

Kikkoman's quarterly intercultural forum for the exchange of ideas on food



## THE JAPANESE TABLE

# Washoku and Health

## The Secret of Longevity in Japan

by Yukio Yamori

*Washoku traditional Japanese cuisine has a significant correlation to overall health and quality of life. Our current Feature series considers this relationship from a medical perspective, in terms of nutrition and how washoku influences longevity. Shizuoka Prefecture, whose specialties include green tea and citrus unshiu, has the highest healthy life expectancy in Japan.*

4

CLOSE-UP JAPAN:  
Edamame Green Soybeans

—

5

JAPANESE STYLE:  
*Kaishi*

TASTY TRAVEL:  
Toyama *Masu-zushi*

—

6

MORE ABOUT JAPANESE COOKING:  
Avocado, Tomato and Tofu with Dashi-Soy  
Sauce Jelly  
*Hijiki-no-nimono* Stewed *Hijiki* Sea Vegetable

—

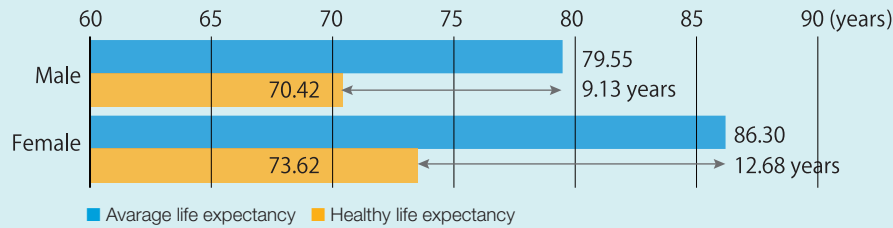
8

KIKKOMAN TODAY:  
Kikkoman Food Culture Exchange in China,  
Part 2

# Washoku and Health

## The Secret of Longevity in Japan

Average Japanese Life Expectancy Compared with Healthy Life Expectancy



Graph source: Special Committee for National Health Promotion, Ministry of Health, Labour and Welfare, 2012

People age as their blood vessels age, and longevity is low in those regions where strokes and heart attacks—the two major vascular diseases—are common. Compared with stroke, heart attacks occur among relatively younger people; and World Health Organization (WHO) statistics indicate reduced longevity in those advanced countries where heart attack figures are high. The reason that Japan continues to show the highest rates of longevity is that, among developed countries, it has the lowest death rate from heart attack among all age groups.

### Relating Diet to Health

The Cardiovascular Diseases and Alimentary Comparison (CARDIAC) study which I launched in 1985 sought data on the causes of cardiovascular disease through the collection of blood samples and 24-hour urine samples, in order to examine the relationship of diet to health. Heart attacks occur because, when levels of cholesterol in the blood are high, the blood vessels that nourish the heart are narrowed owing to arteriosclerosis, which results in a reduced supply of blood to the heart. Among countries in which

rice is the staple diet, calorie intake from fat is low, thus cholesterol in the blood is low and heart attacks are fewer. Those who are overweight are vulnerable to heart attacks, but obesity is less of a problem in rice-consuming areas, where the intake of calorie-rich fats is low. When people eat rice, the blood-sugar level rises gradually and the insulin needed to regulate blood-sugar levels elevates slowly. This attenuates the production of fat in the body; therefore, instances of obesity are fewer.

We also found from our analysis of 24-hour urine samples that the risk of heart attack was lower with diets rich in taurine, a kind of amino acid abundant in fish and shellfish, and that heart attacks were fewer when the blood had a plentiful supply of fatty acids such as DHA from fish oil. Taurine is good for the heart, as it acts to lower both cholesterol and blood pressure. The fatty acids in fish promote good blood circulation and can thus protect the heart from heart attacks. We further noted that those with a high intake of grains, beans, seaweed products and vegetables loaded with magnesium are less likely to

suffer from obesity, high blood pressure and excess cholesterol in the blood, and are therefore less likely to have heart attacks.

