STRESS & IASC ANTI-STRESS PROGRAM

Stress is an inevitable consequence of life. To some extent, which is individual, stress contributes to a better adaptation to daily life and work: stress itself is the life salt [1]. However, when this boundary is crossed, prolonged stress becomes harmful and causes numerous psychosomatic diseases. This is the reason why stress has come into the focus of science and medicine since the beginning of 1960's, when Seley, director of the Institute for Experimental Medicine and Surgery of the University of Montreal, introduced the notion of general adaptation syndrome as a group of mutually connected non-specific stress-reactions of the organism [1,2].

Different causes of stress (hate, anger, fear, frustration, noise, nicotine etc.) were named stressors, to which an organism reacts always equally: injecting sugars, fats, and adrenaline (stress-realized hormone) into the blood, followed by growth of blood pressure, narrowing of blood vessels and increasing secretion of gastric acid - as a preparatory physiological reaction of the organism for the second phase of stress, of intense muscular strain for "fight or flight". As in contemporary life and work conditions the "fight or flight" as a normal reaction to stressful situations is missing, thus mobilized energetic and physiological potentials are returning against the organism, and with continuing (chronic) action can cause numerous psychosomatic disorders: cardiovascular, gastroenterologic, dermatologic, reumatologic, immunologic, neurologic, and psychiatric.

Although the problem of stress is now especially important in the Balkans, because of the increased interpersonal, interethnic, and interreligious conflicts the whole Balkan region has been facing in the last decade of the XX century, with the culmination in NATO bombing of Yugoslavia, it is not less important in industrially most developed countries, where 75-90% visits to the primary care physicians are related to stress.

Since classical partial methods have not demonstrated sufficient efficiency in the prevention and cure of psychosomatic disorders, it seems that novel approaches are needed, including holistic methods oriented to healing the man as a whole, and not of the disease as a symptom of disordered wholeness [3-5]. This was the main motivation for the founding of International Anti-Stress Center (IASC) in Belgrade [2], in order to promote organized investigation, development, and continuous education in the field of novel anti-stress holistic technologies, through development of international multidisciplinary scientific, educational, medical, and technological cooperation in the wider fields of complementary medicine, consciousness, and kinesiologic recreation - with a special emphasis on research concerning the stress influence on contemporary psychosomatic diseases, contributing to public stress reduction and psychosomatic health.

Within the framework of IASC organization, IASC Medical Practice is working in Belgrade, and periodically in regional IASC centers, with application of IASC holistic methods in prevention and therapy of stress and stress-induced psychosomatic diseases, holistic computerized electrodernoal diagnostics of the functional state of organism, as well as IASC specialized and popular anti-stress education [2]. IASC anti-stress program encompasses six-day anti-stress therapy and diagnostics before and after therapy, while in IASC spa's centers includes seven-day full accommodation, with an additional tourist offer.

1) Electrodermal Computerized Diagnostics (ECD). Holistic methods of curing demand holistic diagnostic methods. ECD system, based on the three-minute measurement of the temporary electrical parameters of the representative reflexogenic biological active zones of the skin, provide intermediate information about functional state of the related organs and organic systems, with average reliability over 80%. Through convenient computer graphics one obtains presentation of the condition of the patient's organs and organic systems according to the degree of deviation from normal condition. This unique segmental electrodermal diagnostic automated complex gives a quick information about the functional state of the organism and provides an excellent possibility for the control of the dynamics of patient's recovery during corresponding application of the IASC holistic anti-stress prophylaxis and therapy. This opens an optimal and continuous diagnostics-therapy-diagnostics technological curing cycle, which enables optimization of the process and results of...
curing. Besides, within the framework of IASC anti-stress centers standard systematic and specialist diagnostics can be organized too.

(2) **Microwave Resonance Therapy (MRT).** This is a novel medical treatment, which represents a synthesis of the ancient Chinese traditional knowledge in medicine (acupuncture) and recent Russian/Ukrainian breakthroughs in biophysics and bioengineering. Affecting the appropriate acupuncture points by the generation of high frequency microwaves and subthermal intensity, remarkable clinical results of the treatment are being achieved in prevention and therapy of stress, as well as in many psychosomatic disorders caused by prolonged stress. It is recommended for curing of over 70 psychosomatic diseases (neuropsychiatric, locomotion, cardiovascular, respiratory, gastro-intestinal, nephro-urologic, endocrine, gynecological, ophthalmologic, ORL, stomatologic, pediatric, ...) - with average efficiency of 82% in chronic and up to 100% in acute diseases.

(3) **Eastern Massage.** Ancient Chinese and contemporary techniques of stimulation of acupuncture system and projective microsystems, combined with aromatherapy, in prophylactic and therapeutic purposes for many psychosomatic disorders. For its simplicity, a part of the technique of acupressure massage is prophylactically recommended once a day as daily anti-stress self-aid, and in the case of already manifested psychosomatic diseases (anxiety, fear, uneasiness, phobias, insomnia, psychic disorders, headache, toothache, neuralgia, decrease of immunologic system, increased body temperature, pain in the heart region, stenocardia, tachycardia, asthmatic cough, laryngitis, hypertension, nausea, and gastric pain) as a temporary help before visiting physician.

