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HEALTH-IMPROVING EFFECTS OF PHYSICAL ACTIVITY FOR STUDENTS

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The article considers mechanisms of the health-improving effects of physical exercises on a human body in the context of optimal physical activity. The balanced combination of physical and intellectual activities for maintenance of the adequate state of students' health is estimated.

Keywords: *physical exercises, physical activity, students.*

The basis of physical activity of the person is physical exercises — the physical actions performed for the purpose of acquisition or improvement of physical qualities, abilities and movement skills. Personal physical activity has various manifestations, but in any of them it allocates two components: motor and vegetative (changes in internal organs) (fig. 1):

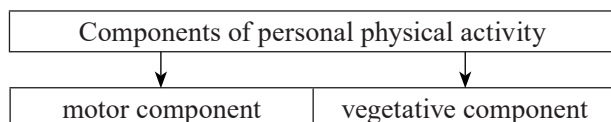


Fig. 1. Components of personal physical activity

Due to regular application of physical exercises the special condition of a human body — “fitness” which is characterized by the following signs is formed: coordination of various physical systems is improved, capabilities of various physical functions and systems raise (fig. 2).

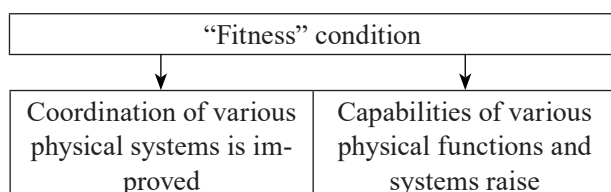


Fig. 2. Characteristics of «fitness» condition

Action — one of essential conditions of normal function of our organism. Action regulates all physical functions and is one of the major factors at treatment of various sick conditions. Under the influence

of systematic and correct use of physical exercises sick organism undergoes various changes promoting more effective improvement. The following are the groups of mechanisms of various beneficial physical exercises [4. P. 199]:

- restorative physical exercises;
- nutritional physical exercises;
- compensatory physical exercises;
- normalizing physical exercises (fig. 3).

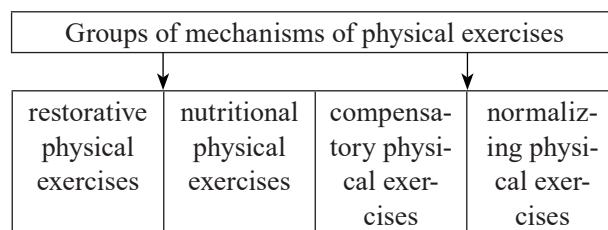


Fig. 3. Groups of mechanisms of physical exercises

External environment is the source of the elements that are essential for the development and life-sustaining activity of any organism. At the same time, it is a source of certain excitators such as solar radiation, temperature and humidity, pestiferous industrial exposure and so on. In this case, physical exercises can become some kind of a regulator that provides control of important processes and sustains the balance of internal environment. That is why, physical exercises help to keep healthy, while the lack of physical activity negatively affects the functions of cell cooperation, decreases defensive ability and multiplies the risk of various diseases [3. P. 144].

Physical and intellectual work is an essential part of human life and activities.

Physical work is a life-sustaining activity the peculiar features of which are being defined by aggregate factors that differentiate one kind of activity from another due to certain climate, industrial, physical, informational and other factors.

Intellectual work is a transformation of conceptual model of reality in human conscience through creating new notions, opinions, conclusions and as a result — hypotheses and theories. Intellectual work has various forms which depend on the type of conceptual model and intentions of a particular person (these conditions specify intellectual work) [1. P. 35].

One of the most important individual characteristics is intelligence. Its characteristic feature and main condition is intellectual ability that is being developed during lifetime. Intelligence can be seen in cognitive and creative activities. It includes gaining knowledges, experiences and ability to apply those. Intelligence is a physiological feature that consists of ability to adapt to new situations, ability to learn from experience, to understand and apply abstract concepts, and to change environment using these knowledges.

Another important individual characteristic is emotional and mental determination, temper and personality. The ability to control personality formation is achieved by means of training, exercise and up-bringing. Systematical physical exercises and especially sport training is good for physiological functions and also is beneficial for intelligent and emotional stability in the context of stressful environment since childhood.

