Research Update Information
2023 Volume 3

*Spirulina Supplementation Could Help Reduce Performance Loss and Accelerate Recovery after Training/Competitions in Athletes**

Similar to most team sports, rugby is an intermittent-type activity that involves a high amount of repetitive high-intensity efforts interspersed with low-intensity activities or rest. The intense physical demands of rugby lead to notable skeletal muscle damage after training and competition. This skeletal muscle damage is associated with an inflammatory response and oxidative stress induced by exercise.

A present study was conducted by Chaouachi's group at University of Rennes in France to examine the effects of spirulina supplementation on pro/antioxidant status, inflammation and skeletal muscle damage markers immediately and 24 h after exhaustive exercise in elite rugby players. Elite male Rugby Union players (n=17) were randomly assigned to a spirulina (SPI: n = 9) or placebo (PLA: n = 8) group in a double-blind, placebo-controlled design. Subjects were supplemented with Spirulina platensis (5.7 g per day) or placebo (isoproteic and caloric) for 7 weeks. At baseline and after 7 weeks of supplementation, blood samples were obtained before (T0), immediately after (T1) and 24 h after (T2) exhaustive exercise.

The results showed that F2α-isoprostanes (F2-Isop) as pro/antioxidant status marker, C-reactive protein (CRP) as inflammation marker and creatine kinase (CK) levels as skeletal muscle damage marker significantly increased at T1 only in the PLA group ($p < 0.05$, $p < 0.05$ and $p < 0.001$, respectively) with no change in the SPI group, which reflects the effect of spirulina to prevent lipid peroxidation, inflammation and skeletal muscle damage induced by exhaustive exercise. Moreover, spirulina supplementation accelerated the return to baseline values given that F2-Isop, CRP and CK levels at T2 were significantly lower than at T0 in the SPI group ($p < 0.05$, $p < 0.01$ and $p < 0.001$, respectively). The data indicate that spirulina supplementation potentially prevents exercise-induced lipid peroxidation, inflammation and skeletal muscle damage, and may also accelerate the recovery of some of these markers.

Dr. Toshi Ide, Sr. Technical Division Manager mentions that "This is another compelling study that spirulina supplementation (*Arthrospira platensis*) could reduce oxidative stress, inflammation and skeletal muscle damage and also accelerate the recovery of these markers in athletes during intense training or competitions. Spirulina contains a variety of beneficial ingredients, such as antioxidants, e.g. carotenoids, proteins, B-vitamins and gamma-linolenic acid. All of these compounds may support reducing oxidative stress and inflammation*. Further research, including a detailed mechanism of action will be expected in the future."

Reference

Chaouachi, M., *et al.,* (2022). Spirulina supplementation prevents exercise-induced lipid peroxidation, inflammation and skeletal muscle damage in elite rugby players. *J Hum Nutr Diet*. 35: 1151–1163.

Earthrise Nutritionals LLC
2151 Michelson Dr., Suite 262, Irvine, CA 92612
Tel: (949) 623-0980, Email: information@earthrise.com
Published in July, 2023