(4) **Aeroionotherapy.** The half-hour Indian traditional rhythmical breathing through the nose in the morning and evening relaxing walks, with pause for keeping the breath between inhalation and exhalation, causing efficient anti-stress relaxation of abdominal muscles, regeneration of overall anabolic/catabolic ionic capacities of the acupuncture system, and anabolic relaxing influence of the excess of negative aeroions. In the same context, in closed environments a microclimate engineering can be recommended by applying aeroionizers which produce an excess of negative ions, in order to compensate catabolic exhausting influence of the microclimate excess of positive aeroions generated by numerous electrical devices. The traditional Indian simple nasal interruption of the two-hour ultradian rhythms in the process of recovering or keeping energy and emotional balance of the organism is recommended too. Because of their simplicity, these techniques of aeroionotherapy are also recommended for daily anti-stress self-aid.

(5) **Autogenic Training.** This is a medically widely applied autosuggestive technique of relaxation of muscles and blood vessels, recognition of the body feeling of breath and heart, and exercise for concentration, based on Schultz's idea of the equivalence of muscular and mental strain. Autogenic training is acting primarily from the state of alertness, but with careful sinking in deeper levels of consciousness, as autosuggestive short relaxing messages are softening one's undesired psychosomatic reactions in daily stressful situations. Experience has shown that this is more efficient if emotional flows are more freely engaged, this being the reason that autosuggestive messages include the words: perfect, relaxing, calm, pleasant, easy, good, free, happy, friendly, bravely, strong, far, quickly, highly. The technique of autogenic training is not only recommended for everyday anti-stress self-aid, but its short morning and evening exercising at home is necessary condition for its success.

(6) **Programmed Active Relief.** These programs represent the most efficient compensation of the second phase of stress - physical activity ("fight or flight"), which is missing in contemporary conditions of life and work as a normal reaction to stressful situations, that causes the first phase of stress with mobilization of energetic and physiological potentials of the organism, through stress-realized hormones, sugars, and fats injected into blood. Besides, these programs soften undesired psychosomatic reactions in daily stressful situations, contributing to improvement of overall health. The Aerobic-ball program of therapeutic balls with accompanying music is especially recommended. For its simplicity, these techniques of recreation are recommended for daily anti-stress self-aid too.
(7) Specialized and Popular Anti-Stress Education. IASC is organizing specialized holistic education, with accompanying offer of corresponding biomedical devices (ECD electrodermal diagnostics system, MRT therapeutic devices, aeroionizers, ...), based on traditional methods and contemporary technologies for diagnostics and therapy of stress-induced psychosomatic disorders, focused on acupuncture system (ECD computerized electrodermal diagnostics, contemporary acupunctureology, microwave resonance therapy, magnetotherapy, Eastern massage, aeroionotherapy, ...) and consciousness (autogenic training, body psychotherapy, ...), with the emphasis on practical work in anti-stress holistic prophylaxis and therapy, as well as on theoretical overview of most contemporary scientific and expert knowledge in these fields, given by renown lecturers, and presented in two corresponding IASC Anti-Stress Holistic Handbooks. Besides, IASC is organizing popular education in autogenic training, Bates' exercises for better eyesight, as well as in traditional and contemporary aspects of massage.
ELECTRODERMAL COMPUTERIZED DIAGNOSTICS

Holistic methods of curing request holistic diagnostic methods [4]. Electrodermal computerized diagnostic (ECD), based on the three-minute measurement of the temporary electrical parameters of the representative reflexogenic biological active zones of the skin, provides intermediate information about the functional state of the related organs and organic systems. Through convenient computer graphics one obtains presentation of the condition of the patient's organs and organic systems according to the degree of deviation from the normal condition.

This unique segmental ECD automated complex gives a quick information about functional state of the organism and provides an excellent possibility for the control of the dynamics of patient's recovery during corresponding application of the IASC holistic anti-stress prophylaxis and therapy - based primarily on microwave resonance therapy (MRT) as a leading non-medicament therapy, which extends new perspectives for medical practice of the XXI century and represents a basis for curing numerous psychosomatic diseases. This opens an optimal and continuous diagnostics-therapy-diagnostics technological curing cycle, which enables optimization of the process and results of curing.

Segmental electrodermal diagnostics, based on investigations of Voll, Pflaum, Kramer and Leonard [6], was originally implemented in contemporary medical practice twenty years ago. Development of ECD systems in Russia began in mid-1980's, with participation of several renown Moscow scientific institutions, with initial clinical applications in Central Military Scientific Air-Force Hospital, where this method is still applied for investigation of the health state of astronauts and pilots. Further on, during 1990's this method was improved as an Automated Medical System of the Analysis of a Therapy, being recommended to wider population of all ages as preventive diagnostics, which detects possible functional disorders up to 2 years before appearance of symptoms of diseases, and especially to professional groups exposed to stress (sportsmen, managers, ...) [7].

Presently ECD diagnostic devices, in combination with MRT therapeutic devices, are applied in big medical institutions of Russia, such as Scientific Institute of Traditional Medicine of The Russian Ministry of Health, Scientific Institute of Pediatrics of The Russian Academy of Medicine (Department for Rehabilitation Curing of Children with Cerebral Paralyze), Institute of Air-Force and Cosmic Medicine of The Russian Ministry of Defense, Central Military Scientific Air-Force Hospital, as well as in hundreds of other hospitals and polyclinics of different level. All devices are approved by The Russian Ministry of Health and have corresponding certificates. The ECD/MRT complexes are also applied in other countries of former USSR, as well as outside their borders, in the USA, England, Germany, and Switzerland, and recently in Yugoslavia in International Anti-Stress Center (IASC) in Belgrade, and in IASC regional anti-stress centers.

