Basics of active physical activity

To start classes in the acute period.

- Hand hold the remote object located behind (the back of the bed will do). On the "one" account, "pull up", straightening the legs and arms as much as possible. Then return to the original position.
- With an effort to straighten the affected arm, starting with the fingers, then moving to the hands and forearms. Using a tire and elastic bandage, fix the limb in a similar position for half an hour. This exercise allows you to restore the function of the hands after a stroke.
- "Slip." Performed with effort. Lying on the bed, they are alternately trying to bend their knees so that the feet do not come off the surface of the bed. It is performed 8-12 times.
- Perform alternate head turns left and right. Exercise is necessary to relieve hypertonicity of the neck muscles.
- Lie flat. Hands at the seams. The body is relaxed. According to the "one" account, bend the right arm at the elbow, fix it in that position for a second or two. Then lower the limb on the bed. On a score of "two," bend the other arm. In addition to the above exercises for the hands, you can perform its complicated version. Suspend the limb with a bandage and perform all sorts of movements: flexion, extension, rotational movement.
- Bend your fingers into a fist and straighten back. After a stroke, the function of the hands deteriorates dramatically. Thus, fine motor skills will be restored and gradually the fingers will return to normal. To restore the power characteristics, it is permissible to use a ring expander [37,38].

Rehabilitation after a stroke should be comprehensive and systematic. Therefore, there can not do without mental exertion. They help restore damaged neurons, train memory and restore normal thought process. With their help, patients gradually overcome aphasia after a stroke. In addition, post-stroke mental exercises help normalize speech functions [39,40,41].

CONCLUSION

To return to a full-fledged social life after a stroke, it is necessary to conduct active rehabilitation until the maximum possible recovery of cognitive and motor functions of the body. This process can sometimes drag on for years. In rare cases, recovery from a stroke goes quickly and after a couple of months the patient can return to his work. To achieve the fullest possible rehabilitation in post-stroke patients, passive and active physical exertion should be used, as well as rational mental training aimed at stimulating the nervous tissue and enhancing the nervous-muscular transmission. The success of the rehabilitation of post-stroke patients is largely due to the consistency and rationality of the scheme for the use of rehabilitation measures.

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