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## **The effects of whole-body cryotherapy and melatonin supplementation on total antioxidative status and some antioxidative enzymes in multiple sclerosis patients**

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### **Abstract**

Oxidative stress is an important factor which contribute to the pathogenesis of lesions in multiple sclerosis (MS). Whole body cryotherapy (WBCT) is often used in treatment neurological and orthopedic diseases.

The aim, material and methods: The aim of this study was to determinate the level of total antioxidative status (TAS) in plasma and activity of superoxide dismutase (SOD) and catalase (CAT) in erythrocytes of MS patients (n = 28) before and after 10 exposures of WBCT (-120 degrees C/3 minutes/day). 16 MS patients during 10 exposures of WBCT additionally were supplemented by 10 mg of melatonin.

Results: Increasing of TAS level in plasma as well as supplemented with melatonin and non-supplemented MS patients was observed after 10 exposures of WBCT Melatonin statistically significant increased activity of SOD and CAT in erythrocytes of MS patients treated with WBCT.

**Conclusions:** Results of our study indicate significant increase of TAS level in plasma of MS patients of WBCT treatment. This indicate that WBCT might be a therapy which suppress oxidative stress in MS patients.