

we could observe regressing cholestatic and cytolytic syndromes and a better biliary function. This was indicated by the activated hepatic protein synthetic function, which is proved by a statistically reliable grow of total protein and albumin fraction content, which increased by 15–17%.

To sum up, levocarnitine has a lipidmodulating effect under the conditions of non-calculous chronic cholecystitis with no disturbances of the biliary functional status; it improves liver function at patients with cytolytic and cholestatic syndromes. The obtained data prove, that levocarnitine is worth using for correction of the metabolic disturbances at patients with chronic cholecystitis.

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DOSE-DEPENDENT ANTI-INFLAMMATORY EFFECTS OF SYNTHETIC CANNABINOID-RECEPTOR LIGANDS

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The research was focused on the dose-dependent effect of synthetic cannabinoid-receptor ligands WIN 55,212-2 and anandamide on proinflammatory mediator expression by blood cells *in vitro*.

Aiming to study the dose-dependent effect of WIN 55,212-2 and anandamide (0,1; 1,0; 3,0 and 10,0 mcM) *in vitro*, blood probes were taken from 12 volunteers, whose level of proinflammatory mediators: cytokines (tumor necrosis factor (TNF- α), interleukin 8 (IL-8)) and eicosanoids (leukotriene B4 (LTB4), thromboxane B2 (TXB2)) did not exceed norms. Blood cells were stimulated by lipopolysaccharide (LPS) *Escherichia coli* in dose 10 mg/ml. Basal and LPS-stimulated cytokine and eicosanoid production in whole blood was measured by means of the immunoenzymometric assay.

It was shown, that a spontaneous level of proinflammatory mediators in the blood probes, obtained from the donors, did not exceed the following values: TNF- α - 80 pg/ml, IL-8 - 115 pg/ml, LTB4 - 110 pg/ml and TXB2 - 210 pg/ml. After the LPS-stimulation of the blood cells, the expression of mediators TNF- α increased 20-fold, IL-8 eight-fold, LTB4 12-fold and TXB2 two-fold. The experiment showed, that low concentrations of WIN 55,212-2 and anandamide did not change the mediator production by LPS-stimulated blood cells. In concentration of 3,0 mcM, anandamide and WIN 55,212-2 reduced the synthesis of TNF- α , IL-8 and LTB4. The strongest inhibiting effect on blood cells was achieved at concentration of 10,0 mcM. There were revealed no influence

of the studied substances in different doses on TXB2 synthesis.

To sum up, the research on the dose-dependent effect of cannabinoid substances on proinflammatory mediator expression by blood cells showed, that cannabinoid-receptor ligands WIN55,212-2 and anandamide have a unidirectional anti-inflammatory effect on TNF- α , IL-8 and LTB4 synthesis in human whole blood. The obtained data on the inhibiting effect of synthetic cannabinoids WIN55,212-2 and anandamide on proinflammatory mediator production could be used to develop new approaches to anti-inflammatory treatment.

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A MODEL OF EXAMINATION STRESS FOR THE DEVELOPMENT OF DETERMINED COLOURSTIMULATION ORIENTATED ON THE MODIFICATION OF THE FUNCTIONAL STATUS OF THE PATIENTS

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There is no other psychological term which is connected to our life as close as stress. Stress at home, in transport, at work and even during sport competitions. When stress mobilizes, for example sportsmen, it is positive factor. Otherwise, especially when it gets out of the control, it should be recognized as a destructive element of subsequent pathology formation. That includes people injured by nature-technological disasters.

Biocontrol is unique modern medical technology, which makes patient an active part of the medical-rehabilitation process.

Biocontrol is a complex of ideas, methods and computer technologies based on biofeedback, orientated on the development and perfection of physiological functions self-control mechanisms in normal condition or with a lot of pathologies. During the biocontrol procedure the information on different physiological functions will be given to the object by the external feedback arranged through a computer. It lets the examinee to learn how to control their physiological parameters and use this ability in daily life [1].

There is a problem commission on the hronobiologic and hronomedicine in Moscow (the chairman is academician F.I Komarov). The commission makes scientific researches orientated on practical use of biocontrolled colourstimulation and colourtherapy (the head is F.A. Pyatakovich).

BFB-therapy for the clinical appendices is divided into: BFB-EEG- therapy, BFB-GRS- therapy

(Galvanic reaction of skin), BFB – beta/teta – therapy, BFB – training for non-clinical application sphere is related to use of BFB-technologies in the effective stress management, which lets to increase the parameters of efficiency in sport, art, and everything else what needs long efforts and big responsibility [2].