ECD-system consists of measuring block, governed by personal computer, six measuring electrodes (for feet, palms, forehead), and accompanying software. During the process of diagnostics the applied test-signal is completely harmless and painless for the patient. Information on the patient's condition is obtained from multiple cross scanning of electrical test-signal along 22 directions and subsequent statistical analysis of the degree of deviation from normal condition of the volume electroconductivity of the representative biological active zones of the skin and related organs and organic systems [7]. The computer graphic presentation enables both to physician and patient to discriminate clearly the condition of the organs and organic systems as a degree of deviation from the normal healthy state. Textual information comments on the state of functional relationships within organism, while the computer-physician-patient dialogue enables verification of the results of examination.

Possibilities of ECD-system are multiple [7]: qualitative estimation of the functional state of the organism in the form of so called phantom analysis (phantom-figures of corresponding organic systems), up to 2 years before appearance of symptoms of diseases; control of the efficiency of effects of different therapeutic methods, and especially microwave resonance therapy (MRT);
analysis of dynamic changes of the functional condition of organism during some therapy; detection of primary focus of the functional disorder; estimation of the character of pathology, by using an expert system implemented within database of personal computer; monitoring of the processes of sportsmen's training and rehabilitation after injuries; alongside with MRT therapy, ECD diagnostics creates an optimal and continuous diagnostics-therapy-diagnostics technological curing cycle, which enables optimization of the process and results of curing.

Based on the results of clinical investigations, reliability of ECD-diagnostics information on the condition of organs and organic systems is up to 80% [7]. The values of results of ECD express-diagnostics multiply exceed material, temporal and exploiting losses of the diagnostics, primarily paying attention to practical possibility of permanent monitoring of the patient's condition and correction of the applied MRT therapy in order to get optimal final result. Having in mind the broad spectrum of diseases which can be diagnosed and cured by complex ECD/MRT, it represents a mini-polyclinic for 2,000-4,000 patients per year, which might be supported by two specialized physicians [7]. In the field of economical efficiency ECD/MRT diagnostic-therapeutic complex is not comparable with anything known in medical practice.

Patients subjected to ECD diagnostics should follow several instructions: normally spent previous night; without consuming coffee and tea on the day of diagnostics; without consuming alcohol and drugs, possibly the day before diagnostics; without consuming food 3-4 hours before diagnostics; empty urinary bladder and large intestine; removed metal objects, jewelry, orthosis and prosthesis before diagnostics; dressed in cotton underwear; diagnostics is not done 3 days before, as well as during menstrual cycle; diagnostics is not permitted to patients with pacemakers and other foreign metal objects within the body.
Microwave Resonance Therapy (MRT) is a novel medical treatment, which represents a synthesis of the ancient Chinese traditional knowledge in medicine (acupuncture) and recent breakthroughs in biophysics [8]: affecting the appropriate acupuncture points by the generation of high frequency microwaves (52-78 GHz), remarkable clinical results of the treatment are being achieved in the prevention and therapy of stress, as well as in many psychosomatic disorders (cardiovascular, respiratory, gastro-intestinal, nefro-urologic, endocrine, gynecological, neurologic, psychiatric, dermatological, orthopedic and traumatologic, ophthalmologic, ORL, stomatologic, pediatric, addictions ...) - with average efficiency of 82% in chronic and up to 100% in acute diseases, tested on population of several millions of patients of different pathologies in several thousands of MRT cabinets in Ukraine and Russia. On the other hand, the MRT is rarely contraindicated (only in the cases of acute pain in abdomen demanding an operation, pregnancy, and menstruation cycle).

The recommended MRT treatment at an acupuncture point is maximum 10 minutes, while the duration of the whole treatment is maximum 20 minutes, applied daily. The 10 treatments in a course are applied (except in very difficult stadium of diseases when they have to be prolonged), with minimum pause of 21 days and optimal of one month, in the case a repeated course is necessary. The specific course of prophylaxis is advised at every 6 months.

The application of low-intensity EM MW fields (of intensity range ~ $10^{-3}$ - $10^{-9}$ W/cm$^2$, in extremely high frequency (EHF) range ~ 30 - 300 GHz, and millimeter (MM) wavelengths range ~ 1 - 10 mm) in biomedicine is a new trend, originated in former USSR in mid-1960’s with the advent of unique broadband backward-wave tube oscillators by two radioelectronics groups of USSR Academy of Sciences, originally used in military industry and satellite communications. Interest in influence of EM MW radiation upon non-human biological objects appeared shortly afterwards (Zalubovskaya in Kharkow [9], Devyatkov et al in Moscow [10]), but necessity for application of microwave resonance therapy (MRT) upon acupuncture points was discovered only in the early 1980’s (Sit’ko et al in Kiev [11]) as appearance of sharply-resonant characteristic eigenfrequencies of human organism - which successfully stimulated development of the second generation of coherent and third generation of noise spectrum MW generators. The coherent spectrum MW generators with manually changeable frequency (from 52 to 70 GHz) are far less suitable in practice, because of much longer seeking of the resonant frequency, dependent on individual properties of the organism and the subjective state of the patient, which can result in therapeutic mistakes and overdosing. The noise spectrum MW generators enable simultaneous excitation of all possibly therapeutic resonance MW frequencies (52-78 GHz), and an organism continuously resonantly responds to currently appropriate (and changeable during therapy) frequency.

