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Research Article

Human Energetic Light System

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ABSTRACT

On the basis of the latest biophysical ideas, the mechanisms of light influence on biological structures at the molecular, organ and information levels are discussed, which allows explaining the practical effects of light applications in a wide spectral range in medical practice for therapy and diagnostics. Particular emphasis is placed on the use of laser radiation.

Keywords: Biophysical Mechanisms; Light Diagnostics; Light Treatment; Integrative Medicine

INTRODUCTION

All leaving beings emit light. This effect was discovered by Russian biologist Alexander Gurwitsvh in 1922, but only in 1970th German physicist Fritz-Albert Popp developed technology to detect this light – weak ultraviolet photons – by modern scientific instruments. He named these photons as biophotons and it was found that amount of these biophotons depend on the conditions of the living being. Bio-photonics may be used to study plants or liquids, but it is not practical to use for human study [1]. To detect and analyze light emitted by human beings we may use Bio-Well technology, which we will describe shortly below.

Light therapy is an important modality of the Alternative and Integrative Medicine. The use of light in medicine began in the middle of the 19th century and the Nobel Prize in Medicine was awarded in 1903 to Danish doctor Niels Ryberg Finsen in recognition of his achievements in treating diseases - especially lupus tuberculosis - with concentrated light radiation.

New stage of development started in 1980th with publishing several groundbreaking works [2,3] and establishing the relationship between the lack of light and winter depression in Northern countries [4]. Since 1990, the penetration of light and chromotherapy into medicine has been widespread, and there are now more than ten thousand publications on the subject each year.

BIOPHYSICAL MECHANISMS OF LIGHT INTERACTION WITH BIOLOGICAL TISSUES

Penetration of light into the skin strongly depends on wavelength. Most organic molecules display strong absorption in the ultraviolet region, and so penetration in the UV is very weak (a few microns). In the visible (blue, green and yellow), absorption is principally due to hemoglobin and melanin. These are the main targets and acting mechanisms of the chromotherapy. Red and near infra-red (600 to 1200 nm) wavelengths are weakly absorbed and penetrate deeply into the tissue (this penetration is, however, limited by optical scattering). In the near and far infra-red, it is water which absorbs intensely (Figure 1).

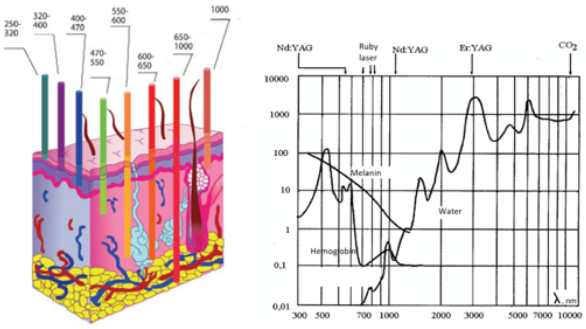

Figure 1: Penetration of light into skin and absorption spectra of the main chromophores of the bio-tissue.

For low-intensity light therapy thermal effects are not important, and we need to pay attention to subtle biophysical mechanisms.

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One of the keys is the direct influence of light to mitochondria, the energy-producing engine of life. Estonian biophysicist Tina Karu demonstrated that light of specific frequencies in the wide range from 400 to 820 nm influence the one of the last links in the mitochondrial respiratory chain that driven by the enzyme cytochrome c oxidase [5]. Monochromatic light increases metabolic energy by the production of ATP: it increases motility and cell division; and it regenerates DNA. This comes due to the communication from the mitochondria to the nucleus, known as a mitochondrial retrograde signaling.

Several mechanisms of the light influence may be related to water. This effect is related to the oxygen transport by capillaries. This principle is based on ideas proposed by the Professor Jerald Pollack. He demonstrated that water adjacent to hydrophilic surfaces — such as capillary walls, surfaces of biopolymers, other hydro-gels, cell membranes, etc. — differ in their dissolving properties from the bulk water. Under certain conditions, the thickness of this zone reached hundreds of microns [6]. This "Exclusion Zone" (EZ) water is physically different from usual bulk water, but two other discoveries made by Pollack, are even more significant because they suggest that EZ water may be the source of free energy. He demonstrated that EZ reacted to light. When illuminated, the size of EZ increased. The strongest effect was under the influence of the infrared radiation.

The above data can be summarized by indicating the main mechanisms of light influence in different spectral ranges:

- in the near UV range this is primarily an energy effect;
- in the visible range it is mainly an information effect, both through vision and skin;
- in near IR and IR it is a molecular effect.

In many cases, we may use both laser and LED light, but in all therapeutic applications, it is low-intensity radiation.

