



## **BIOLOGICAL RESONANCE AND THE STATE OF THE ORGANISM - FUNCTIONAL ELECTRODYNAMICAL TESTING**

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*“To discover the true causes of everything that happens to a being, we must always look to the possibilities inherent in the very nature of the being itself”  
René Guenon*

### ABSTRACT

A brief survey of electromagnetic field interactions in living systems leads into the theoretical foundations for biofeedback processes. The continuous information exchange between a living system and its environment and within the system, is shown to occur via electromagnetic field (EMF) interactions. The quantification of this continuous information exchange is employed in a device (the Cerebellum Multifunction Medical Instrument) which allows a substance-specific monitoring of the ongoing regulative processes of the body. With this device, complex adaptation processes in an organism can be tested. Such processes are based on the information exchange between a living system and its environment, so that the procedure is actually a functional electrodynamic testing (FEDT). With an FEDT instrument, a physician can determine the electromagnetic state of a patient, and from this can make a diagnosis without the necessity of invasive methods. In order to further avoid an invasive character, extremely-low-intensity EMF signals are used in the CMMI. Due to the fact that the patient is exposed to the informational character of the homeopathically prepared body-specific constituents, the diagnostic procedure is also a kind of treatment itself.

### INTRODUCTION

Just as a society cannot be reduced to a sum of individuals, a living organism and its functions cannot be reduced to a set of chemical reactions, even if it were possible to account for all of them. Yet, the dominant paradigm thinking suggests just this, that the dynamics of the whole could be understood from the parts. The list of medical disasters that have occurred due to the shortcomings of this kind of thinking is long, and will continue to grow unless a shift in paradigms takes place. One of the essential points of a new paradigm is that the properties of the parts can be understood only from the dynamics of the whole [1].

The Cerebellum Multifunction Medical Instrument (CMMI) (Hippocampus Institute, Hungary) was designed and developed to be able to estimate this dynamic relationship and hence make a diagnosis. A perturbation at the cellular, tissue, organ, or system level will effect the functioning and performance of all other levels in an organism. Functional Electrodynamical Testing (FEDT) with the CMMI is a very effective tool for estimating the condition of the body, as the entire body's conditions are measured and hence can be treated as a whole.

Trying to understand an organism, or the health of an organism, by only considering the static elements (as with the old paradigm) can be compared to trying to learn a foreign language by only reading the dictionary. The underlying guidelines may be understood, but the dynamics of the living language will remain unknown and hence the language would still be unintelligible. In order to understand the wisdom of an organism, we have to be able to 'speak its language'.

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The CMMI is a unique synthesis of modern thinking and modern technology with ancient wisdom about the body and its relationship to the environment. The body's reactions are measured as a part of its dynamic relationship with the environment and a diagnosis can be made which will ensure a higher degree of complementarity with the environment.

Recent studies (by ourselves and many others [2-6]) have shown the crucial role of continuous information exchange within living matter up to the most subtle levels of biological functioning. This has made it possible, even obligatory from the clinical point of view, to construct a device which will allow a substance-specific monitoring of the ongoing regulative processes of the organism. With such a device, the human body is exposed to the information (stored in the endogenous electromagnetic signals) of homeopathically prepared body-specific constituents and is then free to respond (also by altering its endogenous electromagnetic field pattern) to any piece of this information according to the organism's own choice. This way, the organs functional states in the endogenous information processing are measurable and classifiable. As a result, the vital reserves of the body as a whole are reflected through the vital reserves of the actually tested sub-system. In this way, one can test nearly all aspects of the body (amino acids, enzymes, fatty acids, hormones, minerals, the impact of viruses and vitamins, etc.).

In order to understand the functional aspects of the CMMI, it is necessary to establish a theoretical understanding of the electromagnetic attributes of all organisms and their interrelationship.

### ELECTROMAGNETIC (EM) BIO-COMMUNICATION

All organisms radiate a very low intensity endogenous electromagnetic field (EEMF) in the range below 1 Hz up to  $10^{15}$  Hz, as a result of biological processes. Electrolytes moving in an organism (e.g., via the circulatory system or within cells) create an electromagnetic field. Low frequency fields are generated in cells from the alteration of protein configurations, changes in the amount of lipids, and across cell membranes due to the migration of ions. High frequency fields are generated by enzymatic peroxidation, ATP production, the Krebs cycle, and natural luminophores in nucleic acids and proteins. These high frequency radiations from cells are what Fritz-Albert Popp has termed "biophotons" in order to emphasize their endogenous origin and substantial role in biological communication as well as the optical aspect (visible and ultraviolet light) of the electromagnetic spectrum. Biophotons are considered to be the mechanism by which intra- and intercellular communication takes place. The weak light emission ("dark luminescence", "ultraweak" photon emission) from biological objects has been measured by photon counting techniques and has an intensity of a few up to some hundred photons per  $\text{cm}^2$  surface area per second.

The theory which inspires many current studies is Alexander Gavrilovich Gurvich's notion of the "vectorial biological field", or "morphogenetic field" [7]. Gurvich introduced the notion of the morphogenetic field to account for a wide range of biological phenomena from metabolic processes to the psychic sphere. Many investigators, most notably Fritz-Albert Popp and Mae-Wan Ho, have established a link between EMF and the morphogenetic field. The morphogenetic field contains the information of the whole from a part; each cell in a system is a reflection of the surrounding cell's architecture (spatial arrangement) and each cell makes a contribution to the architecture as a whole. Popp introduced the biophoton as a contributing factor in the morphogenetic field effect. The biophoton is a high frequency photon (in the UV and visible light range) emitted by a biological object which is then received by another cell, thus facilitating intercellular communication. Multiple studies of biophoton emission from unicellular organisms up to primates demonstrate that cells are influenced by the biophotons from other cells and "respond" with their own (endogenous) biophoton emissions [2, 8]. Ho has demonstrated (with *Drosophila Melaongaster* embryos) that the biophoton flux may have biological significance in the synchronization of development to external light [9].



