

## **A Placebo-Controlled Study of the Influence of Chlorella-Derived General Nutritional Supplements on Maximum Oxygen Uptake**

Presented at the 21<sup>st</sup> Meeting of the Japan Society of Exercise and Sports Physiology (2013)

### **[Objectives]**

According to a previous report, intake of Chlorella by mice extended the duration of swimming by mice. However, no such report on the influence of Chlorella on human exercise capabilities has been published. The present study was conducted to evaluate the influence of Chlorella on systemic staying power and aerobic capability in humans.

### **[Methods]**

Ten healthy males and females aged 19-24 (mean: 21.3) were enrolled to this double-blind crossover study and they were allocated to either of Chlorella group or placebo group. Each subject was instructed to ingest Chlorella or placebo every day (15 particles in the morning and 15 particles at night) for 4 weeks. At the start and end of the study, maximum power (systemic staying power) and maximum oxygen uptake (aerobic capability) were evaluated with a bicycle ergometer and an expired gas analyzer.

### **[Results]**

In terms of maximum power and maximum oxygen uptake, there was no difference between the pre-intake measurement and the post-intake measurement in the placebo group. In the Chlorella group, however, these parameters significantly increased after intake as compared to before intake (Fig. 1 and 2). In analysis of changes in maximum oxygen uptake, this parameter was significantly higher in the Chlorella group than in the placebo group (Fig. 3).

These results suggest that 4-week Chlorella intake improves systemic staying power and elevated aerobic capability.

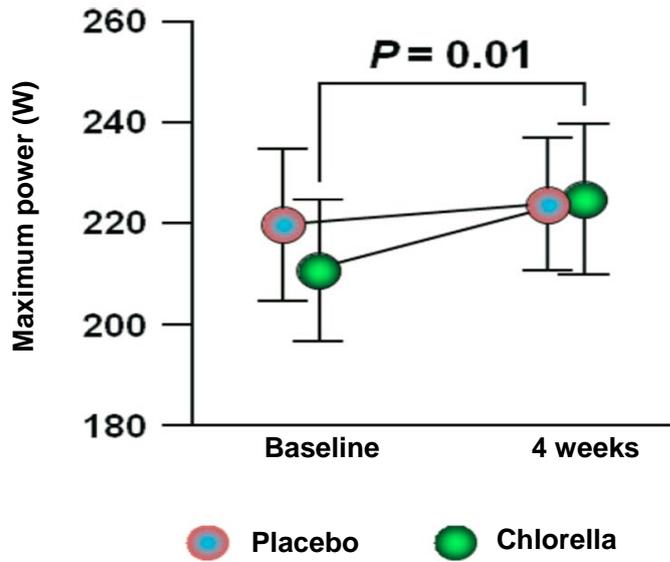


Fig. 1. Changes in absolute maximum power

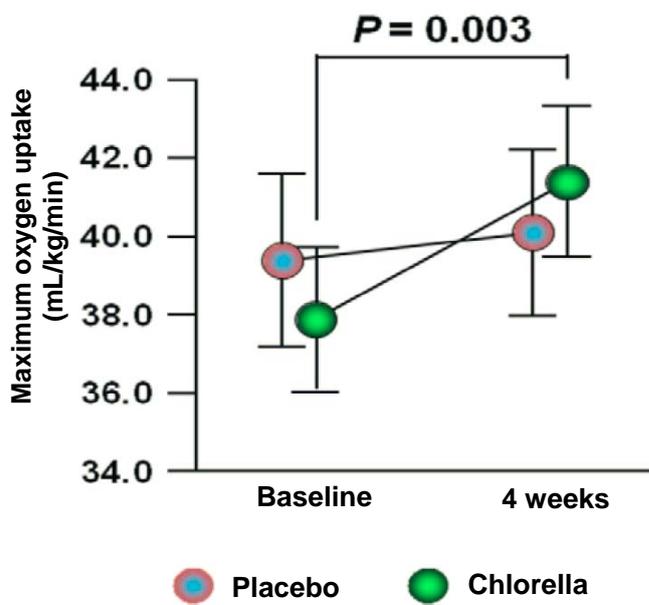


Fig. 2 Changes in maximum oxygen uptake

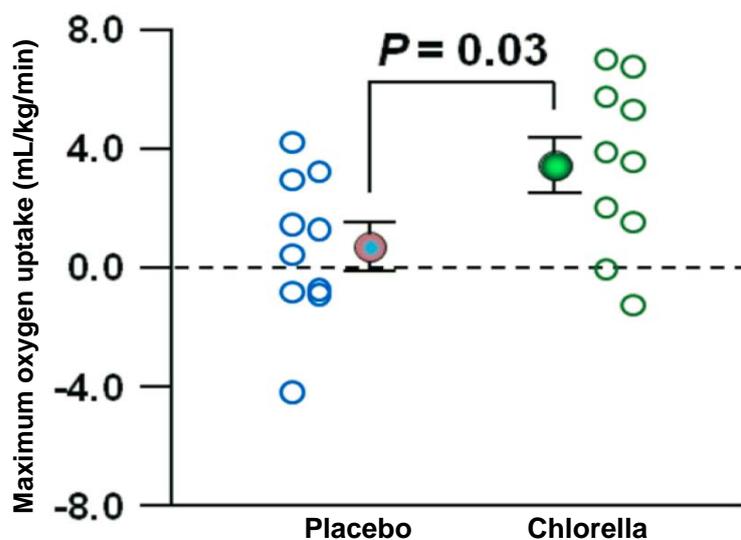


Fig. 3. Changes in maximum oxygen uptake from pre-intake to post-intake measurement

<<Details>>

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