

This is a summary based on the report of the National Health and Nutrition Survey, 2017 published by the Ministry of Health, Labor and Welfare.

For more information, please visit the following site (in Japanese): https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html.

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National Institute of Health and Nutrition

The National Health and Nutrition Survey (NHNS) Japan, 2017

Summary

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Summary of the Survey

1. Purpose of the National Health and Nutrition Survey (NHNS)

The purpose of this survey was to clarify the physical conditions, nutrient intake, and lifestyle of citizens based on the Health Promotion Act (Law No. 103, enacted in 2002) and to obtain basic data for the comprehensive promotion of their health. Furthermore, this survey also aimed to obtain data on the health status and lifestyle by region as well as nationwide

2. Participants

In the Comprehensive Survey of Living Conditions in 2017 (approximately 2,000 areas with 61,000 households and 151,000 family members), participants included households and family members (aged 1 year and over as of November 1, 2017) in 300 area, stratified and randomly extracted from the general census areas.

The following households and householders were excluded as subjects:

<Households>

- Households of which the heads were not Japanese.
- Households which were provided with delivered/prepared meals three times a day.
- One-person households in a live-in situation or residing in dormitories provided with meals.

<Family Members>

- Infants aged 11 months or younger.
- Persons who were unable to eat regular meals, including home care patients taking only fluids or drugs due to illness.
- Those not having meals together with the rest of the family.
- Those who were absent from the household which included migrant workers and those who were (a) working away from home, (b) away on business for a long period (3 months or more), (c) studying away from home, (d) admitted to a social welfare facility (including nursing care facilities), (e) admitted to a hospital for a long period, (f) put out to nurse, (g) imprisoned, and (h) not living together.

3. Survey Items and Period of Survey

(1) Survey items and target age

This survey is composed of a physical status survey, a nutritional intake status survey and a lifestyle habit survey. The survey items and target age are as shown below. Age was as per November 1, 2017.

a. Physical Status Survey

- A) Height (aged 1 year and over)
- B) Body weight (aged 1 year and over)
- C) Abdominal circumference (aged 20 years and over)
- D) Blood pressure: systolic and diastolic blood pressure (aged 20 years and over) measured twice a day.
- E) Blood tests (aged 20 years and over)
- F) Medical interview (aged 20 years and over) regarding the following:

Drugs in use

- Anti-hypertensives
- Anti-arrhythmic
- Insulin or other oral drugs for treatment of diabetes mellitus
- Cholesterol-lowering
- Antihyperlipidemic (triglyceride lowering)

Diagnosis and treatment

- Diagnosis of diabetes
- Treatment for diabetes

Regular exercise habits

- Presence of restrictions for exercise due to medical reasons
- Frequency of exercise per week
- Average exercise duration per day
- Duration of regular exercise habit

H) Muscle mass of limbs (60 years or older)

b. Dietary Survey (aged 1 year and over)

- A) Household status: Name, birth date, sex, pregnant (gestational age) or lactating women, and occupation.
- B) Meal classification for each family member on the day of survey (meals cooked at home, home meal replacement, buying cooked food, using food delivery services, eating out, meals provided at school/work- place, etc.).
- C) Food intake: Dish name, food name, volume, waste volume and proportional distribution by each household member.
- D) Daily physical activity (the number of steps in a day, aged 20 years and over).

c. Lifestyle Habits Questionnaire (aged 20 years and over)

*For household status and lifestyle, 60 years and over

Participants were provided a self-administered questionnaire, in which they answered questions about eating habits, physical activity, exercise, resting (sleep), alcohol intake, smoking, and dental health. We also obtained the information about health/lifestyle habits as important parameters from elderly participants in 2017.

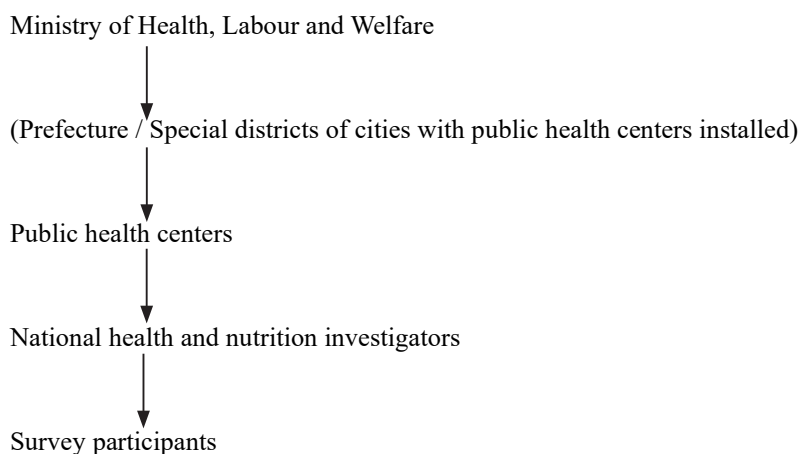
(2) Survey period

The period of this survey was in November 2017.

- a. Physical examination: Date on which the highest participation could be achieved, considering circumstances in the national census areas (several dates were established).
- b. Dietary survey: One day, excluding Sunday and holidays.
- c. Lifestyle habits questionnaire: During the survey period (November 2017)

4. Organizations involved in the survey

The survey system was as follows:



5. Data analyses

The comments related to the evaluation of results such as "significantly higher (lower, increased, or decreased)" or "No significant increase or decrease" were made based on the statistical tests (two-tailed significance level set at 5%). The details are presented below.

(1) Analysis on annual trend

To analyze the trend of the calculated values, age adjusted values were calculated applying the 2010 Census population using the six age groups 20-29 years, 30-39 years, 40-49 years, 50-59 years, 60-69 years, and 70 years or older¹. The 10-year trend test was performed using the Joinpoint Regression Program which used the mean/proportion and standard error for each year. To test the trend of 4-6 point, regression analysis was performed based on the oldest survey year². For the trend in the proportion of persons aged 65 years or older with low BMI ($BMI \leq 20$), the values were adjusted to the 2010 Census population using three age categories (65-74, 75-84, and 85 years or older)¹, and tested by the Joinpoint Regression Program using the proportion and standard error for each year². In these trend tests, the adjusted national values were used for the 2012 and 2016 surveys³.

(2) Analysis related to annual changes

The trends in annual comparisons of basic items were analysed using multiple regression analysis after adjusted age (six divisions: 20-29 years, 30-39 years, 40-49 years, 50-59 years, 60-69 years, and 70 years or older).

(3) Analysis related to inter-group comparison

Items related to the comparison of proportions were analysed using the chi-square test or Fisher's exact proportion test, while the unpaired t-test was used to test mean values. Single regression analysis was used to test for tendencies in mean values between three groups. The tendencies of the skeletal muscle mass index (SMI) were tested by multiple regression analysis after adjusted age (three divisions: 60-64 years, 65-74 years, and 75 years or older).

The first section of the results outlined focused on the health and lifestyle habits of elderly individuals (65 years or older; but 60 years or older for muscle mass of limbs). For some items, the results of adults aged 20 years or

above were also shown as a reference.

1 Directed estimation method

2 National Cancer Institute (NCI): Joinpoint Trend Analysis Software (<https://surveillance.cancer.gov/joinpoint/>).

3 Results of NHNS Japan, 2012 (<https://www.mhlw.go.jp/bunya/kenkou/eiyou/dl/h24-houkoku.pdf>).

Results of NHNS Japan, 2016 (<https://www.mhlw.go.jp/bunya/kenkou/eiyou/dl/h28-houkoku.pdf>)

6. Collection of Samples and Results

The results were analyzed by the National Institutes of Biomedical Innovation, Health and Nutrition. There were 5,149 target households for the survey, and 3,076 households* were surveyed.

* Number of households that responded to the household status in the dietary survey questionnaire.

The number of totalised targets is shown below.

Totals	Physical Examination						Dietary Survey				Lifestyle Survey	
	Examination		Blood test		Muscle mass of limbs		Dietary Survey		Steps per day		Lifestyle Survey	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	6,007	100.0	2,924	100.0	1,833	100.0	6,962	100.0	5,399	100.0	6,598	100.0
1-6	301	5.0	-	-	-	-	373	5.4	-	-	-	-
7-14	375	6.2	-	-	-	-	512	7.4	-	-	-	-
15-19	225	3.7	-	-	-	-	283	4.1	-	-	-	-
20-29	331	5.5	124	4.2	-	-	418	6.0	375	6.9	496	7.5
30-39	545	9.1	248	8.5	-	-	639	9.2	590	10.9	729	11.0
40-49	819	13.6	382	13.1	-	-	978	14.0	921	17.1	1,127	17.1
50-59	749	12.5	416	14.2	-	-	864	12.4	825	15.3	987	15.0
60-69	1,085	18.1	713	24.4	738	40.3	1,186	17.0	1,143	21.2	1,331	20.2
70-79	1,084	18.0	741	25.3	786	42.9	1,149	16.5	1,072	19.9	1,282	19.4
80 and over	493	8.2	300	10.3	309	16.9	560	8.0	473	8.8	646	9.8
(reprint) 65-74	1,210	20.1	802	27.4	850	46.4	1,287	18.5	1,221	22.6	1,440	21.8
(reprint) 75 and over	964	16.0	634	21.7	660	36.0	1,071	15.4	941	17.4	1,212	18.4