There are also some alternative approaches based on hronobiological biocontrol. In 1994 we had proved the recommendations on the development of biotechnical colourstimulation systems, in which the parameters of colour influence on intensity may be automatically coordinated with parameters of biological feedback by means of transducer (gauges) of pulse and breath [3].

The realization of these theoretical positions was carried out in the patented biotechnical colour-soundstimulation system, in which two ovals with cyclically changeable colour sequence coded as this or that EEG pattern were shown.

The researches have shown that use of all biocontrolled colourstimulation provides transformation

of EEG pattern on the basis of the mechanism of resonant capture of thrust frequencies and modification of patient's functional status.

It is known, that at breath with frequency 5-6 one minute, the variation of pulse reaches the greatest values. When breathing 6 times a minute the maximum of stimulation of a wandering nerve is observed as a result of respiratory heart's arrhythmia action [4].

This breath is also called metronomical breath or resonant, because the transfer function of pulse change has expressed functional resonance on frequency about 0,1Hz at breath [5].

That's why we have decided to use metronomical breath in a combination with a relaxing colourstimulation. Naturally for these purposes it was necessary to consider models of biocontrolled resonant breath.

The models of resonant breath formulas are submitted as tables set key parameters which are used for drawing up the algorithms and the program realization of the automated colourstimulation system.

Table 1. Parameters of the phases in the models of resonant breath formulas

Formula	Inhalation c	Pause c	Exhalation c	Pause c
Type 1	4	1	3	2
	4	0	4	2
	4	1	4	1
	5	0	5	0
Type 2	3	1	3	3
	3	1	4	2
	4	0	5	1
	5	0	5	0
Type 3	3	0	5	2
	4	1	4	1
	3	1	6	0
	3	0	7	0

The main parameters of respiratory cycle phases include duration: inhalation — pause — an exhalation — pause.

In the system biotechnic the resonant breath is synchronized with colourstimulation for amplifications of the influence on the central nervous system. The Active participation of the patient will turn the procedure of treatment into the rehabilitation action.

The posttraining condition of students was studied with the help of chronobiological tests. Thus the criteria of health were the reserves of cardiovascular functions, respiratory system, and also their relative parameters: the hronotropical reserve, inotropic reserve, the parameter of the reaction's quality, the parameter of oxygen debts, the definition of "individual minute" duration, estimations of situational and personal uneasiness (The Spielberg's test), the results of rhythmtesting. The parameter of an organism's stabil-

ity to oxygen debts basically depends on cardiovascular and respiratory systems.

The reduction of the parameter testifies the increase of the reserve. The increase of the parameter testifies the cardiovascular and respiratory systems functions reduction. If the natural breath delay after a superficial exhalation reaches 40-60 seconds, the ratio of oxygen and carbonic gas in organism is normal.

The parameter of oxygen debts is defined by formula: $POD = \frac{P_s \cdot t}{A_{pnoe}}$ in min/ Apnoe in sec. Test is carried out in rest, thus the intimate reductions frequencies are counted up, then the examinee makes a breath and a superficial exhalation after which holds the breath until it becomes difficult, then the time of breath delay is counted up.

If the calculated attitude is:

1. $\leq 1,0$, it is excellent;
2. 1,1-1,5 it is good;
3. 1,6-2,2, it is well;

4. > 2,2, it is bad.

The stratifications of the parameter of organism's stability to oxygen debts differ with students in an initial condition before training and after training. If the outcome parameter of students oxygen debts was good and excellent only with 33% persons, after training it became good and excellent with 75% examinee.

Our researches have shown that the disposable procedure of the determined biocontrolled light-emitting diode colourstimulation did not render any influence on this parameter.

The distributions of the "individual minute" parameter of students in an initial condition in comparison with the period after training of control group were investigated.

From the data submitted in the table follows that the distributions of the "individual minute" parameter of students authentically differs from the initial data and the results received after the training course. During the initial period the "short minute"

appears in 1,6 times more often than after the training course.

That, first of all, confirms the well-known a priori nervous-emotional condition of this category of students.

The directive biocontrolled light-emitting diode colourstimulation has led to "lengthening" of the "individual minute", and due to that the share of students which were having "short minute" has authentically decreased for 19% ($p < 0,05$). The number of students having the "individual minute" has coincided increased 4 times. The number of students who's physical and "individual minute's" time has coincided has increased in 4 times.

Quantitative characteristics of sympathetic and parasympathetic nervous system prevalence at rhythm regulation of the intimate reductions can be received at studying information parameters of temporary pulse orderliness.

Table 2. The examination stress influence on the parameters of the variability of the heart's rhythm.