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### COMPLEX ADAPTATION PROCESSES: INFORMATION EXCHANGE BETWEEN A LIVING SYSTEM AND ITS ENVIRONMENT

Frank Brown challenged the paradigm that circadian rhythms in organisms are linked to either sunlight exposure or tidal activity. In his experiment, oysters in an aquarium with constant light, temperature, and water levels opened and closed their shells in synchronicity with their compatriots who remained on a Connecticut beach. Then, the oysters were moved (by Brown) 1000 miles west into a light-proof box in Illinois where they were placed into an aquarium. Initially, the oysters remained on Connecticut time, but in a few weeks shifted to the would-be Illinois tidal pattern [10].

Rutger Weaver designed an experiment in which several hundred males lived in underground rooms for up to two months in an environment cut off from light, time, sound, and temperature which were initially presumed to be the normal cues of circadian rhythms. The two rooms were identical except that one was shielded from electromagnetic fields; various parameters such as sleep-wake cycles, body temperature, and urine content were charted for both groups, and both groups soon developed irregular rhythms. Those living in the shielded room became thoroughly desynchronized, while those still in EM contact with the Earth's fields held a rhythm close to 24 hours. Next, Weaver introduced various EM fields into the shielded room, none of which had any effect save a 10 Hz, 0.025 V/cm field, which restored most of the parameters to normal [11].

These examples evidence the essential role of electromagnetic interactions in the information exchange with the environment that provides the complex adaptability of organisms.

### ENDOGENOUS AND EXOGENOUS CONTROL MECHANISMS

Metabolic activity depends on the electric properties of membrane potential and environmental EM conditions [12-32]. Continuous adaptation to changing conditions, hence continuous readjustment of the parameters of the biochemical reactions inside the body, is characteristic for living matter. Any change or adjustment (with a rate exceeding a certain threshold determined by an organism's adaptability) is considered a perturbation of the system, irrespective of whether this change is intended to cause or prevent illness. Illness in general generates this communication breakdown within the organism's functional network. Since living beings are highly integrated open dynamic systems, wholeness in general is maintained by a permanent mass, energy and information exchange. The dynamics of communication are thusly vital for organisms.

When an organism is treated on a more general level of its functional dynamic hierarchy, it is easier to restore the physiological communication pathways within it and thus activate the endogenous healing processes. Alterations in the biophysical parameters, primarily electrophysical, occur at general levels of the organism's functional hierarchy. Therefore, they are responsible for the very subtle intimate mechanisms of an organism's self-regulation and interlevel communication through resonance (tissue coupling) interactions.

Every level of an organism's hierarchy possesses a characteristic spectrum of endogenous electromagnetic oscillations originating from various processes. Intra- and interlevel resonances should occur to maintain wholeness, more or less providing correlations between these processes. From this point of view a pathology, which may be born at any level, will perturb all oscillations via wave interactions, irrespective of the origin of such waves. The distorted interference pattern of the endogenous waves of a sick organism is a reflection of its improper biochemical processes.

Electromagnetic resonance interactions between the endogenous electromagnetic oscillations of organisms are suggested to occur in living systems; however, an attempt to detect them is a rather complicated problem [33]. Nevertheless, the still growing number of therapeutic devices, which use such kinds of interactions, is elaborated on in [34-36, 75]. For example, the more than 15 years of 'devices for bioresonance treatment' utilization in various European clinics evidence their efficacy in



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the treatment of many diseases [35-38]. They are designed to use resonance interactions between endogenous electromagnetic oscillations.

Numerous positive experiences in the application of electromagnetic therapy devices makes it possible to assume that device-induced restoration of the interference pattern will renovate physiological order in a sick organism. The problem is to isolate basic processes (and the frequencies which correspond to their time scales) which are common to all levels of an organism's hierarchy in certain frequency ranges and can thus open pathways of interlevel signal transduction.

### COMMUNICATION PATHWAYS AND RESONANT INTERACTIONS

The meridian system, according to Taoist description, is the communication system of the body which rises to the skin at certain points (acupuncture points) [39-43]. Becker, Voll and many others, have measured the relative resistance of the skin at the proposed acupuncture points and found that resistivity drops exactly at the points suggested by ancient Taoists [44-47].

At the microscopic level, numerous attempts to elucidate the extremely-low-frequency (ELF) signal transduction pathways of the interactions with cell membranes and subcellular components have been made by measuring various cellular and subcellular characteristics while exposing the studied systems to experimentally generated external ELF fields [20-28, 48]. Alternating electromagnetic field treatment induces observable responses in biological systems. Many processes turn out to be frequency dependent with thresholds or some peculiarities at certain values of external fields [23, 49-52].

The information obtained thus far is still insufficient to offer a reasonable mechanism for EMF interaction with biological tissues. Nevertheless, we would like to emphasize some general features of such kinds of interactions, primarily: the "windowing" of frequency and power in tissue interactions with weak EMF as revealed by William Ross Adey. He studies the behavioral and neurophysiological effects of ELF and modulated radiofrequency (RF) fields as well as the responses of calcium ion binding in tissues to ELF and RF fields [50-52]. The occurrence of amplitude and frequency "windows" in a biological object's response to external stimuli is essential for an understanding of how biological systems can show a high sensitivity to external ELI fields, yet remain stable under intrinsic fields several orders of magnitude larger [47, 53]. The natural dynamic complementarity of inherent and environmental electromagnetic signals (frequency, amplitude, phase and the composition of complex signals), ensures a very fine selectivity of the available information from electromagnetic noise as well as preventing a "dissolving" in environmental electromagnetic fields.

