

The effect of prolonged whole-body cryostimulation treatment with different amounts of sessions on chosen pro- and anti-inflammatory cytokines levels in healthy men

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Abstract

Cryotherapy is used in the early treatment of acute injuries (sprains, strains, fractures) yet only a few papers discuss the possible influence of whole-body cryostimulation on inflammation mechanisms or immunology. It is postulated that cold exposure can have an immunostimulating effect related to enhanced noradrenaline response and can be connected with paracrine effects. The aim of this study was to examine the effect of different sequences of whole-body cryostimulations on the level of pro- and anti-inflammatory cytokines in healthy individuals. The research involved 45 healthy men divided into three groups. The groups were subjected to **5, 10 or 20, 3-minute long whole-body cryostimulations each day at -130°C**. Blood was collected for analysis **before** the stimulations, **after completion** of the whole series, and **2 weeks after** completion of the series, for the examination of any long-term effect. The analysis of results showed that in response to cryostimulation, the level of anti-inflammatory cytokines IL-6 and IL-10 increased while IL-1 α cytokine level decreased. It seems that the **most advantageous sequence was the series of 20 cryostimulations due to the longest lasting effects of stimulation after the completion of the whole series of treatments**.

Keywords

Whole-body cryostimulation, proinflammatory cytokine, anti-inflammatory cytokine

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