

Positive Effects of mm-Range Noise Radiation on Human Organism

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This paper presents results of investigations of positive biomedical effects on human organism with action of mm-range noise radiation. In particular, it considers questions of correction of a human immune system with noise mm-range radiation. Paper describes constructive and functional particularities of multifunction biostimulator of human organism, which had been designed for experimental researches. It is also discussed a possibility of using this effects for various medical applications that had been used in clinical practise.

The offered technique of correction of human immunity system is based on: action of low energy electromagnetic waves of mm-range on receptor areas of person; particularities of perception by a human organism of low energy EM waves millimetre range. Herewith it occurs a complex interaction mm-range noise radiation with separate organs and human organism as a whole.

It had been investigated, that action of electromagnetic noise radiation (spectral density amounts $1 \cdot 10^{-12} \dots 1 \cdot 10^{-18}$ W/Hz at 4.8...5.7 mm wavelength range) intensify an immune-adoptive ability of a human organism. There are observed significant decreasing of action of aggressive ecological factors on a human organism, as well as increasing of efficiency and quality of preventive diagnostics and treatments of various disease, rehabilitation and raising of a human immunity.

Method of therapy with action on human organism of mm-range noise radiation consists in without drug correction of human physiological state. Correction of human physiological state is carried out with non-invasive action of low energy (up to 10 mW/cm^2) mm-range electromagnetic radiation on receptor areas and acupuncture points. Millimetre waves is widely used for treatment such illnesses as stomach ulcer, heart diseases and during post surgical period. It is very important to understand the nature of low energy millimetre waves. In this range ($\lambda=1 \dots 10 \text{ nm}$, $f=30 \dots 300 \text{ GHz}$) waves have significant particularities. Quantum energy is less than heat energy kT . For example, heat energy is 2.53 eV at room temperature in comparison with quantum energy that is 10^{-3} eV at wavelength $\lambda=1 \text{ mm}$. This energy is less than energy of electromagnetic transition, activation, oscillating energy of molecules and even the hydrogen coupling. It means that millimetre waves cannot influence even onto the weakest chemical couplings. Therefore it could be classified as non-ionising radiation.

Human organism consists of about 10^{15} cells; each of them is autonomous formation. Cells generate electromagnetic fields in mm-range. Amplitude-frequency responses of field radiation are different for normal and diseased organism. It means that any pathology is pathology of cells. External millimetre radiation stimulates self-organism radiation in this range that is operating as synchroniser for weak organism and forcing the organism for normal biorhythm. So therapeutic effects of noise radiation consist in mobilisation of human organism reserves that are reduced during the humane age. Essential advantage of noise mm-range therapy is absence of reaction onto normal organism.

It is very important to remember that various humans have certain frequencies of self-radiation. These frequencies must be used for forcing of human organism reserves. Such condition requires the procedure for selection of individual stimulating frequencies in case of using of fixed radiator in mm-range. Using noise-radiator do not require this one, because an organism have selective possibilities. Thus it selects only same mm-waves as individual self-radiation. At that another wavelengths do not participate in biostimulation of organism and as it was mentioned above they have not negative reaction onto normal or diseased human organism.

Using a multifunction biostimulator carried out investigations of positive effects of mm-range noise radiation on a human organism. The biostimulator consists of following main units: an irradiator on IMPATT diode; timer with executive device and sound signaller; unit of searching of biologically active point (BAP); digital meter of BAP resistance.

Investigation of positive effects on human organism with action of mm-range radiation allows to developed new techniques of treatment the most difficult human diseases and creates new class of therapeutic devises.

