

## Changes in dietary habits in Japan -Background of *Shokuiku* and its promotion-

Shaw Watanabe, MD, PhD  
Shokuiku Promotion Council  
President, Life Science Promotion Foundation



No other country has experienced such a rapid extension of the average life expectancy during the past 50 years as in Japan. Presently, the average life expectancy is 80 years in males and 85 years in females and the average healthy life expectancy is 75 years and 80 years respectively (Fig.1). As a result, the number of people aged 100 years and over was 36,000 in 2008 and is estimated to be more than 50,000 in 2009.

The extension of life expectancy in such a short period was mainly due to improvements in public health, development of a medical system including establishment of universal health insurance and reduction of the infant mortality rate after World War II.

In addition, improved growth status of children due to school lunch programs, enhanced immunity against infectious diseases by improved nutritional status and prevention of various diseases caused by malnutrition may have contributed to extension of life expectancy.

However, the “bubble” economy in the 1970’s induced overeating and

lack of exercise, causing obesity and lifestyle-related diseases (e.g. diabetes, hypertension, kidney diseases) to increase.

Also, excessive dependence on imports due to low self-sufficiency rate in food caused concerns about food safety among consumers. Finally, rapid social change led to loss of regional characteristics and the breakdown of the traditional family, making it difficult to pass on food culture to children. Under these circumstances, the *Shokuiku* Basic Act was formulated in 2005, and various programs were planned by the *Shokuiku* Promotion Committee.

Three years have passed since then, and now I would like to review the background and outcomes of *Shokuiku*.

### **Diet is the basis for a human being as well as for a country**

A “Peace world” cannot be achieved without a safe food supply. In 1992, at the the FAO/WHO International Conference on Nutrition in Rome, nutritional strategies toward health promotion of people in the world were

discussed. One of the main issues was how we could support people to choose appropriate daily diet and lifestyle. Recognizing that dietary habits could be associated with various diseases, the World Declaration on Nutrition stated that each country should utilize the foods available within the country and these guidelines should be based on “food” instead of “nutrients” so that the consumers could choose foods appropriately. These are now well known as the “food based dietary guidelines”.

Following this declaration, a large scale expert committee was held in Cyprus in 1995 and the basic guidelines were discussed. And, the World Food Summit of 1996, where the Prime Ministers and the major policy makers of each country participated, was widely regarded as a historic turning point in international nutrition policy. Its result was an international consensus that “adequate nutrition is a human right” and nutrition became the issue related not only to individual living but also the global environment. In parallel, the “Rio Declaration on Environment and

Development,” the “United Nations Framework Convention on Climate Change” and the “Convention on Biological Diversity” were signed at the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil in June 1992.

However, these strengthened principles were undermined by: 1) the greed that dominates the world in the name of globalization, 2) collapse of communism and the subsequent chaos in the Union of Soviet Socialist Republics and East Germany, 3) terrorism that started in Afghanistan, 4) AIDS and extreme poverty in Africa, 5) endless civil war, and 6) spread of slums in cities around the world.

Whilst a principle of “All the people

on the earth are brothers/sisters” has been recognized from the view point of religion or ethics for a long time, it is now biologically accepted by genetic and archaeological research that all human beings alive today have common African ancestors.

It is now anticipated that resource depletion, global warming due to increased emission of carbon dioxide and collapse of the environment leading to decreased food production will threaten the survival of human beings if we continue our present lifestyle. Now is the time to suppress our ego and live humbly. In the process, we should consider the meaning of “eating” from an historical point of view.

### Foundation of "Nutrition Sciences" and its application

The average life expectancy of the Japanese people was forty-something in the early 20th Century. At that time, many people died of beriberi, tuberculosis and typhoid and the growth status of children was poor due to unbalanced diet consisting only of rice, miso soup and pickled radish.

Tadasu Saiki highlighted the importance of “nutrition sciences” that integrated physiology and biochemistry. He provided detailed guidance on appropriate diets, including foods to purchase in line with one’s income and cooking methods that increase nutritional values, so as to promote balanced diet with three major nutrients (carbohydrate, protein and fat), vitamins and minerals.

