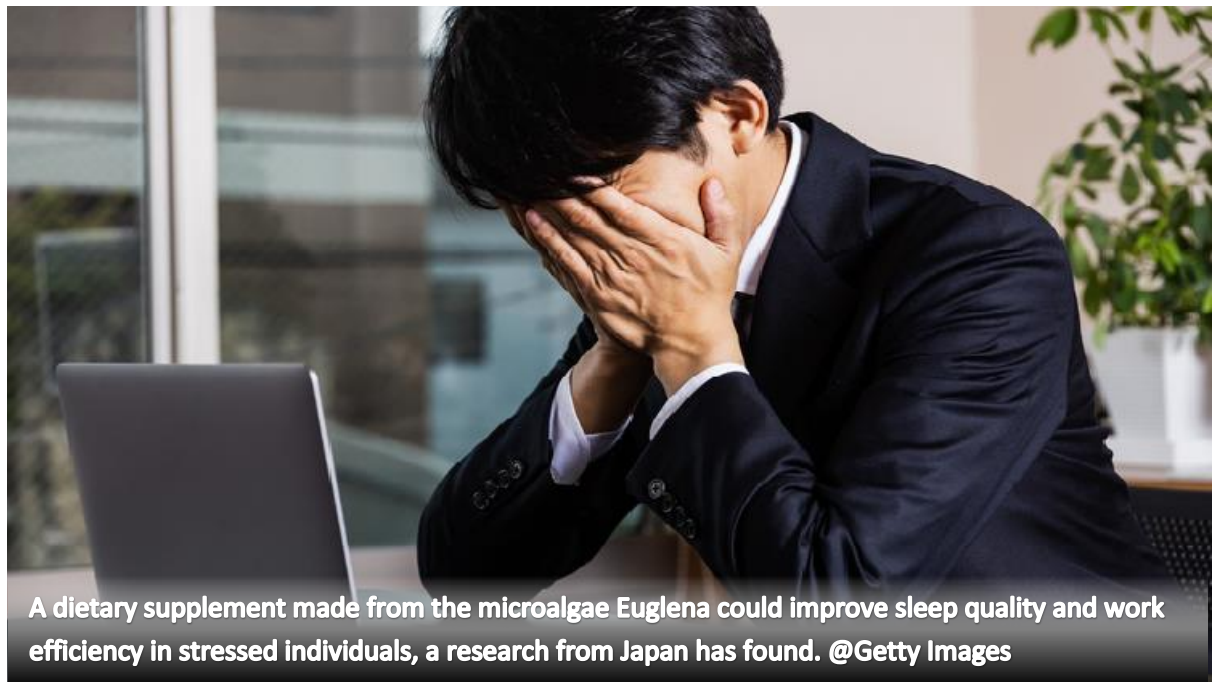


Microalgae Euglena improves sleep quality and work efficiency in stressed individuals – Japan study

By Tingmin Koe

17-Nov-2020 - Last updated on 17-Nov-2020 at 01:40 GMT



A dietary supplement made from the microalgae Euglena could improve sleep quality and work efficiency in stressed individuals, a 12-week human clinical study conducted in Japan has shown.

The researchers said that this was because the intake of Euglena could regulate the autonomic nervous system balance and improve symptoms caused by stress loading.

Euglena (*Euglena gracilis*) is a single-celled microalga with the properties of both plants and animals and contains abundant nutrients, such as vitamins, minerals, amino acids, and fatty acids.

It has been made into a dietary supplement by Japanese firm Euglena and the product is available in several markets outside of Japan, such as Singapore.

The company funded and conducted a 12-week double-blind placebo-controlled trial in Japan in July to Nov last year and the results were published in *Nutrients* recently.

Eighty men and women aged 20 to 64 were randomised into four groups, taking either 500mg, 1,000mg, or 3,000mg of the Euglena powder or placebo two times per day after breakfast and dinner.

On the 4, 8, and 12 week of the study, all the subjects were introduced to workload stress by undergoing the Uchida-Kraepelin test.

It is a questionnaire that requires intense concentration and effort and has been used as a tool to induce mental stress in clinical trials.

After which, the test subjects' autonomic nervous system, psychological states, and sleep quality were measured to find out if the supplementation could improve sleep and work efficiency when they faced stress.

Suppressing excitation of nervous system

First, the research found that 1,000mg of Euglena intake per day was the most effective in regulating the autonomic nervous system – which regulates processes such as blood pressure, heart rate, body temperature, metabolism and etc.

This was the observation seen when the researchers measured the high-frequency (HF) and low-frequency (LF) components of heart rate fluctuation of the subjects.

Under stressful conditions, the LF/HF ratio will increase, which was seen in the subjects after undergoing the Uchida-Kraepelin test.

The researchers found that the intake of Euglena at 1,000mg had suppressed the LF/HF ratio when compared to the placebo.

“The intake of Euglena significantly suppressed the LF/HF ratios in individuals subjected to work stress and appeared to regulate the autonomic nervous system balance. The most effective dose was 1000 mg,” the researchers said.

They also found that Euglena at a high dose of 3,000mg did not cause adverse events.

Sleep Improvement

The improvement in the autonomic nervous system was also accompanied by an improvement in sleep quality.

All three intervention groups reported significant improvement in their subjective satisfaction with sleep, with a dose-dependent effect, by the end of the study.

The group taking 3,000mg of Euglena reported the most improvement, as they had the biggest and a significant change (-3.41 ± 2.26) in their sleep satisfaction score, while the placebo reported no significant change (-0.65 ± 1.22).

The researchers attributed the improvement in sleep quality to an improved autonomic nervous system.

“It is important to maintain a well-balanced autonomic nervous system. In this study, the intake of Euglena improved the autonomic nervous system

Source: *Nutrients*

Effects of *Euglena gracilis* Intake on Mood and Autonomic Activity under Mental Workload, and Subjective Sleep Quality: A Randomized, Double-Blind, Placebo-Controlled Trial

Authors: Ayaka Nakashima, et al