Bearing this in mind, various electromagnetic therapy techniques - especially, those employing low-frequency and low-intensity signals - are promising with respect to initiation of healing processes. Because of their low-intensity and non-locality, such signals come into play at very general levels and may be involved in the inherent mechanisms of the non-specific defense of the organism [32, 33, 54-56].

Resonance is an elusive property which is responsible for synchronizing pendula as well as destroying bridges and buildings. Resonant frequencies establish a kind of sympathetic relationship between objects which have the same period of oscillation, such that the motion of one object will influence the motion of another without any physical connection.

Bio-resonance works on this same principle. It is a method of communication between objects, and apparently, biological objects have the capability of "tuning" their resonant frequencies to match that of another object. Since this is a non-local event, it is difficult to determine the cause and effect of resonance between two or more biological objects. The argument has been made that in order for inter



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and intra cellular communication to be successful, that is, no disturbances or distortions in the message, the cells need to be in resonance.

To the degree that one can use phrases to re-enforce a notion, our common usage of “being on the same wavelength” to describe an understanding of what another is saying might convey human’s more intuitive notion of resonance. This may also account for the good or bad ‘feeling’ that one gets when first encountering someone else. Is this other person capable of resonating with you?

The notion of canceling out certain undesired frequencies, as in Smith’s allergy experiments [57], suggests that an organism would have to be able to attune itself to the frequency emitted by a certain substance. In order to cancel out a signal, or to receive information from a signal, the receiver and sender must be synchronized. Otherwise, the signal is just data, which will be unintelligible to a receiver which is not in resonance. Below, the evidence for this kind of bio-resonance is listed.



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### KNOWN FROM FORMER RESEARCH

The previous results of Hippocampus Institute's studies show that:

The integrating regulatory role of cellular level endogenous oscillations is explicitly evidenced by their influence on malignant (human lymphoma and melanoma B16) cell cultures. Extremely-low-intensity endogenous electromagnetic fields (EEMFs) induce a regulative halt in cell division which is also proved by a comparative study of the cytotoxic and cytostatic effects of EEMFs of embryonic and malignant cell cultures [59, 60].

The regulative function of the EEMFs in naturally occurring cell populations involved in a complex metabolic process is proved by the study of the EEMF effects on the phagocytosing activity of human blood [60].

EEMFs are shown to influence the functioning of the immune system and correct a condition of immune deficiency provoked by the exposure to continuous, low-intensity radiation (in mice kept in Chernobyl). [5]

The EEMF feedback of women suffering with mastopathy is shown to improve the patients' state [61].

EEMFs are shown to influence the viability of heat shocked *Drosophila melanogaster* chrysalises [5, 62,].

At the subcellular level, modulated endogenous EM oscillations are shown to affect kinetic and thermodynamic characteristics (as well as structural dynamics) in water and biological solutions (human blood serum and nucleoprotein complexes) [63, 64].

Human EEMFs are shown to influence the processes of self-regulation in chaotic chemical oscillations [65].

### A LIVING SYSTEM CAN ONLY BE REGARDED AS A PART OF ITS ENVIRONMENT

Andrew Weil notes that most synthetic pharmacological substances are only semi-synthetic in that they are nearly always based on a natural compound (the 'active ingredient' of a plant or part of a plant) with a slight shift in the structure of the molecule. This is because humans do not generally respond well to purely synthetic substances, and in the case of psychoactive substances, the brain lacks the appropriate neurotransmitter to distinguish the substance and respond [66].

It is unlikely that this is mere coincidence. The dominant paradigm of evolution erroneously [67, 68 and references therein] suggests that organisms accidentally respond to their environment, thus tending to suggest that an organism is not an aspect of its environment. And though this idea runs counter to intuition, it is what is generally accepted, and taught in schools. Unfortunately, the paradigm has led to a feeling of being separated from nature, and many pharmacological disasters have occurred over the last century due to the failure of pharmaceutical companies to recognize that all organisms are derived from, and are an integral part of their environment.

Until recently, electricity was not considered as part of the environment due to the lack of evidence of EMFs having an effect on biological objects. There are still substantial disagreements as to the extent and effect of EMF on living systems, but many developed nations have adopted certain guidelines for maximum exposure limits to certain field strengths [69]. Westerners have considered electricity and magnetism to be vital to life processes for at least 200 years (e.g., by Mesmer and the 18th-century vitalists) however, at the time it was largely discredited. Modern possibilities of detecting endogenous AC electrical oscillations in cells [12-14, 47, 53, 69 and references therein] reveal that the endogenous fields are strongest when cell metabolism is most active. No signs of AC oscillations are found in dead or heavily poisoned cells [12]. These measurements make it possible for Herbert Pohl to assume that endogenous oscillations must accompany cellular reproduction, and vice versa - reproductive



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processes cannot proceed without endogenous AC oscillations [14]. This testifies to the key role endogenous EMFs play in the dynamical maintenance of an organism's stability.