LIGHT DIAGNOSTICS IN THE ALTERNATIVE AND INTEGRATIVE MEDICINE

Besides the thermal (infrared) field, it is now clear that a living organism has a very complex radiation-field. This field occupies a wide range of the electromagnetic spectrum from ultra-violet (about 1015 Hz) down to extra-low frequencies of a few Hertz or lower. At this lower end are found the electrical waves from the brain and heart, which can be detected with conventional electrical instruments. At the upper end visible, ultraviolet and near infrared radiations have been detected with the use of the sensitive photon counter. Between these two extremes, lies a huge region of the spectrum, going from radio and microwaves at the lower end to far infrared at the upper end of frequency.

What stands out already, from many studies on both the extra-low frequencies of heart and brain, and the much higher optical frequencies, is that the electromagnetic field of an organism varies all the time in response to the slightest change in physiological conditions.

Among the various methods of light diagnostics, we will focus on the method of Electrophotonic Imaging (EPI) (known as well as Gas Discharge Visualization - GDV), developed in Russia in mid-90th [7].

The technique of EPI allows the recording, from a living subject, of electron and photon emission stimulated by an electromagnetic field, as well as the acquisition of these data by computer image processing. The electric impulse on the camera plate stimulates biological subjects (or chemicals evaporated by this subject) and generates a response in the form of an excited gas plasma. This plasma emits both light and other electromagnetic fields over a wide frequency band because of the short electrical impulse used (10 microsec). The emissions are directly measured by a charge-coupled device (CCD), the state of the art in measuring low-level light that is used in astrophysics and other scientific endeavors. The CCD registers the pattern of photons detected over time. These digital data are transmitted directly into a computer for data processing, and each image from the light emitted is stored as a graphics file (Figure 2).

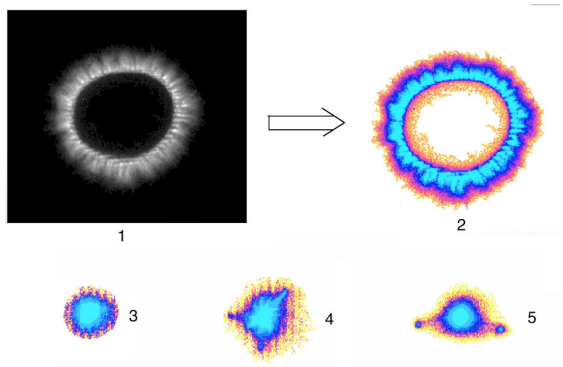

Figure 2: Examples of EPI images. 1 – initial image of light from human finger, 2 – same after processing, 3 – image of light from a drop of distilled water, 4 – same from the potable water, 5 – same from the structured water.

These two-dimensional images of the light are then used to calculate the area, emission intensity, fracticality, and other parameters. On the basis of the calculated parameters, experimental conclusions are drawn. The EPI technique has found a wide range of applications: first of all, in medical practice, both conventional and complementary [8-14]; in analyzing sports activity, and in studying the energy properties of liquids [15, 16]. More than 2000 professionals are using EPI instruments in 65 countries (**www.bio-well.com**). Analysis of more than 100 papers published in medical journals [7, 14] demonstrated that the EPI/GDV software and equipment is a convenient and easy-to-use, which allows examination of patients with various pathologies, the method delivers valuable diagnostic information on the functional state of patients, allowing their state to be monitored, and constitutes a convenient and easy method for conducting preventive examinations of individuals and control of psychophysiological state of people in various areas of application. The informativeness of the analysis allows to evaluate the immunomodulatory, antidepressant and systemic effects of therapy, and based on the objective data to select an individual treatment regimen for each patient.

The described technique can be used in different areas, but the basic area is, certainly, the alternative and complementary medicine. At the affiliation of the University in the town of Sochi, a comparative analysis of Electro-photonic Imaging (EPI)

results in clinical practice on the basis of the data analysis of 542 patients was carried out. With clinical methods of diagnostics, the comparison of the EPI data with the results of clinical and functional analyses, showed from 79 to 94% of coincidence. The Electro-photonic technique appeared highly informative, regarding the prediction and early diagnostics of pre-clinical states of a "pre-illness." The low cost, easily available, non-invasive, reliable and informative ability of the EPI method, using the Bio-Well device, according to the physicians, demands its active introduction in medical-preventive institutions.

From many years of experience using Energy Field analysis, we may conclude that the aim of any therapy, exercise or treatment should be to improve the Energy Field image. This is a clear indication of the positive effect of a therapy.

CONCLUSION

All the life on Earth is based on the energy of photons which we have thanks to the Sun. We accept light with all our body and we emit light. We are – light beings, and you may increase the intensity of your light, the power of your Energy Field by positive emotions and clear consciousness. With Bio-Well we can see effect of positive intentions, love and compassion, as well as the effects of alternative and integrative medicine. We live in the time of powerful cloud technologies and we have to implement these technologies into our life and into our practice.

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