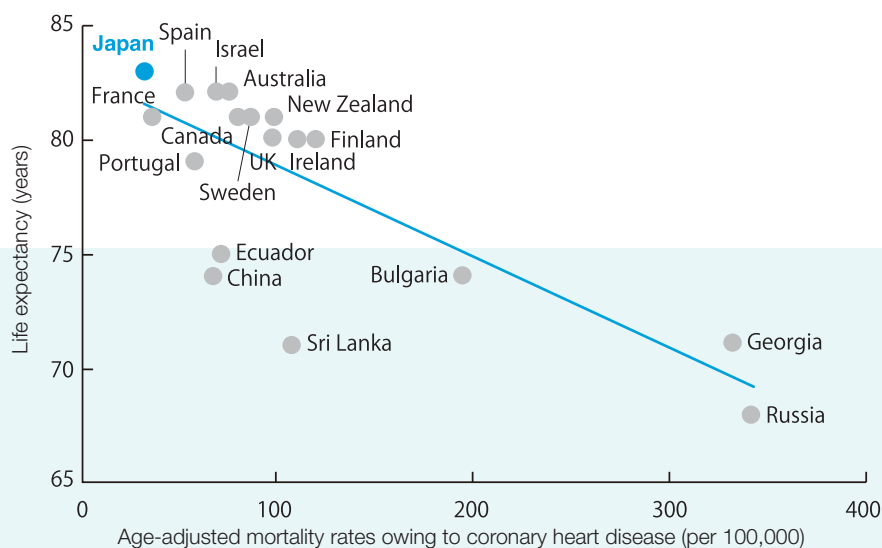
### Taurine and Magnesium

Taurine is plentiful in seafood and some seaweeds, and magnesium, also found in seaweeds, is in ample supply in beans, grains, seeds, nuts and other land-based products. In Fukui Prefecture, known for its archeological excavations, well-preserved kitchen middens have been uncovered, and these tell us much about the diet of people of the Jomon era (10,500BC–ca. 300BC) who lived there some 5,500 years ago. They obtained magnesium from seeds and nuts, including acorns and walnuts, and taurine from fish, shellfish and wild game. From their first



The author's own bento boxes are packed with good nutritional balance in mind.

Life Expectancy & Age-Adjusted Mortality Rates from Coronary Heart Disease



Graph courtesy Dr. Yamori. Source: WHO Mortality Database: Civil Registration Data Life Expectancy in 2009

appearance in Africa more than 2,000,000 years ago until the advent of agriculture not more than 10,000 years ago, human beings flourished and evolved for millennia, thanks to these two major sources of nourishment. Japanese have achieved low levels of heart attacks, and thus the highest rates of longevity in the world, because of their rice-based diet and the wealth of taurine and magnesium obtained from the bounty of both sea and land: fish, soybeans, vegetables and seaweed.

### Healthy Life Expectancy

Globally, the average lifespan is longest among Japanese; but their healthy life expectancy\* is actually 10 years less than the average lifespan in general [see p. 2 chart]. Japanese experience high numbers of stroke and bone fractures, both of which cause patients to become bedridden. The main cause of stroke is high blood pressure; in the CARDIAC survey, it was found that the higher the salt intake, the higher the blood pressure, and thus the greater incidence of stroke. High levels of potassium, which counteracts the detrimental effects of salt, are found in fruit and vegetables, but most people do not consume

enough of these to be effective. The incidence of stroke is higher when the proportion of sodium (the main component of salt) to potassium is greater. Today, the healthy life expectancy in Japan is highest in Shizuoka Prefecture, where considerable amounts of green tea (with its high levels of potassium and antioxidants) are consumed, and where citrus unshiu and other fruit and vegetables are an important part of the diet. In our international study, we found that the proportion of sodium to potassium in those living in Shizuoka was the lowest among all the advanced nations for which there were statistics on stroke. Another factor to take into account is bone fracture. Bones become brittle as the result of calcium loss, or osteoporosis, and among Japanese not traditionally in the habit of consuming dairy products, there is a tendency for calcium deficiency. Excess salt intake, furthermore, leads to loss of calcium.

