

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Regular Muscular Activity In Maintaining The Optimum Of Human Physiological Parameters In Conditions Of Increased Mental Stress.

Makhov AS, Medvedev IN*.

Russian State Social University, st. V. Pika, 4, Moscow, Russia, 129226

ABSTRACT

The optimal functioning of the body is associated with the harmonious development of the main functional parameters of the vital organs. This is largely due to the high performance of internal organs and the body as a whole. Performance is divided into mental and physical. The mental performance of a person is the ability to perform a certain amount of work that requires significant activation of the neuropsychic sphere. Physical performance of a person is the ability to perform the maximum possible amount of physical work due to the activation in the first place of the musculoskeletal system. Tense mental work is often accompanied by involuntary contraction and tension of skeletal muscles that have no direct relation to the implementation of mental work. At the same time, mental performance largely depends on the overall physical performance of the whole organism. It depends on the state of psychophysical qualities, including general endurance, emotional stability, speed of mental activity, ability to switch and distribution, concentration and stability of attention. Physical activity is an important natural regulator of nerve processes. Adequate physical activity in the process of individual development provides an increase in the level of reserve capabilities of a person. As a rule, people engaged in physical culture and sports solve intellectual problems more effectively, they develop mental fatigue more slowly and their working capacity is restored more quickly due to the great effectiveness of their recovery processes in the nervous system.

Keywords: sport, muscular load, functional state, improvement, development.

**Corresponding author*

INTRODUCTION

The optimal functioning of the body is associated with the harmonious development of the main functional parameters of the vital organs [1]. This is largely due to the high performance of internal organs and the body as a whole [2,3]. It is accepted to call human ability to form and maintain his body in working condition, while maintaining the optimum physiological functions for a high level of labor productivity of any activity. The mental performance of a person is the ability to perform a certain amount of work that requires significant activation of the neuropsychic sphere [4]. Human physical performance is the ability to perform the maximum possible amount of physical work due to the activation of the locomotor system in the first place [5].

With active mental work, to which it is customary to refer work related to the reception and processing of information and requiring, predominantly, the voltage of the sensory apparatus, memory, activation of thinking processes and emotional sphere. There is a strong excitation of the brain in a relatively small area of the nerve centers. This often causes the rapid development of fatigue, tension in the sense organs while limiting motor activity [6].

Intense mental work is often accompanied by involuntary contraction and tension of skeletal muscles that have no direct relation to the implementation of mental work [7–9]. At the same time, mental performance largely depends on the overall physical performance of the whole organism. It depends on the state of psychophysical qualities, including general endurance, emotional stability, speed of mental activity, ability to switch and distribution, concentration and stability of attention [10-12]. It is known that high physical activity is an important condition for the normal development of not only the body, but also the mind. That is why physical education should be given great attention to people of mental labor. This can help to overcome the consequences of a long stay in a forced working posture, in which the muscles keep the body in a particular state and for a long period of time [13]. In this regard, the work was set a goal: to consider the possibilities of physical training in terms of harmonization of the physical and mental state of a person.

It is known that physical culture and sports are an effective means of the general development of a person, strengthening his health. They undoubtedly influence various aspects of human life: authority and position in society, labor activity, the structure of intellectual characteristics, aesthetic ideals and value orientations [14,15]. Physical culture and sports provide each member of society with the broadest opportunities for development, approval and expression of their own "I", for empathy and participation in sports action as a process of creativity, make us happy about victory, upset defeat, reflecting the whole range of human emotions, and cause a sense of pride in the infinity of potential human capabilities [16,17].

Physical activity is of paramount importance for the normal course of physical and mental processes. It is very important for the activity of the central nervous system and the work of the human musculoskeletal system [18, 19]. Skeletal muscles contain specific proprioceptors, which, with muscular contractions based on the feedback principle, ensure the transmission of stimulating impulses to the brain [20]. Therefore, the state of many functions of the central nervous system depends on the activity of the muscles [21]. On the one hand, impulses from proprioceptors signal to the brain about the realization of the committed movements [22]. On the other hand, they increase the overall tone of the cerebral cortex. As a result, the overall functional ability of the whole organism increases [23,24]. This is due to the fact that many people think better when walking than in a sitting position. It is known that speakers tend to accompany their speech with gesticulations, and actors prefer to learn their role during walks [25]. This observation shows that the systematic involvement of the muscular system in motor activity has a huge impact on the entire body, stimulating the intellectual activity of a person and increasing the productivity of his mental labor [26].

It is known that physical exertion does not have a selective, but a holistic effect on the body involved. The organic basis for the interrelation of these spheres is the unity of the physical and mental development of a person. This is due to the fact that in the course of regular muscular activity in humans, visual, tactile, musculoskeletal and vestibular sensations and perceptions are activated, and motor memory, thinking activity, will and clarity of the mechanisms of regulation of mental processes develop [27-32].

This is due, firstly, to the fact that physical exercise is put before a person a variety of problems (planning, monitoring, strategy selection), and, consequently, induce a person to acquire the experience of

solving them. In addition, the background physical activity is an activation of deep and complex mechanisms, based on the close relationship of psychomotor and intellectual [33,34].

There are observations on the impact on a person's physical exercise emotional stress [35]. Was seen their positive role as a means of preparation for the difficulties [36]. Confirm this view of the data that regularly exercising people have higher level of social adaptation and resilience to stresses than not training [37]. Also noticed that some people, consciously avoiding regular physical activity, considering them unpleasant [38]. They usually have low social adaptation and poor resistance to stresses [39].

Studies of the emotional state of those engaged in physical culture have shown that feelings of joy, excitement and satisfaction are more often experienced from playing sports and outdoor games. At the same time, martial artists often lack the perception of the spiritual side of movements, but they show aggression, rage, cruelty, pride. While relaxation, lack of aggressiveness, anger, cruelty occurs during the lessons of choreography [40].

In the study of the emotional realms of physically trained and unprepared people. It was found that the level of aggressiveness, frustration and rigidity depends on the level of physical fitness. At the same time, there is more evidence that with an increase in the development of motor qualities through targeted physical exercises, the level of aggressiveness, frustration and rigidity more often decreases. This creates a solid foundation for the formation of a harmoniously developed personality [41].

CONCLUSION

Physical activity is an important natural regulator of life processes in the body. Adequate muscle load in the process of individual development provides the increase of level of reserve possibilities of the person. As a rule, persons engaged in physical culture and sports, spend less time on mental tasks, they slower the phenomenon of mental fatigue and recovered faster performance due to the high efficiency of the adaptive processes in the nervous system.

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