

## Management information

### Relevance to our business

Being one of the first super-aged societies in the world, Japan faces expanding healthcare costs and the potential collapse of its social welfare systems. One key to address this issue is extending healthy-life expectancy and supporting older people to live better and more meaningful lives. The Fuji Oil Group promotes well-being in an aging world by helping address some of the physical and mental health issues faced by older people and by providing healthy food ingredients made from plant-based oils, fats and proteins.

### Basic approach

The Fuji Oil Group has carried out many years of research into the health functions and benefits of plant-based food ingredients such as soy, oils, and fats. Stabilized DHA/EPA\*1 and soy peptides\*2 are products resulting from our research that show great potential for addressing age-related health issues, including dementia, mental illness, lifestyle diseases, and frailty.\*3 We aim to help older people stay healthy in body and mind by providing these food ingredients to our customers and the consumers they serve, and by building a network of partners with municipalities and other relevant organizations, to help prevent such health issues.

\*1 Docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are two types of essential fatty acids — meaning that they cannot be synthesized by the body but must be obtained from food. Studies have shown that DHA and EPA have several health benefits, including supporting memory and concentration and reducing neutral fats in the body.

\*2 Peptides are substances created in the process of breaking down proteins. Peptides formed by enzymatic breakdown of soy proteins are called soy peptides.

\*3 A state between good health and the need for living assistance that is associated with declining motor and cognitive function with increasing age.

### Management system

The Chief Technology Officer (CTO) oversees initiatives in this area. The Sustainability Committee,\*1 an advisory body to the Board of Directors, monitors the progress and results of initiatives as a material ESG issue.\*2

\*1 [https://www.fujioilholdings.com/en/sustainability\\_management/](https://www.fujioilholdings.com/en/sustainability_management/)

\*2 <https://www.fujioilholdings.com/en/sustainability/materiality/>

### Goals / Results

○ At least 90% complete △ At least 60% complete ✕ Less than 60% complete

FY2022 Goals	FY2022 Results	Self-assessment
Establish differentiated advantages of the health functions of stabilized DHA/EPA	<ul style="list-style-type: none"> <li>• Showed a significant increase in serum concentrations of DHA with a single intake of stabilized DHA/EPA</li> <li>• Showed positive metabolite changes in human with intake of stabilized DHA/EPA for one month</li> </ul>	○
Build a network of partners dedicated to dementia prevention	<ul style="list-style-type: none"> <li>• Initiated dialogues with two to three municipalities. Although we were able to communicate the importance of preventing dementia, these efforts did not lead to actual partnerships because of impartiality issues with collaborating with a single company</li> </ul>	△

FY2022 Goals	FY2022 Results	Self-assessment
	<ul style="list-style-type: none"> <li>Drafted plans for municipality partnerships. We plan to explore the implementation of a case study in the form of an industry-academia collaboration involving municipalities.</li> </ul>	

## Analysis

We studied how the absorption of ingested DHA/EPA changes biomarkers using a milk beverage containing stabilized DHA/EPA, which can potentially prevent dementia. The study showed that, compared to the placebo group, DHA levels in the blood increased rapidly after ingestion. The study also demonstrated changes in several metabolic health markers after continuous intake for one month. There was a reduction in metabolite X, which increases in patients with Alzheimer's disease, as well as an increase in metabolite Y, involved in vasodilation. Plans are underway to obtain intellectual property rights and publish papers based on this research. The partnership network for preventing dementia presented programs to several municipalities and explored areas of potential collaboration. While we were able to communicate the importance of preventing dementia, we learned that there are various issues, including (1) the requirement for specific protocols and (2) the difficulty for municipalities to collaborate with a single company. We will continue to explore partnerships with medical institutions showing interest in the efficacy of food products containing stabilized DHA/EPA. We plan to collaborate with academia in the development of ways to track dementia through healthtech,\* including novel identification methods for cognitive symptoms of dementia. Using the results of this collaboration, we will explore the potential for conducting a proof of concept for dementia prevention in municipalities.

\* Technologies that combine AI and IoT-powered sensing technologies with wearables and other digital devices to improve healthcare, such as through health management, prevention, and nursing care.

## Next step

It is important to establish evidence and advantages of the health functions of the food ingredients we supply, and to create motivation for older people to practice prevention. With these in mind, we set the following goals for FY2023.

- Establish differentiated advantages of the health functions of stabilized DHA/EPA

## Specific initiatives

### Serum level changes from the intake of milk beverage containing stabilized DHA

In FY2022, we conducted a joint study with Shimane University Faculty of Medicine and Kato Hospital in Kawamoto, Shimane Prefecture, which had been delayed by the COVID-19 pandemic. For this study, the milk beverage jointly developed with our Group company Omu Milk Products Co., Ltd. was fortified with 297 mg of DHA for its high antioxidant properties, and was consumed by older adults for about one month. DHA was immediately detected in the blood after ingestion of the fortified drink. After one-month of consumption, positive changes were observed in health biomarkers in the blood. The results of this study will be analyzed in more detail in order to provide accurate information that can be used to determine the appropriate intake. In Japan, the market for functional oils and fats claiming health functions — especially cognitive functions — is likely to expand considerably in the future. Although only one new product was released in FY2022, we believe in the importance of continuously bringing new products to the market, in order to make delicious DHA-enriched foods accessible to more customers.