Many thousands of people with heart troubles have a "pacemaker" inserted in their body to keep the heart beating at a steady rate. This can be considered an external pacer as it has replaced the body's own (evidently faulty) internal pacing system. The aforementioned works by Weaver and Brown [10, 11] demonstrate that all organisms rely at least partially on certain pacers from the environment (external pacers). NASA has also realized the need for these environmental pacers and now equip manned space voyages with an artificial Earth field so that the astronauts can maintain their normal bodily rhythms.

The fundamental self-awareness of living matter has been based on continuous communication between living subjects and the environment, during the whole process of development from protozoa to primates. This development occurred in the natural electromagnetic field of a broad frequency range (at least, from the order of  $10^{15}$  Hz (ultraviolet light) to the order of units of Hz (Schumann earth/ionosphere cavity resonance [70]). This supports the occurrence of the endogenous mechanisms of electromagnetic signal modulations in a broad range of frequencies. Internal electrodynamic field coherence is evidenced to be the instrument of biological organization at many levels starting from the observations of the embryonic field in eggs [68].

After his lifetime's work Brown concluded, "No clear boundary exists between the organism's metabolically maintained electromagnetic fields and those of its geophysical environment" [10]. Unfortunately, information obtained thus far is still insufficient to offer a reasonable mechanism for EMF interaction with biological tissue. This is not entirely surprising since the theoretical exploration of EMF interactions with organisms only began about 30 years ago when Fröhlich began to apply his theory of dielectrics to biological systems to describe the propagation of EM signals in a given system [71].

Even if we try to do our best in order to appear self-ruling, we actually find ourselves highly dependent on the weather and the mood of encounters, as well as ones own attitude of how "things are going". Speaking more scientifically, the human organism is essentially incorporated into the entire network of natural interrelations via a permanent balancing of the organism's personal integrity with the integrity of nature as a whole.

Self-regulation of biochemical oscillatory cycles defines the natural selectivity. As it has been already mentioned, such self-regulation is maintained through a permanent information exchange within living matter. Louis-Marie Vincent has recently proposed a new approach to information by providing a conceptual tool adapted to biology [72, 73]. According to this concept, a message (transmitted by a means of communication) does not carry any information, only data. It is the receiver which makes an identification by recognizing the forms. In developing a theory for the mechanism of homeopathy, Del Giudice suggests that the EM information of a substance can be transduced into the surrounding water molecules (for instance, by affecting the field produced by large clusters of molecules), so that when the substance is diluted out, the information is retained in the water. Del Giudice writes, "the homeopathic remedy works only if it is meaningful to the array of previously existing signals in the organism; otherwise it is washed out" [74].

### WHERE IS THE BORDERLINE BETWEEN THE POSSIBILITY OF RECOVERING BY NATURAL SELF- REGULATIVE MECHANISMS?

The Biodiagnosis and Biofeedback functions of the CMMI provide a fresh perspective on the "health" of a patient. As physicians well know, as many parameters as possible of a patients state should be taken into consideration when making a diagnosis. However, even the most extensive questioning of a patient, may not yield proper results as the patient may fail to answer questions correctly, forget



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certain details, over- or underestimate their condition, or, conceivably, deliberately attempt to deceive the physician. The most common analogy of determining the health of a patient based on the external factors alone, is that of trying to determine the structure of an iceberg based on an examination of the above-water structure. The physician is often forced to use invasive techniques, which, by definition of their being invasive, they necessarily alter the patient's condition, further complicating the diagnosis (as well as often introducing unexpected side-effects). Low intensity electromagnetic signals are used in the CMMI in order to avoid a possible invasive character of the diagnosis. Low intensity signals make it possible to identify endogenous regulatory processes rather than to list all kinds of functional and morphological disorders. The latter is definitely not sufficient to estimate the extent of treatment intervention that will be adequate to the body state. To be successful, the treatment should resonate with the pace of the changes - either positive (curative) or negative - in the body state. The pace of such changes, in turn, depend on the vital reserves of the organism. These vital reserves are tested by using the "adaptation test" option of the CMMI with respect to different stressors information about which is available as extremely low electromagnetic signals of the corresponding substances implanted in the device.

### FEDT = FUNCTIONAL ELECTRODYNAMIC TESTING WITH THE CMMI

With the CMMI, a physician can determine the electromagnetic state of a patient, and from this can make a diagnosis without the necessity of invasive methods.

During the Biodiagnosis procedure, the patient is briefly (40ms, though adjustable) exposed to the magnetic fields of over 2000 homeopathic substances (not simultaneously, of course). Then, the patient's reaction to that substance is measured as value of the voltage changes (e.g., between the two wrist electrodes) and is translated into the reactivity (an average of the voltage fluctuations). Once all substances have been tested, the program establishes an overview of the patient's integrity through the "Statistics" function.

As is mentioned above, every organism is in a constant feedback system with its environment. The statistics function measures to what degree a patient is capable of adapting (participating) to the environment. There may be a variety of reasons (both physiological and psychological) for this over- or under-adaptation, which naturally, the physician will have to determine. The uniqueness of this feature is that what a physician previously had to estimate (based on experience and intuition), can now be quantified, and even shown to the patient.

Each time the patient is tested, the substance list and statistics will be different. This may be alarming at first, as one of the most seemingly basic functions of a diagnostic device should be to deliver the same diagnosis given the same conditions. And here lies the key: the organism never experiences the same conditions from one moment to the next, so necessarily, the device will not provide exactly the same diagnosis from one minute to the next. In our age of massive toxic, nuclear, and electromagnetic pollution, as well as rapid transportation, an individual's fluctuations are more and more dynamic, they change every moment.

The device is a dynamic measurement system, and, as such, its power is in its ability to determine these very changes that happen from one moment to the next. Specifically, the physician, once having established the overall adaptability of a patient, can then go the repeat test function.