Men	Physical Examination						Dietary Survey				Lifestyle Survey	
	Examination		Blood test		Muscle mass of limbs		Dietary Survey		Steps per day		Lifestyle Survey	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	2,798	100.0	1,213	100.0	-	-	3,319	100.0	2,510	100.0	3,115	100.0
1-6	153	5.5	-	-	-	-	197	5.9	-	-	-	-
7-14	185	6.6	-	-	-	-	267	8.0	-	-	-	-
15-19	110	3.9	-	-	-	-	141	4.2	-	-	-	-
20-29	166	5.9	58	4.8	-	-	219	6.6	195	7.8	259	8.3
30-39	260	9.3	90	7.4	-	-	322	9.7	290	11.6	366	11.7
40-49	378	13.5	123	10.1	-	-	461	13.9	433	17.3	541	17.4
50-59	342	12.2	159	13.1	-	-	392	11.8	367	14.6	463	14.9
60-69	505	18.0	321	26.5	337	40.7	566	17.1	541	21.6	632	20.3
70-79	484	17.3	325	26.8	346	41.7	516	15.5	484	19.3	581	18.7
80 and over	215	7.7	137	11.3	146	17.6	238	7.2	200	8.0	273	8.8
(reprint) 65-74	551	19.7	361	29.8	378	45.6	585	17.6	562	22.4	663	21.3
(reprint) 75 and over	429	15.3	284	23.4	306	36.9	476	14.3	412	16.4	533	17.1

Women	Physical Examination						Dietary Survey				Lifestyle Survey	
	Examination		Blood test		Muscle mass of limbs		Dietary Survey		Steps per day		Lifestyle Survey	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3,209	100.0	1,711	100.0	-	-	3,643	100.0	2,889	100.0	3,483	100.0
1-6	148	4.6	-	-	-	-	176	4.8	-	-	-	-
7-14	190	5.9	-	-	-	-	245	6.7	-	-	-	-
15-19	115	3.6	-	-	-	-	142	3.9	-	-	-	-
20-29	165	5.1	66	3.9	-	-	199	5.5	180	6.2	237	6.8
30-39	285	8.9	158	9.2	-	-	317	8.7	300	10.4	363	10.4
40-49	441	13.7	259	15.1	-	-	517	14.2	488	16.9	586	16.8
50-59	407	12.7	257	15.0	-	-	472	13.0	458	15.9	524	15.0
60-69	580	18.1	392	22.9	401	39.9	620	17.0	602	20.8	699	20.1
70-79	600	18.7	416	24.3	440	43.8	633	17.4	588	20.4	701	20.1
80 and over	278	8.7	163	9.5	163	16.2	322	8.8	273	9.4	373	10.7
(reprint) 65-74	659	20.5	441	25.8	472	47.0	702	19.3	659	22.8	777	22.3
(reprint) 75 and over	535	16.7	350	20.5	354	35.3	595	16.3	529	18.3	679	19.5

7. Others

- The number of analyzed subjects is shown in parentheses in the figures and tables.
- Because the values listed in collection of results and samples are rounded off, the breakdown total may not match the total number.

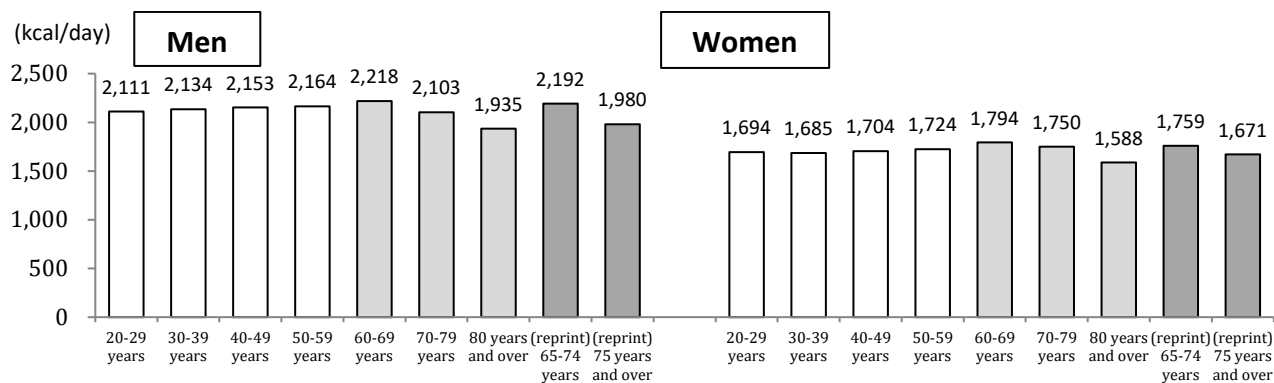
Summary of the Results

Part I. Health and Lifestyle Habit Status of Elderly Individuals

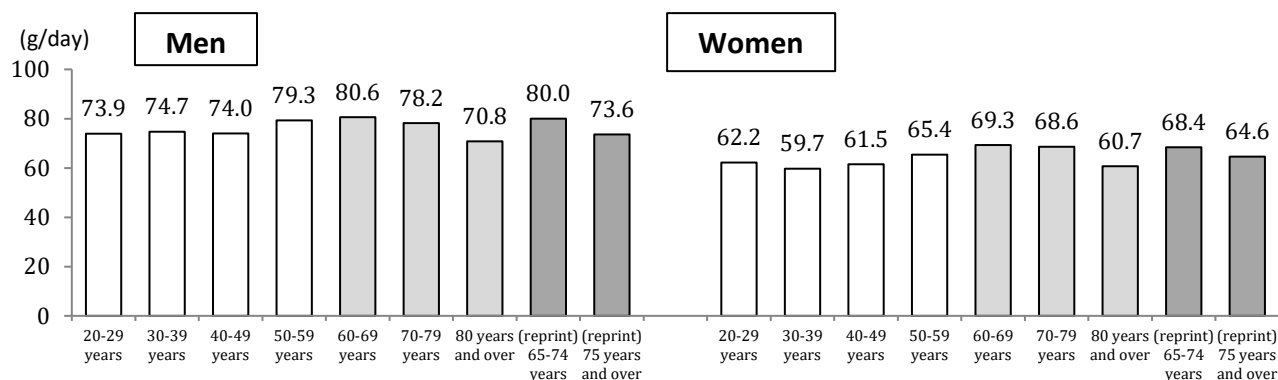
1. Status Regarding Intake of Nutrients

The persons aged 60 to 69 years had the highest energy and protein intakes among both men and women.

