

[Effect of whole body cryotherapy on the levels of some hormones in professional soccer players].

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Source

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Abstract

INTRODUCTION:

The study was undertaken to determine blood serum concentrations of selected steroid hormones (estradiol--E(2), testosterone--T, dehydroepiandrosterone sulfate--DHEA-S) and luteinizing hormone (LH) in professional footballers subjected to whole body cryotherapy.

MATERIAL AND METHODS:

Twenty-two clinically healthy males, mean age 26.7 years, were studied. The subjects underwent ten sessions of whole body cryotherapy in Wrocław-type chamber, with kinesitherapy following each session. Blood samples were collected before and two days after the [treatment](#) and the results were analyzed statistically.

RESULTS:

After the treatment there was a significant decrease in the concentrations of T (6.01 vs. 4.80 ng/mL, $p < 0.01$) and E(2) (102.3 vs. 47.5 pg/mL, $p < 0.00001$), but no DHEA-S and LH. The T/E(2) ratio showed a significant increase from 72.2 to 136.5 ($p < 0.01$).

CONCLUSIONS:

Whole body cryotherapy leads to a significant decrease in serum T and E(2), with no effect on LH and DHEAS levels. As a result of cryotherapy, the T/E(2) ratio was significantly increased. The changes observed are probably due to cryotherapy-induced alternation in the blood supply to the skin and subcutaneous tissue, as well as to modulation of the activity of aromatase which is responsible for conversion of testosterone and androstenedione to estrogens.

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