Subsequently, MRT (EHF) therapy has made a successful headway in former USSR (especially in Ukraine and Russia, at present), becoming a new powerful therapeutic method, internationally introduced by Sit’ko in 1990, when he was awarded a gold medal in Brussels at the 39th Annual World Exposition of Innovations, Research and New Technologies, and shortly afterwards the MRT was introduced worldwide.

MRT is practical realization of the Prigogine theory of self-organization of living systems. On this line, Sit’ko and collaborators have proposed that acupuncture system is a macroscopic quantum dynamic structure [11] which might simply be visualized as differentiated at the locations of maximum of three-dimensional standing waves [8,12], formed as a result of the reflection of coherent MW Frohlich excitations [13] of molecular sub-units in the cell membranes, proteins, microtubules etc. - supported also by other investigations which have demonstrated that differentiation of gap junctions (of higher density at acupuncture points and meridians [14]) is slightly sensitive to voltage [15].

In that context an explanation for efficiency of the MRT, as noninvasive nonmedicamentous medical treatment, should be sought [8,11,12]: some disorders in the organism give rise to
deformation in the standing wave structure of electrical field of the organism in MW region, which influences corresponding changes in spatial structure of the acupuncture system, and consequently its resonant frequencies, resulting in some disease. During the therapy, applying the MW sound at corresponding acupuncture point the excited acupuncture system of the patient is relaxing to the previous healthy condition, while reaching normal resonant frequencies responses of its meridians upon the wide spectrum MW source - and following to physiological mechanisms of the acupuncture regulation [16-18] the organism biochemically overcomes the disease.

It should be noted that quantum-coherent characteristics of MRT therapy (highly resonant MW sensory response of the disordered organism, biologically efficient non-thermal MW radiation of the extremely low intensity and energy, and neglecting MW energy losses alongside acupuncture meridians) might be a consequence of Sit'ko's non-local self-consistent macroscopic quantum potential of the organism [11] - which suggests that healthy condition might be considered as an absolute minimum (ground state) of non-local self-consistent macroscopic quantum potential of the organism, while some disorders of an acupuncture system correspond to higher minimums of the (spatio-temporally changeable) potential hypersurface in energy-configuration space - this being a possible explanation of higher MRT sensory responses of the more excited (more disordered) acupuncture system, and poor MRT sensory response of the healthy acupuncture system being already in the ground state [8,12].

On the other hand, all these minima in macroscopic quantum potential hypersurface might be considered as memory attractors [19,20] of the EM/ionic MW/ULF acupuncture quantum-holographic associative neural network closely related to quantum-relativistic consciousness too [8,12], bearing information about all psychosomatic disorders - implying that the process of the MRT therapy could be most deeply visualized as removal of the very information on corresponding psychosomatic disease [8,12].
EASTERN MASSAGE

It is known that massage has been used by early tribes and peoples. Written data imply that massage was used in ancient times in south Africa, Egypt, Babylon, Assirya, China, India, Greece and Rome. Egyptian data about massage come from XII century BC, while Indian Ayur-vedic evidences on application of the massage originate from IX-III centuries BC. In contrast to ancient Greece and Rome, massage was not widely used in Europe until the beginning of XIX century. Since XIX century massage has been applied in numerous centers word wide (clinics, hospitals, spas, physiotherapeutic cabinets, and cosmetic saloons), and a lot of investigations imply the massage influence on metabolic processes within the organism [34].

Scientific explanation of the massage effects on human organism has been unknown for a long time, in spite of the deep roots of application of massage. It is only in the second half of the XIX century that articles on the physiological effects of massage first appeared. In 1870's the application of massage blossomed. The foundation of contemporary, so called classical massage, might be ascribed to the Russian physician Zabludovski, who has conducted investigations related to application of massage, suggesting its indications and contraindications. The contemporary explanation of the effects of massage is based on mechanical efferentiation of extero-, proprio-, and intero-receptors, with numerous reactions of tissues and organs. Besides, massage has also a direct mechanical effect on the tissues. Under the influence of massage the outflow of lymph and vein blood is enlarged, and hyperemia of arterioles and capillaries appear, which enhances local metabolism and elimination of dissociative harmful metabolic products, and reabsorption of swellings. It acts spasmolitically and analgetically, and amplifies secretory activity of the tallow and sweat glands, thus decreasing fatigue and improving contactile abilities and general relaxing and sedative effects [35].

Massage can be categorized into contemporary and traditional eastern massage, the latter encompassing reflexo-segmental massage, including acupressure.

Contemporary massage is related to kinesitherapy, being very efficient when complexly applied. In contemporary praxis the massage can be used not only therapeutically but also prophylactically (relaxational and sports massages). It can be classified according to the manner of application, the treated part of the body, and intention [23]. Most frequently classical and reflexo-segmental types of massages are mentioned.

Traditional eastern massage consists of two parts: general (preparatory) and special (based on restoration of circulating energy in disordered meridians) ones. The essence of the preparatory massage is linear massage alongside five vertical linear back meridians (GV meridian, bilateral medial, and lateral BL meridians) [24].

Reflexo-segmental massage originates from the Far Eastern tradition, and appears in wider western application only at the beginning of XX century, when Shcherbak (between 1903-1908) investigated the influence of mechanical vibrations on human organism during the vibrational massage.

