КОРОТКІ ПОВІДОМЛЕННЯ

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INFLUENCE OF HEALTH-IMPROVING TRAINING ON THE FUNCTIONAL RESERVES OF CARDIOVASCULAR SYSTEM

Відомо, що важливими показниками здоров'я людини є резерви кардіореспіраторної системи, так як відповідно до здатності організму мобілізувати свої енергетичні запаси ми можемо судити про рівень опірності організму до широкого спектру патогенних впливів навколишнього середовища [1, 5, 6].

Безсумнівно ми можемо стверджувати що за останнє десятиліття рівень захворюваності зріс, а середня тривалість життя знизилась. У той же час спостерігається стійка тенденція до зниження рівня здоров'я школярів, включаючи студентів [2, 4]. У науковій літературі ми можемо знайти окремі дані про результати досліджень рівня здоров'я студентів, проте відсутнє повне уявлення про вище згадану проблему.

Мета дослідження – корекція функціонального стану кардіореспіраторної системи студентів під впливом оздоровчих навантажень.

Ключові слова: *кардіореспіраторна система, фізичне навантаження.*

Известно, что важными показателями здоровья человека есть резервы кардиореспираторной системы, так как в соответствии с способности организма мобилизовать свои энергетические запасы мы можем судить об уровне сопротивляемости организма к широкому спектру патогенных воздействий окружающей среды [1, 5, 6].

Несомненно мы можем утверждать, что за последнее десятилетие уровень заболеваемости вырос, а средняя продолжительность жизни снизилась. В то же время наблюдается устойчивая тенденция к снижению уровня здоровья школьников, включая студентов [2, 4]. В научной литературе мы можем найти отдельные данные о результатах исследований уровня здоровья студентов, однако отсутствует полное представление о вышеупомянутую проблему.

Цель исследования – коррекция функционального состояния кардиореспираторной системы студентов под влиянием оздоровительных нагрузок.

Ключевые слова: *кардиореспираторная система, физическая нагрузка.*

It is known, that the important health indicator of the individual is the functional reserves of the cardiorespiratory system, because according to the ability of the organism to mobilize its energy resources we can judge the degree of the resistance of the organism to the wide spectrum of pathogenic influences of the surroundings [1, 5, 6].

Without doubt we can say that during the last decade the sickness rate increased, and the average lifetime of decreased. At the same time, the steady tendency towards the reduction of the health rate of schoolchildren, including senior pupils is observed. In the scientific literature we can find the isolated reports on the results of the investigation of the state of health of students [2, 4], however, there is no complete idea about the state of the problem described.

The aim of the study – the correction of functional state of the cardiorespiratory system of students at conditions of the health-improvement training.

Keywords: *cardiorespiratory system, physical loading.*

Organization and Methodology of the Experiment. The 1-st, 3-d, and 5-th year students of 'Vasyl Stefanyk' Precarpathian National University took part in the experiments.

The health-improvement training was held three times a week in two regimens: the first experimental group was engaged in the health-improvement training of aerobic character, the second group was influenced by aerobic-anaerobic training. The part of students from each experimental group was also engaged in psychophysical training. The reason for judging about the functional state of the cardiorespiratory system and the state of health of students was maximal oxygen absorption (MOA).

Results of the Experiment. The got results of the experiments showed that the functional state of the cardiorespiratory system of the young men and women of the 1-st, 3-d, and 5-th years is lower than 'the safe health rate' according to G.L. Aapanasenko [1] up to 36–48% (figure 1). A tendency towards the reduction of both absolute and relative values of maximal oxygen absorption (MOA) during the studies of students of all specialities draws our attention.

