

**Reduced lipoperoxidation in high-performance athletes with mental retardation by a mixed protocol based on exercise and supplementation #17**

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Individuals with mental retardation generally present high levels of oxidative stress. Further it is widely accepted that high physical performance may be associated to oxidative damage. The present study was undertaken to ascertain the influence of a mixed protocol based on regular exercise and antioxidant supplementation in lipoperoxidation in athletes with mental retardation. Fifty-five high-performance athletes with mental retardation from Special Olympics volunteered for this study ( $21.6 \pm 1.8$  years-old). Fourty were randomly included in experimental group to perform a 6-weeks protocol, including exercise (low-moderate intensity aerobic exercise before breakfast 3 times per week) and supplementation (1g ascorbic acid + 400 UI  $\alpha$ -tocopherol 6 times per week). Control group included 15 age, sex, trained and BMI-matched athletes with mental retardation who did not perform the mixed protocol. Written informed consent was obtained. The protocol was approved by an institutional ethic committee. Plasmatic (please first define the abbreviation) MDA were determined by high performance liquid chromatography (HPLC) with fluorimetric detection as described elsewhere, 72-hours before starting the protocol (pre-test) and after its ending (post-test). When compared to baseline MDA levels were decreased significantly after our 6-weeks protocol ( $0.50 \pm 0.12$  vs  $0.36 \pm 0.09$   $\mu\text{mol l}^{-1}$ ;  $p < 0.05$ ). No changes were reported in controls. It was concluded that a 6-weeks mixed protocol improved significantly lipoperoxidation in athletes with mental retardation. Further studies on this topic are highly required.

**Key- Words:** lipoperoxidation, mental retardation, exercise, supplementation