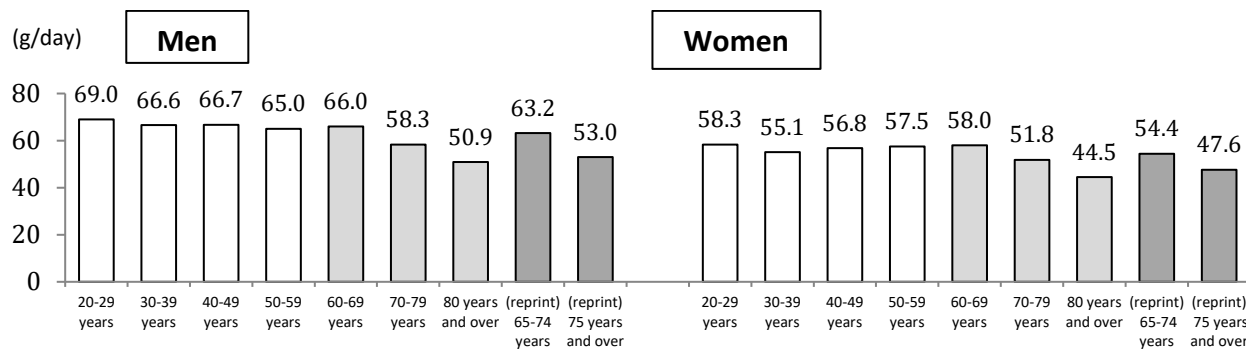
<Energy>



<Protein>



<Fat>



<Carbohydrate>

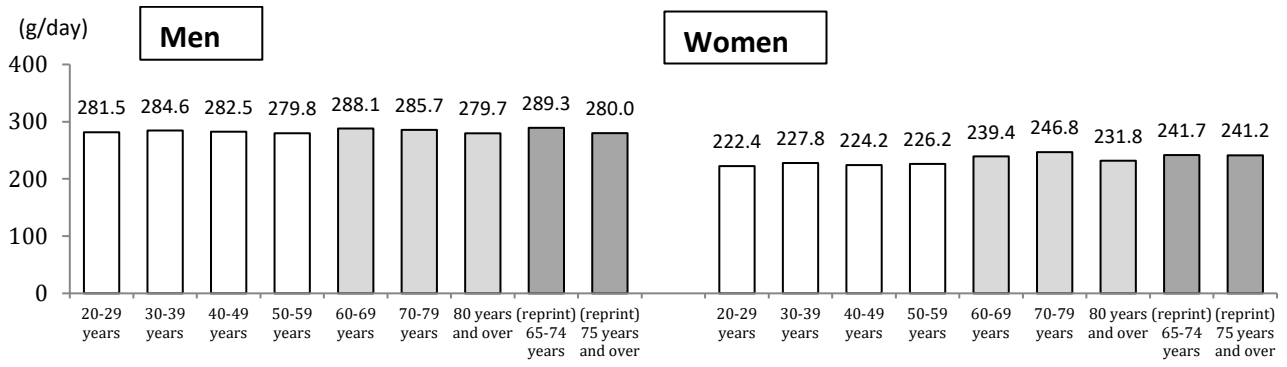
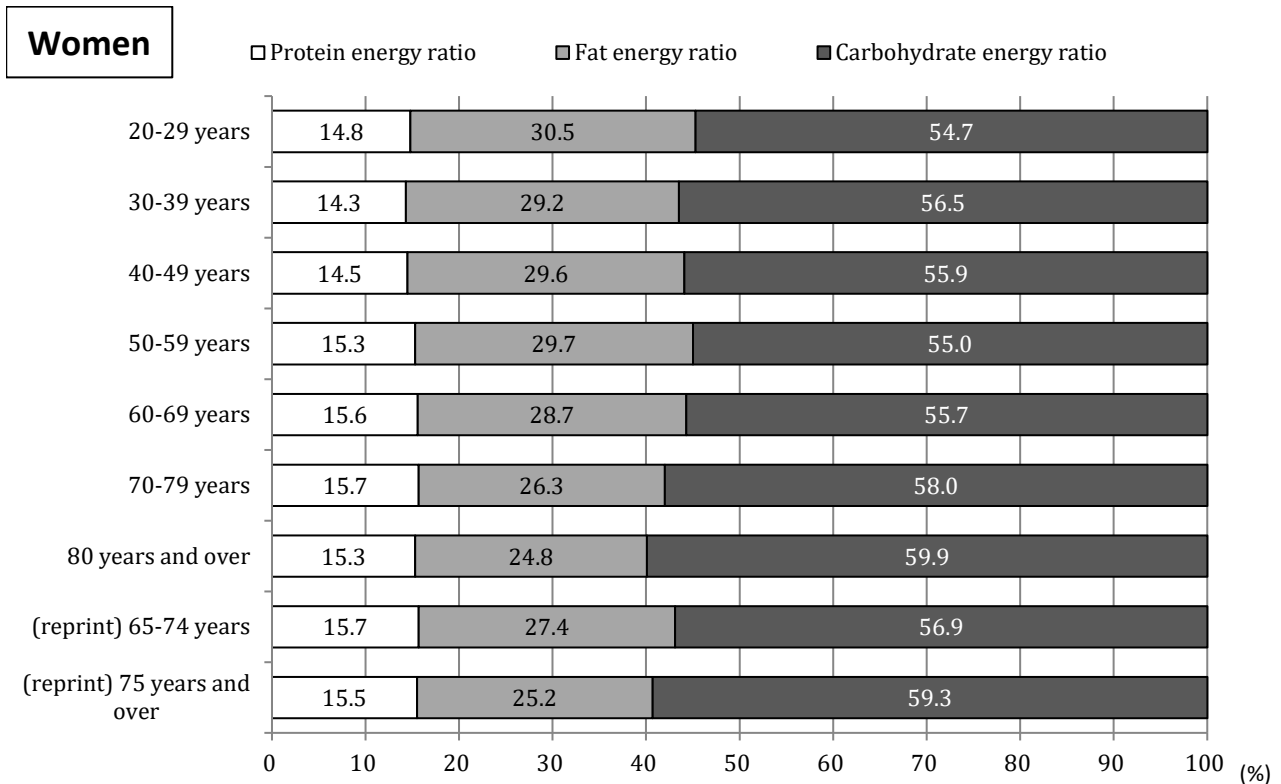
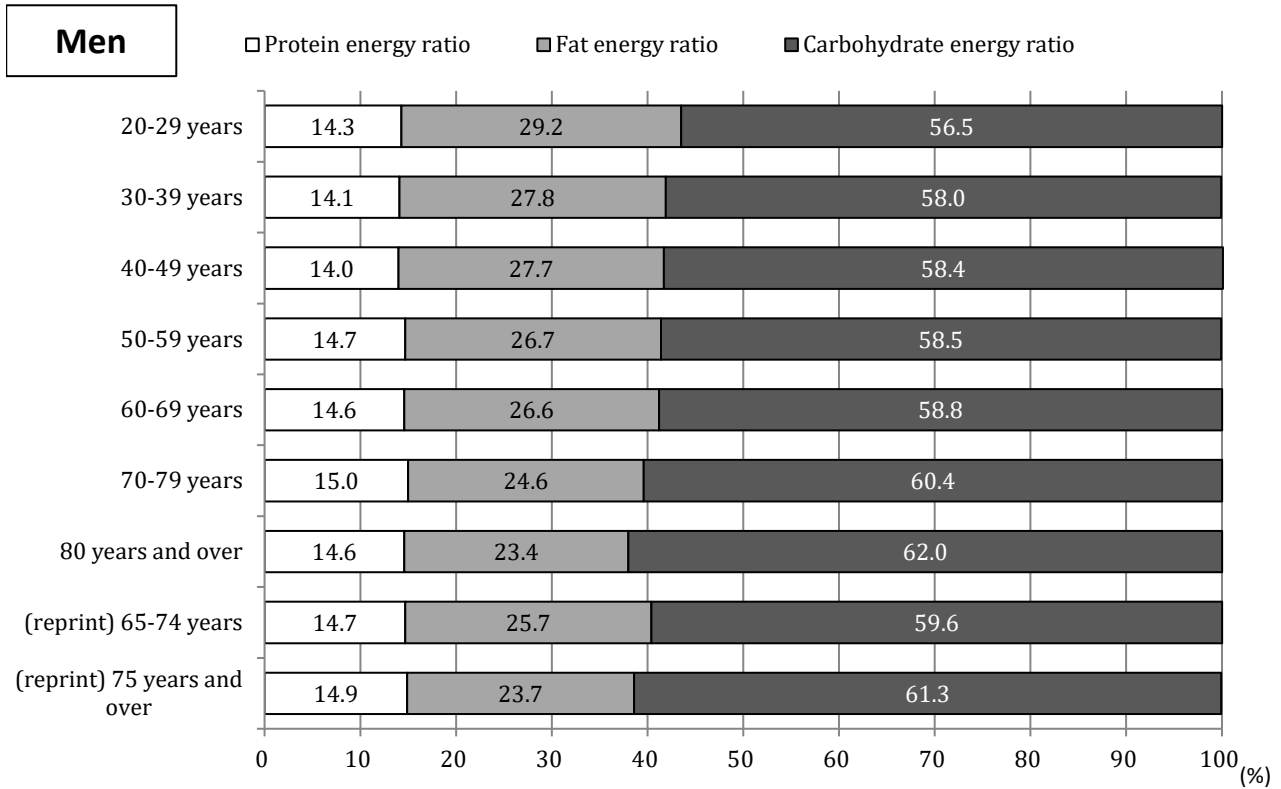


Figure 1. Mean energy, protein, fat, and carbohydrate intakes (aged 20 years and over, based on sex and age)

Fat energy ratio decreased with increasing age, and carbohydrate energy ratio increased with increasing age.



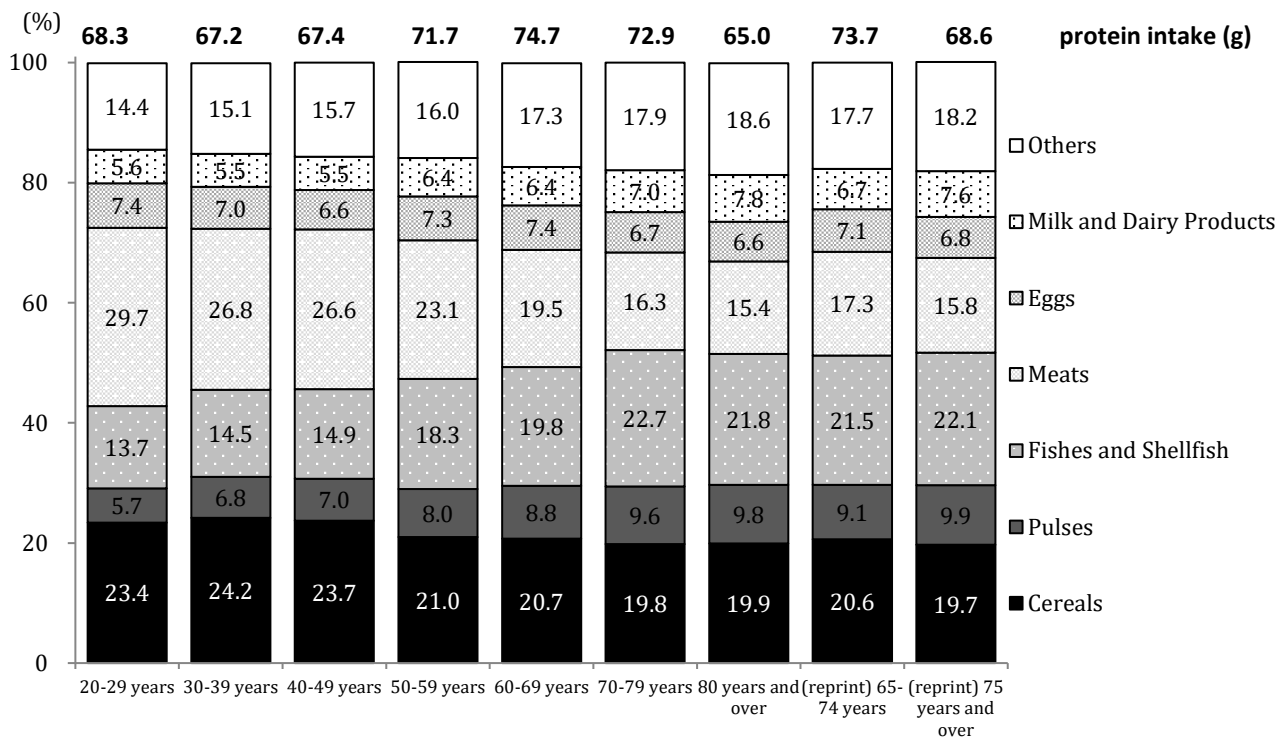
*Each ratio is the mean value calculated for individuals.