Intellectual ability is less affected by unfavourable factor if means and methods of physical culture are systematically applied (for instance, gymnastics, recreation and alike). Study period is intense and requires serious intellectual and emotional stress. Strained working posture when muscles holding body in a certain position and are tensed for a long time; often violation of work-rest regime; inadequate physical activity — all that is mentioned above can become a reason for exhaustion which tends to grow and lead to excessive fatigue. To prevent this it is essential to change activities periodically. The most effective type of recreation during intellectual activity is moderate physical activity or physical exercises [6. P. 111].

Physical exercises considerably influence positive change in intellectual ability of first grade students and to less extend of second and third grade students. First grade students get exhausted more easily during study period due to the process of university adapta-

tion. That is why, for them physical exercise is one of the most important adaptation tools for university life and study.

Important preventive measure is also individual physical exercise of students during the day routine. Everyday morning gymnastics, walking or jogging outside is beneficial for overall well-being, myogenic tonus, blood circulation and respiratory metabolism which are good for development of students' intellectual ability. Recreation is also important during vacations. Students that spent vacations in a sport camp have higher working ability at the beginning of the school year.

However, over-intensive physical or intellectual activity, increasing informational traffic as well as simultaneous intensification of various activities leads to a particular state of the organism called exhaustion.

Exhaustion is a functional state that temporary appears due to the influence of long-lasting and intensive work and reduces productivity. Exhaustion is marked by the decrease of stamina and muscle force; physical coordination deterioration; same amount of work requires more energy; information processing slows down; memory impairment appears; concentration and refocusing as well as conceptual lean becomes difficult. Exhaustion is characterised by fatigue and at the same time it is a signal of possible consumption and a protective biological mechanism that prevents over-exhaustion. Physical exhaustion that appears during physical exercise is also a stimulus that mobilises the hidden reserves of organs and systems of the organism as well as reconstructive processes.

Exhaustion appears because of physical and intellectual activities. Systematic work regardless incomplete recovery, unsystematic work management, excessive neuropsychic and physical strain can lead to over-exhaustion and accordingly to over-stress of nervous system, exacerbation of cardiovascular diseases, hypertensive and peptic ulcer disease same as decrease of self-protective functions of the organism. Intellectual exhaustion is especially dangerous for psychological health because it is connected to ability of the central nervous system to work with overloads at length. All that finally can lead to the development of protective inhibition and co-ordination of vegetative functions breakdown.

Usually organism activates processes of recovery after termination of physical activity. Recovery processes are marked by gradual transfer of physiological and biochemical functions to its original state. Time

that is necessary for recovery of physiological status after particular work is called recovery period.

Functions of various systems of organism don't recover simultaneously. For instance, after long jogging exercise the first parameter to transfer to its original state is external respiration (its intensity and depth); after some hours heart rate and blood pressure also stabilize; while sensomotor reactions indices transfer to its original state after about a day or more after jogging; the recovery of basal metabolism of long-distance runners takes up to three days after the exercise [2. P. 165]. In order to intensify the process of recovery, sportive practice uses recreation aka switching to other groups of muscles training or changing the regime of muscle work. Exhausted limb recovers faster not during passive rest but during exercising another limb.

Rational combination of physical activity and rest leads to activation of recovery processes. Such factors as hygiene, nutrition, massage, biologically active substances (vitamins) can be seen as additional means of recovery.

Therefore, systematic physical activity leads to normalisation of intellectual, psychological and emotional spheres of life. Organism becomes more resistant to various psycho-emotional and psycho-physical stress.

As a result, it provides a human being with good working ability that helps to fulfill biological and social functions. Systematic muscular activity forces all systems of the organism to work intensively which increases functional abilities of a human being and raises resistive power of the organism towards adverse effect of environment.

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Оздоровительные эффекты физической активности у студентов

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В статье рассматриваются механизмы оздоровительного воздействия физических упражнений на организм человека в условиях оптимальных физических нагрузок. Оценивается сбалансированное сочетание физической и интеллектуальной деятельности для поддержания адекватного состояния здоровья студентов.

Ключевые слова: физические упражнения, физическая активность, студенты.

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