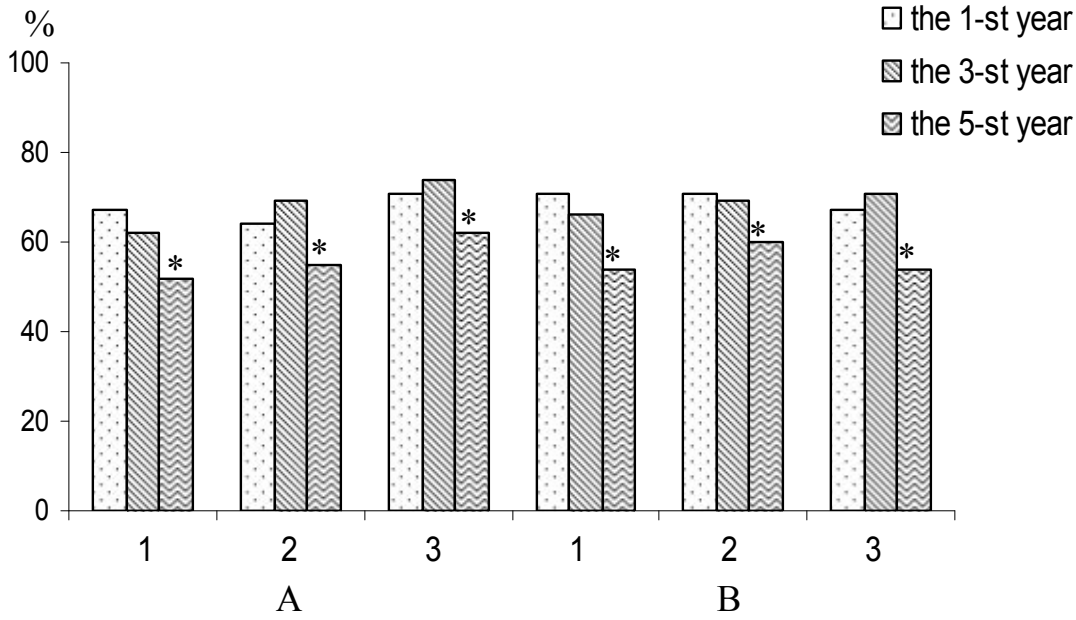

Fig. 1. The functional state of the cardiorespiratory system of students of the specialities 'primary teaching' (1), 'design' (2), 'calculation and audit' (3) (A – the young men, B – the young ladies)
* the indicated reliable changes in comparison with the 1-st academic year.

After 6 weeks of the health-improvement training the functional possibilities of the cardiorespiratory system of students of all experimental groups increased (figure 2). The health improvement training of aerobic character caused an increase of the investigated index among the students of the speciality 'primary teaching' up to 21,4% (♂) and 20,0% (♀), $P< 0,05$ in comparison with the scheduled indices. In the group of designers the relative value of MOA increased up to 18,5% (♂),$P< 0,05$ and up to 16,0% (♀), $P< 0,05$; among the students of the economic faculty – up to 10% (♂), $P> 0,05$ and up to 16,6% (♀), $P< 0,05$. However, all these indices remained lower in comparison with the value of 'the safe health rate'.

In the group of students who except the training of aerobic character were also engaged in psychophysical training, the investigated index was, somewhat, higher. Among the young men of the speciality 'primary teaching' the relative value of MOA increased up to 39,3%, $P< 0,05$ in comparison with the scheduled index, and was 92,9%, $P> 0,05$ of 'the safe health rate' for men. The same changes are observed among the young women. In the group of the designers the investigated index increased up to25,9% among the young men ($P< 0,05$), and up to 8% among the young ladies ($P> 0,05$). Among the students of the economic faculty MOA increased up to 16,6% (♂), $P< 0,05$; and up to 33,3% (♀), $P< 0,05$. Among the young women the index did not essentially differ from the value of 'the safe health rate'.

The health-improvement training in aerobic-anaerobic regimen also caused the increase of the functional reserves of the cardiorespiratory system of the students. Among the young men of the speciality 'primary teaching' the relative consumption of oxygen increased up to 17,9%, $P< 0,05$ in comparison with the scheduled data: among the designers – up to 14,8%,

P< 0,05, and economists – up to 13,3%, P>0,05. Among the young ladies the investigated index increased up to 24%, P< 0.05 – the speciality 'primary training'; 20%, P< 0,05 – the designers; and 12,5%, P> 0,05 – the economists.