*Carbohydrate energy ratio=100 – protein energy ratio – fat energy ratio

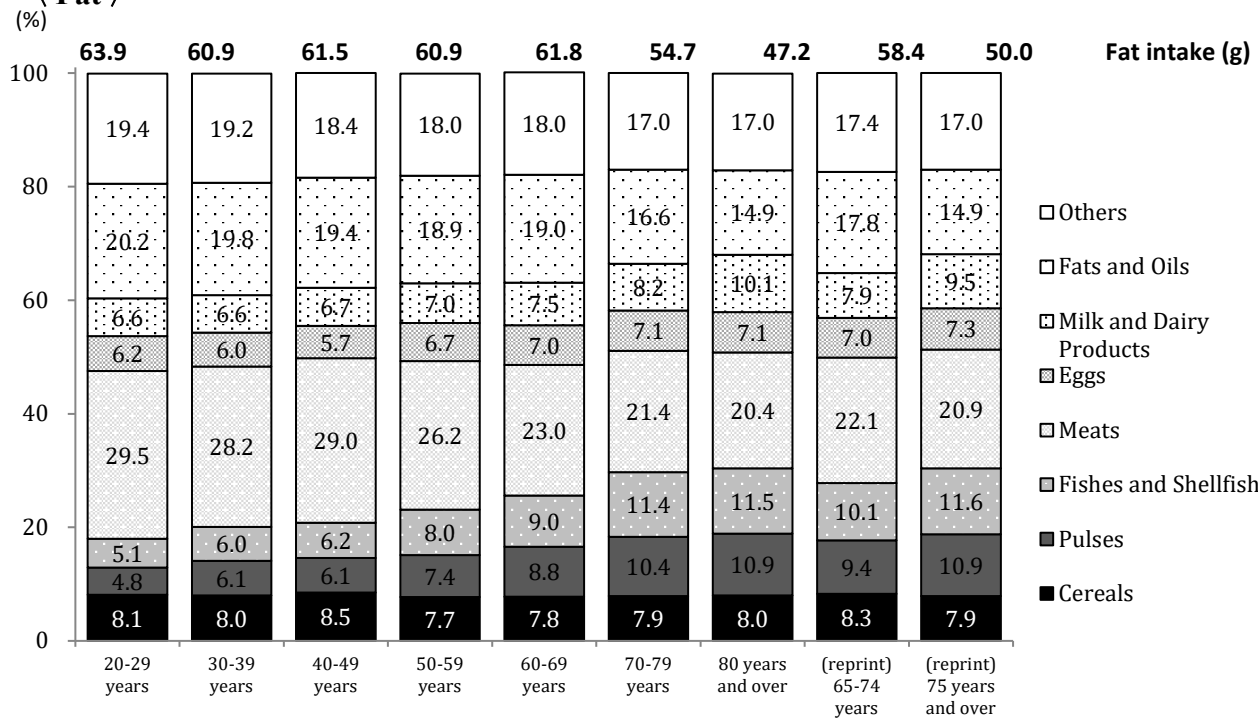
Figure 2. Energy-providing nutrients balance (aged 20 years and over, based on sex and age)

Considering the contribution of food groups to protein intake, the protein intake from meat decreased with increasing age, while protein intake from fish and shellfish was higher with increasing age. For the contribution of food groups to carbohydrate intake, the carbohydrate intake from cereals was the highest for all age ranges, but this proportion was lower with increasing age.

< Protein >



< Fat >



〈 Carbohydrate〉

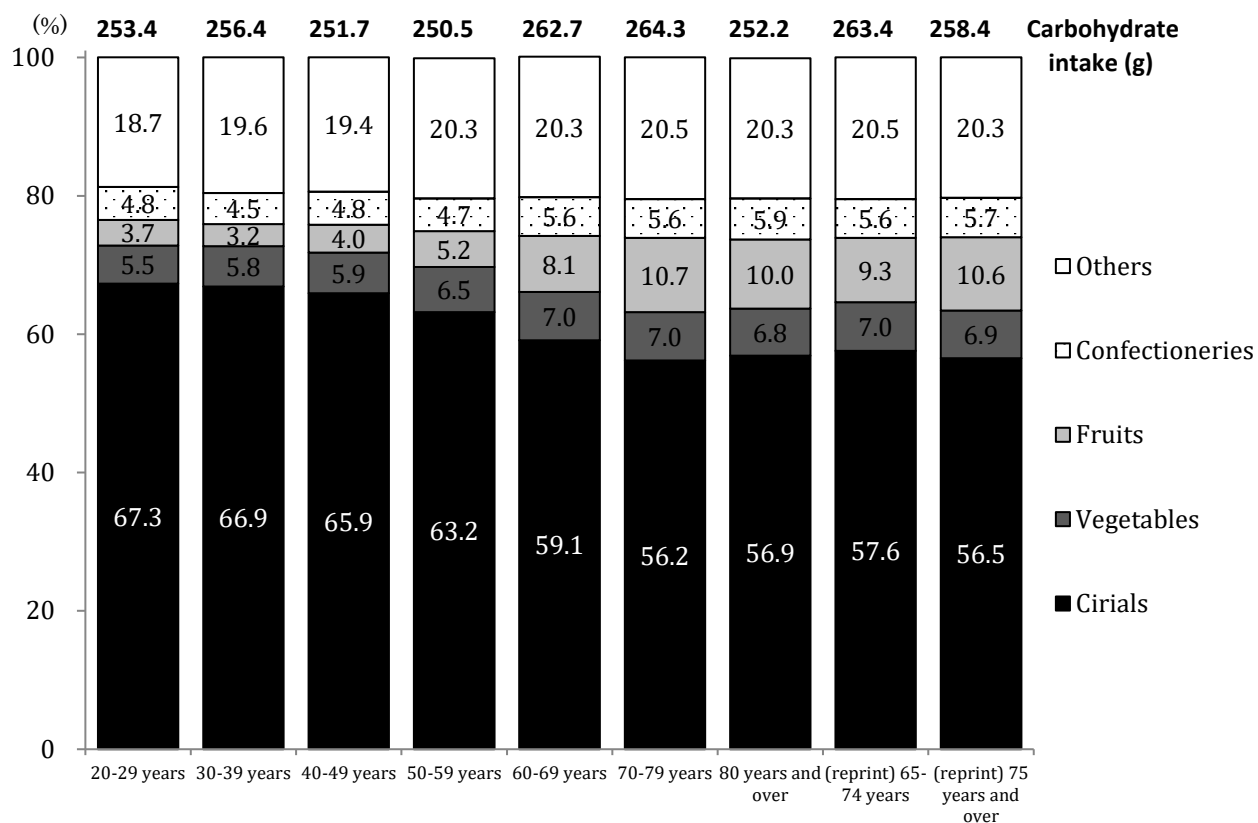


Figure 3. Contribution of food groups to protein, fat, and carbohydrate intake (aged 20 years and over, total of men and women, based on age)

2. Status Regarding Physical Condition (BMI)

The proportion of elderly individuals aged 65 years or above, who had a low BMI ($\leq 20 \text{ kg/m}^2$) was 16.4%. It was 12.5% and 19.6% among men and women, respectively. During the past 10 years, there has been no significant change in the proportion among both sexes. Moreover, the proportion of individuals aged 80 years and over with BMI $\leq 20 \text{ kg/m}^2$ was approximately 20% in both among men and women.

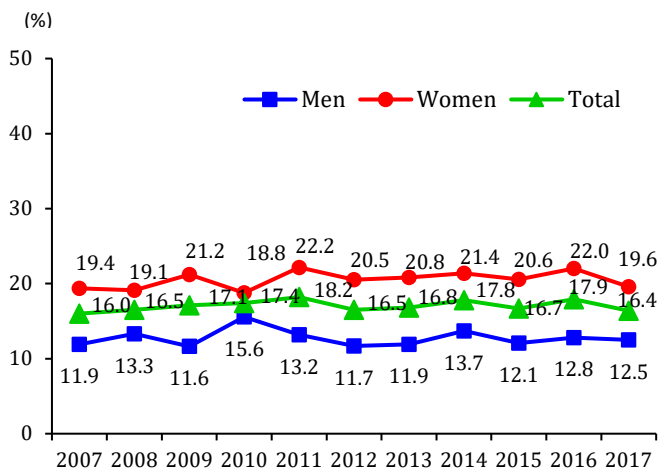


Figure 4-1. Annual Changes in the Proportion of Person with Malnutrition (BMI $\leq 20 \text{ kg/m}^2$) (aged 6 years and over) (2007 to 2017)

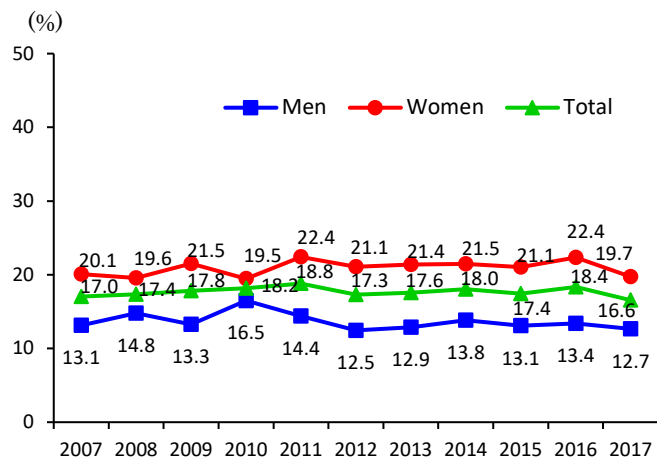


Figure 4-2. Annual Changes in the Age-adjusted Proportion of Persons with Malnutrition (BMI $\leq 20 \text{ kg/m}^2$) (aged 65 years and over) (2007 to 2017)

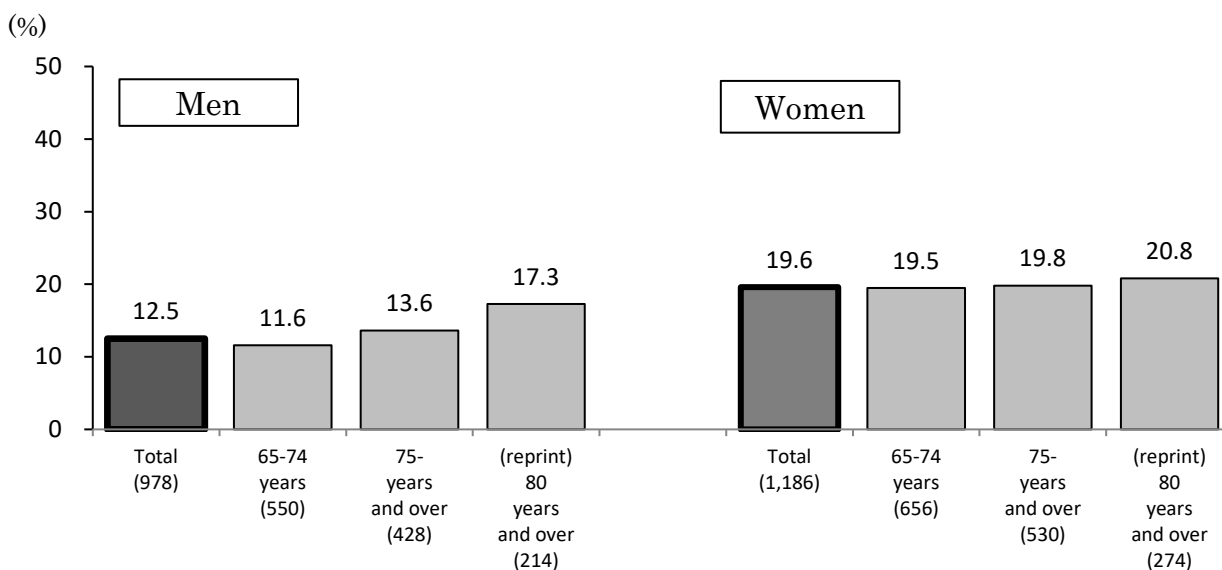


Figure 5. Proportion of Persons with Malnutrition (BMI $\leq 20 \text{ kg/m}^2$) (aged 65 years and over, based on sex and

