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## Locomotor Activity as the Leading Factor of Psychophysical Preparation of Young Students

### Abstract

The article presents data on the current state of health, physical preparedness, motor activity of students in non-sports profile higher education establishments. It was found that low levels of physical condition of students is determined by a number of factors, among which, the lack of their motor activity, as well as non-rational approaches of the governing bodies and the administration of some higher educational establishments to organizing teaching and extracurricular physical training of future specialists are the major ones. It contains data relative to the main functions of motor activity. The basic provisions of the letter of the Ministry of Education and Science of Ukraine of 09.25.2015 №1 / 9–454 “Regarding the organization of physical education in higher education”.

**Keywords:** physical activity, students of higher educational establishments, physical education, psycho-physical formation.

### Introduction

The current state of health of the population of Ukraine in general, children and young people in particular, is a significant challenge for the society and the state and, without exaggeration is a real threat to the security of humanity ([8], p. 215).

The data of the actual material of the World Health Organization ([5], p. 153) shows that the average life expectancy in the country is 67.5 years (61.7 years for men, and 73.4 years for women), that is 11,7 years less than in the economically developed and socially prosperous European countries ([7], p. 109).

The situation is critical among the young generation, especially students. In the last 5–6 years, in Ukraine, the number of students with deviations in health

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outcomes and referred to special medical group increased more than 3 times ([6], p. 114).

One of the main factors of poor health and physical fitness of the majority of young people is the lack of physical activity. Studies show that the lack of motor activity of young students is about 70% ([6], p. 115; [7], p. 110).

According to modern concepts, physical activity should be considered a natural, evolutionary factor due to bioprocesses that determines the development of the body and not only provides its adaptation to the environment, but also the optimization of vital activity ([9], p. 79).

In childhood, physical activity appears in the natural biological needs of the growing organism. The task of adults in this situation is not to constrain these natural efforts and create favorable conditions for physical activities.

At the same time, the socialization of the growing individual inclusion of children in the learning process leads to the regulation of motor activity: children are shown tasks of successful learning, which increases the static component and the main physical activity account for planned physical education.

In adolescence and at all subsequent stages of the so-called “vital” cycle, the social function begins to prevail over the biological one, which is quite logical, but has a negative impact.

Thus, the markers of modernity along with the achievements of scientific and technological progress are stress, violation of the diet and regime, lack of exercise.

The latest scientific achievements clearly demonstrate that a long-term restriction of motor activity – physical inactivity – is a dangerous anti-physiological factor that destroys the body and leads to early disability and aging. It has been established that physical inactivity is particularly dangerous in the early stages of ontogeny and during puberty, as it can lead to slower growth of the organism and inhibition of biochemical processes that can affect functioning of all organs and systems ([1], p. 117).

We know that young students are a social group, characterized by a number of specific conditions of life. Reduced motor activity of students is due not only to an increase in time spent on educational activities, but also the way of life that has become familiar to most young people (computer games, social networks, poor nutrition, lack of sleep, lack of spending time outdoors, presence of harmful habits, etc.).

In these circumstances, the only proper organization of physical education in higher education institutions of Ukraine (combining compulsory and extracurricular pursuits, sports and recreation activation and mass sports work in universities and so on) can overcome the negative trends in health outcomes and physical fitness of students.

At the same time, since Ukraine regained its independence, the Ministry of Education and Science of Ukraine has not defined the concept of reforming the

discipline of “Physical Education”. The final challenge of sustainable development of physical culture and sports were attempts to organize MES management classes in higher educational institutions of Ukraine as an optional (not final control and inclusion in the curriculum).

Implementation of these proposals could lead to complete destruction of physical education for students and significant deterioration in their health, recreation and renewable infrastructure of higher education institutions, and to weakening of the defenses of the state ([7], p. 109).

Perhaps the leaders and officials of the Ministry of Education and Science of Ukraine are unaware of the function of motor activity and its importance for human life? In this regard, we consider it necessary to continue research in this field.

**Research purpose** – defining the functions of motor activity and ways of its optimization in the form of an educational day for students of higher education institutions.

**Research methods** – comparative analysis and synthesis of data of scientific literature, regulations and documentaries.

## Results and discussion

Motor activity as a natural biological process has a number of features, the most significant of which we consider are:

- The motor function is the sum of movements performed by people in everyday life. With its help an individual interacts with the environment, stays in touch with other people, nature and performs certain employment actions.
- The driving function. It has been proved that physical activity is a genetically determined biological need and, at the same time, the very foundation of human activity.
- The creative (developing) function. Motor activity is a leading factor in ontogenesis, i.e. personal development of all components of a human person. Thus, human physical activity has an impact not only on the physical, but also on the intellectual, moral, and social development.
- The training function. Regular exercise is the best effective universal factor that contributes to positive functional, biochemical and structural changes in human body.
- The adaptive function. Motor activity contributes to the timely and qualitative development of human body, thereby helping the successful adaptation to traditional, customary conditions and extreme circumstances.
- The protective function. It was found that the optimal effect of physical activity not only increases the functional reserves of the body, but also enhances psychological stability, and intellectual abilities.

