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Influence Of Physical Exercise On The Activity Of Brain Processes.

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ABSTRACT

Physical exercises are an effective means of stimulation of development of the personality, promoting the directed realization of social potential and individual abilities. It is noticed, the physical activity that moderated, not destroying also leads to bright stimulation of internals of an organism that in addition stimulates work of cells of a brain and accelerates development of synapses. It is known that influence of physical activity on a brain of the person is connected with strengthening of its vessels, strengthening of production of serotonin and dopamine, acceleration of processes of regeneration in nervous cages, activation of a hypothalamus and cerebral cortex. Increase in aerobic activity helps to brake senile dementia, improves verbal memory and ability to remember words and phrases. Power trainings positively influence ability of a brain to planning and regulation of a conscious activity. Loadings with difficult coordination of movements help to concentrate attention better. It is possible to achieve the greatest positive effect for a brain, combining different types of activity, for example aerobic and power loadings. Regular physical activities promote increase in rates of development of the intellectual qualities which are of great importance for success of any cerebration. Use of physical activity in the system of the higher education is very effective remedy of intellectual development of students. Increase in physical activity at young people increases activity of thought processes due to mobilization of processes in a brain. In this regard application of regular physical activities for students should be recommended as it is possible more widely for an intensification of their intellectual development and increase in efficiency of their vocational training.

Keywords: brain, physical activities, muscular activity, nervous processes, health, physiology.

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INTRODUCTION

Physical exercise is an effective means of stimulating the development of personality, contributing to the directed realization of social potential and individual abilities [1,2,3]. Physical education and sports activities at any age causes a bright dynamics of the development of intellectual abilities [4,5], has a great influence on the formation of the psyche, psychophysiological qualities and contributes to the optimal social formation [6,7].

Technologization of society increases information volume, accelerates a rhythm of life and raises load of mentality of the person [8,9]. All this leads to decrease in its physical and intellectual working capacity [10,11], reducing the general efficiency of activity of the person [12,13]. It is possible to overcome this situation regularly, experiencing feasible physical activities. They can help to create the purposeful, initiative personality with accurate living position and clear outlook [14]. It is possible to realize it during training in various physical exercises and the subsequent their regular performance. It provides growth of mental abilities, activity of thinking, improves memory, firmness of attention and increases the general working capacity [15]. Considering that in the program of training of students in higher education institution there are no concrete forms and specific development tools of their mental abilities [16], physical exercises during the occupations physical culture can be considered as necessary means of stimulation of mental qualities and optimization of the emotional and strong-willed sphere of the young man [17,18].

It is noticed that the moderate physical activity causes bright stimulation of internals that strengthens work of cells of a brain and accelerates development of neural networks [19,20]. The main aspects of this process still cannot be considered found out finally that demands carrying out synthesis of the known information for continuation of purposeful observations [21]. In this regard in work the object is set: to cover basics of the known information on influence of regular physical activities on brain processes at the person.

Physical exercises exert strong impact on a brain and on a body. They operate mood, level of vigor and attentiveness. It is known that during physical activity blood flows to a brain, bearing in itself nutrients and oxygen. Therefore moderate physical activity stimulates work of nervous cells of a brain [22].

In the course of scientific research it was revealed that the sport contributes to the development of dendrites not only those sites of a brain that are responsible for physical activity, but also on areas which are responsible for training, thinking and memory [23]. Growth and development of nervous cages and their terminations are responsible for maintaining mental abilities of the person. For this reason the moderate physical activity prolongs youth of a brain [24]. There is an opinion that the regular physical activity promotes synthesis of new stem cells which update and rejuvenate tissues of a brain and an organism in general [25].

With age blood vessels lose the elasticity. And first of all vessels which supply a brain with blood [26] suffer. As a result supply of a brain with oxygen worsens that leads to decrease in mental capacities [27]. According to results of researches of the German Federal union of cardiologists, aged people of 55-75 years who played sports carry out cognitive tests, than unexercised people better. It is connected with the fact that sports activities maintain health and elasticity of blood vessels, promoting maintaining operability of a brain for many years [28].

People who lead active lifestyle acquire easier and remember new information. At physical activities heartbeat becomes frequent, respectively more blood gets into a brain [29]. Almost always the level of cognitive abilities increases, approximately by 15.0% right after the training [30]. In this regard the minimum time of trainings necessary for improvement of work of a brain – 30 minutes three times a week [31]. Besides, trainings increase ability of a brain to concentrate. During performance of exercises of people not only concentrates on a certain task, but also controls technology of exercise. At their performance it is very desirable to concentrate on a breath exhalation [32].

Physical activity can help to counteract depression. This is due to the production of serotonin and dopamine during training. In addition, training helps a person to gain a sense of control over his life [33-35].

Physical activity increases the attention. Therefore, doctors often recommend for children with attention deficit disorder and hyperactivity. This is an alternative medical treatment, because sport helps the brain to form the ability to sequence, ability to prioritize and develop excerpt [36].

Interesting is the fact that anaerobic exercise lead to an increase in the size of the hypothalamus and cerebral cortex. They are responsible for memory and learning ability. Strength training such effect does not have, as their action aims to increase your heart rate and focus on a specific exercise [37,38].

People going through a creative recovery immediately after workouts. This effect can last for several hours. Physically active people offer a more interesting idea at work or school than those who lead a sedentary lifestyle. This effect is due to the fact that training contribute to the production of serotonin. This is a neurotransmitter in the brain, a substance that transmits impulses to the brain between nerve cells and is responsible for self confidence and causes a surge of strength.

Of great importance is the fact that physical activity also affects mood [39]. People who exercise feel happier and more emotionally stable. They have reduced anxiety and no depression [40]. This is because in addition to serotonin, physical activity contributes to increased production of dopamine. This substance is responsible for the emotional state [41,42]. Dopamine supports brain and heart function, controls body weight, increases efficiency and improves mood. Regular exercise is the key to keeping dopamine at a normal level [43,44].

CONCLUSION

The effect of physical activity on the human brain is connected with the strengthening of its vessels, increasing the production of serotonin and dopamine, acceleration of regeneration processes in the nerve cells, activation of the hypothalamus and cerebral cortex. It is noticed that the increase in aerobic activity helps to slow dementia and improve verbal memory, ability to memorize words and phrases. The greatest positive effect for the brain it is possible to achieve by combining various types of activity, such as aerobic and weight training. Regular physical activity contribute to higher rates of development of intellectual qualities that are of great importance for the success of any mental activity. The use of physical activity in higher education is a highly effective tool of intellectual development of students. In this context, the use of regular physical activity among students should be encouraged as widely as possible for intensification of their intellectual development and improving the efficiency of their training.

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