

Experimental research of the reaction of the central nervous system on combined action of physical factors non-ionizing radiation of low intensity

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The urgency of research is related to the necessity of developing ideas about the reaction of the central nervous system to low-intensity non-ionizing radiation factors that are in the real environment often present simultaneously, providing a combined effect on the body.

Carried out a series of studies on changes in the extracellular impulse activity of neurons in the visual cortex of experimental animals on non-ionizing physical factors (static magnetic field, radio frequency electromagnetic field and sound). Mechanism of the reactions could be different in quality and quantity, as determined by the initial background. They were carried out with a latent period, significantly more than light flash, more and more intensely manifested after turning off factor and consisted mainly in reducing the frequency of impulses. According to the literature, that kind of response characteristic of a neuron peculiar weak irritants (rather subliminal) because of its biological significance. It is known that the reaction on such interventions may be more expressed on the background of the additional load.

Patterns of change depended on the performance in background and in response to the isolated action of light. Inhibition of reflexes was observed at significantly higher frequency of the initial impulses than activation. Influence of magnetic factors was similar to the action of sound (an inadequate stimulus for this area). Inhibitory type of reactions was reported more frequently (the result of reliable group of neurons), and it was enhanced by the combined action of irritant. The basic pattern of change was limited to reduce the frequency of the first phase pulsation of activation and increase in the latent periods of first and second active phase. Other indicators of response to flashes of light remain almost unchanged.