

# FOODS THAT COULD HELP ADDRESS MINOR HEALTH COMPLAINTS

A STUDY OF 1,000 PEOPLE is underway to identify foods that might help improve quality of life.

**Consumption of a variety of green tea** may help to reduce the occurrence of common allergy symptoms in subjects with Japanese cedar pollinosis, according to a double-blind clinical study published in 2014 by Mari Maeda-Yamamoto, a researcher who has been studying the effects of foods on health for more than a decade.

Now she is leading a study involving 1,000 people to identify other foods that may have significant benefits beyond basic nutrition.

This time, a research consortium led by Maeda-Yamamoto, who is Director of Healthcare Innovation Research at the National Agriculture and Food Research Organization (NARO), is tasked with finding foods that have an effect on a range of minor physical and psychological complaints, such as digestive issues, lethargy and irritability.

## Labour in lethargy

In Japan, a country known for long working hours, low productivity due to minor complaints is a concern. "Working when unwell has already been shown to amount to a loss of up to US\$190 billion in Japan, compared to a scenario

in which employees only work when they are fit to," notes Maeda-Yamamoto. "In a culture like Japan's, where physical presence in the workplace is sometimes valued over productivity, employees may be forcing themselves to work even if they are feeling unwell."

The study of 1,000 healthy volunteers has been running since April 2019, and collects 2,800 types of data from each individual, aged between 20 and 80. The aim is to identify the most common minor complaints in the group, as well as seek correlations with dietary habits and other aspects.

**WHERE OTHERS TYPICALLY READ ROUGHLY 200 BASES TO IDENTIFY GUT BACTERIA, WE'RE LOOKING AT 10,000.**

Data is collected twice a year, in summer and winter. The data points collected include information on genes, epigenetics, dietary habits, blood composition, preexisting disorders, brain activity during sleep, heart

rate, and the gut microbiome. To date, the two most common physical complaints that have surfaced are sleep debt and digestive problems.

"In a subset of the volunteers, we're examining the gut's metagenome in great detail. Where others typically read roughly 200 bases to identify gut bacteria, we're looking at 10,000," says Maeda-Yamamoto. This should allow the researchers to gather new insights into bacterial elements such as plasmids, genetic structures that can replicate independently of chromosomes, and phages, viruses that infect and replicate within bacteria cells.

The team will make all their data freely available after 2023 in the hope that food manufacturers might develop new food products based on the information they have gleaned. A dataset on genes, the gut microbiome, brain activity during sleep, heart rates, and dietary habits might provide valuable information for those designing food products that are beneficial to health or to reduction of the symptoms of minor health complaints, says Maeda-Yamamoto.

The concept of food with benefits beyond basic nutrition is currently dubbed 'Foods with Functional Claims' in Japan. It is an industry expected to exceed US\$3 billion by 2021.

Already, the team is noticing similarities in food responses between age groups and, even more starkly, genders. These may eventually inform dietary recommendations, says Maeda-Yamamoto.

Links to psychological symptoms are also interesting, she says. "Factors like irritability and lethargy may be warning signs before stress surfaces."

## Supermarket solutions?

One possible future outcome, according to Maeda-Yamamoto, is a world in which buying certain foods to help alleviate the symptoms of minor complaints becomes the norm.

However, finding useful foods is just part of the story. Maeda-Yamamoto's group will be also testing behaviour change in a city in Hokkaido, in Japan's north. There, the team will be investigating whether volunteers will buy lunch boxes with the right ingredients when given advice to do so. "The



Participants of a 1,000-person trial can track their data at an e-health station.



Researchers are gathering 2,800 types of health data.



Health survey blood testing.

system we are creating entails wearing a smart wristband that records health data," she explains. "This is integrated with a smartphone app that provides recommendations on foods." Their work is not a success if people don't change their behaviour.

## Delivering results

Another study will soon be underway in central Japan to identify the most convenient

means of food delivery. "The success of behaviour change may ultimately depend on how easy it is for consumers to get their hands on these foods," explains Maeda-Yamamoto.

"We're looking at options like e-commerce delivery and pick-up at local pharmacies. A pharmacy option is promising for cities with a large elderly population, she says, since many of these people already visit pharmacies to buy

medicine as part of their regular routine."

Ultimately, Maeda-Yamamoto says that if successful long-term behaviour change is possible, some foods may offer a simple route to a healthier population.

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