Dr. Saiki established the first dietitian training school in the world and the first 15 graduates started working as dietitians to provide nutrition guidance at hospitals, factories and schools. Their work caused sick leave to decrease and labor efficiency to rise among factory workers, due to improved nutritional status. Among the 2<sup>nd</sup> graduates, there were dietitians who worked as prefectural staff to provide nutrition guidance at the community level.

When the League of Nations dispatched a delegation to Japan for inspection of the recovery work after the Great Kanto Earthquake, they paid attention to these community-based nutrition activities. Dr. Saiki became the first invited professor at the League of Nations, and provided lectures in various foreign countries. The

## Change in average life expectancy in major developed countries

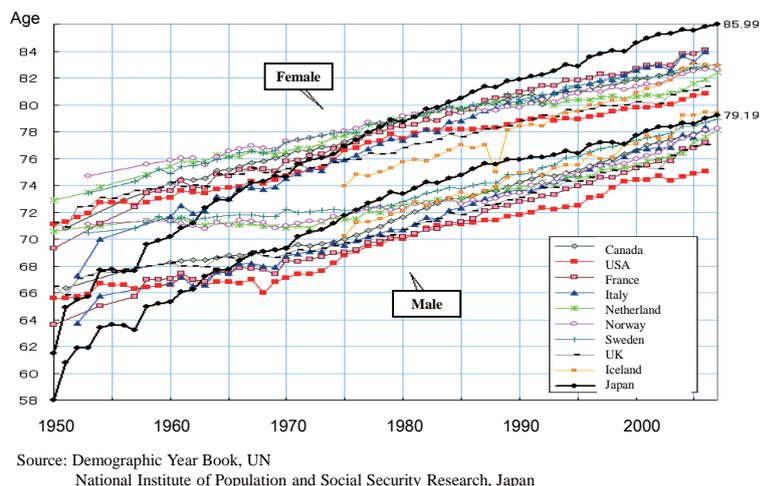


Fig.1. Rapid expansion of the elderly population in Japan compared to other countries.

League of Nations held the International Sanitary Conference in 1934, where the resolution that every participant country should establish diet and nutrition institutes and train dietitians was adopted. In addition, the practical experience of Dr. Saiki was presented at the League of Nations Oriental Rural Sanitary Conference held at Bandung in Java, where all the participant countries decided to establish nutrition institutes and dietitian training schools.

### National Nutrition Survey and nutrition after World War II

The defeat in World War II changed Japanese society greatly. Under the postwar occupation by the allied forces, food aid was provided by GHQ. As the basic data for GHQ to provide food aid systematically, a dietary survey was undertaken in Tokyo in December 1945, and developed into the current National Health and Nutrition Survey.

Initially, dietary intake data were obtained by a weighed recording method for one week, four times a year. Later, this method was modified several times to reduce the burden on the survey participants, and it is now a one-day record. No other country has a large-scale nationwide survey targeting more than 10,000 subjects that has been continuously implemented over 60 years. The survey data form a valuable database on change in diet and related diseases.

Whilst rice intake decreased after World War II, the intake of animal protein and fat increased (Fig.2). The fat

### Dietary Changes in Japan

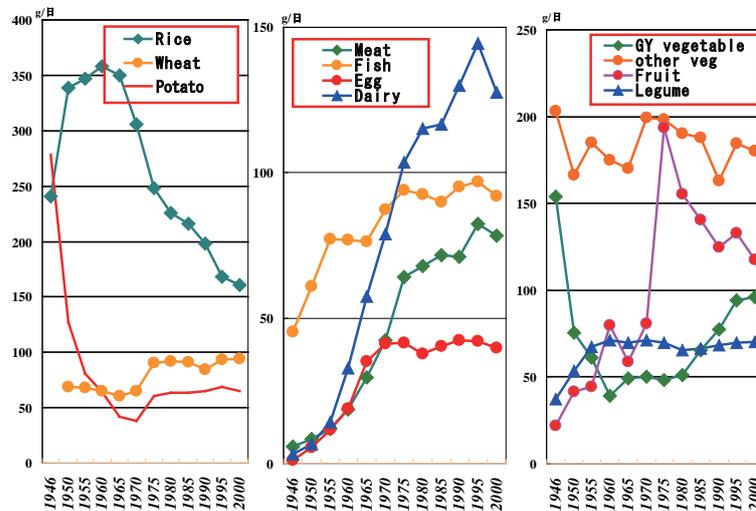


Fig.2. Dietary changes after World War II in Japan. Decreased rice and increased meat consumption are noteworthy.

energy ratio was 4.9% in 1913, which increased to 27.5% in 1990. During a period of high economic growth, many gourmet restaurants were established and processed foods in supermarkets and convenience stores increased. Since the delicacies are gathered from all over the world and there are many high-class restaurants and bistros, it is said that all types of cuisine, including ethnic foods, are available in Tokyo. Similar changes are now observed in many countries of Southeast Asia, China, Eastern Europe and Middle-East.