(Reference) Individuals with a low BMI (BMI $\leq 20 \text{ kg/m}^2$)

In Healthy Japan 21 (the second term), reducing the proportion of elderly individuals with an undernutrition tendency, which is judged using looser criteria, is focused on rather than over-reducing the proportion of elderly individuals who are underweight or in a state of undernutrition. The standard set for an undernutrition tendency was a BMI of 20 or below, which is the point at which the risk for overall death or requiring long-term care significantly increases.

The proportion of elderly individuals within the target BMI range was over 50% for men, but it was less than 40% for women aged 70 years or over. Moreover, the proportion of individuals below the target BMI range was higher for both men and women aged 70 years and over.

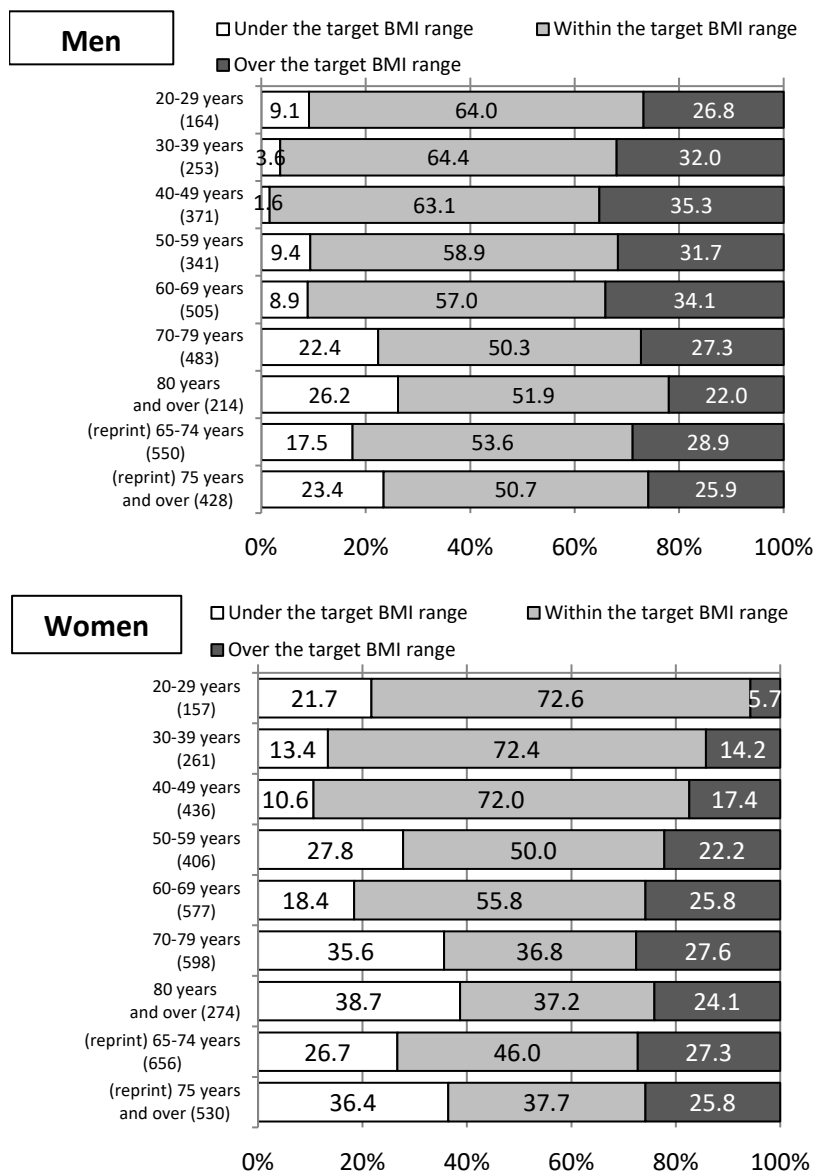


Figure 6. Distribution of target BMI range (aged 20 years and over, based on sex and age)

(Reference) Target BMI range (18 years and older)

Age (years)	Target BMI (kg/m ²)
18-49	18.5-24.9
50-69	20.0-24.9
70+	21.5-24.9 ³

¹ For both men and women. These values shall be used merely as a reference.

² Target range is defined through comprehensive consideration on the association between incidence rate for each disease and BMI, the association between causes of death and BMI, and actual BMI of Japanese people, based on BMI with the lowest all-cause mortality reported in epidemiological observational studies.

³ For people 70 years and over, the actual BMI deviates from the BMI with the lowest all-cause mortality. The tentative target BMI range is determined to be 21.5-24.9, considering the necessity to take into account both the prevention of frailty and prevention of LRDs. (MHLW 'Dietary Reference Intake for Japanese [2015 version]')

3. Status Regarding Muscle Mass of Limbs

The mean SMI values in men and women aged 60 years or older were 7.7 kg/m² and 6.5 kg/m², respectively. The values in both men and women have significantly decreased with increasing age for both men and women.

The mean SMI values among men and women with a low BMI (BMI ≤ 20 kg/m²) were 6.7 kg/m² and 6.1 kg/m², respectively. The SMI values were significantly lower for men aged 75 years or older than those aged 65 – 74 years, but no significant difference was observed for women.

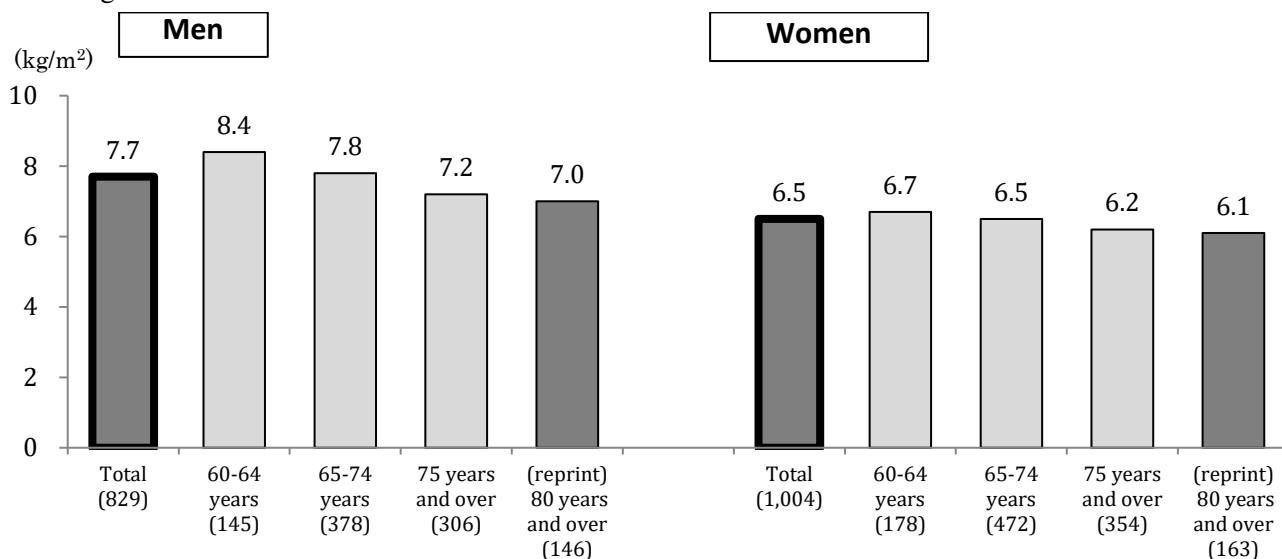


Figure 7. Mean SMI values (60 years or and over, based on sex and age)

*SMI (skeletal muscle mass index) values were calculated as fat-free mass of limbs (kg)/[height (m)]², and rounded off to the third decimal place.

*While no method of evaluation or cut-off values for sarcopenia have been established, a study by Yamada Y et al. using the same device as that used in this survey indicated that the cut-off value for sarcopenia should be SMI < 6.8 kg/m² for men and SMI < 5.7 kg/m² for women (Int J Environ Res Public Health. 2017 Jul 19;14 (7)). The proportion of individuals who met this cut-off value range was 1.4% (60 – 64 years), 10.1% (65 – 74 years), 28.8% (75 years or over) for men and 1.1% (60 – 64 years), 4.2% (65 – 74 years) and 14.4% (75 years or over) for women.

*Sarcopenia refers to an age-related decrease in muscles or decreased muscle mass which is associated with senile changes. (MHLW ‘Dietary Reference Intakes for Japanese [2015 version]’).

