

原著論文

Evoked Photon からみる運動時の生体エネルギーに関する研究 —運動による人間バイオエネルギーの変動—

Evaluation of bioenergy after exercise using evoked photons
— Fluctuation of Human bioenergy by exercise —

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Abstract

Introduction: Living organisms emit extremely weak light particles called biophotons generated by biochemical reactions associated with various in vivo physiological metabolic activities. In this study, we focused on adult males and recorded their evoked biophotons using a Gas Discharge Visualization (GDV) device. Next, we examined whether exercise alters biophoton parameters and the GDV results correlated with other indices of the stress.

Methods: Biophotons were measured using a GDV device that was developed to measure the luminescence phenomenon of evoked biophotons and to evaluate in vivo energy using the parameters of area and intensity. The exercise load comprised running for 1 h on a treadmill at the 70% HRmax level. The following measurements were made before and after running: evoked photon imaging using GDV; salivary secretory immunoglobulin A (s-IgA) using a sandwich enzyme immunoassay; and a profile of mood state (POMS) psychological assessment.

Results: The average in the area and intensity of the evoked-photon energy field indices was found to decrease significantly ($p < 0.05$) after exercise, and a significant decrease ($p < 0.05$) was also observed for s-IgA. In addition, POMS score decreased significantly ($p < 0.05$) after exercise. Furthermore, the area and intensity parameters significantly correlated with s-IgA ($p < 0.05$).

Conclusions: Evaluation of in vivo energy of evoked photons appears to be a useful method for the assessment of physiological stress and produces similar results to conventional s-IgA and POMS testing.

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