Shcherbak's methodology treats the zones reflexly connected with nervous centers, as spinal cord is functionally divided into segments wherefrom originates the enervation of internal organs and corresponding skin zones (Head zones). In some disorders of internal organs, the changes in skin, underskin tissue, muscles, and peristom appear in the enervation zones reflexly corresponding to these organs [21]. As a consequence of pathophysiologic and pathologic disorders in these tissues painful manifestations appear, being designated as "painful points" or "trigger points", with the following characteristics: sensitivity to palpation (under finger pressure the pain appears not only in the treated zone but also in displaced regions); radius of 1-2 cm; localizations in different tissues (muscles, vesicles, peristom); the patient is most frequently not aware of their existence; they are not directly connected to the painful region, but they are on the same segmental level of the parasimpathal nervous system. The painful points are very successfully treated by various types of reflexogenic massage, thus restoring the equilibrium of vegetative nervous system, and removing or
alleviating the pain. Although the part of the classical massage, the reflexo-segmental massage is specific in its individual approach and individual choice of the zones (depending on the disorder).

Acupressure is one of the oldest reflexogenic curing methods based on the eastern philosophy, being conducted by stimulation of acupuncture points by finger pressure. It is widespread because of its therapeutic effects, as well as of its simplicity in application. Acupressure is applied as a monotherapy, as a part of the complex curing, or in a prophylactic procedure. It has no side effects, and gives good prophylactic-therapeutic effect when applied properly, especially in functional disorders.

Reflexogenic effect of the acupressure massage on the whole nervous system has a strong role in functional regulation of the organs and organic systems, as well as in restoration of the functional equilibrium in general. It can be applied from an early age (in infants, by adopting weak stimulation), to the middle age (strong stimulation between 15-30 years), and until the old age (middle stimulation between 30-50 years, and week stimulation in older age).

Duration of the acupressure depends on the particular case, age, sex, and pathology.

In spite of the degree of stimulation and its duration, acupressure in all cases gives rise to reactive response of the organism towards overall normalization on the level of systems, organs, down the cells. Especially good effect is exposed on the disordered blood flux either of functional or organic origin, lung, digestive, and urogenital disorders [21].

The choice of acupressure points depends on the purpose. In prophylaxis the points with general regenerative effects are recommended, and in therapeutics the points on the disordered meridian or organ should be used. Acupressure is applied in the direction of the meridian energy flow, by respecting other rules of Chinese traditional medicine in choosing overall procedure too.

Massage of foot and hand provides the same prophylactic and therapeutic effects as in corporal acupressure. The foot and hand are reflexogenic areas - microsystems where all organs are represented. Upon application of these types of massage it is necessary to pay attention to the small surface of the represented organs [25].

Shiatsu massage is conducted by the pressure of fingers, elbows, and knees upon selected points, coinciding with the acupuncture ones. Shiatsu massage is also applied in prophylactic and therapeutic purposes.

Anti-stress massage might be prophylactic (traditional massage in general) or therapeutic (restoration of circulating energy in disordered meridians).

During massage the following basic rules should be respected: from weaker to stronger intensity, from periphery to the center, and in the case of acupressure in the direction of the meridian energy flow. There are several methodical hand movements (grips) using in massage: smoothing, squeezing, rubbing, knocking, and vibrating [23].

To achieve a better contact between the therapist's hand and the patient's skin, the indifferent fats and talcum are applied, as well as aromatic oils for persons without allergic predispositions. The choice of ether oil depends on the intention.

The dosage depends on the location and exposed surface, skin and tissue reactivity as well as general reactivity, and the applied technique (massage must not be painful and unpleasant to the patient, and experienced therapists choose the intensity of pressure and technique of massage). The procedure duration for local massage is 10-15 minutes, and for general massage 30-45 minutes. It is conducted every day or once in two days in the series of 10 or more seances, i.e. depending on the needs and pathology [23].

Good prophylactic-therapeutic results of massage depend on the proper choice and respecting of the instructions for indication and contraindication in contemporary and traditional medicine [21-27], with different effects depending on the applied grips, location, intensity and specificity of the procedure.
AEROIONOTHERAPY

The half-century investigations have shown that ions in the air (of the concentration ~ 10^3 - 10^4 cm^-3) essentially influence behavioral effects (coolness/fatigue, relaxation/irritability), and in the long run also the human health: it has appeared that negative ions act anabolically (causing relaxation, and consequently improving the health of the organism), while positive ions act catabolically (giving rise finally to fatigue, and in the long run to disorder) [28].

It has also been shown that domestic electrical apparatuses, personal computers, climatizers and industrial electrical machines generate an excess of positive aeroions, giving rise to accelerated human fatigue in their vicinity. Therefore miniature aeroionizers (generators of negative ions) have been made, which raise concentration of negative ions in their vicinity up to 10^5 cm^-3, making a microclimate which can be met in nature near rivers and waterfalls, forests and mountains, after strong rainstorms and pelting rains. Such a microclimate bioengineering has a beneficial significance for raising global level of human health, and within IASC center airoionizers of smaller and bigger capacity can be provided.

Beside artificial sources of poorly influencing positive ions, there also exist natural sources, mostly in the form of warm winds (like, for instance, fen - the wind blowing in south Germany and Switzerland). Statistical investigations have shown that during the periods of fen blowing there is an increase of postoperative complications and deaths in intensive care units, as well as other physical and psychological disorders: headache, dizziness, sickness, allergic breathing problems, asthma, bronchitis, insomnia, fatigue, irritability, anxiety, depression, ... In all these disorders aeroionizers have appeared as a good prophylaxis.

Aeroionizers also purify air through electrical neutralization of large positive aeroions of dust, unpleasant odor, tobacco smoke, pollen, and other allergens - thus decreasing their stressful influence upon the organism; besides, airborne bacteria and viruses are removed efficiently by aeroionizers [28].

