

## Oxidative Stress Markers in Sports Related to Training

**Authors :** V. Antevska, B. Dejanova, L. Todorovska, J. Pluncevic, E. Sivevska, S. Petrovska, S. Mancevska, I. Karagjozova

**Abstract :** Introduction: The aim of this study was to optimise the laboratory oxidative stress (OS) markers in soccer players. Material and methods: In a number of 37 soccer players ( $21 \pm 3$  years old) and 25 control subjects (sedenters), plasma samples were taken for d-ROMs (reactive oxygen metabolites) and NO (nitric oxide) determination. The d-ROMs test was performed by measurement of hydroperoxide levels (Diacron, Italy). For NO determination the method of nitrate enzyme reduction with the Greiss reagent was used (OXIS, USA). The parameters were taken after the training of the soccer players and were compared with the control group. Training was considered as maximal exercise treadmill test. The criteria of maximum loading for each subject was established as  $>95\%$  maximal heart rate. Results: The level of d-ROMs was found to be increased in the soccer players vs. control group but no significant difference was noticed. After the training d-ROMs in soccer players showed increased value of  $299 \pm 44$  UCarr ( $p < 0.05$ ). NO showed increased level in all soccer players vs. controls but significant difference was found after the training  $102 \pm 29$   $\mu\text{mol}$  ( $p < 0.05$ ). Conclusion: Due to these results we may suggest that the measuring these OS markers in sport medicine may be useful for better estimation and evaluation of the training program. More oxidative stress should be used to clarify optimization of the training intensity program.

**Keywords :** oxidative stress markers, soccer players, training, sport

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