

HEALTH-IMPROVING NOURISHMENT AS A METHOD OF STRENGTHENING THE HEALTH OF PARTICIPANTS OF THE EDUCATIONAL PROCESS

*Olena KONOVALOVA, Nataliia SAMOILOVA,
Oleksiy POLUBOIAROV, Igor TSYMBALOV*

Abstract: *The considerable decline of health of students level is lately marked, especially by the end of school year. An accumulating fatigue worsens the results of summer session, negatively tells on the state of all of the physiological systems of organism. During 1998–2008 the department of valeology and interfaculty research laboratory of the Karazin Kharkiv National University is study the mechanism of adaptation of organism in the conditions of the modern educational and ecological loading and the search of ways of correction of violations of these mechanisms, resulting to the pathological changes of organism. One of the directions of the valeological making healthy of children and young people offered by us is the use of the health food stuffs developed by us: teas and syrups on the basis of medical plants, and also products from sprouts of grain-crops. The state of health of students of 4 faculties of university was estimated in 2008: philosophical, radiophysics, psychology, foreign languages. To the students 1, 2, 3 courses such health food stuffs as phytotea Vesnyanka, syrup Valeoton, sprouts of grain-growing cultures, accordingly. It is received that the state of the cardiorespiratory system and row of their indexes, on which a health level was estimated, for the students of groups, gettings a health feed were higher, than at control groups. Thus, addition to day's ration of feed phytotea, phytosyrups and other special products of health feed developed by a laboratory, enables to promote his biological value, improve mineral and vitamin material well-being, that is instrumental in making healthy of students.*

Keywords: *valeology, health of students, nourishment*

Almost in all countries students are allocated as a group of the raised risk because students much more often, than young men from other social groups of the same age, are observed with the considerable aggravation of health. According to a number of sources [1–3], the transition to the new social conditions of students – yesterday's schoolchildren – causes an active mobilization in the beginning, and then the exhaustion of organism's physical reserves, especially in the first years of education. After entering the univer-

sity, a student finds himself in the new social and psychophysiological conditions. The adaptation to a complex of the new factors, which are specific for the higher school, is a difficult multilevel socially-psychological process and is accompanied by a considerable tension, and also by the disturbance of optimal work, rest and nutrition. It often leads to a failure of adaptation process and a development of a number of diseases.

Recently there has been a considerable decrease of the students' health level to the end of the academic year. The collected tiredness makes worse the results of summer session, negatively affects the state of all physiological systems of organism.

For the prevention of it there need, on the one hand – the profound scientific researches, on the other – the introduction into practice a complex of the practical actions aimed at the optimization of the educational process organization, the improvement of educational, life, nutritional and rest conditions of students.

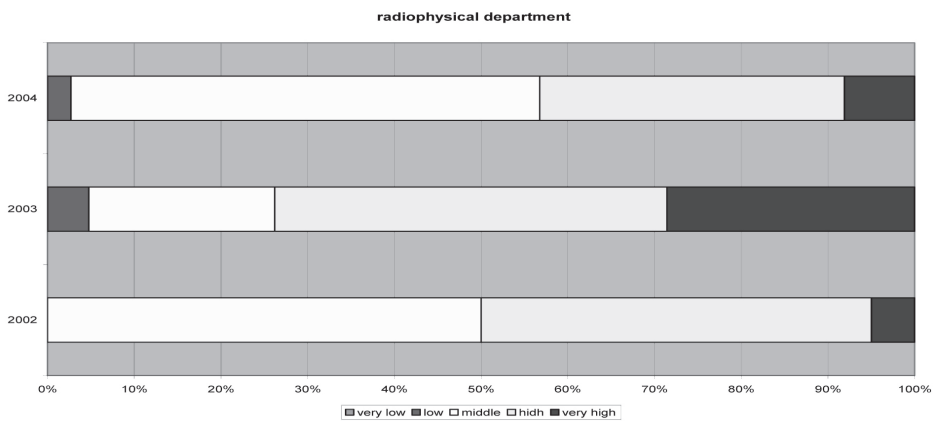
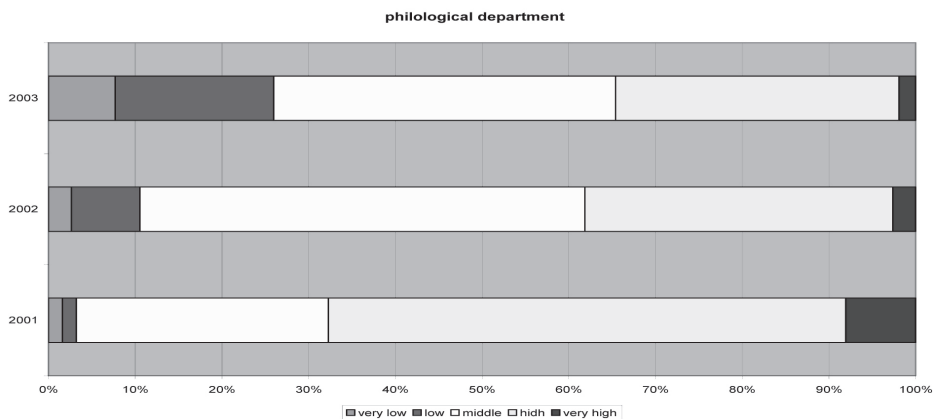
Throughout 1998–2008 the department of valeology and interfaculty scientific-research laboratory of the Kharkiv National University named after V. N. Karazin investigate the mechanisms of organism adaptation in the conditions of a modern anthropoecological load and search for the ways of correction of these mechanisms' disturbances leading to a condition of preillness, and further to the pathological organism changes.