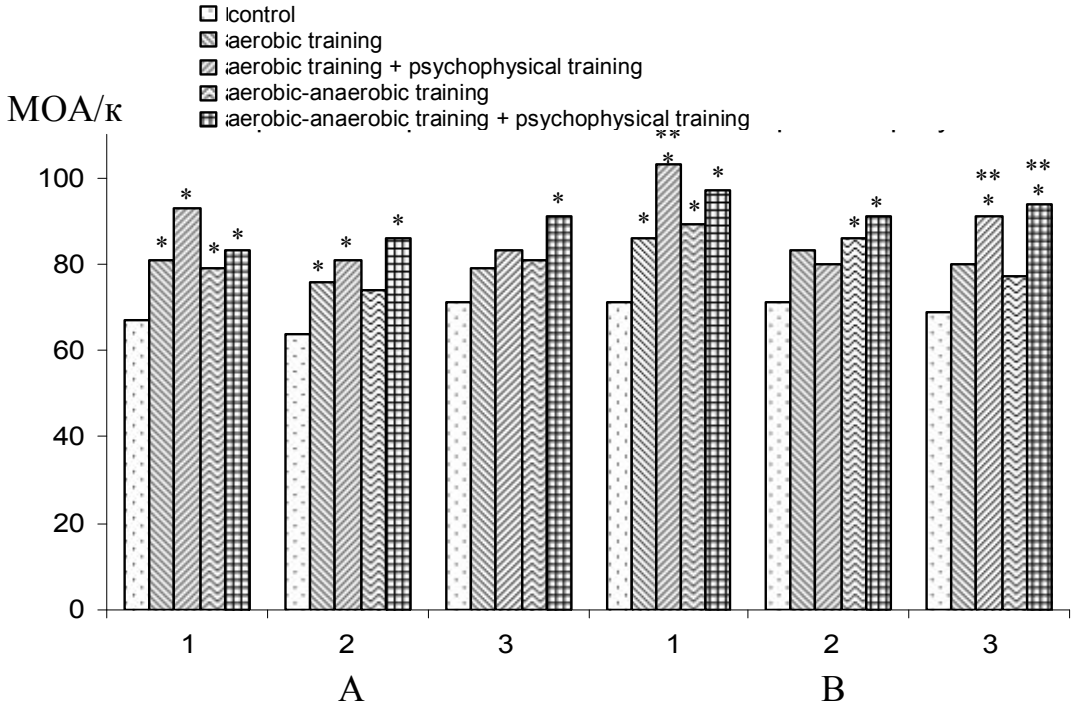

Fig. 2. The influence of different regimens of the health-improvement training on the functional state of the cardiorespiratory system of students of the specialities 'primary teaching' (1), 'design' (2), 'calculation and audit' (3) (A – the young men, B – the young ladies)
* – the indicated reliable changes in comparison with the scheduled indices;
** – the indicated reliable changes in comparison with the indices, where the psychophysical training was not applied.

In the group of students, who except the training of aerobic-anaerobic character were engaged in psychophysical training more essential increase of the relative consumption of oxygen is observed. Among the young men of the speciality 'primary teaching' the investigated parameter increased up to 25%, among the designers up to 33,3%, among the economists up to 26,6% in comparison with the indices the experiment. Among the young women the relative value of MOA reached 'the safe health rate'.

Conclusion

The got results testify to the substantial rise of the functional state of the cardiorespiratory system as a result of preparatory period of the health-improvement training of both aerobic and anaerobic character. It should be mentioned, that the combination of the health-improvement program with the psychophysical training concludes to more essential maximal oxygen absorption (MOA) growth. It testifies to considerable negative contribution of psychoemotional stress in the decline of the state of health of students. The long-term psychoemotional excitement, the irregular labour and rest regimens, the huge flow of information and other factors can cause the repartition of the regulatory influences on the functioning of the inner organs and change their functional possibilities. The suggested program of the health-improvement training allows to increase the cardiorespiratory endurance, and, thus, the rate of somatic health of students.

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