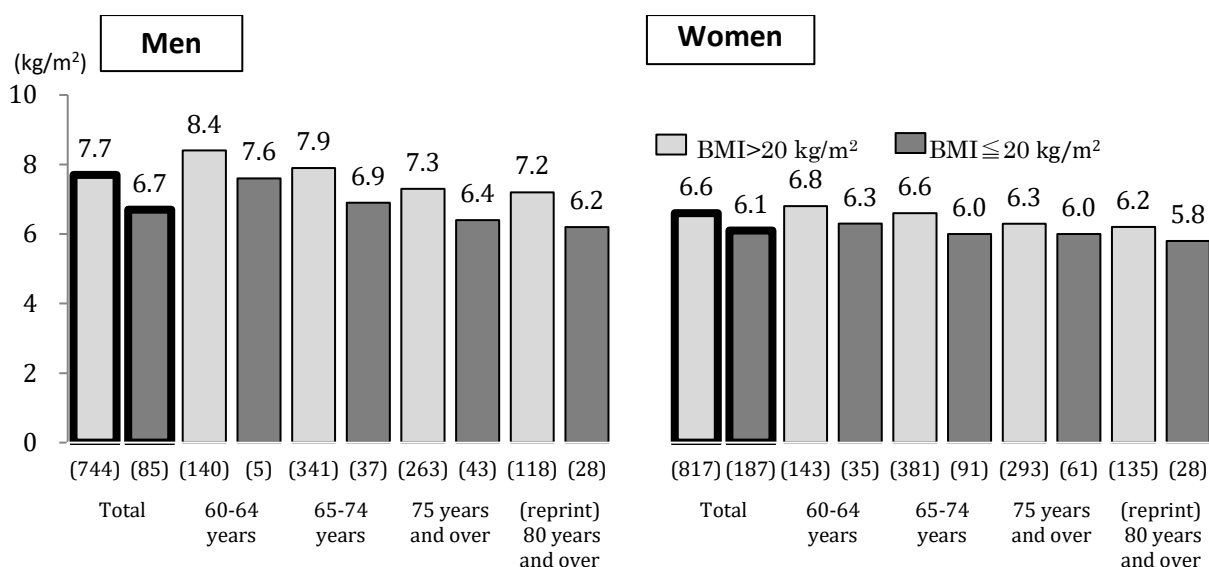
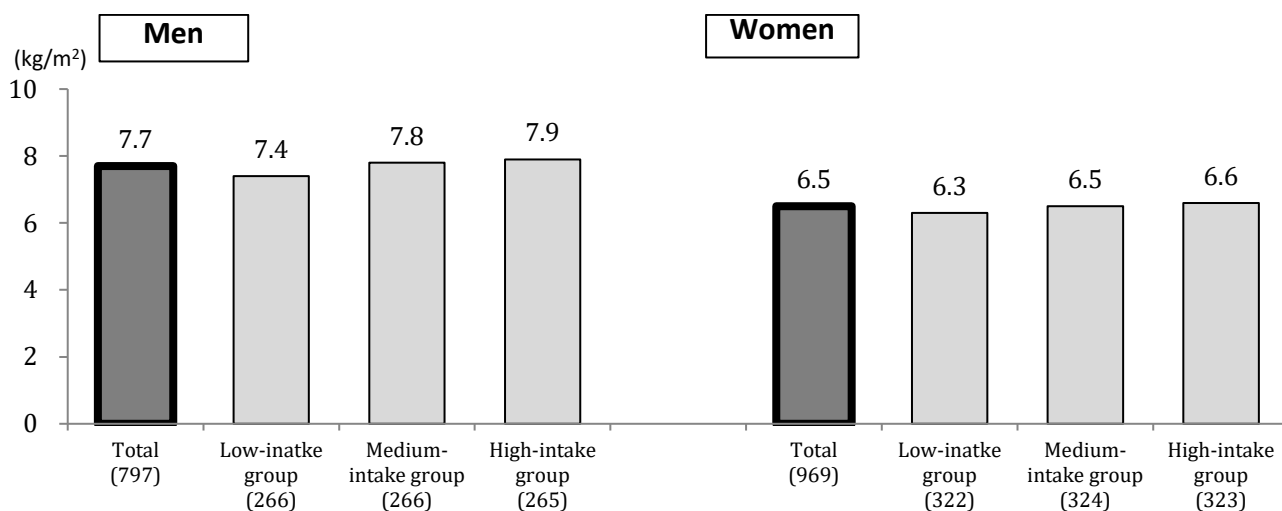


Figure 8. Mean values according to physique status and SMI (60 years or over, based on sex and age)

Mean SMI values were significantly higher for both men and women with higher protein intake. Similarly, the values were significantly higher for both men and women who engaged in manual labour.

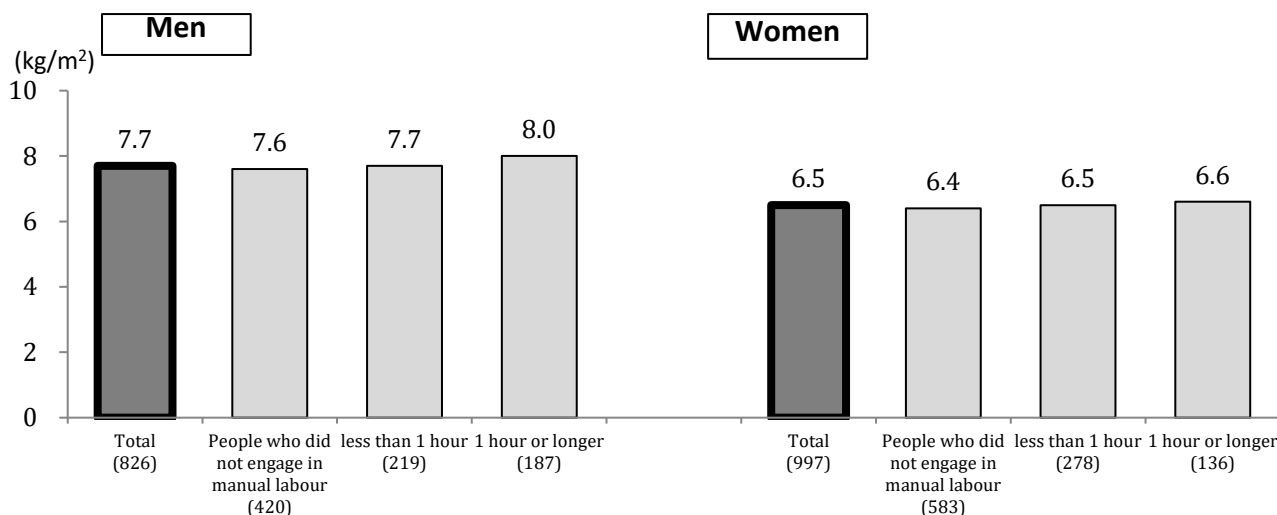
Mean SMI values by amounts of protein intake and time spent on manual labour were significantly higher for individuals who have higher protein intake and spend more hours engaging in manual labour.



*Men and women were classified into three groups according to their protein intake; low intake, medium intake and high intake groups (Men: Low intake group: below 67.7 g, medium intake group: 67.7 g to below 87.3 g, high intake group: 87.3 g or above, women: low intake group: below 59.9 g, medium intake group: 59.9 g to below 76.2 g, high intake group: 76.2 g or above)

*Mean SMI values by amounts of protein intake adjusted for age were as follows. For men, low intake group: 7.6 kg/m², middle intake group: 7.9 kg/m², and high intake group: 8.0 kg/m². For women, low intake group: 6.4 kg/m², middle intake group, 6.5 kg/m², and high intake group: 6.6 kg/m². Thus, the values were significantly higher for both men and women with higher protein intake levels.

Figure 9. Mean SMI values by amounts of protein intake (60 years over, based on sex)



*Mean SMI values by time spent on manual labour adjusted for age were as follows. For men, those who did not engage in manual labour: 7.7 kg/m², less than 1 hour: 7.9 kg/m², 1 hour or longer; and 8.0 kg/m². For women, those who did not engage in manual labour: 6.5 kg/m², less than 1 hour: 6.5 kg/m², and 1 hour or longer: 6.6 kg/m². Thus, the values were significantly higher for both men and women who spent longer time on manual labour.

Figure 10. Mean SMI values according to time spent on manual labour (60 years over, based on sex)

Table 1. Mean SMI values according to protein intake amount and time spent on manual labour (60 years or older, by sex)

	Low intake group		Middle intake group		High intake group	
	n	Mean (kg/m ²)	n	Mean (kg/m ²)	n	Mean (kg/m ²)
Men (total)	264	7.4	267	7.8	264	7.9
People who did not engage in manual labour	146	7.3	141	7.7	119	7.8
less than 1 hour	71	7.4	64	7.9	77	7.9
1 hour or longer	47	7.6	62	8.1	68	8.1
Women (total)	320	6.3	322	6.5	321	6.6
People who did not engage in manual labour	186	6.3	197	6.4	184	6.5
less than 1 hour	92	6.4	81	6.5	93	6.6
1 hour or longer	42	6.5	44	6.6	44	6.7

* Men and women were classified into three groups according to protein intake (Low, Middle-, and High intake groups).

(Men: Low intake group: below 67.6 g, Middle intake group: 67.6 g to below 87.3 g, High intake group: 87.3 g or above, women: Low intake group: below 59.9 g, Middle intake group: 59.9 g to below 76.2 g, High intake group: 76.2 g or above)

*Mean SMI values by amounts of protein intake and time spent on manual labour adjusted for age were significantly higher in individuals who had higher protein intake and those who spent longer time on manual labour.

4. Living conditions

With respect to lifestyle status, significant differences were observed between women aged 65-74 years and those aged 75 years or older for all items, while there were significant differences in the proportion of people who ‘stand up from a chair without any aids’ and ‘go shopping to buy daily necessities by oneself’ among men. For the results by living with others, there were significant differences in the proportion of people who ‘go shopping to buy daily necessities by oneself’ and ‘prepare meals by oneself’ among both men and women, which difference was greater among men compared to women.

For the results about the proportion of persons who had a low BMI ($\leq 20 \text{ kg/m}^2$) by going out at least a week, the proportion of men with ‘not-going out’ was higher than those with going out regardless of age category.