Physiological significance of the chemical nature of (negative and positive) aeroions is still not clear. Russian investigations showed [8] that functional effect of ions of the same polarity but different chemical composition (small gaseous anions O_2^-, O_3^-, H_2O^-, ... and cations NO^+, H_2O^+, CO_2^+, ..., heavy aqueous complexes of anions O_2^- (H_2O)_n, ... and cations H_3^+O (H_2O)_m, ..., etc.) is basically equal, implying that aeroionic action is achieved by yielding its charge to biological object. However, it was also shown [29] that negative ions have physiological influence on the increase of tracheal ciliary rate in rabbits only in presence of O_2 in the air, while positive ions have physiological influence on the decrease of tracheal ciliary rate in rabbits only in presence of CO_2 in the air - implying possible physiological significance of O_2^- and CO_2^+ aeroions in nostrils, as necessary precursors for dominating inhaling of negative aeroions by ida and positive aeroions by pingala (in their alternating ~ 1 hour active phases, respectively, with their corresponding terminations in left and right nostrils, in swara yoga physiology [30]).

This picture is in accordance with the viewpoint of successive dominant flow of (negative) anions through the left circulatory part of the acupuncture system, and (positive) cations through the right circulatory part of the acupuncture system [8,31-33], with normal ultradian periodicity ~ 2 hours (i.e. ~ 1-hour dominance for left and right phases, alternately: ida-pingala-...[30]). Although this rhythm is not apparently in phase with ~ 24-hour acupuncture rhythm of successive dominance of 12 paired meridians (i.e. ~ 2-hour dominance for each organ-related meridian with corresponding yin or yang functions in the following order: yin-yin-yang-yang-...[16-18]), it might be that every ~ 2-hour organ-related acupuncture phase (either yin or yang) needs complete ~ 2-hour nasal phase (ida-pingala) in order to balance activities of the corresponding organ-related pair of symmetrical left and right meridians, to enable both regenerative (anabolic, ida-like left meridian) and degradative (catabolic, pingala-like right meridian) organ functions [8,32,33], contributing finally to either yin or yang overall corresponding organ-effect from the viewpoint of the traditional Chinese medicine [16-18]!
The ionic basis of the qi-entity of Chinese acupuncture system (or prana of Indian energetic system), is also supported by 10 times greater concentration of ionic intercell "gap junctions" [18], which is in accordance with 10 times greater skin electrical conductivity on acupuncture points in respect to neighboring tissue, as well as with significantly enhanced aeroionic reabsorption in these points [17]. The biophysical ionic interpretation of the acupuncture system can also account for the origin of Chinese therapeutic yin-yang/tonification-sedation rules through the type of the needles (Ag-Au) or their rotation (in clockwise - counterclockwise direction) [8,32,33], depending on the type of disorder and the side of treated meridian [18]. Also, theoretical predictions of the biophysical model of acupuncture system and states of consciousness [31] imply an ionic nature of the qi entity of the Chinese acupuncture system, with possibility of its partial displacements from the skin surface in these states, when the displaced acupuncture electromagnetic/ionic microwave/ultralowfrequency quantum-holographic neural network [8,31-33] behaves like an "optical" which can extrasensory perceive environment (as reported by patients reanimated from clinical death [34]).

The ionic nature of qi i.e. prana also implies the significance of aeroionic balance [8,28,33] and regular rhythmical breathing, recognized especially in Indian tradition [30]. According to swara yoga the rhythmical breathing through the nose is especially important, in order to inhale as many as possible aeroions (prana) within the two (out of three) most significant nadis (the left ida and the right pingala), with their entrances in corresponding nostrils: this is recommended in fresh and nonpoluted air, when even some excess of negative ions exists, with the relaxing healthy influence on the body! It should be pointed out that breathing through the nose is crucial, with pauses for keeping breath between inhaling and exhaling (in order to inhale as many as possible aeroions within ionic channels, and then redistributed through the whole acupuncture ionic system). For keeping good healthy state, a half-hour rhythmical breathing in the morning and evening relaxing walks, with rhythmicity 6:6:12 (during 6 steps deep inhale, next 6 steps keeping the breath, and following 12 steps the full exhale), 5:5:10 or 4:4:8, depending on individual lung capacity. In the same context, in closed environments a microclimate engineering can be recommended by applying aeroionizers which produce an excess of negative ions.

It should be added that swara yoga also recommends simple nasal control of the two-hour ultradian rhythms in the process of recovering or keeping energy and emotional balance of the organism. Namely, brain ultradian rhythm controls the nasal rhythm contralaterally (more active left hemisphere gives rise to more active (more opened) right nostril, and reversely for opposite hemisphere). However, according to swara yoga there is also possibility for reverse influence of the nasal rhythm on the brain one, by activating less active nostril through special breathing procedure [30]: the more active nostril is closed by finger pressure, this being followed by forceful and short inhaling 10-15 times through the less active nostril. In this way the previously less active channel (ida or pingala) is excited through ionic nostril receptors, then subsequently influencing the limbic brain center to change the phase of ultradian rhythm. The effect is achieved after only several minutes, which might be monitored by exchanged activity of nostrils. The procedure is very simple, and can be efficiently used to prevent development of cold in early phase (through cutting the ultradian rhythm of developing disorder), for change of stressful mood, etc!
Autogenic training (AT) is a medically widely applied *autosuggestive technique of relaxation* of muscles and blood vessels, recognition of the body feeling of breath and heart, and exercise for concentration, based on Schultz's idea of the *equivalence of muscular and mental strain*. By autosuggestive short relaxing messages one's undesired psychosomatic reactions in daily stressful situations are softened: it can help in all functional psychosomatic disorders, where mistakes produced by habits should be corrected, or where severe emotional reactions should be smothered [35]. Technique of autogenic training is not only recommended for everyday anti-stress self-aid, but its short morning and evening exercising at home is a necessary condition for its success.

