The Logic of Health

"*Health is a state of complete physical, mental and social well-being*"
~World Health Organization, 1948

"If a man cares about his health himself, then it is hard to find a doctor who would know what is better for his health then a man himself". This aphorism is ascribed to the ancient Greek philosopher Socrates, who lived from 469 to 399 BC. It's odd, but in spite of undoubted progress in medicine and pharmacology this quotation remains relevant even today. Why? The answer to this question is in this pamphlet.

Modern medicine and the health

The life of the organism is a huge complexity of interrelated processes on many levels that maintain a particular state of equilibrium. Abnormalities in physiological processes result in disturbing this balance. We can control the course of physiological processes. For this purpose Nature supplied us with signals of two types: sensations of comfort and discomfort. It seems that there are no reasons for anxiety when we feel well. Comfort lulls us and we forget that our health is not inevitable. In a word, until serious problems will appear.

The author of these lines had cardiac problems. I turned to the highly skilled physicians. But it turned out that modern medicine, with all its impressive achievements in the diagnosis and cure of the most difficult diseases, and its fantastic progress in surgery and transplantation, can help just to survive but not to return to full health. Why? Because everywhere methods of pharmacotherapy are based on eliminating the effects but not the causes of a disease. I'll explain this by personal example.

I turned to the cardiac clinic (one of the best in Ukraine) in connection with increased blood pressure and a sharp increase in pulse rate after to physical activity. After a full examination I was offered the modern complex therapy based on Nebilet (Nebivolol) and Co-Renitec (Enalapril+Hydrochlorothiazide) medications. Nebilet is a selective beta-adrenergic blocking agent (which mainly blocks the β_1 adreno receptors). The frequency and strength of heart beats are stimulated by adrenalin through the β_1 adreno receptors. Blocking the receptors by beta-blockers decreases the strength and frequency of the heart beats, thereby lowering blood pressure. Scientists who were developing beta-blockers were awarded the Nobel Prize in 1986. Impressive, isn't it? Undoubtedly impressive. Apparently many human lives have been saved by adreno receptor blockers.

But the organism has no natural mechanism for regulating the rate and strength of heart beats by blocking β_1 adreno receptors. Decreasing blood pressure and pulse rate by beta-blockers is alien to an organism. It suppresses vital functions that evolved over millions of years, and it is no coincidence that it is linked with numerous additional health problems.

Co-Renitec is a composite medication which consists of enalapril maleate (this is linked with the suppression of renin-angiotensin-aldosterone system activity) and hydrochlorothiazide (a diuretic which increases urinary excretion). In order to explain the essence of "curing" I have to go deep into the maze of physiology. Briefly I'll explain how the renin-angiotensin-aldosterone system works. Kidneys generate a number of active substances, including renin, a proteolytic enzyme. In the blood plasma it separates physiologically inactive peptide (angiotensin I) from the angiotensinogen. Under the

influence of an angiotensin-converting enzyme, angiotensin I turns into the active vasoconstrictor (angiotensin II). Owing to a vasoconstriction, angiotensin II increases blood pressure and aldosterone secretion, and it increases the sensation of thirst. The level of renin that is released into the blood increases as there is a decrease in blood pressure in the kidneys and of the concentration of sodium in the organs. Thus the renin-angiotensin-aldosterone system contributes to the normalization of blood volume and pressure.

Hydrochlorothiazide hampers the reabsorption of the ions of sodium and potassium in the renal tubules, which in turn is followed by a decrease in the reabsorption of water. Eventually the volume of blood reduces and the blood pressure lowers, but at the same time fluid-and-electrolyte balance is disturbed and hypokaliemia occurs.

The question arises: how can the blocking of beta-receptors, the depression of the renin-angiotensin-aldosterone system and introduction of a diuretic into the kidneys result in a person returning to full health? All those systems perform a huge number of functions besides those mentioned; their performance is directly linked with the performance of the whole organism. Everything in the organism is interrelated and functioning in both modes of direct relation and feedback.

So what do we get as a result? The medications decrease blood pressure and heart rate. But at what cost? During the clinical application of one of the first adreno receptor blockers – pronetalol - an increase in the number of canceroid diseases of thymus was observed. Modern selective adreno receptor blockers can cause bronchospasm in people who have chronic pulmonary diseases; they can result in sexual dysfunction (impotence), undue fatigue, depression, metabolic disturbance and other problems. Co-Renitec can cause angioneurotic edema, muscle spasms, nausea, asthenia (a condition indicated by general weakness, undue fatigue and moodiness), headache, coughing, impotence and many other problems. The apparently “innocent” diuretic hydrochlorothiazide can cause hypokaliemia. There seems to be no problem with a decreased amount of potassium (K+) in the organism that is linked with urinary excretion of potassium. Alas, hypokaliemia causes a number of really horrific consequences. Thus, Professor Vyacheslav Luk’yanchikov reported on *psycho-emotional and neuromyopathic abnormalities.*

Hypokaliemia is almost always followed by abnormalities in the rate, volume and other aspects of the work of the heart; first there is arrhythmia which is often serious up to ventrical fibrillation. The abnormalities occur not just in the functioning but also in the morphology of myocardium and blood vessels. Skeletal muscles are also subjected to hypokalemic dystrophy. Chronic hypokaliemia is followed by functional and structural damage to the central, peripheral and autonomous nervous systems. Neuromotor symptoms usually correlate with the depth and duration of hypokaliemia, varying from muscle weakness and low tendinous reflexes to a general paralysis including expiratory muscles.

Hypokaliemia causes functional and morphological damage to the kidneys and decreased tolerance to carbohydrates and may become a cause of diabetes mellitus, inasmuch as a deficiency of K+ leads to a disturbance of the insulin secretion and its action in the tissues...

So can we speak of health and a cure? Using medicaments is simply an acute treatment for a person in a critical situation. Such a “cure” has nothing to do with returning to full health. We can only speak about a decrease in blood pressure and heart rate caused by gross interference with the organism, and interference with its normal functioning as a result. There is no need to be a psychic to predict a steady deterioration in the health under such a regime of “cure”.

So what medicine had to do was to create a real cure and the return to full health. In my case, medicine had to discover the causes of the imbalance in the control systems of the heart. These are very diversified and not confined to the humoral control of the heart by the stimulation of frequency mentioned above, and the strength of heart beats with adrenalin through the β_1 adreno receptors. For example, there exists the general biologic phenomenon of heart rhythm control. According to this phenomenon, the central nervous system creates a volley of impulses. These impulses come to the heart by vagus nerves and by interacting with heart rhythmogenic structures, they cause the heart to beat at exactly the same speed as these impulses. Treatment directed towards returning me to full health required finding out the causes that led to the abnormal heart performance and eliminating these causes. This would allow the blood pressure and heart rate to return to normal themselves. But unfortunately modern medicine doesn't work like that. The basis of modern medicine is the "curing" of patients described above. It is an invalid basis for the primary task of returning a person to full health and, additionally, preventing possible diseases.

This sad picture set me thinking about the prospect of swallowing pills perpetually, with a very long list of horrific side effects. When I asked whether I'll be wrecked by these side effects, physicians quoted the proverb of one respected professor that "It is better to live with a bad liver than to die of stroke". Neither prospect suited me (as well as the fact that Nebilet caused pain in the heart area while Co-Renitec caused heart deficiency, even in minimal dosages). It was absolutely clear that bad liver was not the only trouble waiting for me in the near future. It was essential and urgent to study my own organism and try to return it to full health.

Choosing the Right Path

Physiology gave me strong reasons to be optimistic. Almost everything in our bodies can regenerate. Each of us has witnessed the wonder of wounds healing. Why was this process of renewal created? It was created by Nature so that we could recover our health. We have an innate ability to heal ourselves. If cell replacement took place without limit or error, we would live forever. But cell replacement takes place with errors (this is just one of the 250 aging theories). Why do these arise? Figuratively, the main reasons can be summarised as:

1. Faults in the genetic information result in faulty instructions about what building materials to use and how to use them.
2. Information errors acquired during our life time.
3. Poor or unsuitable building materials (inadequate diet and the body's inability to get all its requirements from the food consumed).
4. Various messages, from an adverse environmental impact to our own negative thoughts.

On analysing points 1-4 it is possible to reach the optimistic conclusion that only the genetic information is beyond our influence (this factor is estimated to have a 20-25 % influence on our overall health). All the other factors are, to a varying degree, under our own control.

The conclusion is well-known and obvious. We must lead a healthy life-style that excludes as many harmful aspects as possible.

Can it be as easy as that? Alas, in reality everything is very complicated. It is no accident that no fewer than 250 theories of aging exist! Each of these theories is right in some degree. And the understanding of a healthy life-style is not exact. Each of us knows

the principles of a healthy life-style: balanced and regular nutrition, physical exercise, walking in the fresh air, and so on. Unfortunately, very often our knowledge is limited to this list. In fact, a healthy life-style is defined by an infinitely large number of factors. Moreover, many factors can have an individual effect (something that is good for me might be harmful to my neighbour). For example, let us consider the relation between jogging and infarction (which is the formation of dead tissue caused by a lack of oxygen). Some people claim that jogging can prevent infarction, while others claim that jogging can cause infarction (they cite the occurrence of heart attacks in runners, including fatal attacks). Who is right? Both views are right. Everything depends on who jogs and on THE conditions of jogging (duration, speed, type of terrain, air temperature, etc). In some cases jogging improves health, in other cases it destroys it. Let's recall the photos of the 42 year-old Bill Clinton when he was president of the USA, showing him regularly jogging. It is hard to be certain what the effect of this was. But one thing is clear: Jogging did not make him healthy. In the autumn of 2004, Bill Clinton underwent aortocoronary bypass surgery that later resulted in periodic complications. The world's best cardiologists were powerless in their battle with disease.

How is it that jogging or other physical exercises can harm our health? This is a simplified explanation. Each person is born with one or more malfunction in the body. This is either heredity or caused by unfavorable conditions of growth in the uterus. In some individuals, the health problems are obvious at birth, in others the problems reveal themselves gradually later on in life. Inefficient functioning of any body system inevitably worsens the functioning of the others. Eventually this leads to the onset of one disease or another, depending on which system is disordered and how serious these disorders are.

Any physical exercise is an additional problem for the body, which has to mobilize its resources to adapt to the new conditions. If these resources are great enough, then moderate physical activity will be just a training of the resources mobilizing process. This is what happens when physical activity increases the adaptive abilities of the organism, so that improved health results. But let's suppose that one or another functional system is disordered even under conditions of rest (we will call it a "weak" body system). In this case, the increase in physical activity causes all the body systems to start working in a more tensioned mode. The malfunctioning of one system will (unless the body itself reverses the malfunction) inevitably lead to the failure of other systems. Eventually this may lead to infarction. It is almost impossible to draw a clear line between admissible and inadmissible exercise stress. This line depends on many factors and varies constantly.

The conclusion is obvious. It is necessary to:
1. Identify the "weak" system or systems (if there are several) of the organism with hereditary or acquired problems.
2. Take measures to improve the work of these "weak" body systems.
3. Gradually increase exercise stress (within admissible limits), in order to restore the co-ordination all the body systems, to improve the body's ability to adapt, and consequently improve health.

So, in theory it is possible to stop being a patient of conventional medicine. Moreover, even if cell replacement in our body is finite, it is still possible to extend our lifetime. It is necessary to prolong the lifetime of the cells, to create the ideal conditions for their renewal and functioning.

