

# THE CHARACTERISTICS OF THE DISADAPTIVE CONDITIONS OF THE UNIVERSITY STUDENTS AND THE POSSIBILITIES OF THEIR CORRECTION

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**Abstract:** *The functional possibilities of the organism, anthropometrical parameters of first-year students, a level of physical development, dynamics of parameters of cardiovascular system parameters of blood at students, types of adaptable reactions the adaptive peculiarities of the first-year students were studied. The desadaptive conditions of the university students taking into account the levels of the students' body health were characterized. The complex correctional was done, after which the quantity of the students with the satisfaction adaptation increased, their psycho-emotional condition, advancement improved. The predominance of the higher activation reactions comparing to the calm activation before correction was established to the students with low level of the body health.*

**Keywords:** *health students, adaptation, desadaptive conditions, complex correctional*

## Introduction

At first and second years of education falls period of acute adaptation of students, that's why not all first-year students quickly adapt to new environment and high activity, what leads to disadaptation. Disadaptaion is a process, which appears by influence on human's organism of environmental factors, that exceed in amount possibilities of adaptive system, and causes adaptive reactions of organism abnormalities.

More often, you can find disadaptation at first-year students with extremely high trait anxiety, with serious somatic diseases, at invalids, orphans from the infancy and people suffered from lack of mothering [8;9].

That's why it is important to carry out modern diagnostics, correction and preventive care of disadaptive conditions development of first-year students.

Among medicines, applied for compensation of organism's functional state, it is worth to notice amber acid medicines. According to M.P. Saakyan and others [10], amber acid takes part in correction of energy metabolism abnormalities as powerful proton source and ATP and also as antioxygent which provides improvement of energy metabolism.

The aim of our researches is to study university first-year students' disadaptive conditions and possibilities of their correction. To reach this aim, the following tasks were set: to evaluate adaptive possibilities of students, to give characteristics of disadaptive conditions of students and to study efficiency of complex correction appliance.

## Materials and research methods

The researches were carried out at Pedagogical Department of Belgorod State University in 2005-2008. In general, there were examined 724 students of 1st-3d years of education. Integrative health rate (health level), vegetable homeostasis, adaptive potential, etc. were determined [6] according G.L. Apanasenko's method [1]. In family practice center of University clinical blood's analysis was done, state of cardiovascular system was evaluated. On signal indicators of peripheral blood's leucogram were identified types of blood's adaptive reactions, characterized by nonspecific resistance of organism. As for lymphocyte's ratio to segmented neutrophils (L/N) were identified reactions of training, quite arousal, high arousal, stress, over-arousal [5]. Efficiency of education activities was evaluated in terms of test score and current progress. The researches were carried out within one term period and exams period.

## Results

On the basis of all data analysis [2;3;4] the group of students with tension of adaptive process (disadaptation) was separated, in this group were found reliable differences of haemodynamics parameters, potential of circulatory system, vegetable homeostasis etc.

The quantity of first-year students with disadaptation, in average, composes 22 % from all first-year students, it corresponds with data of R.G. Gilmutdinov (2005), who found out in his researches up to 30 % of students with serious problems with educational activities while adaptation process [7].

Within the disadaptive group there were separated subgroups taking into account estimation of individual health reserves with the help of rapid-test of diagnostics suggested by G.L. Apanasenko. Among students with disadaptation, 52 % has low level (subgroup No1), 30 % - below average (subgroup No2), 18 % - average level of physical health (subgroup №3).

Average values of systolic and diastolic blood pressure, frequency of heart beats of students in subgroup №1 were reliably higher, than of students in subgroup № 2 and 3. It is, probably, connected with high tension of adaptive mechanisms of students with low level of physical health.

By vegetable status, 75 % of students in subgroup No1 were sympathonics, they had predominance of ergotropic regulation mechanism, 16,7 % were vagatonics, i.e. with trophotropic mechanism's predominance, 16,7 % were vagatonics, i.e. with predominance of trophotropic mechanism. 8,3 % of students had euthonia and balance of nervous system's vegetal departments. In subgroup No2 and 3, the quantity of students with trophotropic type of reaction was higher on 11,9 % and on 33,3 % in comparison with subgroup No1 accordingly.

Efficiency test of Hildebrant allowed to reveal that 58 % of students in subgroup No1 have the presence of normal intersystemic interaction in cardiorespiratory system, 42 % had discrepancy in operation of cardiovascular and respiratory systems. In subgroups No2 and 3, 71-75 % have coefficient of Hildebrant within norm, 25-29 % - discrepancy in cardiovascular and respiratory systems' operation.

To determine level of circulatory system operation and adaptive capabilities of whole organism, adaptive potential value was calculated. Average values of adaptive potential of students in subgroup No1 were higher on 12,3 % ( $p < 0,05$ ), then in subgroup No2 and on 24,2 % ( $p < 0,05$ ), then students of subgroup No3, what indicates considerable tension of adaptive mechanisms of students with low level of physical health.

By the results of psychological testing most of students in subgroup No1 and No2 have melancholically type which characterize by unbalanced behavior, complete and long emotional experiences, unstable mood with pessimism predomination. In subgroup No3 predominates choleric type.

To study possibilities of lowering stress-reactions of students with tension of adaptive processes in pre-sessional period, complex correction work was carried out within month, it included adaptogen dose of amber acid from biologically active supplement in food doses, allowed by Nutrition Institute of Ministry of Health of the Russian Federation; classes with psychotherapeutic and training of self-regulation methods to use it in stressed situations, etc.

