

EFFECTS OF OLIVE OIL PHENOLS ON EXERCISE-INDUCED OXIDATIVE STRESS MARKERS IN ELITE CYCLISTS AFTER A 3-WEEK TRAINING PROGRAM*

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Abstract

The purpose of the present study was to assess the effects of high and low phenol-enriched olive oil on markers of oxidation, plasma susceptibility to oxidation and antioxidant status of elite athletes. Fifteen elite level cyclists took part in a 3-week intervention periods with high and low phenolic content olive oil that were separated by a washout period of 2 weeks. During the intervention periods, 30 grams of olive oil were provided to each athlete per day. A two-way repeated measures analysis of variance showed that both olive oil phenol supplements resulted in significantly higher concentrations of Vitamin C ($P=0.001$). The lipid hydroperoxide concentration increased only after supplementation with the low phenol olive oil ($P=0.03$). No significant differences were found in any of the other measured antioxidant markers as a result of the olive oil phenols. These findings demonstrate a lack of a protective effect of olive oil phenols on the oxidative damage induced by strenuous exercise in elite athletes. It is possible that the background Mediterranean diet as well as the high fitness level of these elite athletes did not allow for an additional antioxidant effect to take place with the olive oil phenol supplementation. Future research is needed to further investigate this issue.

Key words: phenol, olive oil, oxidative stress, exercise, cycling

*An extended Summary Plus English version is freely available at www.hellenicjsport.com