But how can we identify what is good for our cells (and so for us) and what is bad? The control of functional condition which is based on feelings is definitely not suitable. The feed-back is too subjective and slow. What we need is an immediate method of controlling our health and forecasting its changes. My task was to find a method which would allow me to evaluate the results of measurements very quickly and accurately.

Without such an evaluation of changes in health it is impossible to adjust immediately the renewal of the body's damaged functions. I decided which functional diagnostics to use after analysing the stages of a disease.

We can distinguish three stages in the development of a disease: **informational, pre-clinical and clinical**.

At the first stage abnormalities occur in the information flows of the body's control systems. Symptoms of disease are absent and functional indices are normal. In unfavourable conditions (see below for more details), the informational stage transforms into the pre-clinical one.

The pre-clinical stage is marked by the absence of subjective and objective signs of disease. But biochemical, immunological, serological and immunogenotypic tests can reveal the departure from the norm of the corresponding functions or indices. In some cases, recorded changes may indicate a risk of the development of one or another pathology. But in many cases, signs of existing pathological conditions can be discerned, which have not yet revealed themselves clinically.

The clinical stage is characterized by the full-scale presence of a disease. Traditional medicine usually deals with the clinical stage.

It is evident that prompt control of health can be based just on the analysis of the information flows of the body's control systems. Such analysis can reveal abnormalities in the organism before subjective sensations of discomfort and test abnormalities appear.

The human body is an intricate self-regulated system with a control structure that is multilevel and hierarchic. Such a system exists through the constant exchange of information at all levels, from cellular to organismic. Dynamic homeostasis is always present, that is, the organism is constantly trying to maintain a stable equilibrium in the face of changing conditions. Each of these conditions is determined by the impact of the external and internal environments, as well as by the general condition of organism. The transition from physiological norm to a pathological condition goes through several stages. During these stages the body tries to adapt to the new environmental conditions by changing the functioning level of separate organs and systems. To preserve the existing level or to move to a level more suited to the new conditions, a certain degree of tension in the control mechanisms is needed. The purpose of this tension is to mobilize functional resources.

Functional resources include informational, energy and metabolic resources that enable the body to make specific adaptations. To mobilize these resources under changes in environment a certain degree of tension is needed in the control mechanisms. The tension needed to preserve homeostasis determines the current functional condition of the person. The process of adaptation to environmental conditions results in a specific outcome. If the active factors (factors that disturb homeostasis) are not strong or have a short-term effect, the body can maintain satisfactory adaptation (i.e. preserve its optimal settings) with relatively small tension of the control mechanisms. If the impact is much greater or the duration longer, the maximum tension of control systems appears. This maximum tension is needed for the mobilization of the body's functional resources and activation of corresponding defensors, which ensure the necessary final effect (P.K. Anokhin, 1962). Overstraining the control systems may lead to adaptation being disrupted, which is followed by inadequate change in the level of functioning of the body's main systems. This results in abnormality of homeostasis, the appearance of pathological syndromes and diseases. The body's ability to adapt to the new conditions (its adaptive ability) depends on its functional resources and its ability to mobilize them in time, thus preventing the exhaustion of the control mechanisms. The concept of the body's adaptive abilities includes two aspects, diagnostic and prognostic. The diagnostic aspect reflects

the current condition of the body, the amount of its functional resources and the corresponding tension of the control systems.

The prognostic aspect characterizes the body's potential ability to perform a particular activity. Depending on their resources, different people react to the same impact with different tension in their control systems. In some cases, the control systems become exhausted very quickly; in other cases, the body is able to preserve homeostasis (under the same impact) for a long time, without causing significant tension of the control mechanisms. An adaptation that demands increasing effort from the body, and goes beyond the scope of the "biosocial budget", will eventually lead to the failure of the adaptive mechanism. Therefore, it is vital to know the cost of preserving homeostasis during the body's adaptation to a new and unfamiliar environment. *A body's adaptive ability is an indicator of health. It is evaluated by the degree of body adaptation to the environmental conditions.* (R.M. Baevsky, 2005).

The information about forming different homeostasis conditions and the cost of passing from one condition to another is contained in different bio-rhythms of the body.

To carry out the diagnostics, the hardware-software complex "Omega-M2" was used; the aim is to analyze the biorhythms of the body, using an electro-cardio signal in the broadband frequency. "Omega-M2" is based on a new analysis of bio-rhythmic processes – Fractal Neurodynamics. The development of this technology was initiated by the USSR navy in order to study the abilities of the human body under extreme stress during the training of naval commandos and scouts, who had to act autonomously in an open sea. This work was given a USSR Government Award when it was successfully completed.

The "Omega-M2" hardware-software complex has opened up the diagnostic facilities enormously. These functions are possible:

- Electrocardiogram (ECG) registration in standard lead and real-time monitoring of the functional conditions.
- Screening and diagnostics of the functional conditions.
- Dynamic monitoring of changes in the functional conditions – health calendar and clock.
- Daily forecast of the psycho-physical activity in the "biological clock" mode.
- Evaluating the cardiovascular condition and neuro-humoral regulation according to the "golden section" on the ECG timing parameters.
- Evaluation of the vegetative regulation parameters using statistical, time and spectral methods of heart rhythms analysis
- Evaluating the central regulation parameters and the condition of the endocrine system by neurodynamic analysis of the biological rhythms.
- Evaluating the psycho-physical condition of the patient by phase analysis and mapping the biorhythms of the brain.
- Evaluating the degree of harmonization of the body's biorhythms by fractal analysis
- Evaluating the information parameter of the immune status by fractal analysis
- Evaluating the self-regulation level in conditions of the biological feedback.
- Automatic evaluation of the PQRST parameters with the ability to correct manually.
- Producing the comprehensive medical report following computer-aided analysis, saving and printing the results of the survey (plus many other options which were not relevant to the evaluation of my own health).

The preliminary tests of the ability of "Omega-M2" to evaluate health under different conditions exceeded all expectations. It turned out to be so sensitive that during recording it even registered the effect of different *thoughts* on the health condition. The

appearance of negative emotions, concerns, anxiety, etc was immediately recorded as a worsening of health indices.

But unfortunately, the diagnostic complex “Omega-M2” (like any other medical diagnostic equipment) was unable to show the source of all my troubles; it could not identify the weak points in my body. However, quite poor health led me to conclude that there are many such weak points in my body, so it would be logical to take measures to activate the whole body. Therefore I searched innocuous, broad-spectrum biologically active substances, which are able to improve the performance of almost all organs and control systems. At the same time these substances had to have a functional orientation which I was interested in (for example reducing blood pressure and heart rate). It was necessary short-term to stop taking medication and normalize the performance of the main link - cardiovascular system.

Activating the body’s work by biologically active substances should create the favourable conditions for training the body with moderate physical activity. This moderate physical activity was considered one of the main factors in health improvement. Functional diagnostics had to play the key role in determining the amount of physical activity.

In general, the measures taken had to ensure the functioning of the body as it functioned 10-15 years ago. In this case it was hoped not just to retard aging but also actually to rejuvenate the body.

The Results

To evaluate the results of my searches let’s return to functional diagnostics, for it is hard to take on trust the word of someone who declares that at the age of 63 he feels like a thirty-year-old without taking the drugs that were prescribed for the rest of his life, after the tachycardia and hypertensic crises which necessitated calling for an ambulance!

Before starting to analyse the survey results we shall consider several sections of the Omega-M2 manual. During the analysis of the content (Figures 1 – 3) we will emphasise the information that is present on the “Observation card”, which is printed and passed to the patient. The complete manual contains 66 pages.

SCREENING

Figure 1 is taken from the Manual and presents the following information:

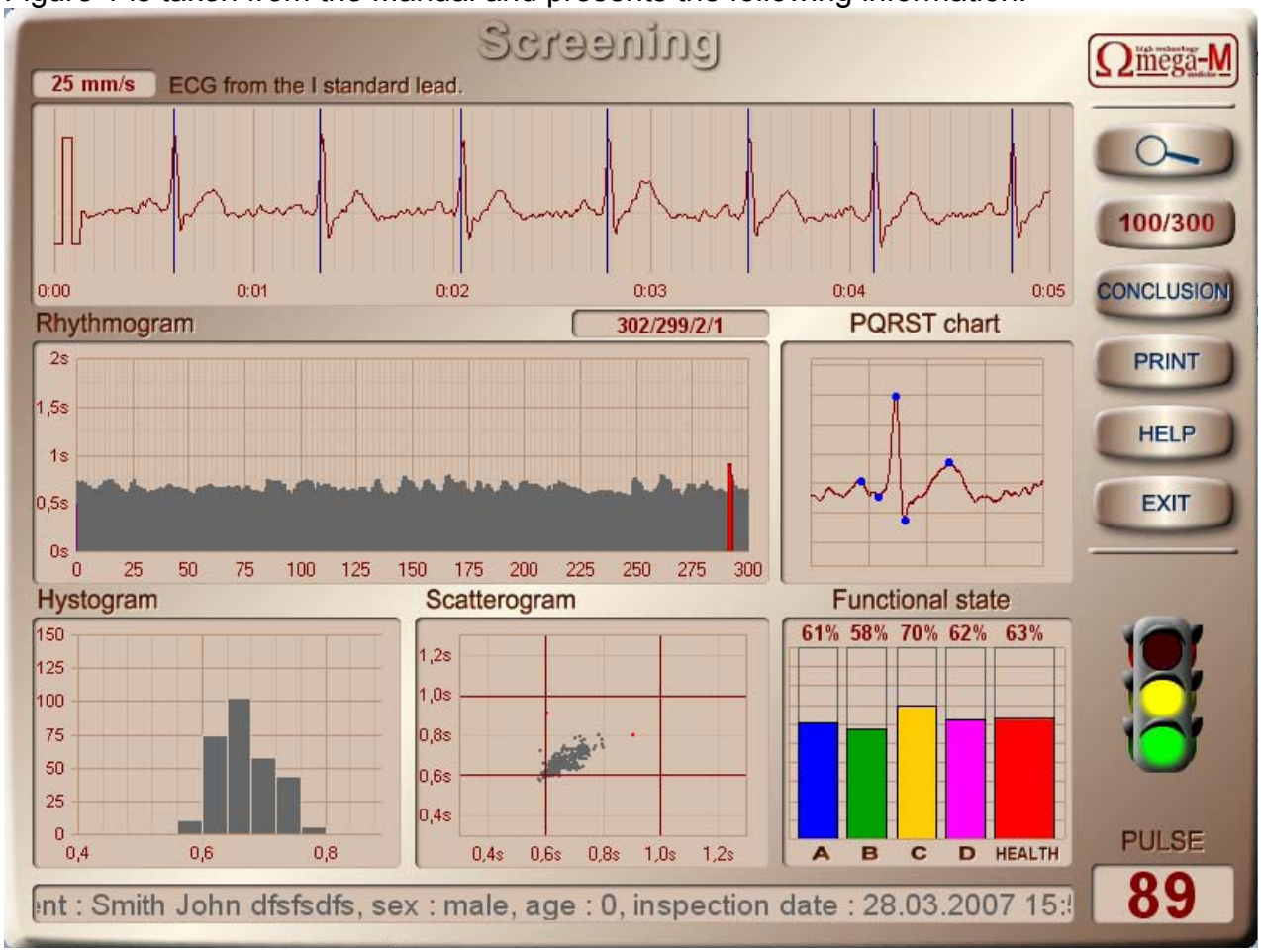
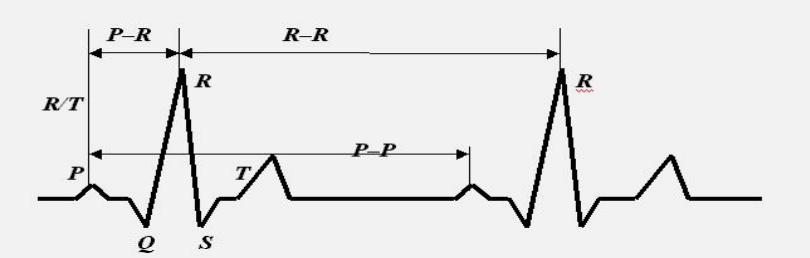


Figure 1

The window displays the ECG record and cardio-complex, relating to the RR interval, selected on the rhythmogram. Blue marks indicate the P, Q, R, S, & T peaks (see Figure 1 and scheme below).