### Japanese traditional diet

When we consider diet and health, it does not make sense to investigate dietary/nutrition sufficiency only. This is because diet is closely related to one's life, hence social status, regional culture and historical change. We can, therefore, say that diet is life itself. Food

culture is formed by efforts to process the available foods for survival. For example, at the *Nishiki* market in Kyoto, we can see many traditional foods well processed.

### Background of the Shokuiku Basic Act

The importance of *Shokuiku* was widely advocated by Miyuki Adachi, Professor Emeritus of Kagawa Nutrition University who studied the food environment of children by examining their drawings. Looking at inappropriate diets among female university students, Yukinori Hattori, Principal of Hattori Nutrition College, emphasized the importance of *Shokuiku*. Consequently, Shokuiku Investigation Committee was established in the LDP's Policy Affairs Research Council on November 21 2002, and then the Shokuiku Basic Act was formulated in 2005 under lawmaker-initiated legislation.

The initial purpose of the Shokuiku

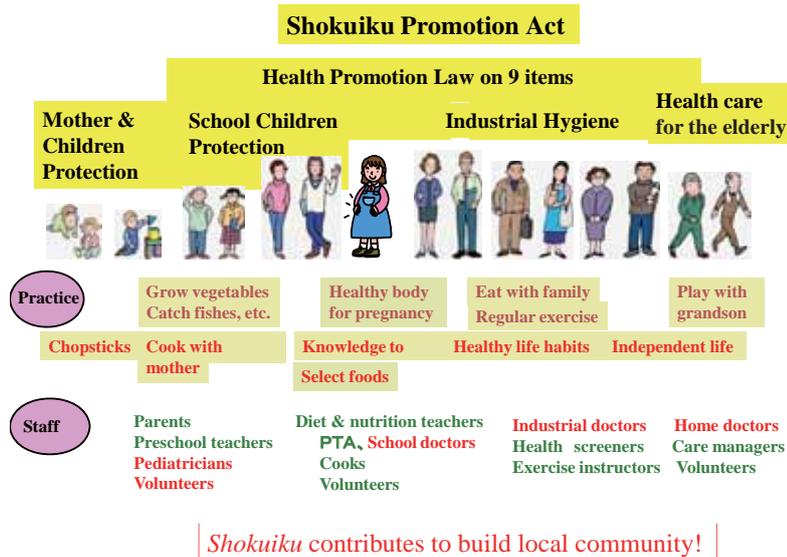


Fig.3. Shokuiku Basic Act covers 5 different laws for health and welfare throughout life. Purpose at each age stage is listed. Volunteers support these plans.

Investigation Committee was to remove anxiety and distrust caused by the incidents related to food safety (e.g. BSE problem, mislabeling of origins) among the consumers through *Shokuiku* <sup>1</sup>.

At the same time, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) was working to establish a diet and nutrition teacher system. The possible negative effect of inappropriate diet on health status of children was reported at the Health and Physical Education Council in 1997. It was then proposed that nutrition guidance should be enhanced through school dietitians so as to improve diet of children. For that, it was acknowledged that a new licensing system was required. Likewise, the Ministry of Health, Labour and Welfare (MHLW) participated in the formulation of the Shokuiku Basic Act from the view point of “health promotion throughout one’s lifetime”, as it has enhanced health

promotion policy “Healthy Japan 21”.

The Shokuiku Basic Act was formulated on June 10, 2005 with the aim of fostering mental and physical health, as well as individuals’ humanity, throughout one’s lifetime.

#### **Enforcement of the Shokuiku Basic Act**

Following the enactment of the Shokuiku Basic Act, a Shokuiku Promotion Council was established within the Cabinet Office, consisting of all the cabinet ministers, nine members from the Ministry of Agriculture, Forestry and Fisheries (MAFF), MEXT and MHLW.