If the patient has either too narrow or too wide a statistics function the physician might consider terminating the test at that point and recommending to the patient possible ways of normalizing the overall reaction. In any case, the general adaptability of the patient must be considered for all repeat tests as all measured values are relative to the initial measurements.



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The physician's initial assessment of the patient, combined with the statistics results, and the list of items on the "Substance List" can be used to then isolate the substances which are the most crucial to the contribution of the patient's condition. The adjusted values of +120 to -120 can be considered as informational values in that a strong reaction (far from 0) indicates the organism's missing or needed information which it is no longer getting from the environment. And here again, the dynamics of the reaction are crucial to a proper diagnosis.

Due to the fact that the patient is exposed to the informational character of the substances, the diagnostic procedure is a kind of treatment itself. This means that these initial reactions serve primarily as markers. It may be that the patient only needed the very brief exposure to the information, and reacted strongly initially, but the physician should not immediately assume that values which initially appeared with high values are what the patient's body needs.

Through repeated applications of the "Adaptation Test" (Transmit Button), the physician can determine to what extent the information is needed, or over saturated with. A patient's adaptability to a particular substance is indicated by the subsequent "Reactivity", "Rise", and "Fall" values as well as the character of the line. The adaptability to the information of a certain substance reveals how much that information is needed, as well as indicating possible pathologies from the inability to adapt to that substance.

In this way, the physician can simulate a homeopathic treatment and subsequently determine the expected and possible therapeutic effects regarding the tested substance.

### DIAGNOSTIC PROCEDURE FOR THE CEREBELLUM MULTIFUNCTION MEDICAL INSTRUMENT

#### 1. Anamnesis

First of all, it's very important to get enough information from the patient in order to conceive the primary hypothesis. All kinds of data can provide important information concerning symptoms and their development (pathogenesis). In the holistic approach, all things and processes are considered to be interlinked. Despite the body's ability to express (by the measured electrical parameters) its reactions with a finite speed, time sets certain limitations to our measurements (that is, patients usually don't have an entire day for a diagnosis). The preliminary hypothesis creates a kind of base line from which the outcome of the electrical diagnosis can be compared. This can provide a justification by the measured results or an adjustment where you can include pathogenic components or skip some of the ones you included in your preliminary hypothesis.

#### 2. Automatic Measurement

It is practical to start with a general screening, chose "all substances". There are always substances (aspects) which may be forgotten while conceiving the primary hypothesis, here you will have a chance to identify them on the screen. A reaffirmation of the primary hypothesis is the other goal of this step of the diagnostics process. The differences between your primary hypothesis and automatic measurement results remain for further testing. The permanent comparison of the results of the "Automatic Measurement" with the information from the anamnesis shall lead you on through further testing.

#### 3. Statistics

The shape of the distribution diagram (number of substances plotted against the measured value of the electrophysical parameter under consideration) represents the ability of the organism to react (participate) to its environment, e.g. to the changes in it. This correlates to organism's reactions to the



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tested substances. On the x-axis, values from 0 to 4096 correspond to an adjustable voltage measurement of +3mV (4096) to -3mV (0), therefore, 2048 signifies no measurable reaction (0 Volts). The number of substances is plotted on the y-axis. Usually, the distribution of the measured values is non-Gaussian. In all distribution diagrams, the Gaussian distribution is shown as a reference only, and does not correspond to the patient's actual distribution diagram. If the wings of the distribution of the plot are broad, it means that the organism reacted very intensely to many substances (fig. 2). An extremely high peak at the middle corresponds to low reactivity (i.e., with the measurement parameters applied (fig. 3)), and means that a fast, general test (short exposure time) cannot be performed on the patient. The distance between the maximum and minimum values (on the x-axis) measured from a particular patient is linearly subdivided into 240 units regardless of the number of measured substances. The newly obtained scale is labeled starting from -120 (at the minimum initial value) up to +120 (maximum initial value). From this, the patient's individual distribution list is generated to serve as the base line for "Repeat test" measurements. We are interested in the amplitude of the changes due to adaptation which should be considered within the individual range of fluctuation of the electrophysiological parameters.

Fig. 1. An example of a commonly found distribution diagram of a patient's reaction.

