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Immunological effects of light therapy

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It was shown that photobiomodulation therapy (PBM) has anti-inflammatory and pain relief effects. M. Pelletier et al. demonstrated that PBM also have delayed effects comprising restoration of tissue alterations (healing, rejuvenation) and hair growth. Different research implies activation of mitochondrial functions, stimulation of ATP synthesis and cell membrane ion channel regulation as mechanisms of the PBM effects. We suggested participation of immunological mechanisms in local and system responses to PBM. To check possible effects of the PBM on cell immunity we evaluated relative contents of peripheral blood (PB) lymphocyte subpopulations before and after skin irradiation with long wavelength light. Near Infrared Lamp RIGHT HAUSEN 125W E27 emitting red and near infrared light (600-950 nm wavelength band) was used for one hour irradiation of chest region in healthy volunteers. Comparative evaluation of PB lymphocyte subpopulations was performed using Flow cytometry method (DACO Galaxy instrument). Four lymphocyte subpopulations were evaluated: CD3+ (T-cells); CD3+CD4+ (T-helper cells); CD3+CD8+ (T-suppressor / cytotoxic cells) and CD4+CD25+ Immunoregulatory T-cells (T-regs).

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