

Noninvasive investigation of skin local hypothermia influence upon local oxygenation and hemoglobin concentration

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Publication:

Proc. SPIE Vol. 2979, p. 375-377, Optical Tomography and Spectroscopy of Tissue: Theory, Instrumentation, Model, and Human Studies II, Britton Chance; Robert R. Alfano; Eds.
Publication Date: 8/1997

Abstract:

Functional evaluation of local hemoglobin concentration and hemoglobin oxygenation based on back scattering spectra from human skin in vivo have been obtained in visible range (502 - 628 nm) by a rapid microlightguide spectrometer (EMPHO II) with step 250 micrometer. Analysis of received results has shown that during local cooling there is two nearly simultaneous reactions: reduction of hemoglobin concentration and increase of hemoglobin oxygenation level. In a case when one has used previous heating of planning place for cooling, reduction of hemoglobin concentration is expressed higher by 22 - 33%.