So, with the use of the whole complex of physiological and psychological techniques, we carried out researches of the state of health of the first-year students from the philosophical, philological, economical, biological, chemical, radiophysical and mechanic-mathematical departments, departments of psychology and foreign languages [4].

The carried out researches have shown that from year to year there is a deterioration of physical health of the first-year students practically at all faculties. The results of researches testifies to the decreasing amount of students in groups with a high level of health and a level of health above average, at the same time the part of students with low and below average health level is enlarged. Thus on figure 1 there are the results of a physical health condition monitoring (according to an integrated indicator of health) of a number of the Karazin KhNU departments' first-year students throughout 2002–2004 years. As we can see from the presented data, at the radiophysical department in 2002 among the examined there were not students with a level of health below an average, in 2003 4,8 % of students with level of health below an average have already been exposed, and in 2004 the amount of students with this health level was 2,7 %. The students of biological department have had a more expressed tendency – in 2002 8,3 % of students with level of physical health below an average have been exposed. In 2003 10,5 % of students had a level of somatic health below an average, and in 2004 3,8 % of persons with a low health level and 9,4 % of students with a level of physical health below an average have been exposed. This tendency was the most indicative at the philological and foreign languages departments: in 2002 1,6 % of students with a low level of physical health and 1,6 % of students with a level of somatic health below an average have initially been exposed; in 2003 the amount of students with a low level of health was 2,6 %, below an average – 7,9 %. In 2004 the amount of students with a low physical health level was already 7,7 %, and a health level below an average – 18,3 %.

Thus, the results of long-term monitoring testify to the progressing tendency to the decreasing of physical health level of the Karazin KhNU first-year students throughout the period of observations. Our researches exposed an orientation to decrease of adaptive

possibilities of cardiovascular system at the students arriving in each next year of monitoring [5]. It reflects the rising of degree of vegetative and central nervous system strain and it is one of the important factors in decrease of adaptic possibilities of students during this period of training. These conclusions are verified also by studying the KhNU medical aid station's data: it is shown that 29 % of first-year students have one, and 28 % – two or three chronic diseases. The presented data testify to an urgency of carrying out the effective preventive work for keeping and improving the health of studying youth.



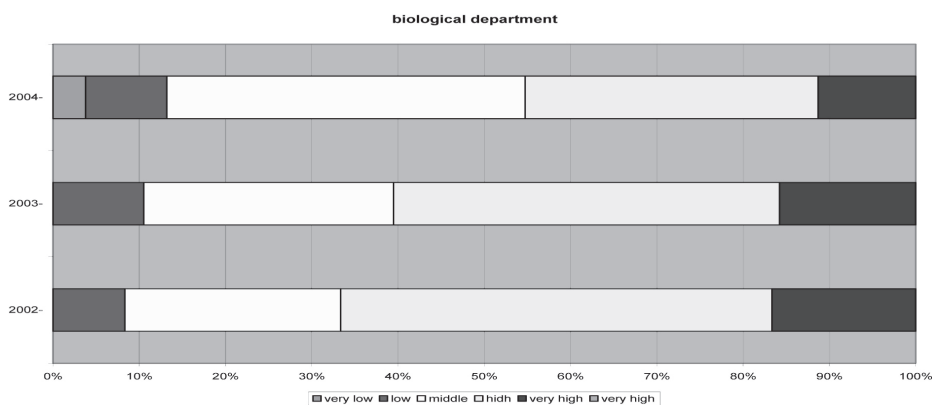


Figure 1 – Dynamics of physical health level at university's first-year students

One of our directions of valeological improvement of children and youth is using an improving food products developed by us: teas and syrups based on domestic vegetable raw materials and also products from sprouts of grain crops. The productivity of such approach is shown on an example of improvement of children's preschool institutions and schools pupils of some regions of Ukraine. According to our researches, the application of improving food products have been picked up according to an ecological condition of residing region, and also the intensity of academic load of the given educational institution, helps to overcome seasonal infection flashes, to decrease the informative processes' indicators owing to tiredness in the end of an academic year, to improve the indicators characterizing a condition of cardiovascular, immune and respiratory systems [6–9]

