

Effects of Seaweed Supplementation on Muscle Strength, Oxidative Stress
After Resistance Training

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Abstract

Introduction: To investigate the effects of seaweed supplementation on muscle strength, oxidative stress after resistance training.

Methods: In this study, 5-weeks old SD rats were randomly divided into four groups. Ten rats for each group, group C (control group), group S (seaweed group), group E (exercise group), group ES (exercise add seaweed group). Two groups were resistance trained once time per day and two days per week (Group E and ES). This type of exercise training was introduced in 2004, Hornberger et al. indicate that rats performing ladder exercise training can have similar effects on human resistance training, while the leg of Flexor Hallucis Longus muscle (FHL) is the main use of this movement in the muscle. Group S and ES were treated with seaweed (250 mg / kg dose), group C and E were supplemented with placebo at the same time. After 10 weeks of training, test the oxidative stress (including SOD, GSH and GSSG).

Results: Muscle strength for Group E and ES were significantly better than group C and S. However, in the first five weeks of muscle strength, group ES was significantly higher than group E. In the marker of oxidative stress-TBARS, group E was significant higher than group C, S and ES. And the marker of antioxidant SOD (Superoxide dismutase), group ES and S was significant higher than group C. GSH is also the antioxidant marker, group E and ES was significant higher than group C. In terms of GSSG, group E and ES was significant higher than group C, the GSSG concentration of group E was significant higher than group ES.

Conclusions: Seaweed supplementation during resistance training can accelerate muscle strength growth. The marker of oxidative stress--TBARS and antioxidant marker--SOD, GSH of group ES was better than the other three groups. Therefore, maybe the better results of group ES on oxidative stress marker was caused by the effect of "natural" antioxidant supplementation.

Keywords: Deep ocean water, Oxidative stress, TBARS