

Salivary IgA response to astaxanthin supplementation in young soccer players

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Habitual exercise at an intense level can cause suppression of mucosal immune parameters⁽¹⁾. We investigated the effect of astaxanthin (Asx) supplementation on salivary IgA (sIgA) concentration and secretion rate in young soccer players following 2 hours of forced exercise. Thirty five male soccer players participated in the study. Subjects were randomly assigned in a double-blind fashion to astaxanthin (Asx) and placebo (P) group. Asx group was supplemented with 4 mg of Asx. Saliva samples were collected at the onset of the study and after 90 days of supplementation in pre-exercise and post-exercise conditions. The exercise protocol induced a significant decrease in sIgA concentration and secretion rate in young soccer players both in the pre- and post-supplementational period ($p < 0.05$). However, we observed significant increase in pre-exercise sIgA concentration and sIgA secretion rate over the 90-days of training and supplementation program ($p < 0.05$). In P group, we detected small, statistically insignificant decrease in sIgA response after observational period ($p > 0.05$). These data indicate that astaxanthin supplementation might serve as a countermeasure to sIgA changes associated with continuous intense training.

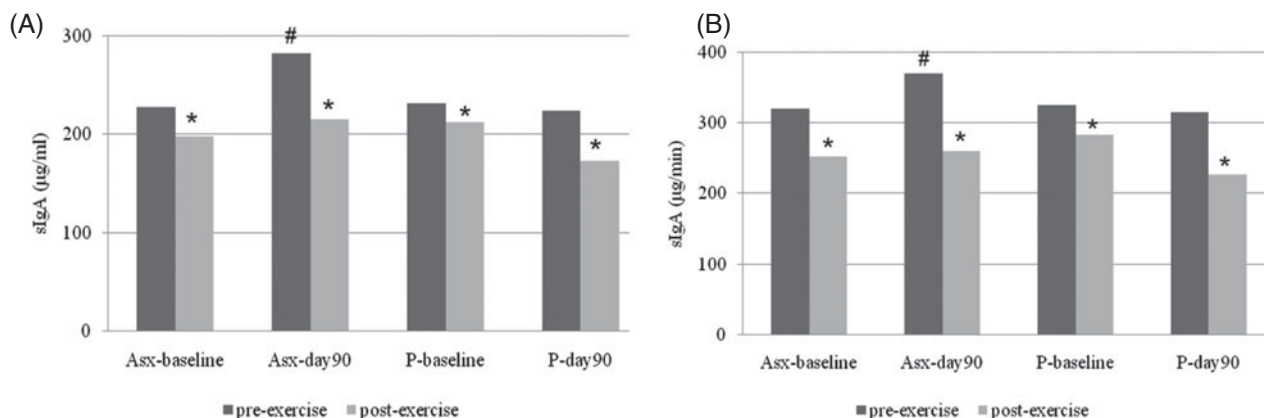


Figure 1. sIgA concentration (A) and sIgA secretion rate (B) before and after 90 days of supplementation period in pre-exercise and post-exercise conditions. The difference in relation to before the training was significant at $*P < 0.05$. The difference in relation to before the supplementation was significant at $\#P < 0.05$.

1. Glesson M & Pyne D (2000) *Immunol Cell Biol* **78**, 536–544.