First experiences in AT originate since 1911 from early Schultz's works in his ambulance for hypnosis in Wroclaw, followed by his neurological practices in Jena, Dresden, and Berlin, and finally published in his big monograph in 1932, being until 1970's reprinted almost without changes in Germany and world wide; in the further affirmation of AT a significant role was played by Lindemann, who has pointed to its great importance in anti-stress prophylaxis [35]. The related techniques have been also developed in USA ("progressive relaxation", Jacobson) and France ("relaxation", Ajuriaguerra, Lemair, et al.) [36].

So, AT has passed through the whole XX century, and "in the following one it will enter as a method which outlived many psychotherapeutic trends, which have appeared and disappeared with the waves of fashion" [37]. Although AT, in the context of psychotherapy, might be classified into relatively nonpretensional "shallow or pragmatic methods, which are not concerned with the background of mental, neurotic, and psychosomatic disorders, but directly attack and remove the symptoms of these disorders" [38] - nevertheless Poro in his renowned Encyclopedia of Psychiatry points out its great practical significance: "*Autogenic training is the most contemporary method of medical relaxation*" [39].

In the near future it might be expected that AT will emerge outside the medical framework, with a wider spectrum of applications, as excesses of psychophysiological and social tensions are becoming more and more a problem of civilization at the borderline of the second and third millennia, which will be less and less resistible by unconscious self-defending automatism [40]. One of the ways of self-defense is AT and related methods, based on the millennial tradition of Eastern meditative techniques.

Classical AT is acting primarily from the state of alertness, but with careful sinking to deeper levels of consciousness, as autosuggestive short relaxing messages are *softening* one's undesired psychosomatic reactions in daily stressful situations. Experience has shown that this is more efficient if emotional flows are more freely engaged, this being the reason that autosuggestive messages include the words: perfect, relaxing, calm, pleasant, easy, good, free, happy, friendly, bravely, strong, far, quickly, highly ... [35].

Although classical AT might be classified into relatively shallow psychotherapeutic techniques, in order to strengthen integration and communication between different levels of consciousness higher courses of AT are developing, like *Autogenic Training - New Generation* (AT-NG) [41]. In developing AT-NG especially inspiring was Jung's warning, that rationalism of the modern age is keeping back to unconscious everything considered irrational, religious [42], this being the reason that AT-NG is directly oriented towards these speculative Jung's focuses of archetype tensions, with intention to weaken and cleanse them, and to recover old, forgotten, principles of morality [41].

At the end, let us try to put AT in the theoretical-practical context of meditation, meridian psychoenergetic, deep psychotherapeutic, and Christian-religious techniques:

(1) *Autogenic training*, as an autosuggestive (auto-hypnotic) technique of relaxation, helps autosuggestive positive contextual messages to be memorized on a subconscious level, in order to *soften from this level one's undesired psychosomatic reactions* in daily stressful situations, which is suggested from theoretical modeling of cognitive processes. Namely, according to the oscillator
model of a neuron [43], the electroencephalographic (EEG) rhythmicity is qualitatively predicted in such a way that an increase in the input causes an increase in the frequency of oscillations - which might basically be the mechanism of information ascending upon the (frontolimbic) selection and amplification from the lower-frequency (δ,θ) unconscious form of primordial subliminal thought to the higher-frequency (α,β,γ) conscious thought [44] - while other contextual non-amplified information is memorized on subconscious level. As this whole automatic process of perception, selection, and amplification of information begins below the threshold of consciousness, this points to the significance of contextual reprogramming of subconsciousness in autogenic training, in order to put under control that part of undesired instinctive associative reactions which jeopardizes one's psychosomatic health. However, the practice reveals that this mechanism is not sufficiently efficient for persons with strong psychological conflicts, which give rise to neurotic and even psychotic disorders, and for such persons the main priority is to resolve their psychological conflicts by some deep psychotherapeutic or Christian/religious technique.

(2) Meditation, as a prolonged altered state of consciousness, like REM phase enables more efficient integration of (otherwise divided by brain's functioning in the alert state) normally conscious and unconscious contents around healthy associative memory ego-state, i.e. more intense personality growth and alleviation of emotional conflicts [31,32,45,46], this being the reason for its central role in yoga and related esoteric disciplines [47]. However, in the case of persons with strong psychological conflicts, who bear strong conflicting associative memory states alongside with the healthy associative memory ego-state, the result of prolonged meditation might be integration of personality about these associative memory states, with a harmful result of divided (instead of fully integrated) personality, and for such persons the main priority is to resolve their psychological conflicts by some deep psychotherapeutic or Christian/religious technique too.

(3) Meridian psychoenergetic techniques enable very fast removing of persistent phobias, allergies and other psychosomatic disorders [13], through simultaneous effects of visualisation and tapping/touching acupuncture points, which might be theoretically interpreted [6] as a "smearing" of memory attractors of the psychosomatic disorders, through successive imposing new boundary conditions in the acupuncture energy-state space during visualizations of the psychosomatic problems.