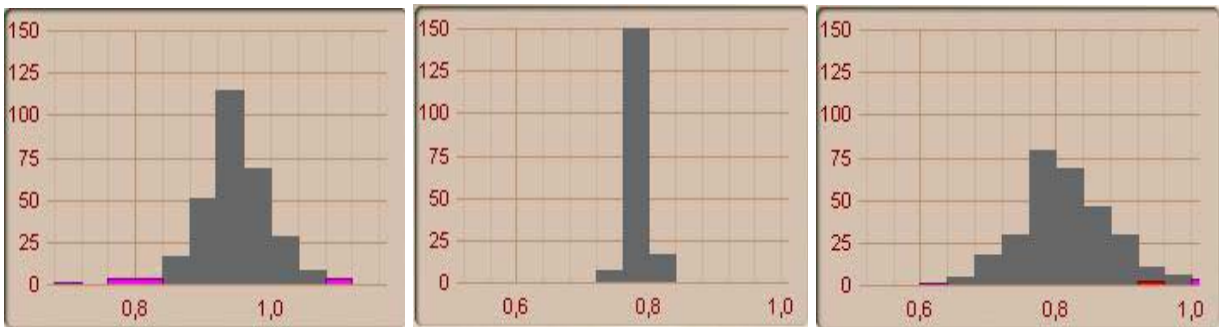


Rhythmogram

The rhythmogram shows the dependence of the RR interval (RRi) duration on the number of the evaluation cycle. The atypical phenomena observed are marked in red on the rhythmogram. The numbers on the x axis show the RRi. Time is shown in seconds along the y axis.

Histogram

The histogram charts the duration of RRi (x axis) against the probability of their occurrence (y axis).



A B C

In the state of vegetative equilibrium (A, above), the distribution is normal and the highest column (mode) is between 0.7-1.0 sec. In (B) the columns are shifted to the left and the histogram's base is not so wide, which shows the influence of the sympathetic nervous system. (C) shows the parasympathetic nervous system influence.

Scattergram

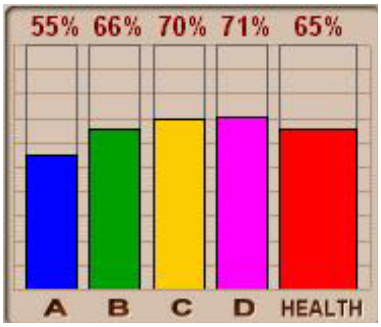
RRi scattergram is a display of the heart rhythm, which displays the “mnemopictures” characteristic of the main types of disturbance of the heart rhythm. The x axis shows the RRi in seconds, the y axis the value of RRi+1 in seconds. Atypical phenomena on the rhythmogram and scattergram are marked in red. Uniform distribution (A, below) means equilibrium in the vegetative nervous system state, the normal state. Higher density of the scattergram “cloud” and its skewing towards the bottom left corner (B) indicates a dominance of the sympathetic nervous system. Considerable spread of the points of scattergram and skewing to the right (C) indicates a predominant vagus nerve influence on a sine node.

A B C

Figure A is a norm (balance in the vegetative nervous system). B and C is an imbalance in work of sympathetic and parasympathetic departments of the vegetative nervous system. Under the body's limited ability to adapt, the imbalance in these control systems can demand higher levels of control, increased tension in the control systems, exhaustion of functional resources and a reduced ability to adapt, with consequent transfer to the pre-unhealthy condition.

Diagram of Normalized Indices

The information about indices of functional condition is contained in a diagram of normalized indices:



A – adaptation level of cardiovascular system

B – index of a vegetative regulation

C – index of a central regulation

D – psycho-emotional state

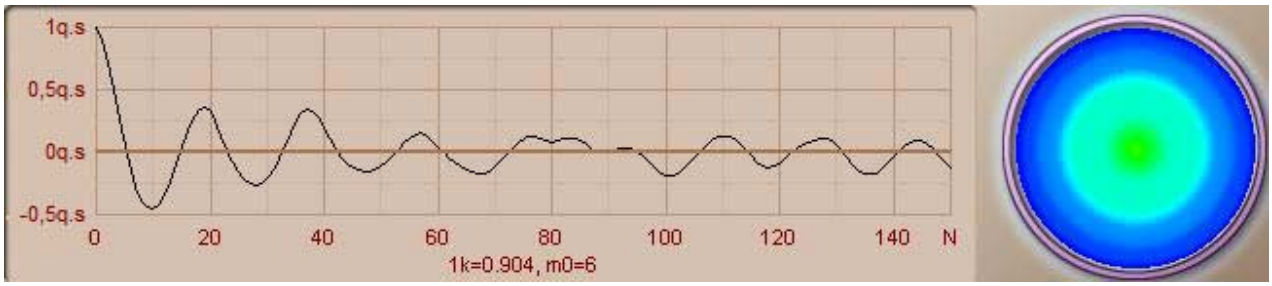
Health – integral index of a functional state: evaluates current health condition and forecasts the ability of the body to preserve homeostasis of the main essential systems and organs.

The closer these indices are to 100 %, the better the level of health. On the observation card these parameters are expressed as a decimal fraction, i.e. 100 % corresponds to 1.0.

Figuratively, the health level is classified with the image of “traffic lights”. The colours of the “traffic lights” correspond to the different levels of functional state:

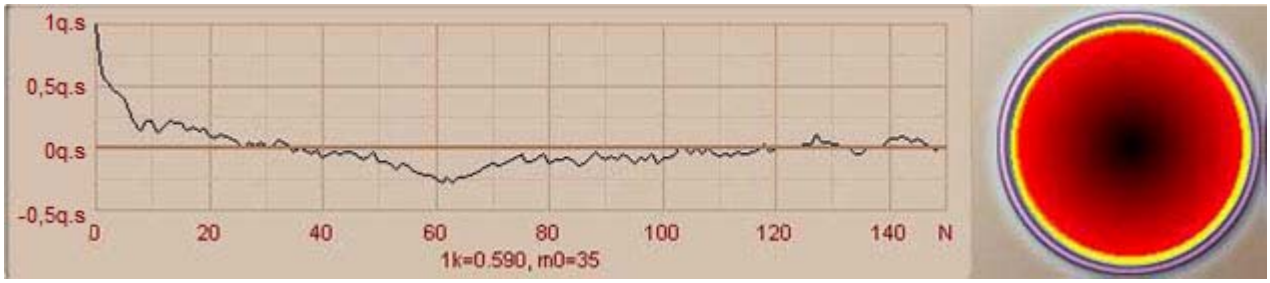
	NORMAL FUNCTIONAL STATE. HIGH ACTIVITY.
	NORMAL FUNCTIONAL STATE
	SMALL DIVERSIONS OF FUNCTIONAL STATE FROM THE NORM. IT IS RECOMMENDED TO REPEAT THE OBSERVATION
	ABNORMAL FUNCTIONAL STATE. FURTHER OBSERVATION IS RECOMMENDED.
	PRE-ILLNESS STATE. SIGNS OF PATHOLOGICAL CHANGES. CLINICAL OBSERVATION IS STRONGLY RECOMMENDED

On the observation card, the **analysis of the variation in heart rhythms** is also represented by a spectrogram of different frequency components of the heart rhythm oscillation and an auto-correlogram that represents the controlling influence of an independent and central contour on a heart rhythm:



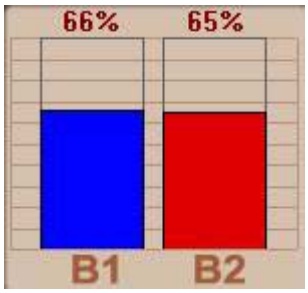
A - Predominance of the independent regulation contour

B - Predominance of the central regulation contour



C – Pathologic regulation

An estimation of the **vegetative regulation efficiency** is represented by a bar chart of vegetative regulation, a list of parameters with quantitative values (the normal range is indicated in the brackets on the observation card) and “traffic light” colours which correspond to the different levels of functioning of the vegetative nervous system:



This diagram shows normalized values of the integral indices of a vegetative regulation

B1 – regulation level

B2 – regulation resources

	Normal vegetative regulation High function resources.	Minimal or optimal exertion of regulation systems. Good adaptation to the environmental conditions.
	Moderate strain on the vegetative regulation system. Normal functional resources.	State of a physical strain manifested by the mobilization of protective mechanisms. Rise of activity of the sympatho-adrenal system and the "pituitary bodies - paranephroses" system.
	Hard strain on the vegetative regulation system. Low functional resources.	Overstrain. Lack of adaptive and protective mechanisms. Disability to provide optimum proper response of an organism to the impact of environmental factors.
	Malfunction of the vegetative regulation system. Functional resources too low.	Malfunction of the adaptation mechanisms. Exhaustion of the regulation mechanisms. Predominance of the non-specific changes.
	Malfunction of the vegetative regulation. No functional resources.	Premorbid state with prevailing of specific changes.