The given research is devoted to studying of influence of various health-improving products developed by the valeologists of the Kharkiv National University named after V.N.Karazin and earlier offered for the improvement of health indicators to the Ukrainian schoolboys, on the indicators of physical health of university students.

In the spring semester of 2008 we estimated the state of students' health of 4 university departments: philosophical, radiophysical, psychology, foreign languages. The students of 1, 2, 3 courses were offered such products of health-improving food as phytotea «Vesnyanka», a phytosyrup «Valeoton», dishes from sprouts grain, cultures accordingly in the quantity corresponding to their age. A number of physiological indexes was used for an express-estimation of physical health of students: Kettle index, Robinson index, Skibinsky index, Ruffje index and Shapivalova index. These indexes are closely bound to the variety of indicators of physical preparation and somatic health of students. [10,11]

According to the table the estimation in points was given to each index indicator and the total sum of points on which level of physical health was defined paid off:

For an estimation of functionality of an organism the adaptational potential (AP) as a whole paid off, and also the mathematical analysis of a warm rhythm (variation pulso-metry) was carried out by the methods offered by R. M. Baevsky. [12,13]

After taking up a course of seasonal tea «Vesnyanka» we did not observe the significant differences on the majority of measured indicators, except for adaptational potential: in experimental group on 10 % the share surveyed with satisfactory adaptation was enlarged. The results of the spent researches confirm a conclusion made by us after courses of improvement of schoolchildren, that seasonal phytoteas are expedient for applying in the cases which are not demanding high mobilization of the reserves of organism: in ecologically pure regions, at a small academic load and for conservation of level of the health reached by means of stronger receptions of correction.

The results of improvement of two-year students by the syrup «Valeoton» (figure 2–4) have shown the augmentation of level of somatic health of students from the experimental groups, accompanied by rising of adaptational possibilities and a voltage reduction in regulatory systems that is proved by ascending of quantity of students with satisfactory value of adaptational potential and normal level of a strain index.

It is possible to come to a conclusion, that the syrup «Valeoton» has more strongly affected a state of health of two-year students than phytotea. It is explained by the presence of larger quantity of plants in the syrup, as a result it has richer spectrum of trace substances, vitamins and other biologically active substances. Besides, the syrup contains the amber acid positively influencing functioning of nervous and warmly vascular systems.

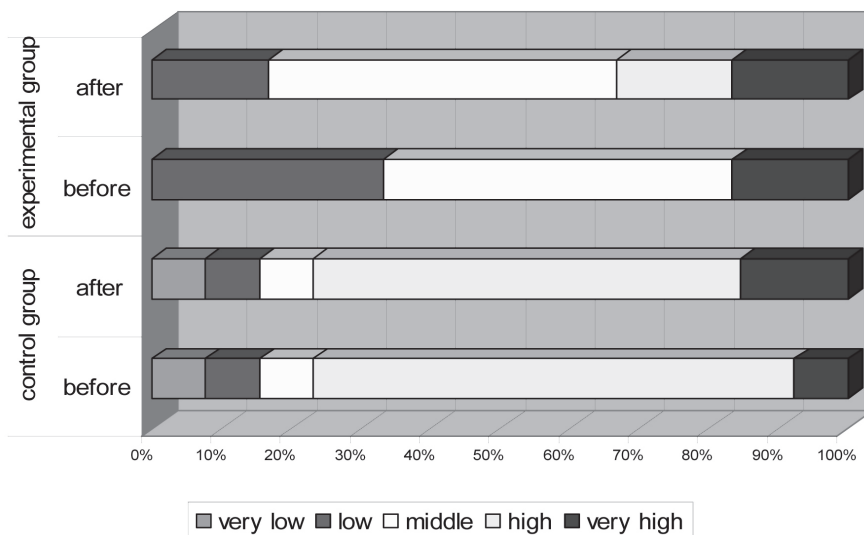


Figure 2 – Dynamics of physical health level changes at 2nd course students before and after reception syrup “Valeoton”