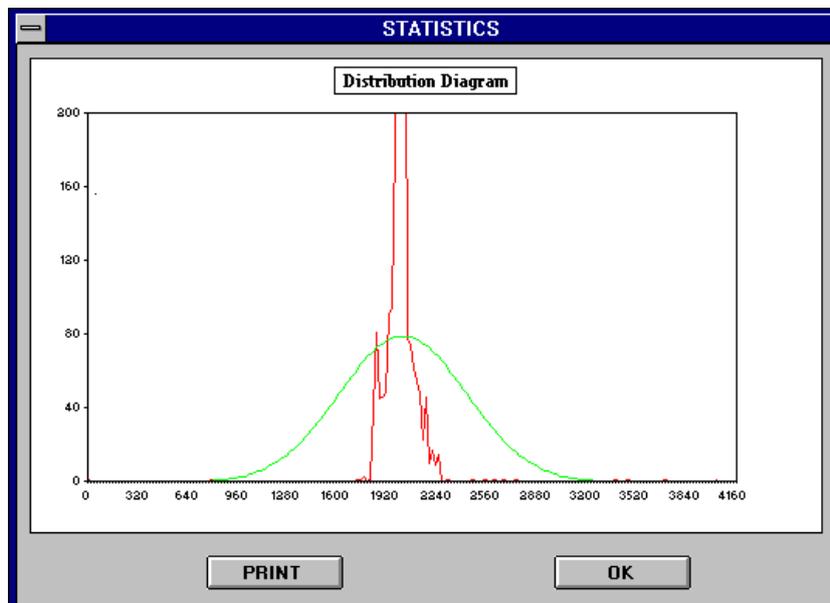
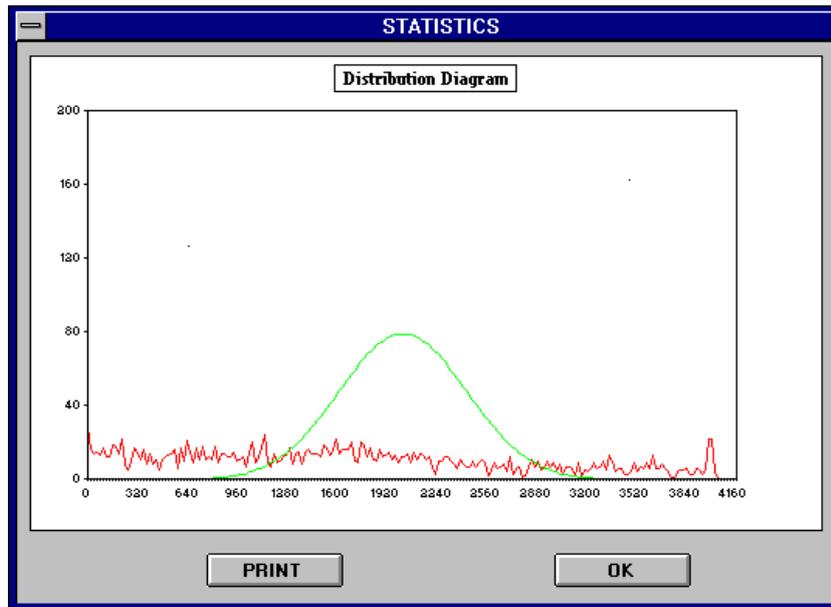


Fig. 2. Distribution diagram of a hypererg patient's reaction during the automatic test



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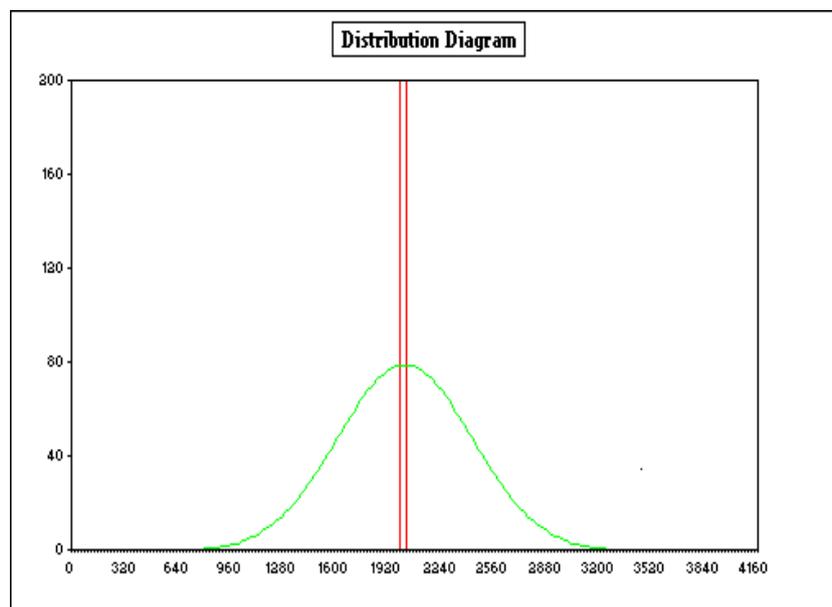
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Broad wings signify a decreased integrity of the organism and an over-reactiveness to environmental changes without effective compensation. This distribution is mostly found in multiple-allergic patients and by those who are exposed to extreme environmental pollution.



Fig. 3. Distribution diagram with extremely diminished wings



A lack of wings indicates that the body doesn't want to show individual reactions/participate and that it is keeping its integrity with all of its forces. This is a sign of an over-compensated state (called masking in allergy studies), when neural and informational systems are no longer responding because the organism does not want to risk its stability (integrity). This is found mostly in patients with a severe chronic overload coupled with strong determination, like many high position bank managers, and noticeable emotional control (stoic patients), and also in some introverted, psychologically unstable patients. Patients with this type of distribution need certain preparatory treatments before becoming electrically responsive. This is possible with the treatment unit, or by applying longer "transmit" triggers of this diagnostic unit.

