

Is chlorella food beneficial for elderly people?**A study of the benefits of carotenoids, folate, and homocysteine**

Presented at the 4th Meeting of Japanese Association of Sarcopenia and Frailty

[Study objectives]

Chlorella contains not only folate which is important in the metabolism of homocysteine associated with a risk of vascular disorder but also lutein, an antioxidative component in the erythrocyte cell membrane. The bioavailability of folate contained in food decreases with age, resulting in an increased level of homocysteine in blood, and the oxidation of the erythrocyte cell membrane should be prevented to maintain cognitive function.

We studied the concentrations of 4 types of carotenoids including lutein, folate, and total homocysteine in elderly people who ingested chlorella for 1 year and examined whether they are useful in inhibiting and preventing frailty progression.

[Study method]

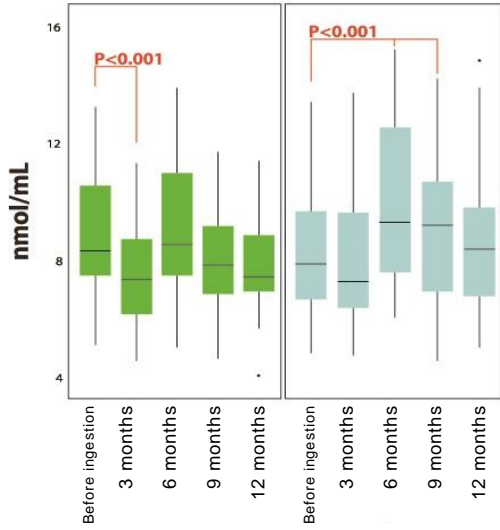
A randomized, double-blind, placebo-controlled study was conducted in 50 healthy elderly men and women (60 years or older at study participation) assigned to the chlorella or placebo group (25 subjects per group). Study participants ingested 40 tablets (8g) of chlorella or placebo food daily (20 tablets each in morning/evening) for 1 year. In order to confirm the effect of ingestion, the concentrations of carotenoids, folate, and homocysteine in blood were measured before ingestion and 3, 6, 9, and 12 months after ingestion.

[Results]

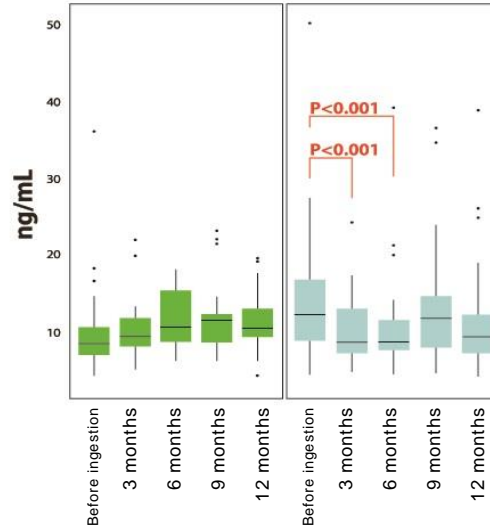
In the chlorella group, the homocysteine level significantly decreased ($P < 0.001$) at 3 months, and the folate level increased. In the placebo group, the homocysteine level showed seasonal changes, and the folate level significantly decreased at 3 and 6 months ($P < 0.001$). In addition, the levels of 4 types of carotenoids including lutein significantly increased at 3 months ($p < 0.001$) in the chlorella group only, and the level was maintained until the end of the study. These results demonstrated that folate and lutein contained in chlorella food are used in the body, suggesting that long-term ingestion of chlorella food may be beneficial in the inhibition and prevention of frailty progression.

Chlorella group Placebo group

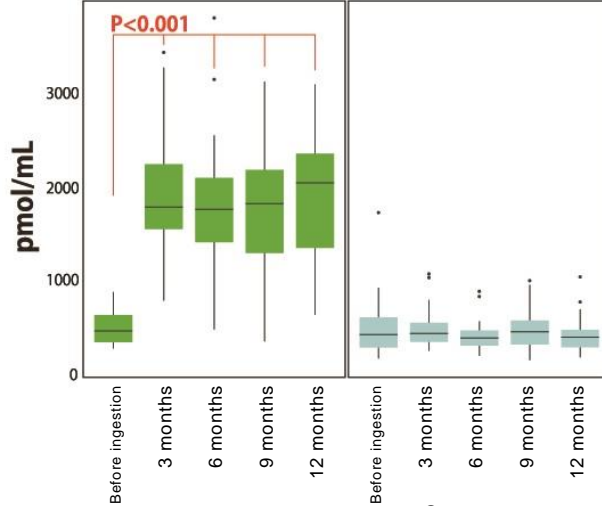
Total homocysteine



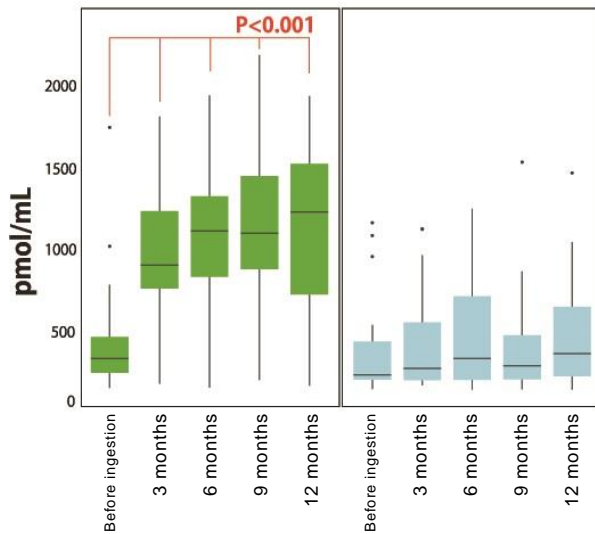
Folate



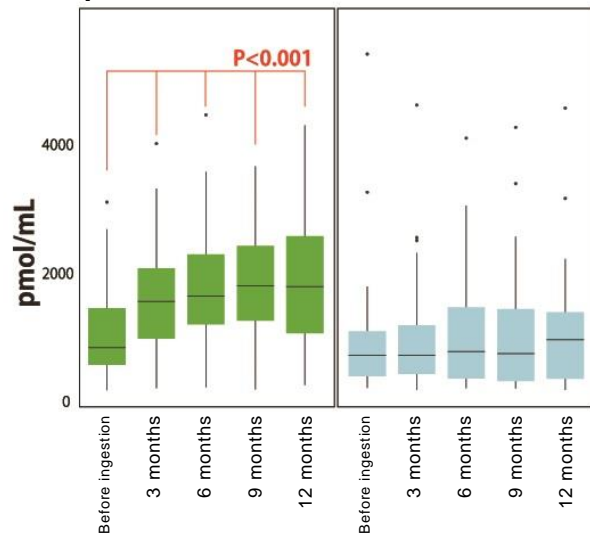
Lutein



α-carotene



β-carotene



<<Details>>

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