NEURODYNAMIC ANALYSIS

The results of neurodynamic analysis are presented in the following window:

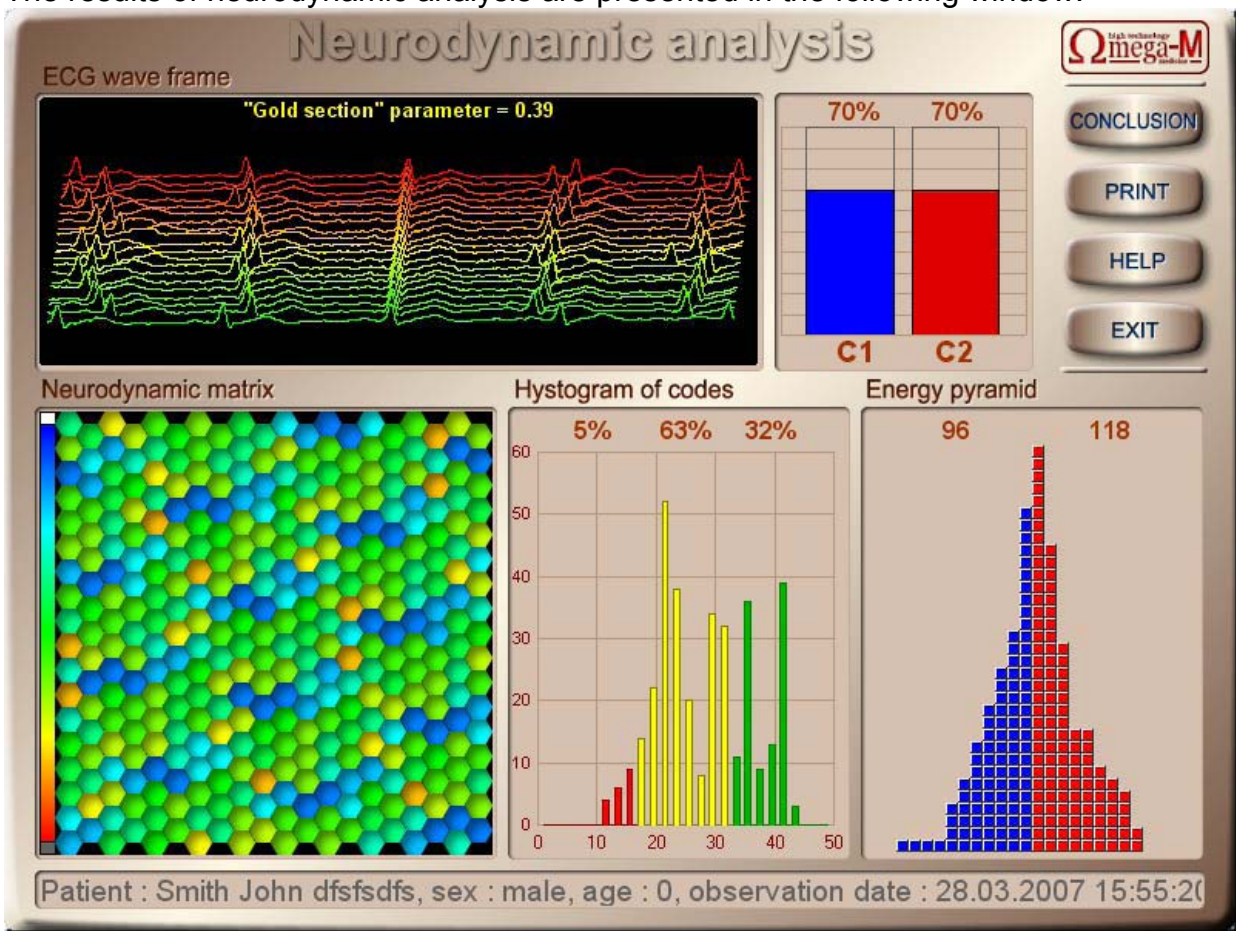
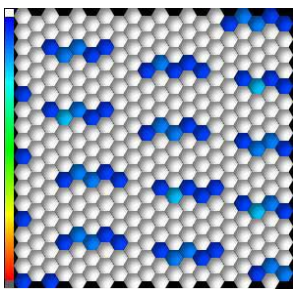


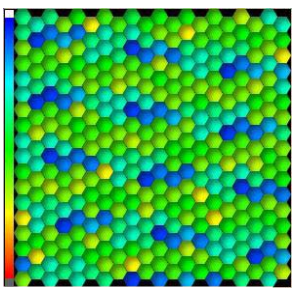
Figure 2

1. The Wave frame of an EGC signal window allows visual evaluation of the variability of different rhythms which form the PQRST-complex. In the upper-left corner there is a “Golden Section” parameter, which is the ratio of the duration of the whole complex to the period of the cardio-signal. The “Golden Section” parameter can vary from 0 to 0.62. Its normal value should not be less than 0.15. In pathological conditions the value is less than 0.01.

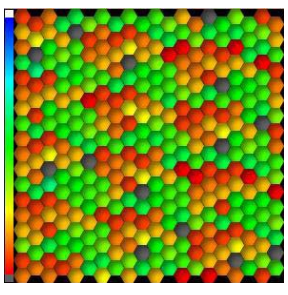
2. The Neurodynamic matrix window represents the informational interaction between the heart rhythms. Separate elements of matrix correspond to the different neurodynamic code exposition windows. The colour of an element defines the degree of structural failure of the code. The gradations in the colour scale correspond to different degrees of code structure failure, ranging from pathologic to optimal.



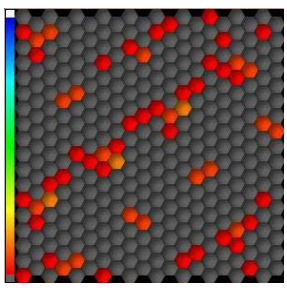
Norm
Hyper activity



Norm
Hypo-activity

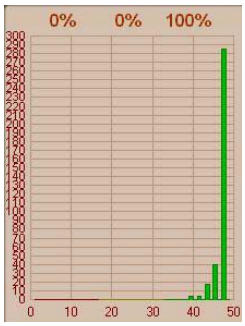


Functional disorders

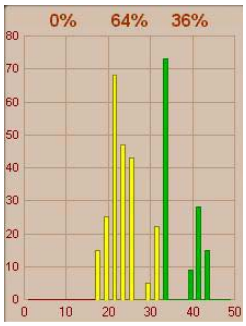


Pre-illness state

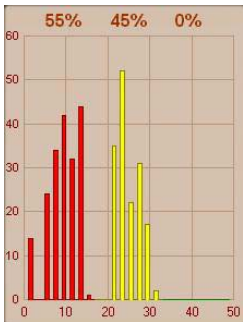
3. The Histogram of codes window represents the distribution of neurodynamic codes according to the degree of their structural failure. Red indicates codes with defective structure; yellow, codes with a modified structure; and green, codes whose structure corresponds to the normal functioning of the body.



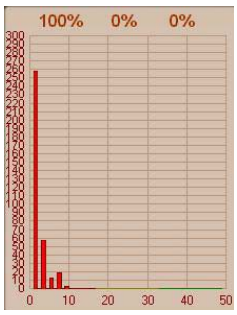
Norm
Hyper activity



Norm
Hypo activity

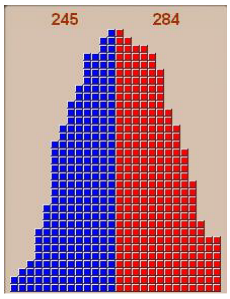


Functional disorders

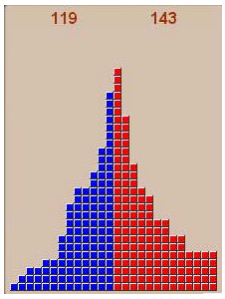


Pre-illness
state

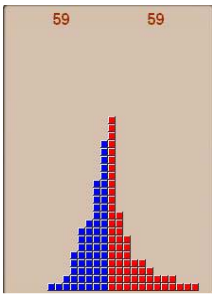
The Energy Pyramid window is a dynamic display of the energy balance in different control systems of the body. The correlation between the right and left parts of the pyramid represents the dynamics of anabolic and catabolic processes – the left part corresponds to the accumulation period of energy, while the right one represents the period when different organs and systems are comsuming energy. The energy pyramid is characterized by the following indices: energy resource, energy balance, anabolism index, catabolism index. Examples of “energy pyramids” corresponding to different states of the organism are shown below.



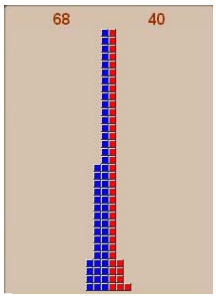
Optimal energy
balance



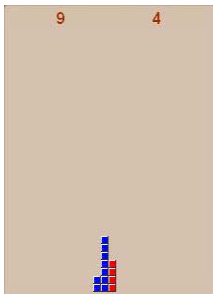
Norm



Lowered energy
resources



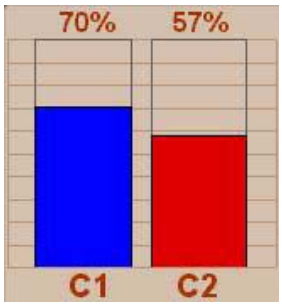
Signs of emaciation



Emaciation

5. The CR Diagram window.

This diagram represents the normalized values of integral indices of the central regulation:



C1 – compensation level

C2 – compensation resources

The state of the central regulation mechanisms includes 5 variants:

	Normal central regulation. High compensation level. Maximum resources.
	Normal central regulation. Normal compensation level and resources.
	Normal central regulation. Compensation level is lower than normal. Low resources.
	Signs of malfunction of the central regulation mechanisms. Low compensation level. Insufficient resources.
	Malfunction of the central regulation mechanisms. Critical compensation level. Insufficient resources. Signs of the endocrine disorders.

BRAIN BIORHYTHMS

Figure 3 (below) shows the *Brain Biorhythms.*

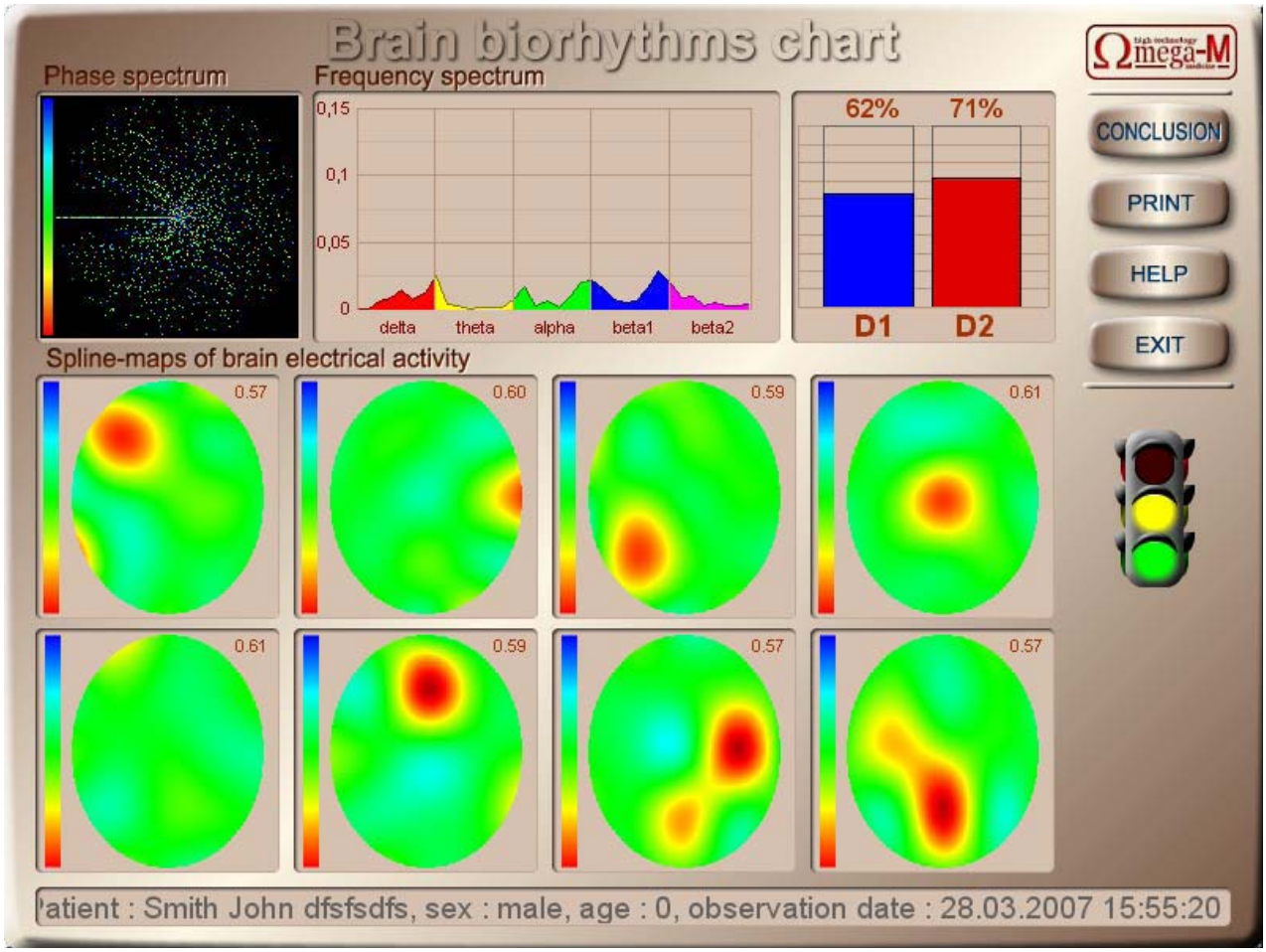
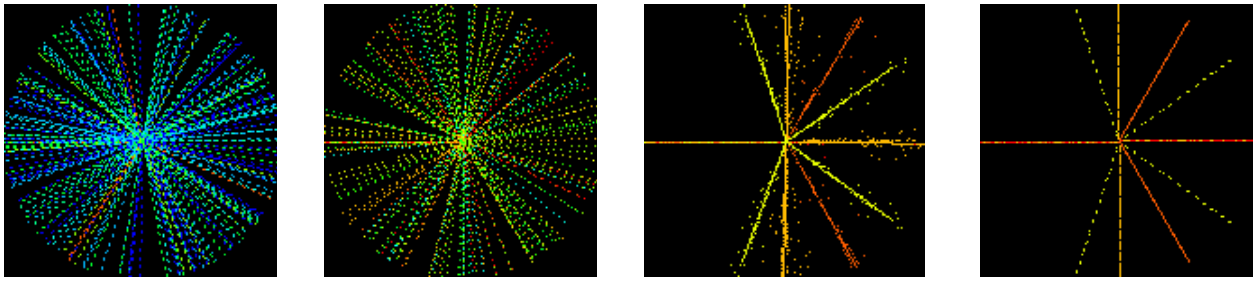


