A previous note regarding the influence of a 6-weeks mixed protocol on plasmatic carbonyl groups in high-performance athletes with mental retardation #16

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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 plasmatic carbonyl group content in athletes with mental retardation. Mainly if we take into account individuals with mental retardation generally present high levels of oxidative damage. Fifty-five high-performance athletes with mental retardation from Special Olympics volunteered for this study (21.6±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 α-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. Further the protocol was approved by an institutional ethic committee. Protein oxidation expressed in terms of plasmatic carbonyl group levels 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 carbonyl group levels were decreased significantly after the 6-weeks protocol (1.98±0.2 vs 1.16 ±0.1; $p<0.001$). No changes were reported in controls. It was concluded that a 6-weeks mixed protocol reduced carbonyl group levels in athletes with mental retardation. Further studies on this topic are highly required.

Key words: Mental retardation; exercise; carbonyl groups.