The longevity that Japanese enjoy today is without doubt owing to the *washoku* diet, which is well-suited to human development in that it has provided a balanced range of foods from both land and sea since the

Jomon era: rice, beans, fish, vegetables and seaweeds. If the two significant weaknesses of this diet—excess sodium intake and chronic calcium shortage—could be overcome, then it would be more likely that we could prevent patient health from deteriorating prematurely through bedridden disabilities from stroke and bone breakage caused by osteoporosis. Then we would have a true chance for improved healthy life expectancy alongside greater longevity. ●

Translated by Lynne E. Riggs

\* Years an individual may live without limitations on daily activities owing to health problems.

### cover

Green tea contains high levels of potassium and antioxidants; fruits like citrus unshiu also contain potassium, which helps to counteract the detrimental effects of sodium in the diet.

### Author's profile

Yukio Yamori, M.D., Ph.D.; born 1937 in Kyoto. Dr. Yamori is a pathologist specializing in preventative medicine and nutrition. After serving for many years as professor at the Graduate School of Human and Environmental Studies at Kyoto University, he is currently professor at Mukogawa Women's University, as well as Director of the Mukogawa Women's University Institute for World Health Development, President of the Hyogo Prefecture Health Promotion Association, and professor emeritus of Kyoto University. In 1998, he was awarded Japan's Medal with Purple Ribbon. He has authored many books, including *Choju no Himitsu* ("Secret of long life") and *Daizu wa Sekai o Sukuu* ("Soybeans will save the world").





## CLOSE-UP JAPAN

Traditions and trends  
in Japanese food culture



Clockwise from left: Edamame boiled in salted water; *zunda-mochi*; snack food containing green soybeans.

# Edamame Green Soybeans

Soybeans are native to east Asia, and were introduced to Japan in the eighth century from China. Using soybeans as its predominant ingredient, Japan developed soy sauce, which was eventually exported to Europe; by the eighteenth century, the beans themselves had come to be cultivated in the West, where they were dubbed “soybeans,” a straightforward

Edamame are  
a nutritious,  
tasty treat

description of “beans for soy sauce.”

Soybeans have long been used to make other traditional foods, including tofu, miso and *yuba*, the delicate skin that forms on the surface of heated soybean milk. When mature, soybean pods split open and the dry yellow beans are used for various preparations. In Japan, immature unopened green soybeans are called edamame: their name is literally derived from *eda*, meaning “branch” or “stem,” and *mame*, or “bean.” Edamame on stems are rarely sold these days; today’s shoppers are more likely to see just the edamame pods in markets.

Whole edamame pods are boiled and often served with a sprinkling of

salt; only the beans are eaten. Pinching out the beans from their pods makes for an entertaining—and highly nutritious—protein- and fiber-rich treat. Both at home and in *izakaya* Japanese-style pubs, edamame are a popular summer snack served with beer. Japan’s northern Tohoku region enjoys traditional sweet *zunda-mochi*, glutinous rice cakes coated with a lightly sweetened paste of edamame. Edamame also appear in rice, soups, Japanese confectionery—even in popular snack foods.

There are many varieties of soybean in Japan. Green soybeans are roughly categorized into three types: green, brown and black. Generally speaking, the green varietal is enjoyed as edamame: its pods are a vivid green and a single pod contains two or three beans. In the last decade or so, edamame have become overwhelmingly popular in the West as a tasty, low-calorie health food, where they are sold frozen in the pod or shelled. ◆



Green soybeans on branches  
and beans in pods



## Kaishi

*Kaishi*, literally “pocket papers,” are one of Japan’s most ancient and useful traditions. These papers are about 15cm (6 in.) square; men may carry slightly larger sheets than women. *Kaishi* were originally used by the aristocracy during the Heian period (794-1185), tucked inside the front of one’s kimono for use as a

handkerchief, or for jotting down *waka* poetry. *Kaishi* have also traditionally been used during the tea ceremony to embody gestures of cleanliness and respect: to wipe the rim of the tea bowl, to clean fingers and chopsticks when enjoying *wagashi* Japanese confectionery, and as individual “plates” for the *wagashi*. Today

*Konpeito* sugar candy served on *kaishi*



the practicality of *kaishi* is appreciated beyond the tea ceremony. It is considered good manners, for example, to hold *kaishi* beneath foods that may drip when transferring from plate to mouth. Fewer people carry *kaishi* now, but its modern colors and styles suggest other uses, including as unique, elegant notepaper. ◆



From left: *Wagashi* on *kaishi* at a tea ceremony; *kaishi* with floral design.