Initially, the base of developing *Shokuiku* was “local production for local consumption” for MAFF, school lunch and diet and nutrition teacher system for MEXT and “Healthy Japan 21” for MHLW. It was also proposed that the Japanese traditional diet should be reevaluated and its benefits should be

bequeathed to our children (Fig. 3).

The first annual National Convention on *Shokuiku* was held in Osaka in June 2006, followed by Fukui (2007), Gunma (2008) and Shimane (2009).

Various incorporated nonprofit organizations were established in the field of *Shokuiku*, training courses for diet and nutrition teachers were started in the dietitian training schools, and the Japanese Society of *Shokuiku* was established. In order to evaluate the target goals and progress of *Shokuiku*, the Special Committee for Evaluation of Shokuiku Promotion was established within the Cabinet Office in 2007, for which I have been serving as the chair.

It is difficult to translate *Shokuiku* properly in English. For example, “education for eating” includes the meaning of neither “gratitude to food” nor “traditional food culture”. Therefore, *Shokuiku* has become popular as an international word.

When the Shokuiku Basic Act was discussed in the Diet, there was an opinion that eating is such a personal thing that government shouldn’t regulate it by a law. Yet, looking at the role of the “Act” to protect disadvantaged groups, such legislation should be enacted because inappropriate diets have a negative impact on growth and health, leading to public health problems. This legislation attracts world interest as a health promotion strategy throughout one’s lifetime.

The preamble of the Shokuiku Basic Act states that “For development of our country in the 21st century, it is important for children to acquire sound mental and physical health, so that

they could make progress in the future world. In addition, it is important to secure mental and physical health of the population for healthy living throughout one's lifetime". That objective is also embodied in Article 24 of the Constitution.

This law has a possibility to become the basis of far-sighted national policy. Its approach incorporates the idea of small government, regionalization and slow food, etc.

The articles of the Shokuiku Basic Act specify by whom, where and how *Shokuiku* should be implemented. In addition, Article 7 states that "*Shokuiku* should be promoted by enhancing the understanding on the current status of food demand and supply among population and encouraging exchange between food producers and consumers, so as to contribute to revitalization of farming and fishery villages and increase in the food self-sufficiency rate, while considering our traditional food culture, dietary habits that take advantage of regional characteristics and food production and consumption balanced with environment". The image of "family" and "village as a local community", which older people have, forms the foundation of this Article.

The next issue should be whether *Shokuiku* can be developed as a national movement similar to the National Council, by involving related sectors in the Ministry-specific targets (e.g. promotion of "local production for local consumption" and increase of self-sufficiency for MAFF, increase of diet and nutrition teachers for MEXT, promotion of "Healthy Japan

21" and "Health Frontier" for the MHLW). Fortunately, in several areas, the opportunities for children to learn appropriate diet/eating have been increasing with support of volunteers, including the activities about *Shokuiku* at kindergartens and primary school farm and cooking classes held by community-based staff who promote healthy diet.

### School lunch and *Shokuiku*

School lunch is an appropriate setting for *Shokuiku*, and the positive influence from children to parents can also be expected. In order to promote *Shokuiku* in schools, the diet and nutrition teacher system was introduced. This is a new license that combines the qualifications of registered dietitian and teacher. The major roles of nutrition teacher are to provide children with nutrition education through the school lunch system, foster desirable habits and self-management capacity in children, and advocate for healthy diet in connection with other subjects and in families and the community.

Following the goal set in the Basic Plan for *Shokuiku* Promotion, about 2,600 nutrition teachers were posted in all the prefectures by the end of 2009. Yet, there is a great regional gap; more than 100 in Hokkaido, Kyoto, Osaka, Hyogo and Kagoshima and less than 50 in Aichi, Mie, Ehime and Fukuoka.

### Number of dietitians according to school size

By promoting the post of diet and nutrition teacher, it is expected that a comprehensive dietary guidance plan would be established at each school and implemented systematically and



Japanese child (age 2) eating at home. Rice, roasted salmon, vegetable salad and sea weed soup.

continuously by all teachers.