Figure 3

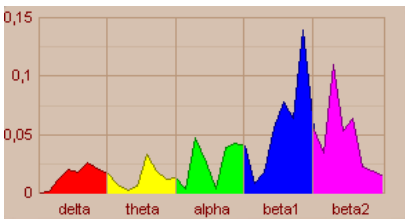
1. The Phase Spectrum window. Colours of the spectrum correspond to the different rhythms. The width of sectors is defined according to the modulation indices of the corresponding parts of the spectrum. The maximum colour saturation indicates normal activity. With functional and pathologic malfunctions, the level of phase portrait saturation decreases rapidly. Unfortunately this pictorial information is absent from the observation card.



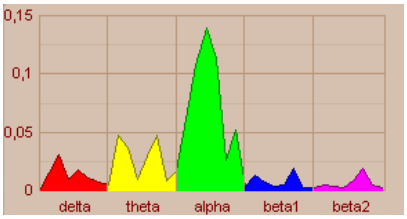
Change of the color saturation level of brain activity phase portrait during transition from the normal activity to the states with functional and pathological abnormalities (left-to-right).

2. Frequency spectrum

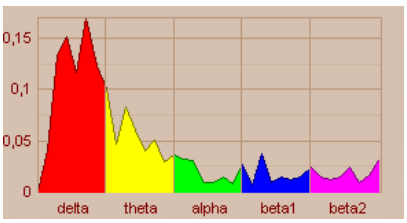
The spectral power is calculated for the complete range of delta, theta, alpha, beta1- and beta2- rhythms. Registering data is coordinated with the results of the brain encephalogram.



Hyper activity

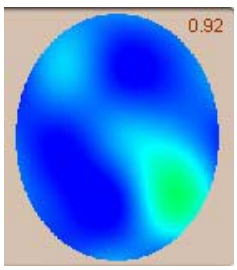


Normal activity

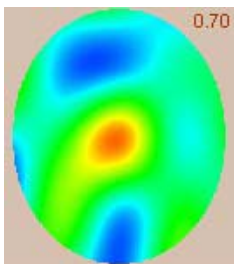


Hypo-activity

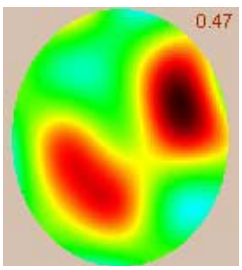
3. Spline maps are two-dimensional representations of the biorhythms of the central nervous system (CNS) in the functional spaces of the brain. It is an on-screen method of monitoring and visualizing brain biorhythms in real time. The set of spline maps supplements the visual analysis of a recorded summarized bio-electric signal of the CNS, and enables simultaneous evaluation of the space changes in the activity of brain bio-rhythms on 8 maps of power spectra. This allows the onset of any increase in rhythm to be located efficiently, and solitary flashes of biorhythmic activity in different brain spaces can be readily observed. The sequence of spline maps corresponds to different functional spaces in the brain, and their colours represent different levels of electrical activity.



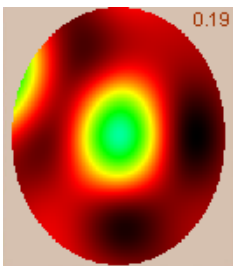
Hyper activity



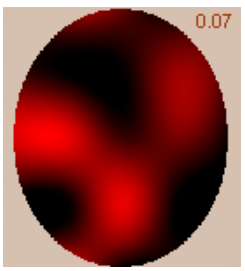
Normal activity



Hypo-activity



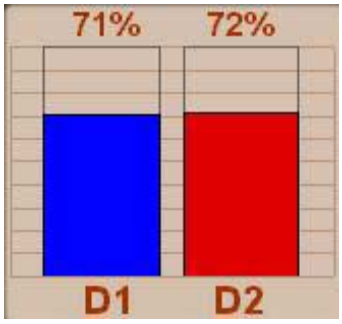
Signs of depression



Pathological state

4. The Control Diagram window

This diagram shows normalized values of the integral parameters of the psycho-emotional state:



D1 – self-regulation level

D2 – self-regulation resources

5 Traffic lights

The colour combinations correspond to the different levels of a psycho-emotional state:

	PERFECT PSYCHO-EMOTIONAL STATE. HYPER ACTIVITY.
	GOOD PSYCHO-EMOTIONAL STATE. NORMAL ACTIVITY.
	NORMAL PSYCHO-EMOTIONAL STATE.
	NERVOUS STRAIN AND SIGNS OF TIREDNESS.
	NERVOUS STRESS AND SIGNS OF DEPRESSION.

FRACTAL ANALYSIS OF BIORHYTHMS

The fractal analysis is an evaluation of the degree of harmonization of biorhythms of different organs and body systems that have a fractal-like structure, in order to discover functional and pathologic changes, evaluate the body's immune status, and forecast changes in the level of health for a period up to 10 days (Figure 4).

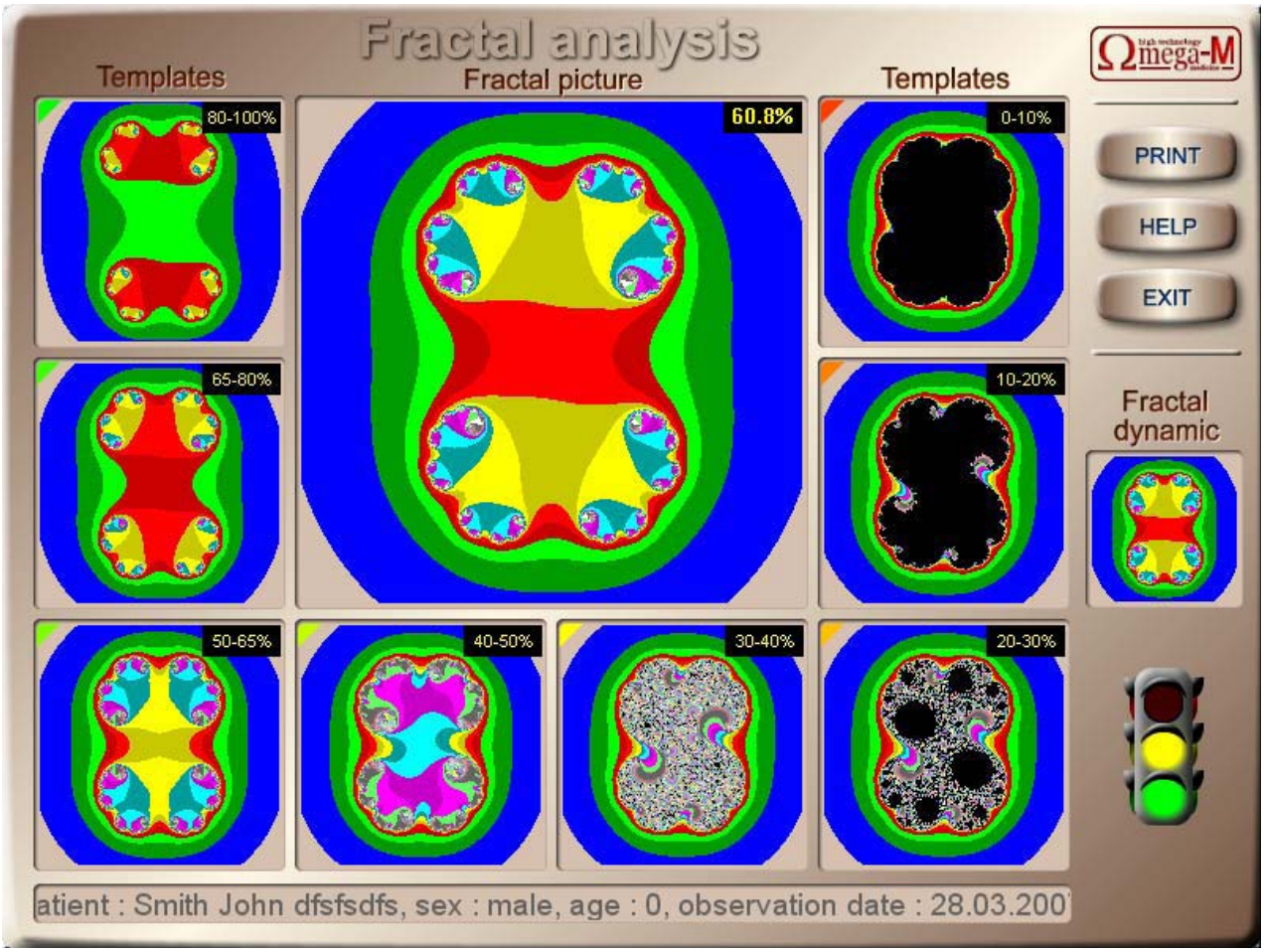


Figure 4

The fractal portrait – in the centre – is formed by the biorhythms of an examined patient, which were extracted during the process of electro-cardio signal registration.