#### 4. Result list

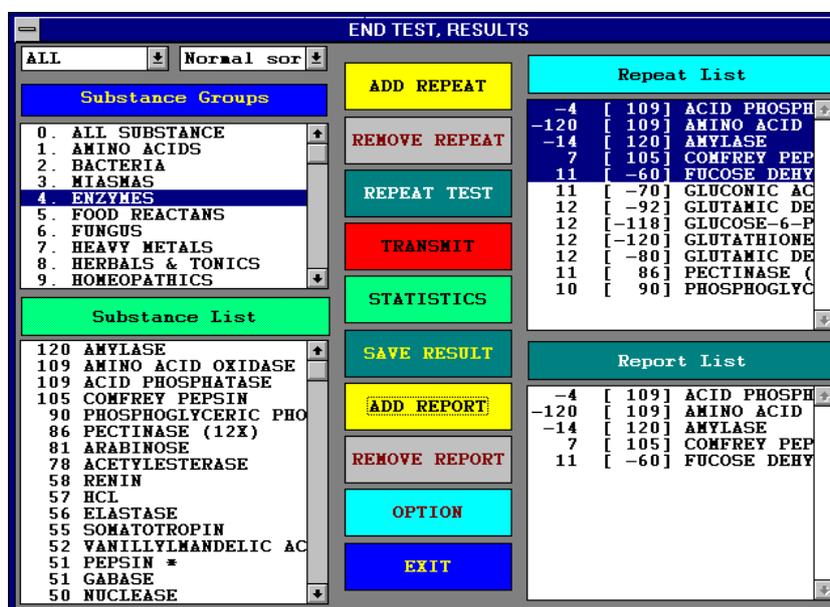
When the SUBSTANCE LIST window (located at the lower left corner of the screen, Fig. 4) appears after the calculations are finished, it begins by listing ALL SUBSTANCES. The x-coordinate of any substance (in the 240-point scale defined above) is listed starting with 120 (extreme right position in the distribution diagram) down to -120 (extreme left position). If you want to examine the results within a specific category of substances, you can click on a group name and open that group. The substances which compose the group will appear (in "Normal Sort" mode) listed by their x-coordinate in descending order. One should keep in mind that all values are measured on a relative scale, all values are relative to the patient in the moment that the measurements were taken. This serves the purpose of obtaining the dynamics of the patient's reactions to the tested substances during the REPEAT TEST period. However, a good starting point is to assume that values above 60 or below -60 indicate a "high reaction". Always relate those values to the shape of the "Distribution Diagram". Now we can compare the differences between the preliminary hypothesis and those values measured by the functional electro-diagnostic testing (FEDT) in the automatic mode.

There will always be only a partial overlap between the lists of the substances with expected high values and actually measured high absolute values. Those which confirm the preliminary diagnostic hypothesis need not be "Repeat tested". Yet, if you want to estimate the pathogenic priority of these substances and test the organism's specific regulative capacity toward each of them, the



ADAPTATION TEST can be carried out. For substances which were expected but do not appear with high absolute numbers, the “Repeat Test” will help to decide whether we had a false assumption in the preliminary diagnostic hypothesis or may indicate that the organism needs more time to express itself specific to the investigated substance. This group of substances should be included in the REPEAT TEST phase of the diagnostic process. Some substances which were not explicitly expected, but came up with high absolute values correlate well to the pathogenesis and the epicrisis and will not necessitate further testing. For further investigations, this can be considered as similar to the substances belonging to Case “A”. Still more substances which were not explicitly expected but came up with a high absolute value will correlate either questionably or poorly. These substances need to be investigated more thoroughly should be added to the REPEAT TEST phase. It can happen that the user may not be familiar with some of the substances listed on the screen. In this case, the best thing to do for the moment is to ignore them. So as not to create confusion, make your search for the unknown substance after the well known substances have found their place in your diagnostic picture.

Fig. 4. End test result window.



### 5. Adaptation Test

The ADAPTATION TEST function consists of first, a period of contact for several seconds (adjustable from the software, usually 5 seconds) between the substance and the patient, then the usual testing of the patient’s reactions. This allows the “Adaptation Test Diagram” to provide an exact insight into the dynamics of the reaction. By repeating the ADAPTATION TEST, we can get the most detailed diagnostic information. “Reactivity” indicates the average of the 16 channels’ results during the entire period which was monitored. “Rise” indicates the highest deviation upwards from the average. “Fall” indicates the largest deviation downwards from the average. In the “Adaptation Test Diagram” on the vertical axis, we can see the amplitude of the signal measured in the same units as the x-axis of the STATISTICS TEST. On the horizontal axis, time is indicated in milliseconds. The actual measured values are depicted in red, “Reactivity” is represented by the flat green line corresponding to the overall average during the actual measurement period. (In later models, the vertical amplitude axis is represents only the actual interval according to the actually measured intensities during the “Test Measure Time” .) Normally, we expect “Reactivity” to settle down around 2048, “Rise” and “Fall”



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should be lower than 40 (in later models, 204.8, and 4.0 respectively). In order to understand the dynamics of the ADAPTATION TEST, the following tendencies are listed:

First of all, we follow the changes in the “Rise” and “Fall” parameters. The dynamics of the patient’s adaptation to the field of a therapeutically diluted substance is very significantly characterized by the fluctuations of its electric parameters in both frequency and amplitude. The maximum amplitude of fluctuation is characterized by the “Rise” and “Fall” values.

Usually, we include in the ADAPTATION TEST only substances which seem to play a key role in the epicrisis presented by the patient and here we want to collect information about which aspect of the pathology should be first treated. We are looking for not only the primary causes but also the principle stressors, the elimination of which brings about the opportunity for normal self-regulation of the organism. The ADAPTATION TEST makes it possible (through the reaction to the test substances) to identify the conditions under which the body’s self-regulation activities seem to be insufficient and substitution therapy or other more invasive treatments may be required.

In the case of a fast normalization of the “Rise”, “Fall”, and “Reactivity” values (e.g. within two ADAPTATION TESTS), we can conclude that a cell communication enhancement treatment (such as bioresonance therapy) would give the necessary first push and the organism could accomplish the rest of the recovery.

If the “Rise” and “Fall” values are only partially normalized (e.g., a stepwise function coming down from a higher value to a significantly lower value) we should consider a temporal administration of home medication in addition to cell communication adjustment treatments.