### TASTY TRAVEL



Toyama

## Toyama *Masu-zushi*

*Masu-zushi* pressed-trout sushi is a specialty of Toyama Prefecture. This unique sushi dates from the Edo period (1603-1867), and was once presented as formal tribute to the shogunate in old Edo (Tokyo) by Toyama feudal lords.

*Masu-zushi* was originally made with cherry trout from the Jinzu River, which runs through the prefecture. It is prepared by lining a *magewappa*, a round wooden box with a lid, with fresh bamboo leaves. A layer of vinegared rice is spread over these, and topped with thin slices of trout that have been salted, preserved and vinegared; the long green leaves are then carefully folded over the fish. After covering with the lid, a heavy stone is set on top for several hours. The leaves’ bactericidal properties, along with salt, vinegar and pressing, embody traditional food-preservation skills. Diners can explore different varieties of texture and taste at Toyama’s various restaurants, souvenir shops and train stations, many of which boast their own special *masu-zushi* recipe. ◆



*Masu-zushi*





## AVOCADO, TOMATO AND TOFU WITH DASHI-SOY SAUCE JELLY

Adding dashi to soy sauce makes for a smoother, milder taste. It is difficult to fully season tofu with liquid sauce dressing, but this jelly binds the seasoning to all the ingredients.



◆ Kinome

木の芽

### Serves 2

348 kcal Protein 11.3 g Fat 28.4 g  
(per person)

#### Dashi-soy sauce jelly

- 2 t unflavored gelatin powder
- 180 ml /  $\frac{3}{4}$  C dashi stock
- 2 T Kikkoman Soy Sauce
- *Kinome* Japanese mountain pepper sprouts\*, roughly chopped. Reserve several whole sprouts for garnish.
- 1/2 block of medium firm tofu, 150-180g / 5-6 oz.
- 2 medium tomatoes, total 200-250 g / 7-8 oz.
- 1 ripe avocado
- 2 T olive oil

**1** To make dashi-soy sauce jelly, put the gelatin powder in a saucepan. Sprinkle in 4 T of the dashi stock and heat gently, stirring constantly until the gelatin dissolves completely. Do not allow to boil.

**2** Add and mix in the remaining dashi stock, soy sauce and chopped *kinome*.

**3** Pour the gelatin into a flat-bottomed tray, and place the tray in a pan of ice water to cool until the gelatin starts to thicken. Then refrigerate the tray of gelatin for over 2 hours or until it becomes firm.

**4** Cut the tofu into 1 cm / 0.4 in. cubes. Cut the tomatoes and avocado into cubes slightly bigger than the tofu. In a bowl, combine the tofu, tomato and avocado. Add the olive oil and mix lightly. Spoon this mixture into a serving bowl.

**5** Use a fork to mash the gelatin into small pieces (*see photo*), then spoon plenty of jelly over the salad before serving.\*\* Garnish with *kinome*.

\* Other herbs may be substituted to taste, such as parsley or dill.

\*\* Unused jelly keeps for a few days in refrigerator.



Recipe by Michiko Yamamoto

1 C (U.S. cup) = approx. 240 ml; 1 T = 15 ml; 1 t = 5 ml



## HIJIKI-NO-NIMONO STEWED HIJIKI SEA VEGETABLE

Loaded with vegetables from both the land and the sea, *hijiki-no-nimono* is a healthy dish with a good nutritional balance. This traditional home-cooking recipe is enjoyed throughout Japan as a side dish and is a bento box favorite.