In windows **1** – **8** there are standardised images corresponding to different degrees of harmonization of the biorhythms, ranging from the maximum in window **1** (top left) to the minimum in window **8** (top right). The fractal harmony of biorhythms at all levels of the RR intervallogram testifies to high energetic resources, optimal energy balance and favorable prognosis for the changes in health level (windows 1-2). A partial disharmony in biorhythms in separate organs and systems is seen in fractal portraits 3-4, which represents some degree of functional abnormality. The decrease of energy resources and changes in energy balance are characterized by disharmony in the biorhythms, which corresponds to serious functional abnormalities or pathologic changes in separate organs (windows 5-6). The fractal portraits of windows 7 - 8 show total depletion of energy resources and serious pathological changes in organs and systems.

The fractal index that is given in the patient's portrait allows a forecast to be made of his health level during the next 3 to 10 days. If the fractal index is greater than integral index of functional state (which is shown in Screening window) then the health state will improve; if smaller, then the health state will become worse.

The information on the observation card ends with the Bio Age Chart (Figure 5).

Gerontological curve is the slowest biological rhythm of the organism. Its period is determined by the life span and covers 90-110 years. The curve consists of two zones, corresponding to an increase and a decrease in resources.

Chronological age is measured with the clock situated outside the organism while biological age is measured by the clock inside the organism. People can be younger or older than their chronological age. That's why diseases and death that are linked with aging happen at different chronological ages. The real age of a person is determined not by the time passed since his birth but by the performance that reflects his viability. The degree of an organism's viability is identified as biological age.

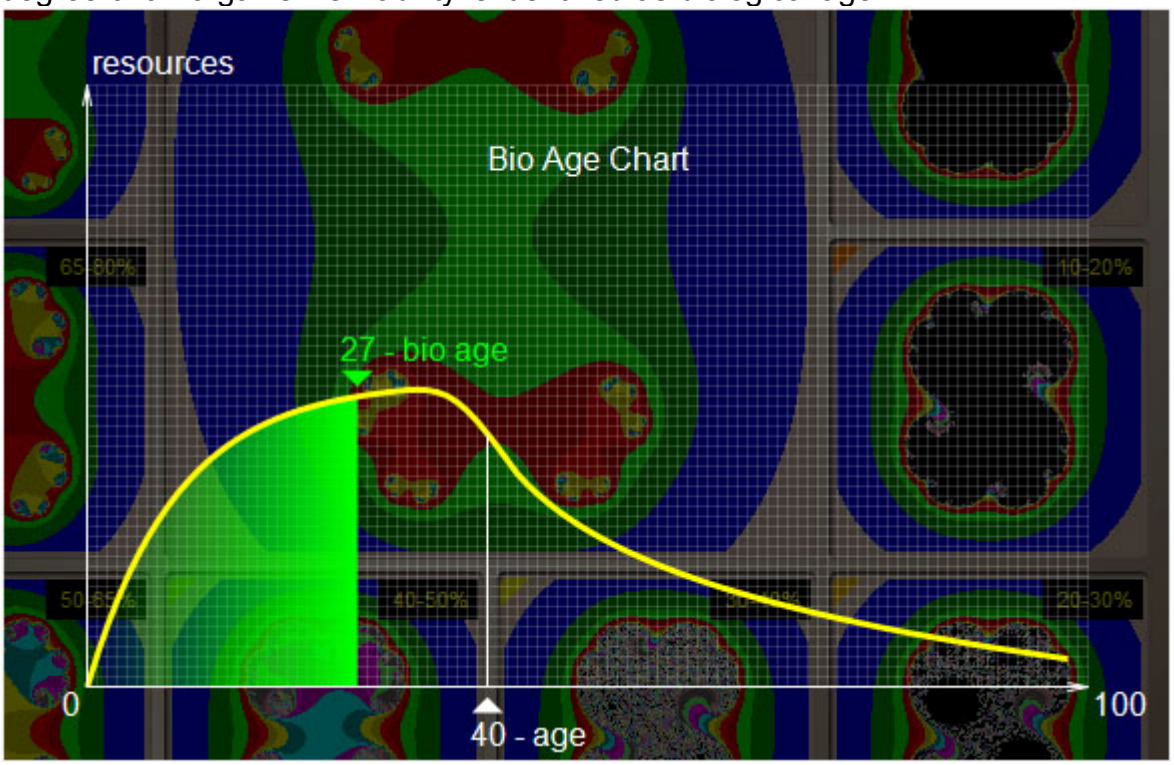
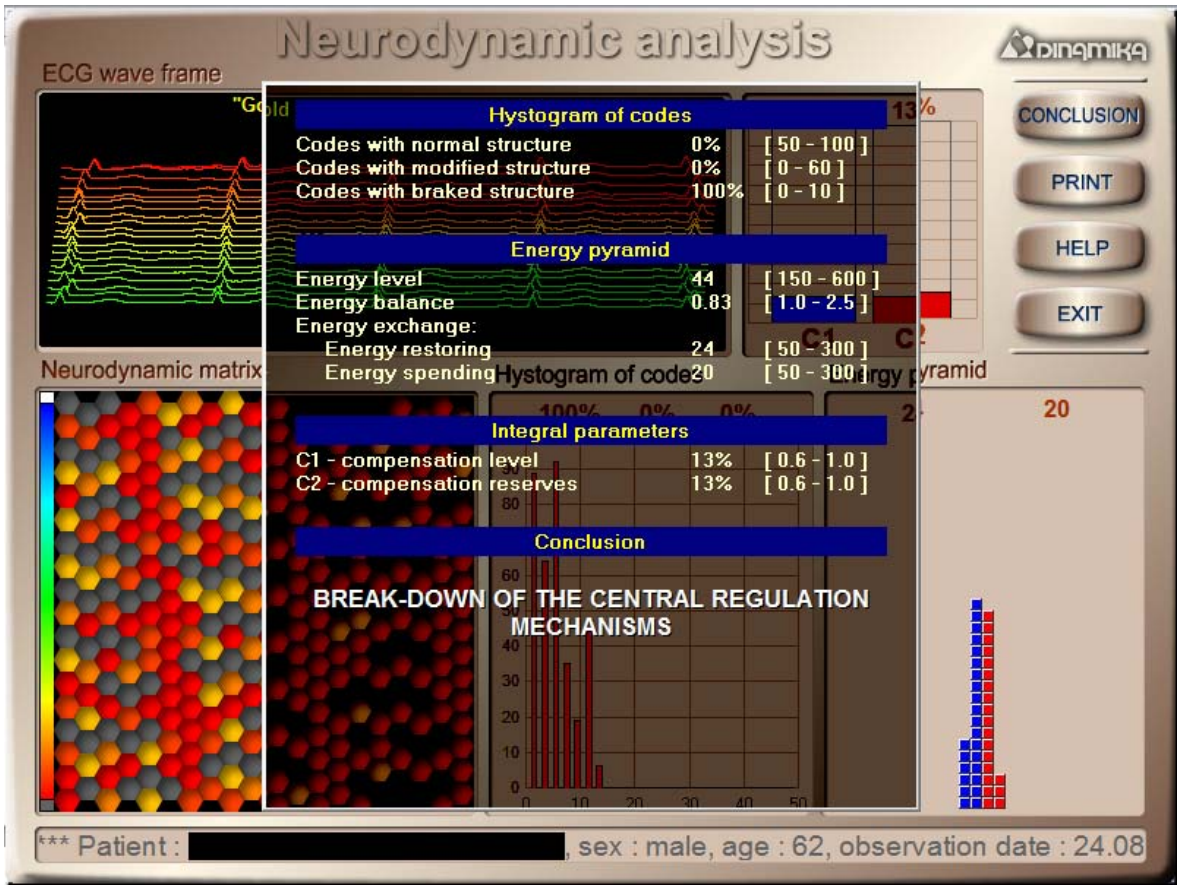