- The stimulatory function. In muscles in the human During motor activity human muscles generate biocurrents. During contraction and relaxation of the muscles, excitation of the muscle receptors that send nerve impulses to the brain occurs. The more intense the movement of nerve impulses, the more intensive stimulation of brain cells, and therefore – an overall body tone are.
- The thermoregulatory function. The muscle component has a significant share in the internal heat production in the body. Accordingly, to maintain a constant body temperature a person must have a constant supply of such energy as heat, provided by the working muscles.
- The bio-rhythmical function. The body works in certain rhythms, which are called biological. The hosts are the rhythms of the central nervous system. It was established that rhythmic motor activity (running, walking, etc.) has the ability to rebuild bio-current rhythms of the brain and form the so-called “personal” rhythms that determine the level of work ability, fitness and resilience to external and internal stimuli.
- The corrective function. It is known that exercise is an effective and affordable means of physical perfection. Thus, systematic exercise not only harmonizes figure, as well as coordination of all organs and systems, but also contributes to correcting the physical and mental state of man.
- The psychomotor function. This feature is particularly manifested at an early age, when there is a close relationship between the development of movements and mental processes of a child. Stimulation of motor activity ensures active muscles, which contributes to the mental operations. In particular, the development of fine motor skills of the child (precision of hand movements) promotes language development.

Thus, multifunctionality of the process of motor activity of a man ensures the effective functioning of the body as a whole and that can qualitatively improve the level of his life.

In this regard the logical question is: what should the amount of human motor activity be, depending on age indicators and social functions.

There are several concepts and parameters relative to the volume of motor activity ([1], p. 171; [3], p. 424) and others. Their rates vary within the following range (hours per week):

- preschoolers – 21–40 hours;
- schoolchildren – 14–21 hours;
- students – 10–14 hours;
- adults – 6–10 hours.

Motor activity of student youths can vary within 14–19 thousand of steps a day, i.e. an average of 10.3 km, the cost of energy per kilogram body weight of 40–50 kcal.

Of course, unified performance of motor activity for people of all ages and occupations does not exist. However, we can say that the above data can serve as

guidelines for an individual program of motor activity of students. The implementation of such a program can be provided during both organized and independent physical training.

In our opinion, it is reasonable to comply with recommendations concerning the organization of physical education in higher education institutions that have been developed by leading experts of Ukraine and set out in the Annex to the letter of the Ministry of Education and Science of Ukraine of 25.09.2015 №1 / 9–454 ([4], p. 4).

Such basic model or various forms of combination have been proposed for the purpose of teaching physical education in higher education institutions at the appropriate levels.

1. Sectional. Creation of a wide network of specialized sports and general sections, groups, clubs that operate on a fixed schedule in their spare time training sessions (e.g. in the second shift for students who attend their training sessions in the morning).
2. Professionally oriented. The development of a number of integrated programs for physical education that are directly focused on the features of a future profession (teacher, doctor, office worker, computer programmer, etc.). Alternative options to access to such programs may be purely sporting activities, military applications section (targeted at both boys and girls wishing to achieve the requirements for admission to the program of military training), military medical training with elements of general training.
3. Traditional. Preservation of physical education as a compulsory subject in the assessment of credit, billing credits and the inclusion of the provision of schedule students to attend classes as a group and their individual engagement in sports clubs and recreational groups, clubs, etc. applications of their choice.
4. Individual. Assigning each student an employee of a specialized unit in the department of physical education who acts as a tutor for rehabilitation or physical development, recommends certain types of physical activity (both organized and independent), develops an individual program of physical development, including sports and fitness clubs, groups, clubs, lectures on preservation of health, family planning, etc. (2–3 times per year).

## **Conclusions**

Given the above, we consider it appropriate to return the discipline “Physical Education” its mandatory status in the curriculum for future professionals in all sectors of higher education in Ukraine. In addition, lecturers in physical education should intensify activities to popularize knowledge of personal physical training among students, and – the use of new and interesting types of physical activity, which will help them raise the level of psychophysical training.

Prospects for further research will be associated with the development of organizational and methodological principles of psychophysical training of university students of humanistic profile.

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## **Aktywność lokomocyjna jako wiodący czynnik przygotowania psychofizycznego młodych studentów**

### **Streszczenie**

W artykule zaprezentowano aktualne dane dotyczące stanu zdrowia, przygotowania fizycznego, aktywności ruchowej studentów szkół wyższych o profilu nie-sportowym. Stwierdzono, że niski poziom warunków fizycznych studentów określony jest przez grupę czynników, wśród których główną rolę odgrywają brak aktywności ruchowej oraz nieracjonalne podejście ciał zarządzających i administracji niektórych instytucji szkolnictwa wyższego do organizacji nauczania i dodatkowych zajęć treningowych dla przyszłych specjalistów. W artykule zawarto dane dotyczące głównych funkcji aktywności ruchowej oraz podstawowe postanowienia zawarte w zaleceniach Ministerstwa Edukacji i Nauki Ukrainy z dnia 25.09.2015, nr 1/9-454 „W związku z organizacją wychowania fizycznego w szkolnictwie wyższym”.

**Słowa kluczowe:** aktywność fizyczna, studenci uczelni wyższych, wychowanie fizyczne, kształtowanie psychofizyczne.