(4) Deep psychotherapeutic techniques (of psychoanalytical, group, humanistic, gestalt, existentialist, body, transpersonal, expressive, hypno, integrative, empirical, ... orientation) are focused on the recognition of the cause of unconscious conflict and its bringing to awareness, through intellectual and emotional insight which gives rise to deep change of personality [38,49]. In this way the experienced conflict becomes less traumatic for the person (as its conflict-related subconscious associative memory state vanishes, which enables further integration of personality around healthy associative memory ego-state), while the patient in psychotherapy is becoming less and less dependent on psychotherapists and more and more on himself.

(5) Christian churches are also focused on confession before a priest (although with strong transpersonal role of the faith in Christ, who acts through the confessor as a channel of Holy Spirit and liberates the confessed person - especially in the Orthodox tradition of hesychasm [50]), while the confessed one enhances his experience of powerless i.e. humility before the merciful power of God, which can keep him from even worse downfalls in new temptations [49,50]. Probably essential transpersonal aspect of psychological conflict and necessity of its simultaneous transpersonal reprogramming in all persons involved should be pointed out, contributing to its radical and final reprogramming at the level of spatio-temporal associative memory network of collective consciousness, which seems to be only possible through prayer in transitional states of consciousness) [32,45,46].
PROGRAMMED ACTIVE RELIEF

General stress mechanism prepares the organism for intense physical activity. Namely, the two-phase stress mechanism has been developed during the evolution [1,51]: (1) mobilization of the energetic and physiological potentials of the organism - preparation for defense, attack, or escape; and (2) intense physical activity - muscular strain which is spending the hormones, sugars and fats injected into the blood during the first phase.

However, daily stressful situations mostly do not request strong physical activity of contemporary person as a reaction to stress. On the contrary, it is the calmness, repression and control of emotions, and reduction of physical activity, which is demanded. In contemporary people the social behavior dominates the biological one, so that socially useful unnatural behavior disturbs biological harmony of psychoemotional and physical reactions, giving rise to neuroses and other psychosomatic disorders. Such omission of the second phase of stress has negative consequences on many organs and organic systems.

The most natural and useful compensation of the second phase of stress is corresponding programmed active relief i.e. program of kinesiologic/sports recreation.

Kinesiologic anti-stress programs are based on contemporary scientific results on significant effects of the programs of kinesiologic recreation [5]: they are excellent prophylaxis against negative effects of stress, through improvement of muscular, cardiovascular, nervous and especially endocrine system, thus softening reaction on the stress; they improve general self-confidence, provide the sense of coolness, and lower anxiety, irritability, and depressive states; they enhance life tonus and working ability; they represent the most efficient compensation of the second phase of stress - physical activity ("fight or flight"), which is missing in contemporary conditions of life and work as a normal reaction to stress; they neutralize an excess of hormones, glucoses, and holesterole, injected into the blood in stressful situations; they enlarge endorphin within the organism with positive influence on intellectual activity, alleviate or remove depressive states and nervous overreactions, soften stress and reaction to it; and they develop abilities for relaxation and self-control.

Besides, the necessity of programs of kinesiologic recreation is supported by the facts [5] that absence of general motor activity or hypokinesia causes drowsiness, laziness, irritability, insomnia, loss of appetite, bad mood, weakening of emotional stability, deterioration of physical and mental abilities. Hypokinesia is one of the basic causes of numerous difficult chronic diseases of internal organs, and of metabolic deterioration. Hypokinesia is most frequently combined with other pathogenic factors of civilization - neuropsychological strain, overdosed and non-adequate nutrition, inconvenient life and work conditions, and harmful factors and habits.

Therefore, persons with optimal physical readiness have greater activity of nervous centers, differentiate complex signals faster and more precisely, have greater speed of information reception and processing, and higher stability of neural processes. Systematic exercises induce significant morphological and functional changes in all parts of the locomotion system: increase in mass and volume of the skeletal muscles, improvement in muscular blood supply and in neuromuscular regulation, enhancement in bone strength and their cross-section, growth of muscular energetic potentials which accelerate aerobic and anaerobic reactions, increase of sensitivity and mobility of neuromuscular apparatus and ability for more complete and faster muscular relaxation and concentration of muscular strains. Sports recreative activities also contribute to reduction of fat layers and growth of sugar reserves; they increase abilities of breathing system in more intense oxygen and nutrition supplies of all tissues and cells in human organism, improve activity of heart and heart-vessel systems, and provide more rational and efficient work of all organs.
REFERENCES


33. Group of authors, *Anti-Stress Holistic Handbook: With Fundamentals of Acupuncture, Microwave Resonance Therapy, Relaxation Massage, Aeroionotherapy, Autogenic Training, and Consciousness* (IASC, Belgrade, 1999), Sect. 1.2, Sect. 1.4, and Ch. 8 (Encl. by D. Rakovic and N. Sobat), and references therein.


49. V. Jerotic, Individuation and (or) Deification (Ars Libri, Belgrade & National and University Library, Pristina, 1998); cf. especially Ch. 7: Confession in Christian churches and psychotherapy, in Serbian.


51. Group of authors, Anti-Stress Holistic Handbook: With Fundamentals of Acupuncture, Microwave Resonance Therapy, Relaxation Massage, Aerioionotherapy, Autogenic Training, and Consciousness (IASC, Belgrade, 1999), Sect. 1.1.2 (Encl. by D. Lekic and D. Djordjevic), and references therein.