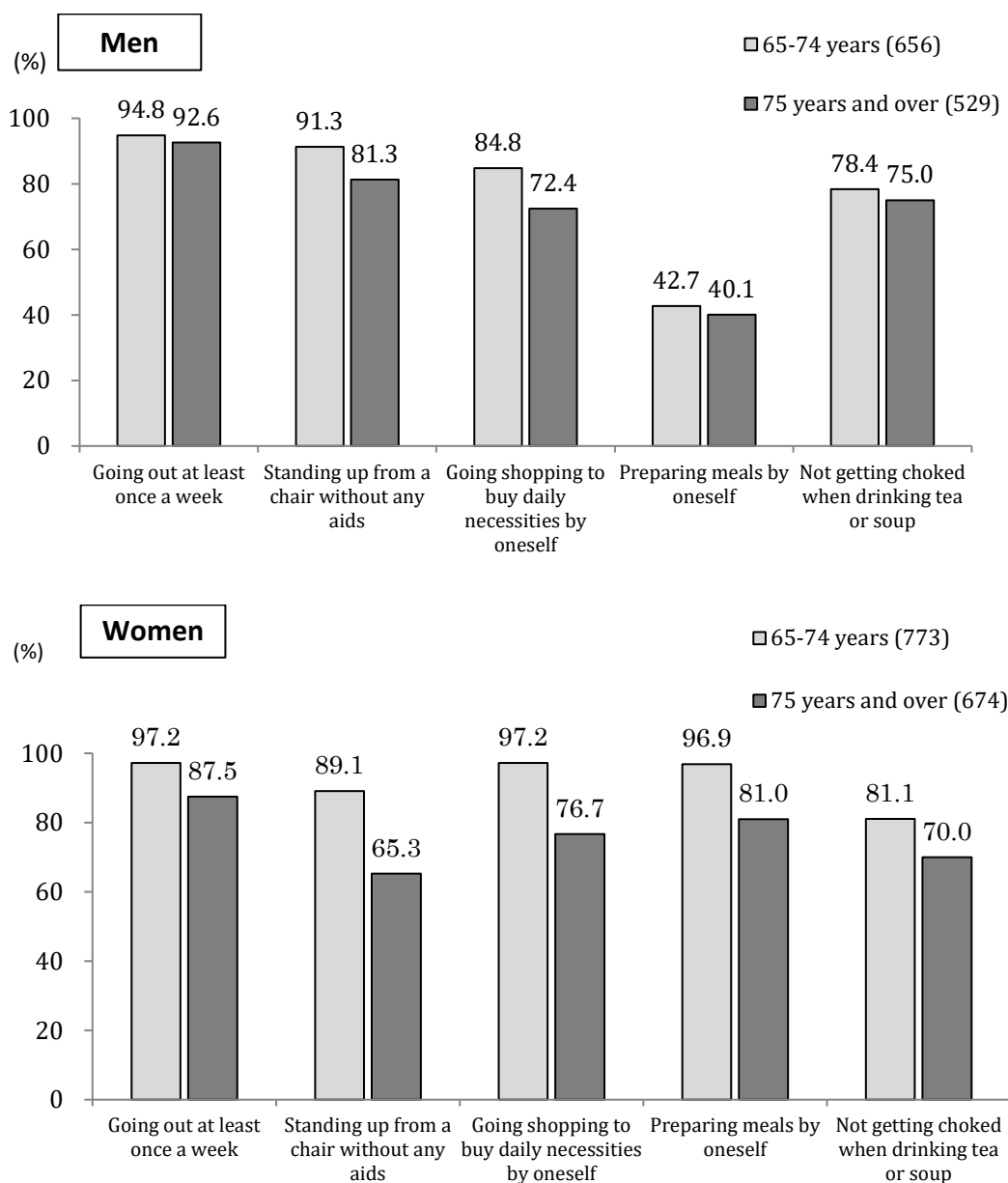


Figure 11. Lifestyle Status (65 years or over, based on sex and age)

*The numbers in the figure show those who answered ‘YES’ to ‘Do you go out at least once a week?’, ‘Can you normally stand up from a chair without any aids?’, ‘Do you go shopping to buy daily necessities by yourself?’ and ‘Do you prepare meals by yourself?’ and ‘NO’ to ‘Have you been choked on yourself tea or soup recently?’

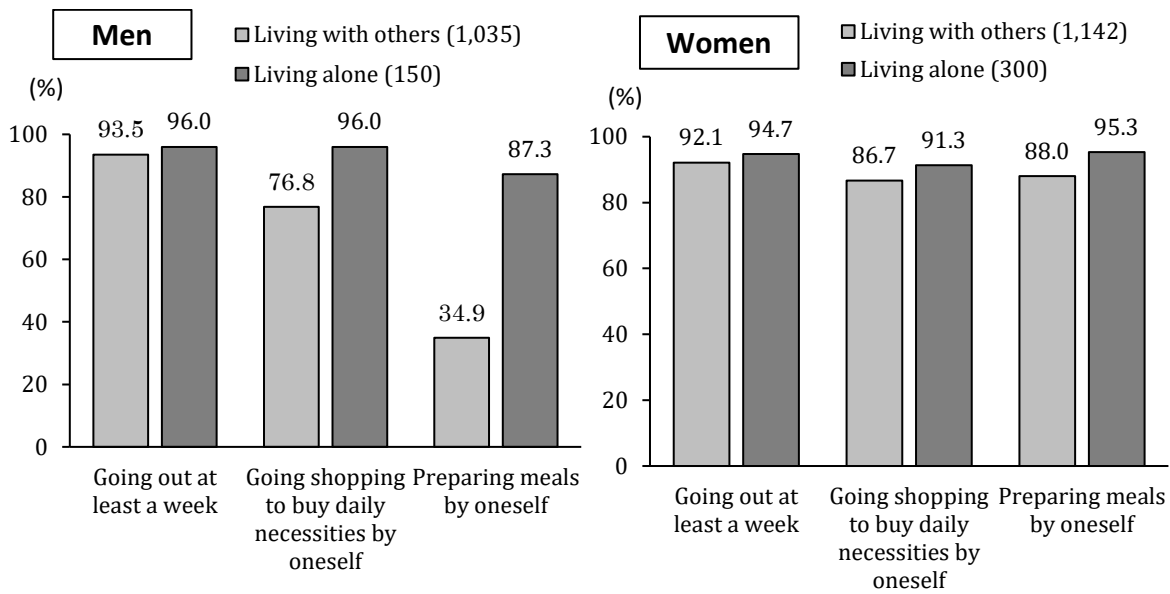


Figure 12. Lifestyle status by living with others (65 years and over, based on sex)

* ‘Living with others’ refers to those who answered ‘Two or more’ to the question ‘How many people, including yourself, do you live with?’, and ‘Living alone’ refers to those who answered ‘One’.

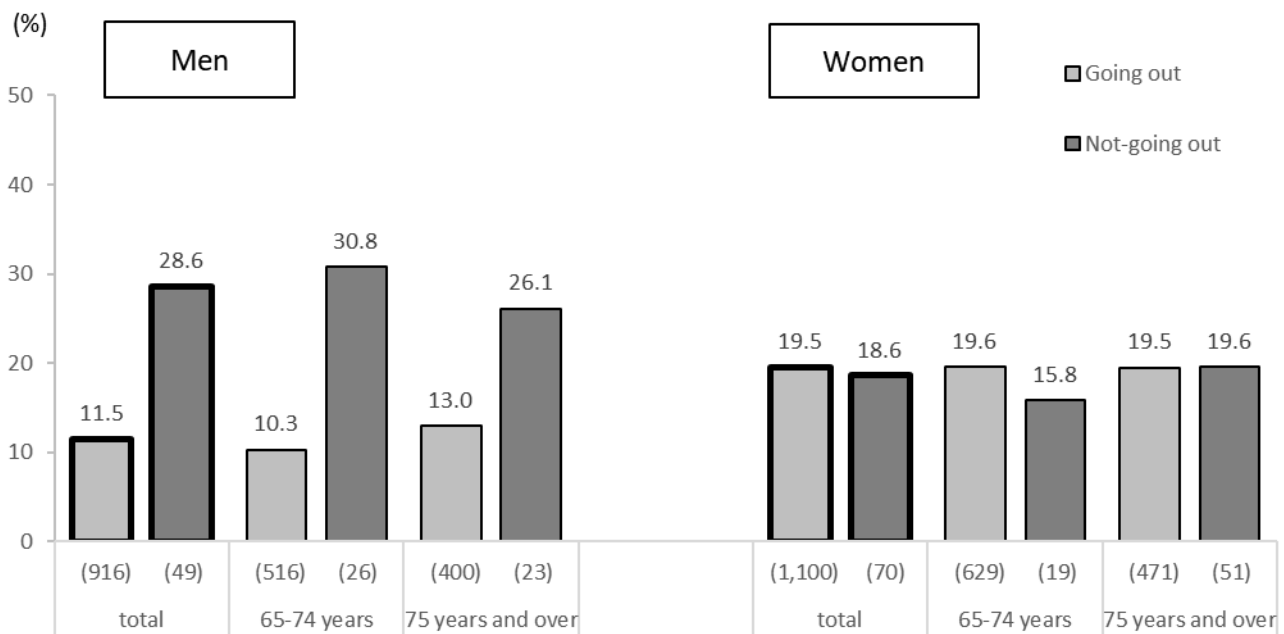


Figure 13. Proportion of persons who had a low BMI ($\leq 20 \text{ kg/m}^2$) by going out at least a week (65 years or over, based on sex and age)

*“Going out” refers to those who answered “YES” to the question “Do you go out at least once per week?” and “Not going out” refers to those who answered ‘NO’.

5. Dental Health (Oral Health)

The proportion of persons 'who are able to chew any type of food' and those with more than 20 teeth decrease sharply after age 60. Moreover, among individuals 60 years or older, the proportion of those who had a low BMI ($\leq 20 \text{ kg/m}^2$) among those 'who are able to chew any type of food' was 10.2% for men and 18.0% for women. Differences in the proportion between persons with 'being able to chew any type of food' and others were greater in women than in men.