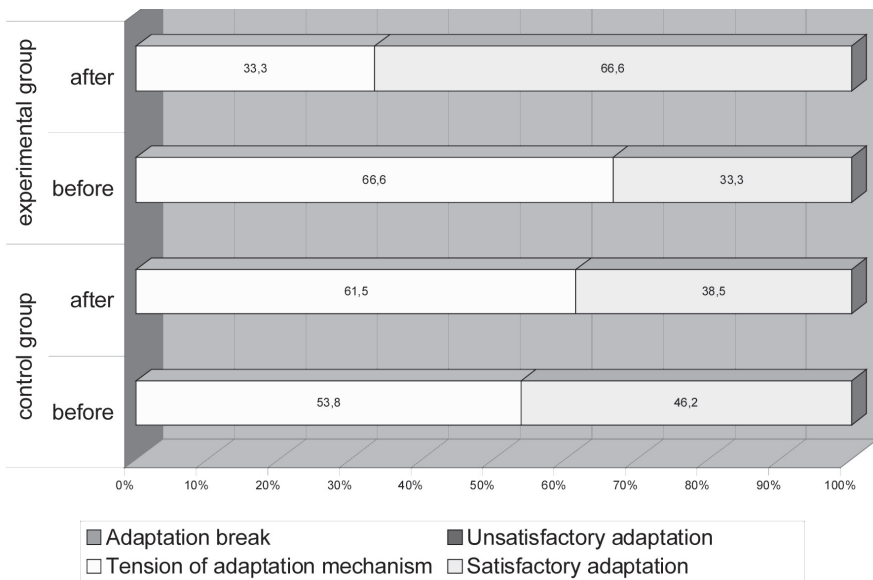


Figure 3 – Dynamics of changes organism’s adaptic possibilities level at 2nd course students before and after reception syrup “Valeoton”

The further researches have shown that the use of nutrition with lucerne sprouts has led to augmentation at 10 % of number of students with health level above an average and satisfactory level of adaptation. The profound researches of functioning of cardiovascular system have shown that at the students, using the sprouts in nutrition, the

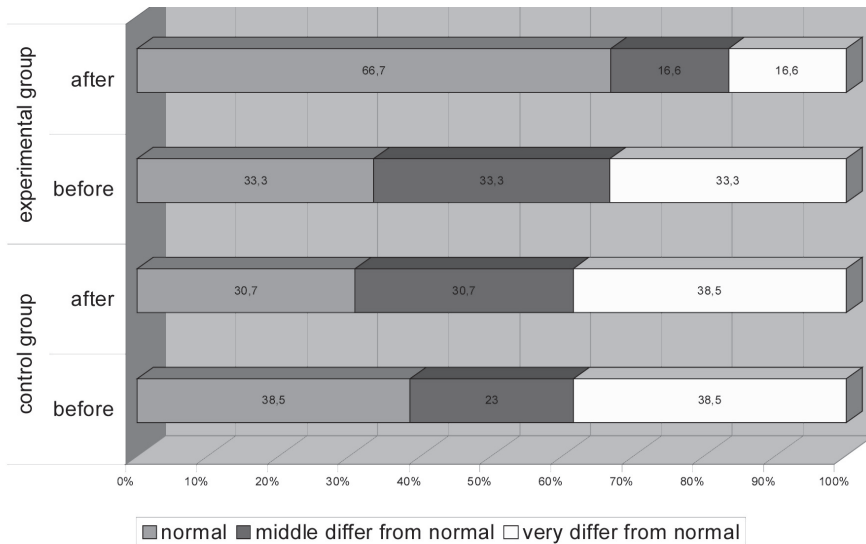


Figure 4 – Dynamics of strain index changes at 2nd course students before and after reception syrup “Valeoton”

index of a strain Baevsky (Figure 5) was normalized, that is there was an optimizations of regulation of heart activity. If on indicators of physical health we have received the same insignificant augmentation, as well as a post of the use of phytotea the mathematical analysis of a warm rhythm grants to us is right to assume the further augmentation of level of health as the organism has already reconstructed the regulatory systems aside the most effective scheme of management.