According to a report published by the Central Education Council at MEXT, the roles of diet and nutrition teacher can be largely divided into two-parts; "dietary guidance" and "school lunch management". Dietary guidance" is further divided into three approaches: individual counseling for obese or extremely thin children or those with unbalanced diets, class lessons on other related subjects (home economics, health and physical education) using the school lunch as a practical teaching material, and coordination of various collaborative activities related to dietary guidance. "School lunch management" includes planning of school lunch menus and hygiene management. Through the experience of eating foods they cultivate themselves and locally available foods, children can be expected to recognize the linkage between production activity and daily diet.

### *Shokuiku* for adults

In our busy lives marked by rapid

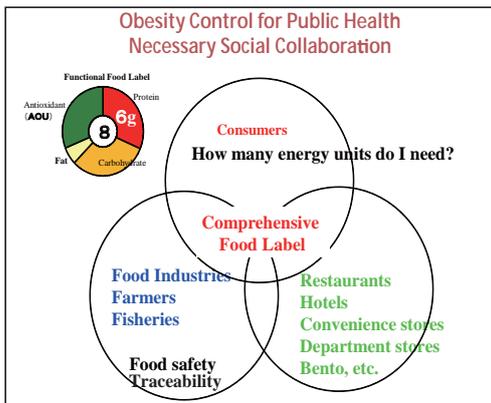


Fig.4. Cooperation among consumers, producers and providers is important to construct a supportive environment. Standard food label on every menu, food package, etc. is useful. Number in center is a new energy unit (= 80kcal). Body weight (kg) x 0.4 E-unit intake allows tailoring to individuals. Outer 4 colors of circle show a balance of nutrients.

socioeconomic change, we tend to forget the importance of diet for basic health. In addition to the existing diet-related problems such as unbalanced and irregular diets, increased obesity and lifestyle-related diseases, and excessive pursuit of thinness, new problems also arose, including food safety concerns and overreliance on imported foods.

In the present society with abundant information on foods, we need to learn more about appropriate diet not only in terms of dietary improvement but also food safety. Careful attention to the food environment is necessary to control obesity and other diet-related health problems (Fig. 4).

Irregular dietary patterns including breakfast skipping, unbalanced diet,

eating/drinking after midnight increase obesity and lifestyle-related diseases. Parents are encouraged to pay attention to the food environment of their children, have stable family life and participate in community activities.

The “Health Check Up Specifically Programmed against Metabolic Syndrome Followed by Specific Health Counseling” started in April 2006, with the intention to increase awareness of the relationship between diet and health. There are two stages of follow-up health counseling: one is “motivating support” where nutrition education and exercise guidance is provided in group counseling and the other is “intensive support” where guidance is provided individually to those with metabolic syndrome. In our obesity control program, behavior modification therapy was found to be effective, and thus it is important to inspire one’s motivation first.

#### Impact of the Shokuiku Basic Act toward improvement of regional power

In 2005, the proportion of people aged 65 years and over rose to 19.1% in Japan. No other country has experienced such a super-aging society as Japan. It is regarded that this increase in longevity is due to medical support for maternal and child health, school health, safety statutes, Health and Medical Service Law

for Elderly, as well as to improvement in hygiene and environment in the whole community. Recently, low birth rate and aging have become significant problems in Japan, for which community-level solutions are required to promote safe and comfortable lives.

For example, Nangoku city, Kochi Prefecture placed a rice cooker with the timer in each class, so that rice could be cooked by noon. The smell of rice inspires children to prepare school lunch by themselves, and no leftovers are reported. In addition, the nearby farmers and fishermen brought vegetables and small fish to the schools. In this way, the entire community shared in raising children. In the area where the *Shokuiku* coordinators worked actively at primary/junior high schools, the whole community became involved, children's love of one’s home town was cultivated, and the safety of society was maintained.

Whilst Nishi-Aizu-cho, Fukushima Prefecture used to have the highest mortality rate by stroke in Japan, both mortality rate and medical expenditure were reduced by the health promotion program targeting the middle-aged.

We are still in the process of discovering the ideal approaches for an aging society with a low birth rate. I would like to suggest that a society with healthy longevity can be achieved through community-based *Shokuiku*.

#### Reference

1. Shaw Watanabe, Melissa Melby, Naomi Aiba. Food safety and food labeling from the viewpoint of the consumers. *Asia Pacific J Clinical Nutrition*.2009;18(4): 532-7.