If “Rise” and “Fall” values don’t tend to normalize even after 3-4 ADAPTATION TESTS, then the organism is incapable of any detectable degree of self-correction concerning the tested substances. In this case, the revealed principle pathogen agent cannot be treated by a local enhancement of the damaged endogenous control mechanisms. Thus, the identified substance is a significant contributor to the patient’s pathology, and a longer preparation phase in the treatment is required before causal therapy can be applied (since at the moment, the organism has no vital reserves to react to a specific treatment regarding this substance).

In some few cases, we find a strange kind of extreme fluctuation of the “Rise” and “Fall” values (from several hundred to almost zero and back repeated several times). This indicates a very severe situation, potentially due to a lack of vital reserves. The body is trying to decide whether to ignore this substance or adapt to its field, and confusion ensues. This situation must be treated very carefully, and it requires that the body’s vital reserves are built up first because if the body is treated with this substance, the patient will develop a fever. Therefore, ignore this substance in the treatment until the patient’s vital reserves will be sufficient.

Fig 5. Adaptation Test result window.



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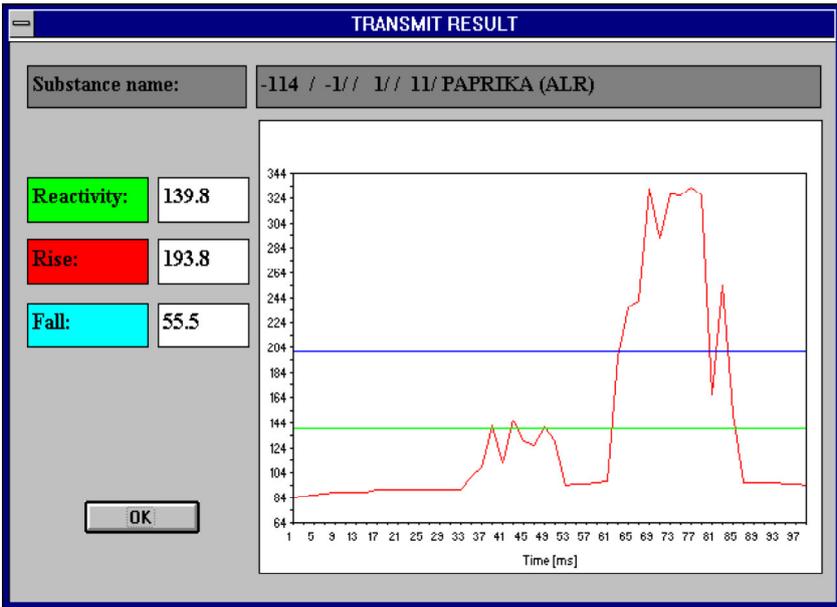
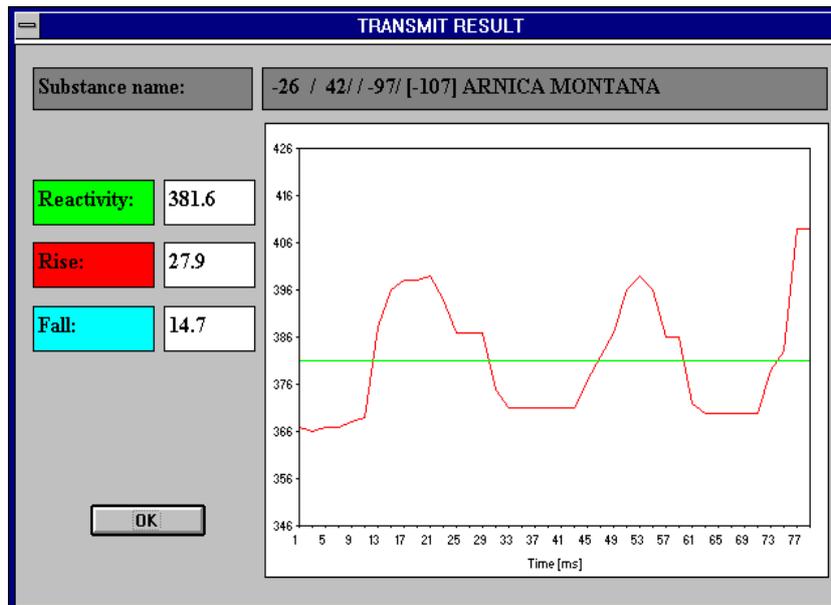


Figure 6



As Fig.7 shows, all measurement characteristics can be adjusted from the software. We usually connect the patient and the test-substance for 40 ms and start measurement with the smallest possible delay time of 1 ms. One measurement block consists of 110 ms. With the usual measurement time of 80 ms this provides a 70 ms relaxation time for the body after connection with each subsequent test substance. Since immediate adaptational activity is the object of interest, these parameters are convenient in clinical practice. However, in the case of an extreme mesenchimal block (a solid disturbance in the mesenchimal matrix which makes endogenous information transfer, i.e., electric connection, very poor), the measurement and relaxation times should be elongated.

For carrying out the adaptation test, a longer period of connection between the test-substance and the patient (the *Transmit* time) is applied, usually 5-7 seconds. Changes in the dynamics of the reactivity are monitored (see references 60 and 61 for a more detailed description).

Figure 7:



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**OPTIONS**

Drawing Speed: 4

Drawing modulation: 5

Substance ON-time [ms]: 40

Test Measure-time [ms]: 80

Test Delay-time [ms]: 1

Repeat-time [ms]: 110

Drawing format  
 Absolute  
 Derivative

ON  
OFF  
Measure

Repeat time

TRANSMIT-time [s]: 5

Therapist name: dr Simor Zoltán

Examination: HIPPOCAMPUS INSTITUTE

Cancel

OK

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