

Recovery abstract Nagata

Title;Effects of
Astaxanthin on Recovery
from Whole Fatigue with
Three Stepwise
Exercises

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Abstract;This study was designed to evaluate the effects of astaxanthin (A) ingestion upon recovery from whole fatigue, that were generated by progressive loads of three stepwise exercise-30%HRmax, 50%HRmax, and 70%HRmax. Nineteen healthy volunteers were randomized into two groups: Group A (10 subjects) received oral astaxanthin capsule (5mg) daily for two weeks, while Group C (9 subjects) ingested oral placebo (C) capsule (5mg) with the double blind method. After a month from this ingestion, another capsules were taken again with cross-over system for the same subjects respectively. Comparative detections were practiced to estimate with effectiveness of A ingestion upon changing ratios between two groups. Significant difference between A and C groups were obtained to inhibit the increase of respiratory-circulatory function from expired gases analysis. Additionally sympathetic nervous activities (LF/HF ratio) during exercise and parasympathetic nervous activities (HF/TF 100) during recovery were observed to significant increase. Otherwise, blood serum concentration of LDL cholesterols showed significant decrease, while concentration of creatine phosphokinase had increased to higher level than that of C ingestion, significantly. Then, findings of the present study indicated that with astaxanthin ingestion for human, respiratory-circulation ability and activities of sympathetic nervous system were augmented to make efficient metabolism during exercise load. Those anti-fatigue and anti-oxidative function might be promoted for human to make recovery ability from the whole fatigue generated by exercise stress.