

BIOPHOTONS ARE A MODERN PROSPECTIVE BIOPHYSICAL PARAMETER FOR ASSESSING METABOLISM AND FUNCTIONAL STATE OF THE ORGANISM *IN VIVO*

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Summary. The publication covers aspects of using the assessment of biophoton emission parameters, which are new indicators of the functioning of the human body.

Key words: biophoton, biophoton emission, ultraweak photon emission, analysis electrophoton emission, metabolism.

Introduction. The search for new methods for intravital non-invasive assessment of metabolism and the functional state of the human body is relevant. Estimation of biophoton emission is a new promising direction in science. Ultraweak photon emission (UPE) is a universal biophysical phenomenon of the functioning of tissues of living organisms. This is an optical phenomenon of electromagnetic radiation in the spectral region from 200 to 800 nm at a constant speed from several photons per cell per day to several hundred photons per organism per day. Biophotons are carriers of energy and information of intercellular communication. It's biophoton signaling. UPE correlates with the level of metabolism, vital functions of cells, stress levels, etc. [1, 2]. UPE contains information about the activity of general cellular metabolism and the functional state of the body. The purpose of the study was to conceptualize existing scientific views on biophotons as a modern biophysical parameter for assessing the metabolism and functional state of tissues of the human body *in vivo*.

Materials and methods. General scientific methods (logical analysis, induction, deduction and synthesis of knowledge) and theoretical methods (logical methods and rules of normative nature) were used in this theoretical study.

Results. The results were obtained that biophotons are a promising physical parameter for an objective assessment of the functional state of tissues. The phenomenon of collective biological life of cells in the body (for example, processes of deterministic self-organization of molecules, functional and morphological association of cells into tissues, cellular regeneration, cellular activity, cellular metabolism, etc.) is ensured by quantum information electromagnetic signaling. Biophotons perform the following functions: 1) they provide resonant signaling between cells, processes of cellular regeneration, cellular activity, cellular metabolism, viability and replication; 2) they correlate with the cell cycle and other functional states of cells and organisms, and their change is a response to external stressors; 3) play a role in specialized cells of the



nervous system during the transmission and processing of nerve signals (participation in the mechanisms of vision and the formation of internal biophysical patterns of visual perception); 4) they provide a superposition of various cells inside the organ, since they form an information field transmitted through the connective tissue according to the optical fiber principle (participation in morphogenesis). There are different instrumental techniques for recording the emission of biophotons [3]. The analysis electrophoton emission (AEPE) method has been adapted for use in clinical settings. The method makes it possible to obtain biophoton emission enhanced by an electromagnetic field (gas-discharge imaging mechanism). The use of modern hardware and software systems (for example, a certified BioWell, USA measuring device) allows you to quickly and automatically process registration data of AEPE from ten human fingers and perform clinical analysis of the results. Tissue metabolism is assessed based on the area, shape and intensity of the recorded luminescence. Mathematical processing algorithms make it possible to obtain clinically significant indicators. The technique allows for an objective measurement of stress levels. This is a quick and valid way to individually screen for “burnout syndrome” in work teams. Determining the balance indicator (%) between the right and left halves of the body allows you to assess the functioning of the autonomic nervous system. Normally, biophoton emission rates between the left and right should not differ by more than 5%. Determining the total level of energy and organ energy is a fundamentally new promising indicator for clinical use. It gives a general objective idea of the level of metabolism in the body. Based on the existing reflex connections between the tips of the fingers and the internal organs of a person (method of sectoral analysis by P. Mandel, Germany), the device calculates the energy level of the organs.

Conclusions. 1). Biophotons are a modern biophysical parameter of the morphogenesis of tissues of the human body and in vivo assessment of their functioning. 2). Estimation of biophoton emission parameters may be of practical importance for use in biomedical research. 3). The certified BioWell (USA) measuring device can be recommended for an instrumental objective assessment of stress levels.

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