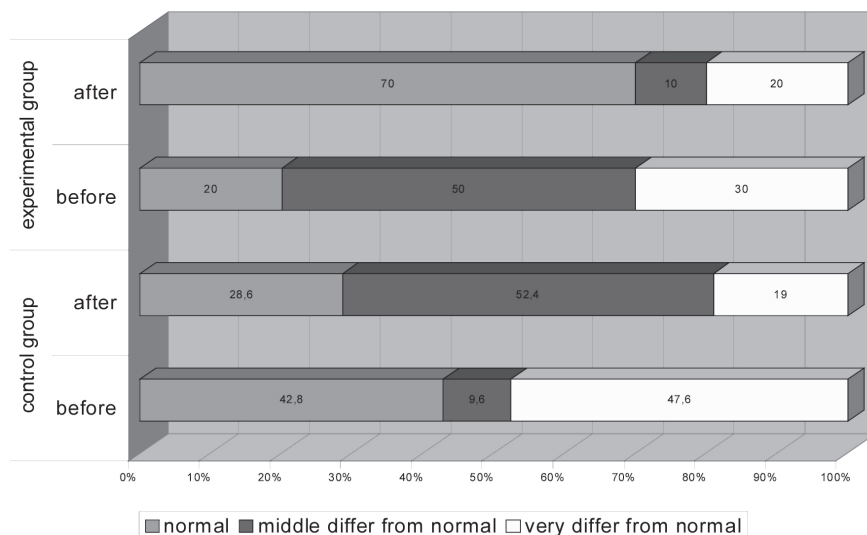


Figure 5 – Dynamics of strain index changes at 3rd course students before and after reception sprouts of grain-growing

If according to norms and phytotherapy principles the monthly course of the use of a syrup «Valeoton» is maximum, further it is necessary to make a break, supporting the reached level of health phytoteas the nutrition with sprouts can be applied constantly. Thus, the monthly course of the use in nutrition of sprouts does not show all the improving possibilities of this perspective view of health-improving food.

Thus, as a result of definition of physical health level, the functionality of organism and the adaptic possibilities of cardiovascular system at first-year students before tea reception «Vesnyanka», at second-year students before syrup reception «Valeoton» and the using of sprouts in nutrition students of the 3rd course it is shown that the greatest positive influence on studied indicators was rendered by a phytosyrup which can be recommended for improvement of students during the periods of the greatest academic load. Phytotea is better for drinking in the beginning of a semester or after a course of improvement by the syrup for conservation of the reached health level. Dishes from sprouts are necessary for introducing in a daily ration of students for achievement of stable improving effect.

Summing up, it is necessary to notice that including in nutrition as additives to a daily food allowance of the phytoproof-readers developed by our laboratory, gives the chance to raise its biological value, to improve mineral and vitamin security that

promotes the improvement of participants of educational process. Therefore it is possible to recommend them for a wide introduction for the purpose of expansion of assortment of products in student's dining rooms, and also for a dietary and treatment-and-prophylactic food. For improvement the quality of food of their students it is possible to recommend them as in the organized collectives (dining rooms at universities, student's dispensaries and bases of rest), so as in the house conditions (including student's hostels).

ZDRAVÍ ZLEPŠUJÍCÍ VÝŽIVA JAKO METODA POSÍLENÍ ZDRAVÍ ÚČASTNÍKŮ VZDĚLÁVACÍHO PROCESU

Abstrakt: V poslední době zaznamenáváme významný pokles zdraví studentů, a to zejména ke konci školního roku. Kumulovaná únava zhoršuje výsledky letního semestru a vypovídá negativně o stavu všech fyziologických systémů organismu. Během let 1998–2008 se oddělení valeologie a mezifakultní výzkumná laboratoř národní univerzity Karazina Kharkiva zabývaly studií mechanismu adaptace organismu v podmínkách moderní vzdělávací a ekologické zátěže a hledáním cest k nápravě porušení těchto mechanismů, což vedlo k patologickým změnám organismu. Jedním ze směrů valeologického zajištění zdraví dětí a mládeže, který nabízíme, je používání zdravých potravin, které vyvíjíme: čaje a sirupy založené na zdravotních rostlinách a také produkty z výhonků obilovin. Stav zdraví studentů 4 fakult na univerzitě byl odhadován v roce 2008: filosofická, radiofyziky, psychologie a cizí jazyky. Pro studenty 1, 2, 3 se jednalo o takové zdravé potraviny, jakými jsou fytočaje Vesnyanka, sirup Valeoton a výhonky obilnin. Zjistilo se, že stav kardio-respiračního systému a sada jeho indexů, podle které se odhaduje úroveň zdraví, byla u skupiny studentů získávající lepší potravu pro zdraví vyšší, než v kontrolní skupině. Přidání výživy ve formě fytočaje, fyto sirupů a dalších zvláštních produktů zdravé výživy vyvinutých naší laboratoří nám tedy umožňují propagovat její biologickou hodnotu, zlepšovat zdraví ve formě přísunu minerálů a vitamínů, který pomáhá zachovávat zdraví studentů

Klíčová slova: Valeologie, zdraví studentů, výživa