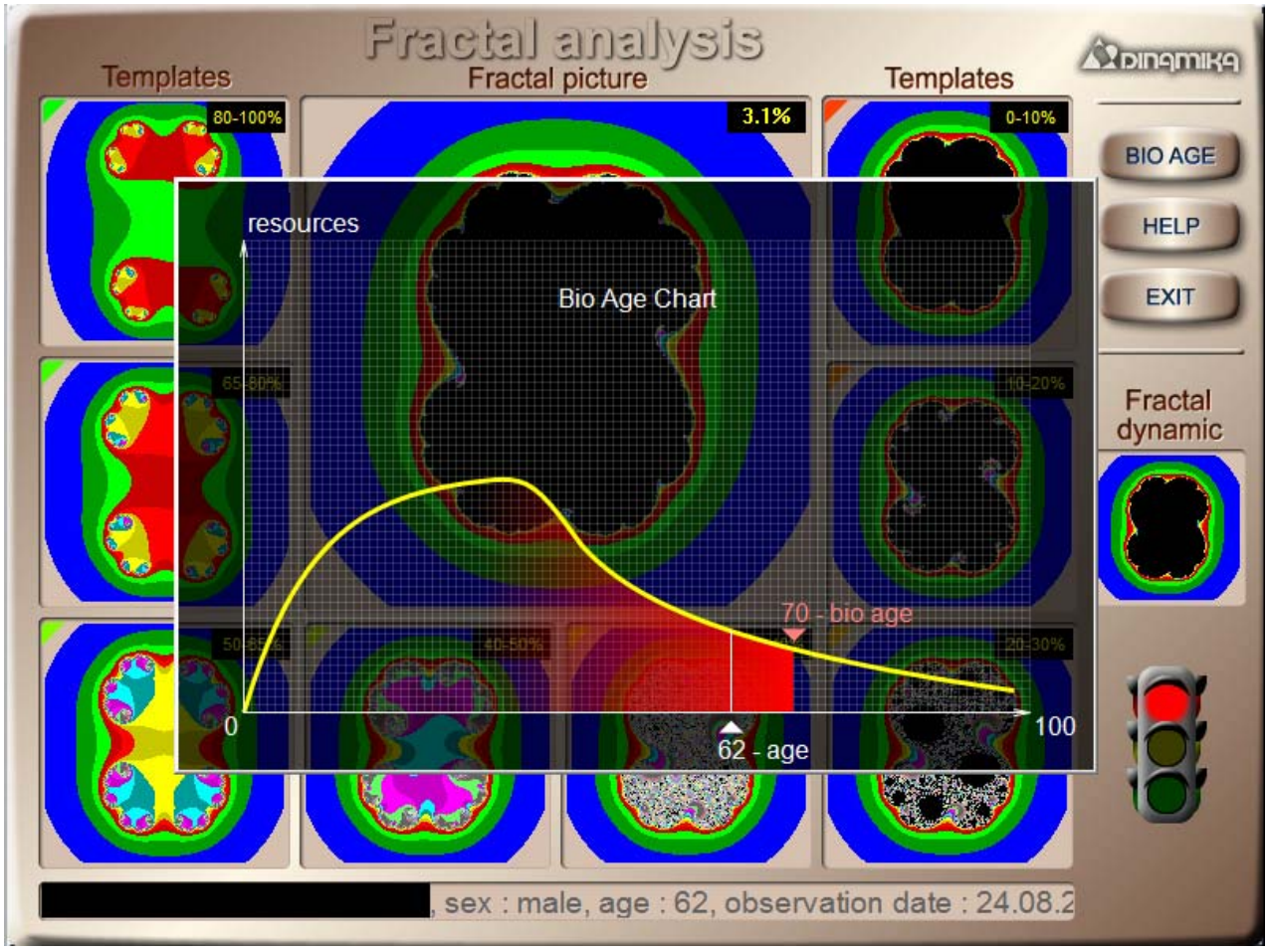
Figure 5

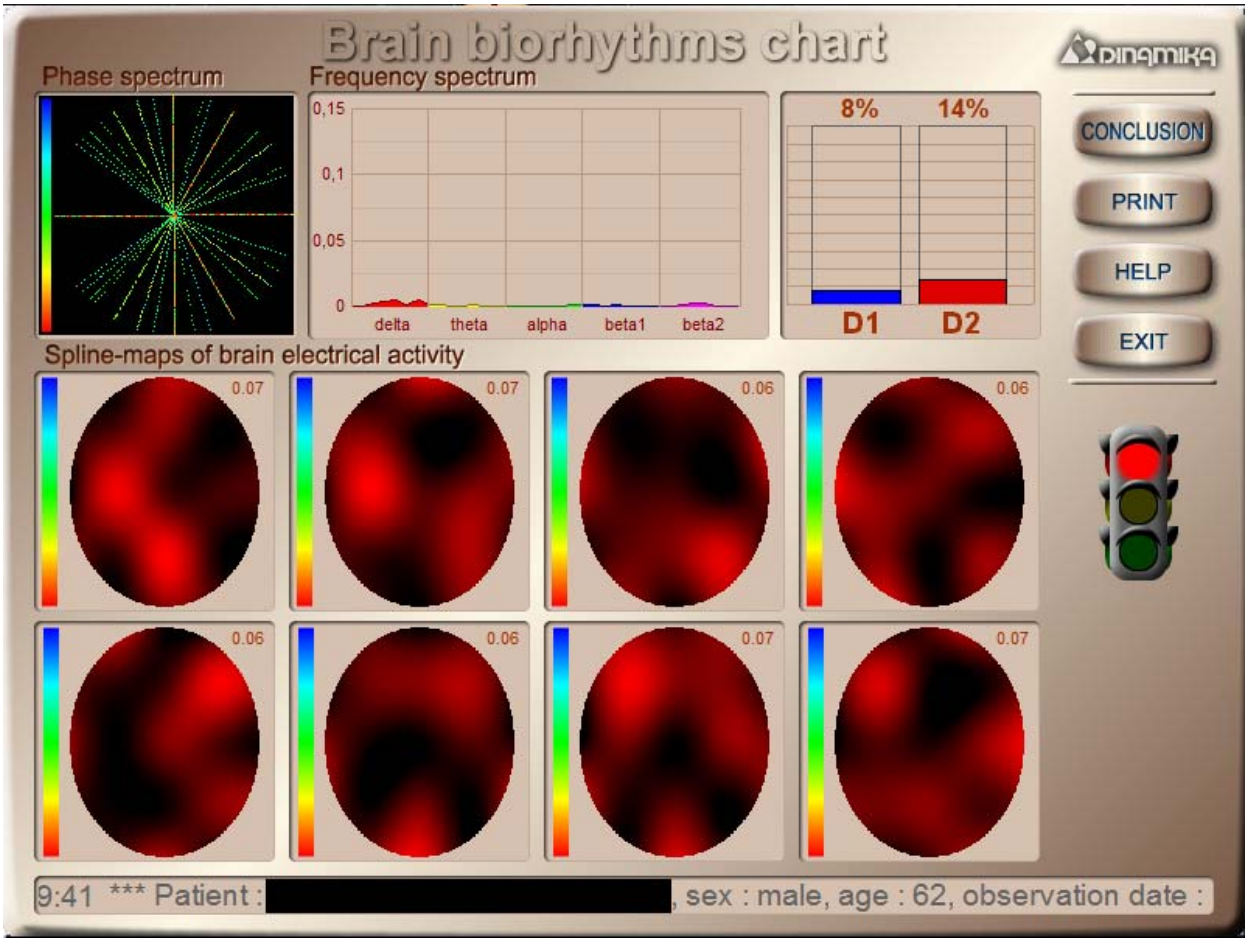
The importance of anything is shown by making comparisons. And of course I was interested in the health level of my relatives and friends. Alas, it is turned out that an integral index of functional state of 50% or more (0.5 fraction from 1) is more an exception rather than a rule. This was confirmed also by the results of diagnostic testing of patients in a recreational centre, where the analogous hardware-software complex was installed. As an example I'll give the observation results of a man (patient) who is quite wealthy and doesn't deny himself anything.

On the charts below his results are displayed and my results are depicted below his after I took phytogenic preparations for 3 months.