After correction work in subgroup No, quantity of vagotonics has increased on 8,3 % , in subgroup No2 - on 11,4 % and in subgroup No3 - on 10 %. In subgroup with low level of physical health the quantity of students increased on 8,7 % with normal intersystem interactions in respiratory system, in subgroup with physical health level below average – on 9 %, at students with average level of physical health - on 25 %.

In subgroup No1 after correction the quantity of students with satisfactory adaptation increased on 16,7 %, in subgroup No3 – on 75 %.

After correction in subgroup No1 the quantity of students with moderate anxiety increased on 47,7 %, in subgroup No2 – on 31,4 %, in subgroup No3 – on 75 %.

Adaptive reactions of organism are antistressed reactions, which reflects impact force and organism's reaction rate. It is important to use for characteristic not only one parameter but interaction between quantity of lymphocytes and segmented neutrophils L/N [5]. Leucogram analysis of peripheral blood after correction allowed to find out that 41,7 % of students in subgroup No1 have reaction of high arousal, 33,3 % - training reaction and 25 % - reaction of low arousal, in subgroup No2 after correction the reaction character hasn't changed – predomination of high arousal remained, in subgroup No3, 50 % of students had low arousal, 25 % - high arousal and 25 % - training arousal

Progress analysis showed that after correction students' progress in subgroup No1 increased on 11,1 %, in subgroup No2 – on 16,7 % and in subgroup No3 - on 17,6 %.

Thus, in the results of carried out researches was established that for students with low level of physical health characterized melancholical type, high anxiety, considerable tension of adaptive mechanisms, predomination of sympathicotonia. and discrepancy in cardiovascular system's work, higher values of blood pressure parameters, heart beats frequency in comparison with students with physical health level below average and average. These students compound risk group towards neuropsychic and

somatic diseases and need pedagogical, psychological and medical correction. It was established that correction work allowed to low tension level, positively influenced on psychophysiological characteristics of students of disadaptive group and their progress.

## Literature

- G.L. APANASENKO, Personal health: essence, displays, mechanisms / G.L. Apanasenko // Hygiene and sanitation. – 2004. - № 1. – p.60-62.
- L.K. BUSLOVSKAYA, Health and adaption of University first-year students/ L.K. Buslovskaya, Y.P. Ryzhkova // Ecologo-physiological problems of adaptation: sourcebook XII international Symposium/ RUNF. - M., 2007. – P.84-86.
- L.K. BUSLOVSKAYA, Adaptation and disadaptation of University first-year students/ L.K. Buslovskaya, Y.P. Ryzhkova // Questions of modern science and practice. University named V.I. Vernandskiy. – 2007. – V.1, № 4 (10) – P. 106-116.
- L.K. BUSLOVSKAYA, Adaptation abnormalities of university first-year students / L.K. Buslovskaya, Y.P.Ryzhkova, T.V. Dralkina // Adaptive physiology and life quality: problems of traditional and innovative medicine: source book of international Symposium / RUFN. – M., 2008. – P. 71-73.
- L.X. GARKAVI, Activation therapy. Antistressed reactions of activate and training of its using for health improvement and cure/ L.X. Garkavi. – Rostov-on-Don: Publishing house of Rostov University, 2006. – P.256.
- R.G. GILMUTDINOV, Role of health service of IHE systems in correction of students' adaptation to education by the example of psychophylaxis laboratory work RGD / R.G. Gilmutdinov // Reporter RGD «Health saving technologies in education». – 2005. - №11. – P.10-13.
- L.V. KOSOVANOVA, Screening-diagnostics of pupils and students' health. Organisation of health promotion in general educational institution/ L.V. Kosovanova, M.M Melnikov, R.I. Aizman. – Novosibirsk: Publishing house of Siberian University, 2003. – 240 P.
- L.D. MARKINA, Modern approaches to estimation and correction level of individual health of students/ L.D. Markina, V.V. Markin // Pacific medical magazine. – 2003. - № 2. – P. 39-42.
- T.I. PODKOPAEVA, Disadaptive conditions and their correction for medical college's students: autoabstract from thesis. ... Candidate of Medical Science / T.I. Podkopaeva. – Tomsk: Publishing house of Syberian Medical State University, 2001. – 19 p.
- M.R. SAAKYAN, Correction of internal environment's abnormalities by food additive of amber acid of animals and men/ M.P. Saakyan, M.N. Kondrashova, I.V. Vysochina // News RAAS. - 1994. - V.4. - P.596-604.

# CHARAKTERISTIKA DISADAPTIVNÍCH PODMÍNEK VYSOKOŠKOLSKÝCH STUDENTŮ A MOŽNOSTI JEJICH KOREKCE

**Abstrakt:** Autoři studovali funkční možnosti organismu, antropometrické parametry studentů prvního ročníku, úroveň fyzického vývoje, dynamiku parametrů kardiovaskulárního systému, krevní parametry studentů, typy adaptivních reakcí a charakteristické adaptivní rysy studentů prvního ročníku. Charakterizovali disadaptivní podmínky universitních studentů, přičemž brali v úvahu stav jejich tělesného zdraví. Byla provedena komplexní korekce, po níž se zvýšil počet úspěšně se adaptujících studentů, zlepšil se jejich psycho-emoční stav a dělali větší pokroky. U studentů s nízkou úrovní tělesného zdraví byla zjištěna predominance vyšších aktivačních reakcí ve srovnání s klidovou aktivací před korekcí.

**Klíčová slova:** zdraví studentů, adaptace, disadaptivní podmínky, komplexní korekce