◆ Hijiki

ひじき

### Side dish serves 6

98 kcal Protein 4.3 g Fat 5.3 g  
(per person)

- 30 g / 1 oz. dried *hijiki* sea vegetable
- 30 g / 1 oz. carrot, peeled
- 50 g / 1.7 oz. lotus root, peeled
- 1 sheet *abura-age* deep-fried tofu
- 1 T vegetable oil
- 1/2 C parboiled soybeans\*

### Seasoning

- 1 C dashi stock
- 2 1/2 T Kikkoman Soy Sauce
- 1 1/2 T granulated sugar
- 2 T Kikkoman Manjo Mirin

- 1 Place dried *hijiki* in a large bowl and rinse well, then soak in ample water for 15-20 minutes.\*\* Drain the *hijiki* and parboil briefly, then drain again.
- 2 Julienne the peeled carrot. Cut peeled lotus root into quarters, then into slices. Soak lotus root in water for 5 minutes and drain.
- 3 Pour boiling water over the *abura-age* to rinse off excess oil (*see photo*), drain and then pat dry with a paper towel. Cut in half horizontally, then into thin strips.
- 4 Heat the vegetable oil in a saucepan. Over medium heat, add the *hijiki* and stir until completely coated with oil. Add the carrot and lotus root, and sauté until also coated with oil. Finally, stir in the soybeans and *abura-age*.
- 5 Add the seasoning ingredients to the pan. After bringing to a boil, reduce to lower-medium heat, cover with a drop-lid or parchment paper, and simmer until the liquid has nearly evaporated.
- 6 Place in a serving bowl.\*\*\*



\* To prepare dried soybeans, refer to the recipe for *gomoku-mame* simmered beans and diced vegetables in *Food Forum* Vol. 30 No.1.

\*\* After soaking, the dried *hijiki* will swell in size by eight to ten times.

\*\*\* This dish can be served either hot or cold.

Recipe by Kikkoman Corporation



## Kikkoman Food Culture Exchange in China, Part 2



Introducing kombu, used for dashi stock

Since its exhibition at the Japan Industry Pavilion of Expo 2010 Shanghai China, Kikkoman has continued to promote interaction with young Chinese people with a focus on food. This spring Kikkoman held a lecture at the Shanghai Ganlin Junior Vocational School through an introduction from the Shanghai People's Association for Friendship with Foreign Countries (SPAFFC). This school provides occupational training programs for young people ages 14 to 16, including cooking. At the event, Kikkoman organized a lecture on the basics of *washoku* Japanese cuisine for a total of 40 people, including first- and second-year culinary students, and teachers

at this and other vocational schools in Shanghai. The focus was on *washoku* cooking techniques and the lecture was given by Mr. Hitoshi Kakizawa, who served as general manager of Kikkoman's Japanese restaurant "紫 MURASAKI" at Expo 2010 Shanghai China and who also coordinated Kikkoman's event at Expo Milano 2015.

The lecture started with a session on *katsuobushi* (dried bonito flakes) and kombu, the key ingredients of dashi stock. Participants taste-tested *katsuobushi* and kombu, some for the first time. The lecturer then explained the synergistic effects on food created by the combination of *katsuobushi* and kombu. After a demonstration that included making and

tasting dashi stock, a drop of soy sauce was added into each participant's stock, so they could experience the changes in flavor and aroma.

The next session was on cooking *temari-sushi* hand-held sushi. For ingredients in this cooking session, participants used soy sauce-marinated salmon and sea bream and sweet-and-sour pork which had been prepared by the students. Mr. Kakizawa demonstrated how to cut fish and how to properly hold a kitchen knife for safe and accurate cutting, which includes correct posture. After each student followed these cutting techniques, they then wrapped vinegared rice and ingredients in plastic wrap and prepared *temari-sushi* on their own.

In a message for young people who aspire to venture into the world of cuisine after graduation, Mr. Kakizawa discussed the significance and pleasure of engaging with cuisine, based on his own experience. He concluded by saying, "Please make as many people as possible smile by serving cooking full of affection that no one else can make."

One of Kikkoman's management philosophies is to promote the international exchange of food cultures. Kikkoman provides the opportunity to experience new flavors by combining soy sauce, the seasoning that has supported Japanese food culture for many years, with foods from around the world. Through events such as these, Kikkoman is able to disseminate information about Japanese food culture to a wide variety of people who are interested in or engaged with cuisine and global food culture. To achieve the goal of becoming a company whose existence is meaningful to the global society, Kikkoman continues to carry out these activities on a regular basis. ◆



Mr. Kakizawa oversees the making of *temari-sushi*.