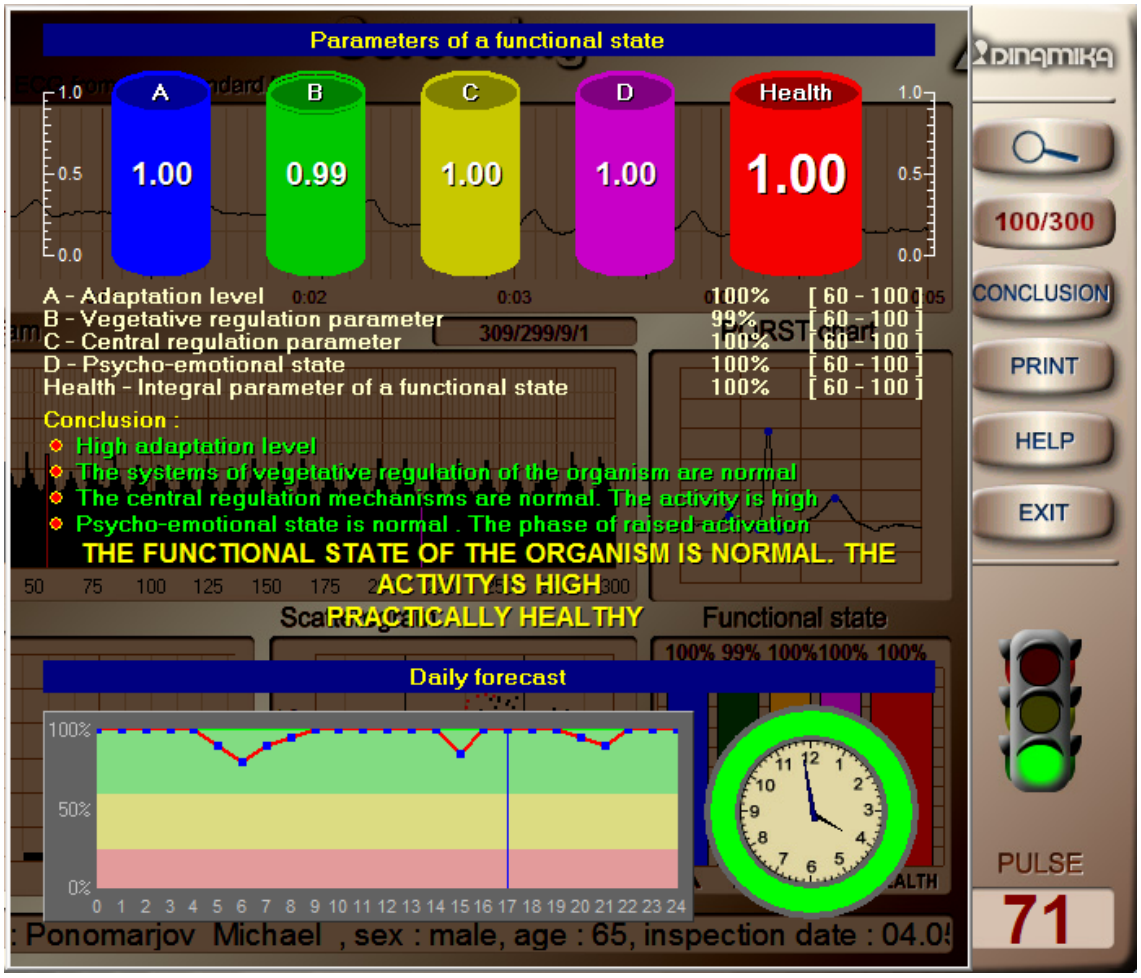


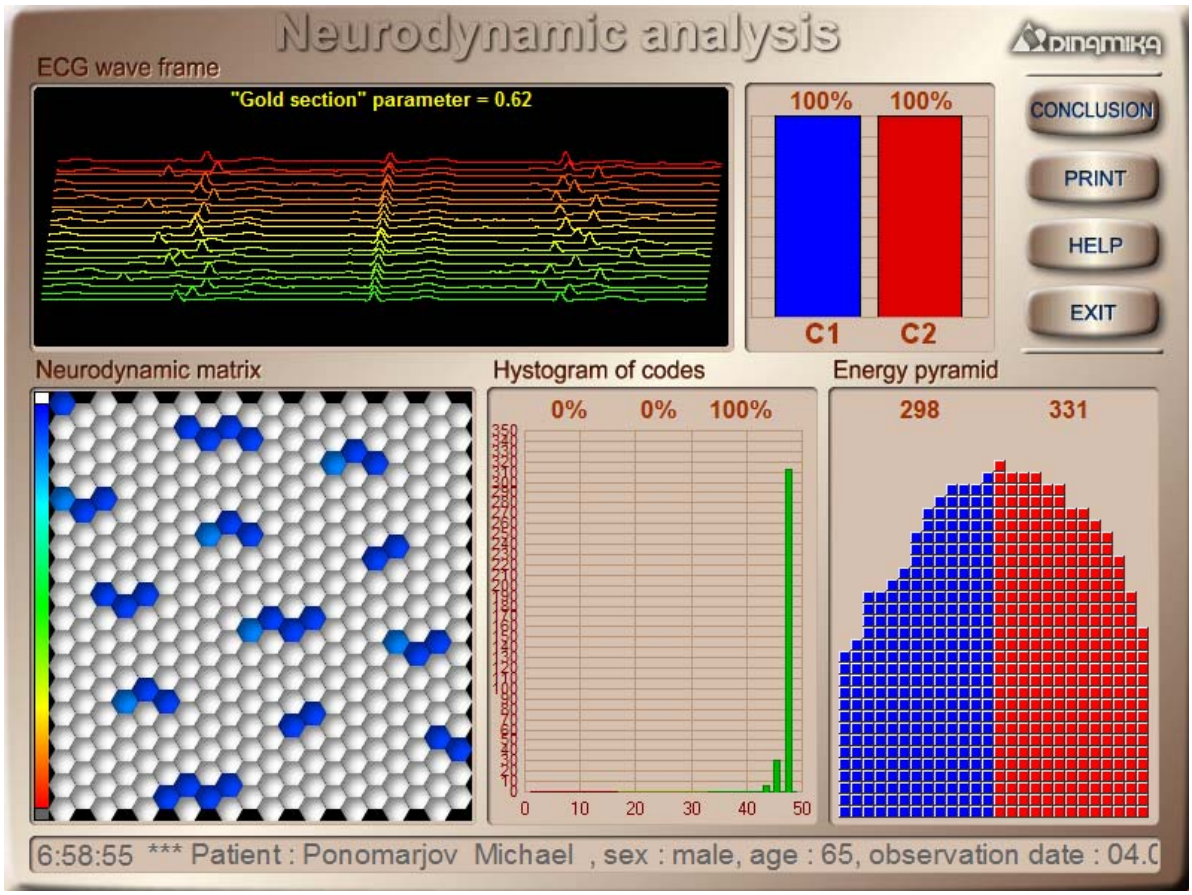
Survey results of the patient



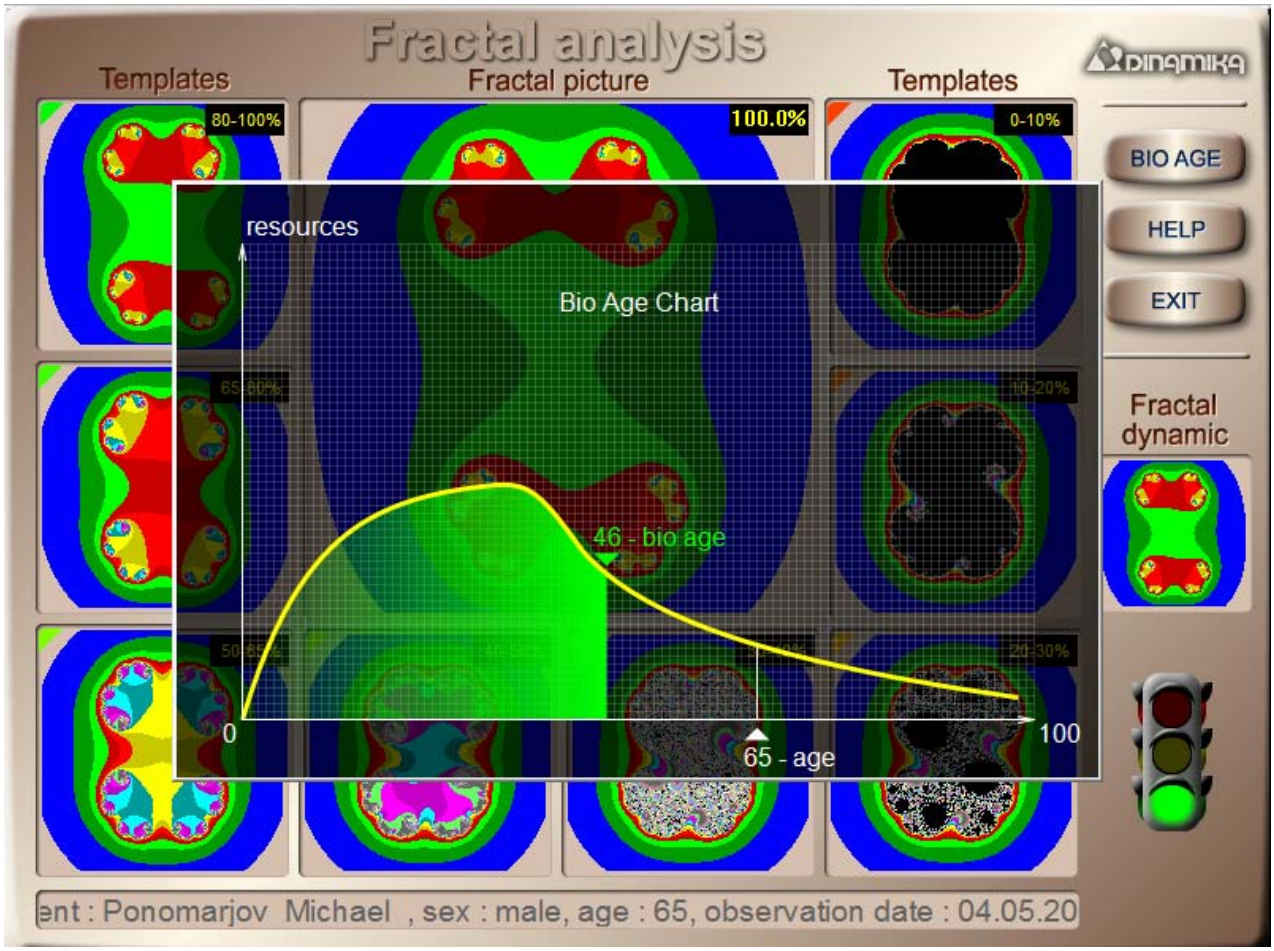


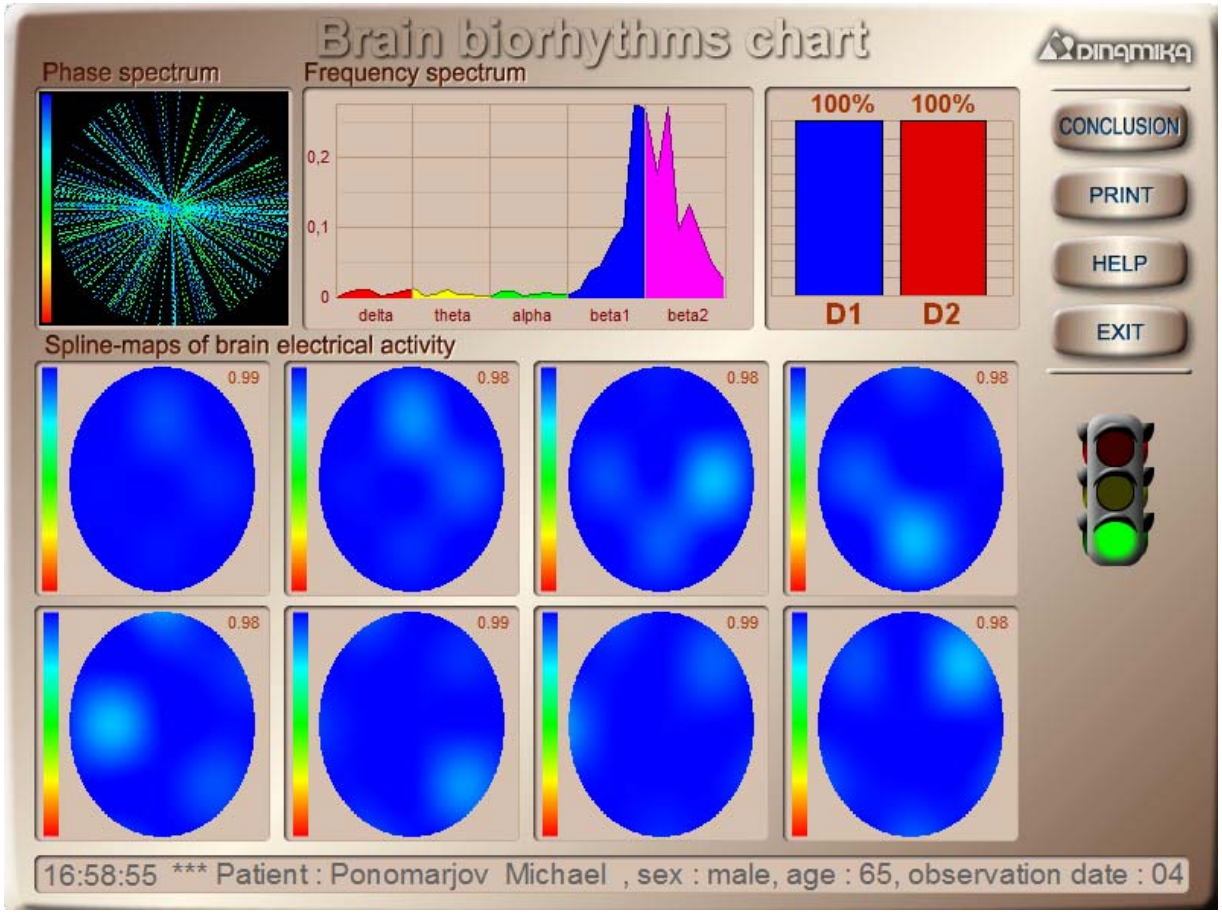
Survey results of the patient





Personal survey results





Personal survey results

I will not comment on the diagnostic results of the patient. It is enough just to read the conclusions. It can't be worse.

As for my results, it seems that at moment of measuring they corresponded to the test results of a healthy navy commando in perfect psycho-emotional condition, with active functioning of brain, maximal adaption abilities and functional resources, with excellent energy level and energy resources. As for the last two factors – energy level and energy resources (they are figuratively shown as an energy pyramid) - the comparative results of measuring can be explained with a simple example. An automobile engine can work in idling mode or at full power when the throttle is fully open. Idling demands less resources (fuel, motor oil, etc) and it is accompanied by less engine wear. The larger the volume of the energy pyramid, the less energy is used by the human organism in unit time for maintaining life. As with a car engine, with the large volume of energy pyramid, the human body works in idling mode with minimal speed metabolic processes and minimal wear.

Unfortunately I can't adduce the results of my diagnostic at the point where I began taking the herbal mixes. At that moment my health was so bad (hypertensic crises and tachycardia attacks under even small physical stress) that I couldn't wait for the ordered equipment to arrive. I can just point out that a few days after starting to take the herbal mixes I left off taking prescribed medicines. And a month later when the diagnostic equipment had arrived, my integral index of functional state already reached 50% (0.5). In one more month I felt myself in excellent health. My feelings matched completely the results of the diagnostic, which in the best case evaluated my biological age as 46 years while my chronological age was 65. The difference in 19 years between biological and chronological age was a result that exceeded my expectations. Now it is necessary to meet another challenge: to reach a stable condition of health and the corresponding diagnostic indices, to use the potential of traditional methods of health improvement (until now I have confined myself to the consumption just of biologically active products, in combination with moderate training of all muscles groups). Stable, high indices of health will provide optimal conditions for rejuvenation of the body.

So, my experience showed that a return to youth can be a reality. I haven't discover anything special. The only thing that I did was to find that herbal mixes Evig Vår and Phoenix actually do perform miracles. These products are marketed as a herbal mix for a beverage with the warning that the contents of the tea-bag are biologically active. It is these herbal mixes which I started to take in a critical situation (of course after an analysis of the contents of the herbal mix). And the mix showed great promise. Evig Vår contains a few "women's herbs" and it is intended for women. But at the same time these herbs would have a positive impact on excitable and hot-blooded men, especially as the concentration of *Origanum* and *Melissa* is small. Phoenix is distinct from Evig Vår in its cardiovascular orientation.

In general, the benefits are obvious. Taking Evig Vår and Phoenix produces an improvement in the performance of almost all the body's functional systems. This is the only real way to cure and prevent disease. But it is also necessary to remember that taking Evig Vår and Phoenix is not the only reason for an improvement in health. Consumption of these herbal mixes increases the body's functional resources and permissible level of physical stress. Special exercises (involving moderate physical stress) which activate the whole body are an important additional factor in the recovery of health and rejuvenation . My own experience shows that it is impossible to slow down the aging process and return to youth without arduous self-discipline. Moreover, the worse the inherited condition, the greater the effort that is needed to maintain health .

In conclusion, I want to stress one further point. You should not take my criticism of conventional medicine and my unwillingness to accept the course suggested by qualified

doctors as an appeal to refuse medical assistance and medications prescribed by doctors! If you have serious health problems or you are already taking medication, the possibility of taking Evig Vår and Phoenix herbal mixes alongside prescribed medicines must be agreed with your doctor. In the absence of contra-indications through joint consumption, as your health improves you can reduce the dosage of prescribed medicines and then stop them entirely.

I am 65 and full of strength and energy. I believe that realizing the LAL concept will allow me to reduce my biological age even more.

Wishing you excellent health!
Professor M. Ponomarjov