Regime of the mobilization microstructure of the pattern HRV	Period of examination				Module		
	Fone		Stress		2 – 3	4 – 5	2 – 4
	Tranq respir	Reson respir.	Tranq respir	Reson respir.			
1	2	3	4	5	6	7	8
Quasi harmonic	56	39	-	20	17	20	56
Quasi determination	4	-	14	2	4	12	10
Harmonic	2	-	67	59	2	8	65
Determination	1	-	19	-	1	19	18
Quasi stochastic	31	51	-	23	20	12	31
Stochastic	6	10	-	7	4	7	6
$\sum P\%$	100	100	100	100	-	-	-
$\sum P_{i1}-P_{i2} $	-	-	-	-	48	78	186
$D(x_i)\%$	-	-	-	-	24	39	93
Signification	-	-	-	-	$P < 0,05$	$P < 0,05$	$P < 0,05$

From the submitted data follows that the resonant breath allows to differentiate the influence on the heart rhythm regulation of the wandering nerve. The metronomic breath provides the contribution of the cholinergical influences (a wandering nerve) to the comparison with vagal inhibition influence adrenergical mechanisms (a sympathetic nerve) for the people which are having stress.

This means that the similar test also has independent medical influence, besides diagnostic. Thus,

summarizing the material submitted in the section, it is necessary to note, that in the period before course influence on a frequency spectrum the alpha-rhythm concerned to a range of low amplitude of 12-13 Hz.

After the carried out determined colourstimulation course, the structure of the rhythm has undergone essential changes: the density of high-frequency components has decreased because of the beta range. Also the densities low-frequency and highamplitude components in the alpha range has increased due to the

frequency of 10-11 Hz. The decrease of the θ/α also means that the influence succeeded.

The process of the reorganization of EEG pattern is carried out unidirectional with the reduction in the system of the disorder measure, random and increase of the reproduction function, which shows the increase of the system efficiency: the optimization parameters grow in 1,5 times in comparison with an outcome before treatment.

It's also necessary to mention that the biotropical EEG parameters reflect normalization of the neurodynamical processes of the brain activity, directed on amplification of the braking reaction.

The Conclusions

As a result of carried out science work we have got the following results, which are new for the science:

1. The model of the efficiency colourstimulating optimization influences at stress was investigated. The light structure of the model met to a pattern of an alpha-rhythm spindle. The alfa-spindle model was developed in such way that, that lightimpulse porosity decreased all over again up to peak of a spindle and then as smoothly increased up to the last lightimpulse.

2. The Formed model to optimization to efficiency of the influence to account of the reinforcement intersystemic relationships of the system of the regulation. For these purpose was released structure in the form of pattern "resonance of breath", including change the correlations to duration of the inhalation and exhalation under unchangeable period 10 seconds.

3. It is designed module biocontrolled of the system deterministic biocontrol, including possibility to independent realization of the synchronous influence by the method of the colour stimulation and resonance of breath.

4. Efficiency training of the colour stimulation beside student, having high neuroemotional load, was charaterized by change their functional condition in after training period to account of the transformations neurodynamic to activities of the brain.

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THE EFFECT OF THE CHANGE IN POPULATION QUALITY OF LIFE ON THE VALUES OF PREGNANCY LOSS AND FETUS DEVELOPMENT

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The fact of comparatively higher population quality of life and medical service in previous decades has been a distinction feature of Russia development dynamics for last 20 years [G.A. Komarov, 2009]. Slowing down the rate of economic development is considered as a main cause of direct material losses, missed benefit, non-expectancy to live till a certain number of years. The specific contribution of social loss is accepted to account for 81.6% of total loss, while that of ecological loss – 18.4% [N.I. Kozlova et al., 2002].

Despite the measures undertaken to stimulate birth rate, the before-existent level failed to be achieved, thereby confirming the notion of eventual character of demographic crisis. It should be noted that low values of birth rate are observed in European economically favourable countries as well, because the population urbanization with the change-over to health quasi-modern type is characteristic of industrial society. The most important causes, giving rise to different disorders of intrauterine development, include chronic malnutrition and improper nutrition of women before and during pregnancy [V.A. Shchurov et al., 2008]. In the countries undergone fascist occupation the baby development in mothers, who went hungry in war time, was accompanied by a number of disorders: increasing the incidence of spontaneous abortions, premature births, mortinataly [Yu.I. Novikov et al., 1981]. The children born grew weakened, they had more diseases and higher mortality rate. In countries with higher animal protein consumption the body size of younger-age children was relatively more [T.V. Volkova, 1988]. For example, in Bombay, where society caste structure still remains, the body mass of "the lowest" class newborns amounts to 79% of the value of "the highest" class children [R.K. Ignat'yeva, 1970]. In France the body length in the newborns of immigrants from South Africa is less in comparison with natives of Paris [F. Rovilli-Sausse, 1998]. In