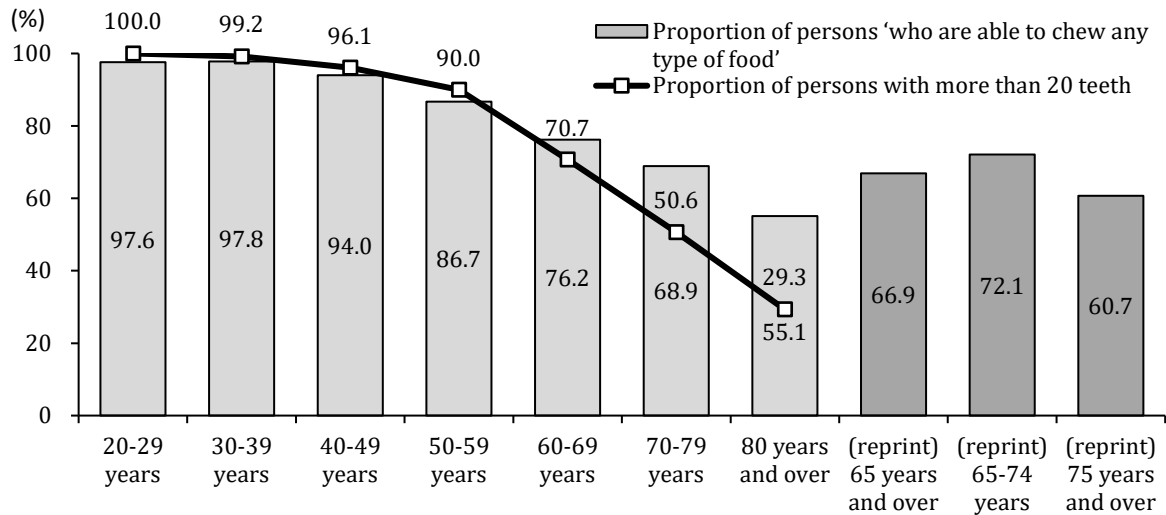


Figure 14. Proportion of individuals 'who are able to chew any type of food' and with more than 20 teeth (aged 20 years and over, totals for men and women, based on age)

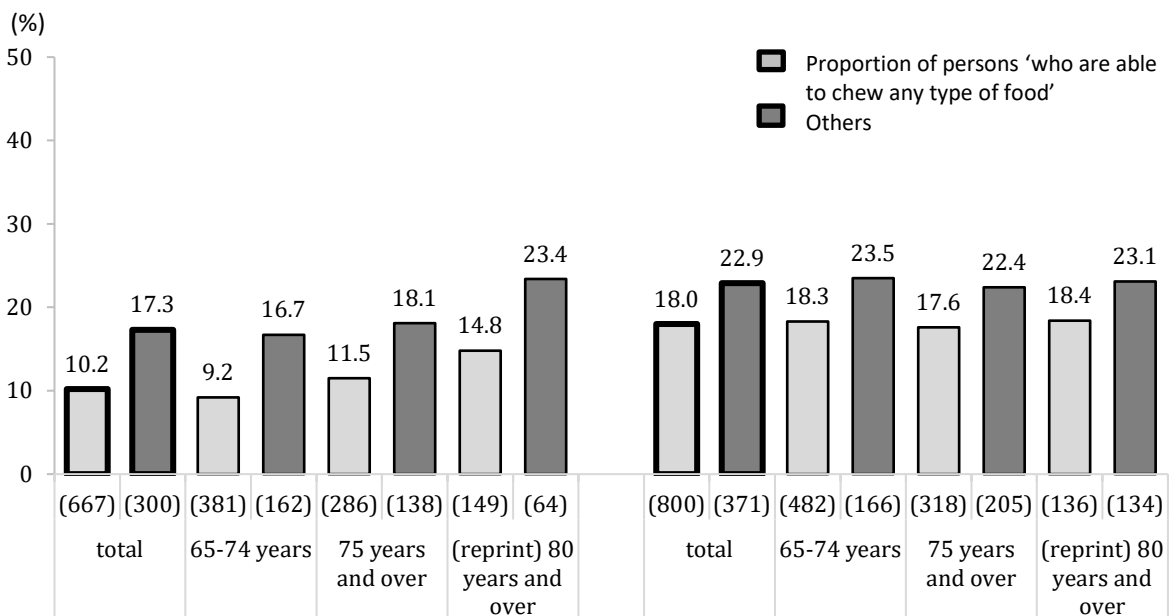


Figure 15. Proportion of individuals who had a low BMI ($\leq 20 \text{ kg/m}^2$) by chewing ability (%) (aged 65 years and over, based on sex and age)

*Persons other than those 'who are able to chew any type of food' refers to those who answered 'I cannot chew some food types', 'I often cannot chew foods', or 'I cannot chew food' regarding their chewing ability.

Part II. Results of Basic Items

Chapter 1. Physical Condition

1. Status Regarding Obesity and Underweight

The proportion of obese men and women ($BMI \geq 25 \text{ kg/m}^2$) was 30.7% and 21.9%, respectively, with no significant change over the past 10 years in both the sexes.

The proportion of underweight men and women ($BMI < 18.5 \text{ kg/m}^2$) was 4.0% and 10.3%, respectively, with a significant increase in the number of women, over the past 10 years. Additionally, the proportion of underweight women aged 20-29 years was 21.7%.

Evaluation of obesity: BMI (Body mass index [kg/m^2]: body weight [kg]/(height [m])²) was used to evaluate obesity (Obesity Criteria-Reviewing Committee of Japan Society for the Study of Obesity, 2011).

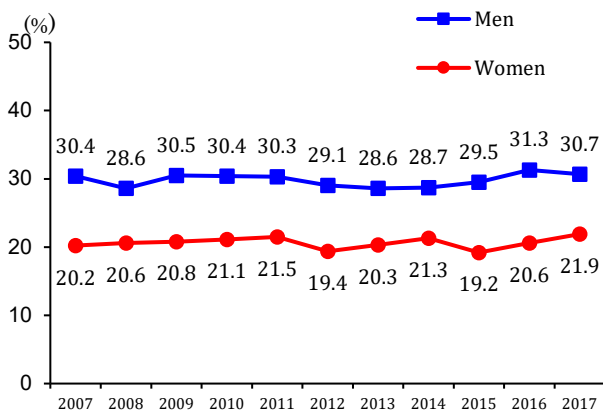


Figure 16-1. Annual Changes in Proportion of Obesity ($BMI \geq 25 \text{ kg/m}^2$) (aged 20 years and over) (2007 to 2017)

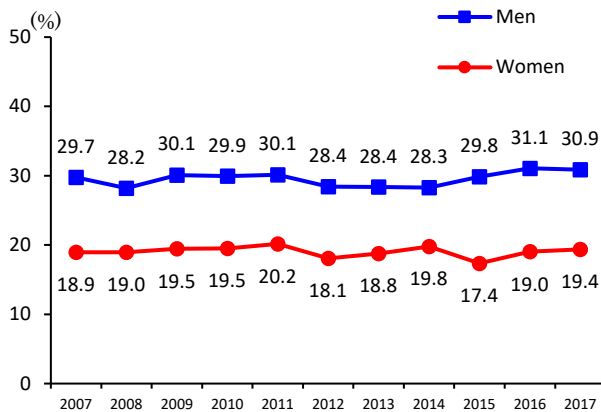


Figure 16-2. Annual Changes in the Age-adjusted Proportion of Obesity ($BMI \geq 25 \text{ kg/m}^2$) (aged 20 years and over) (2007 to 2017)

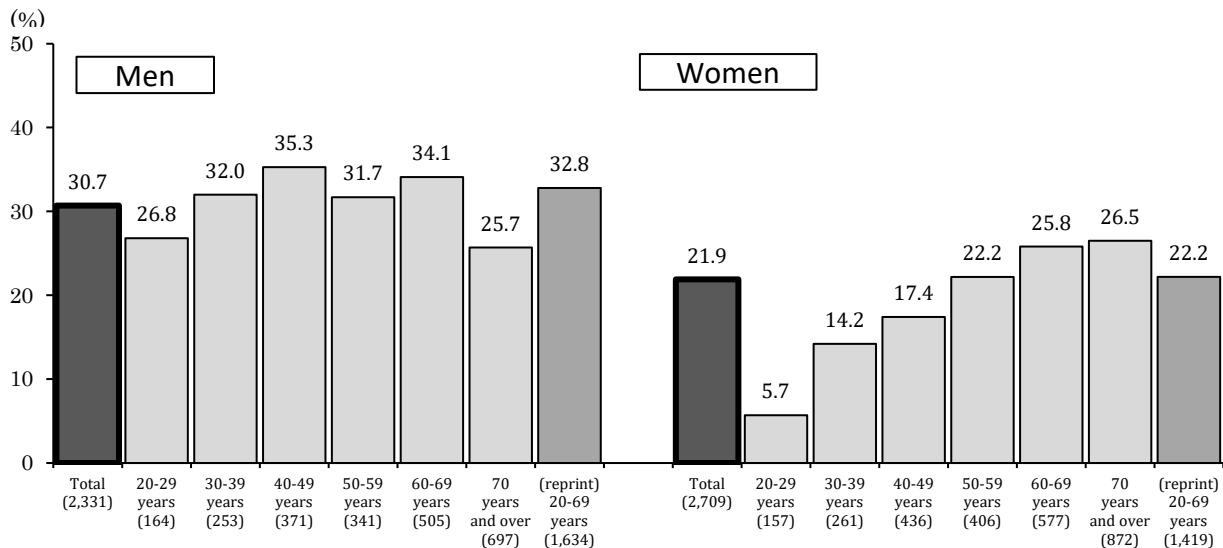


Figure 17. Proportion of Obesity ($BMI \geq 25 \text{ kg/m}^2$) (aged 20 years and over, based on sex and age)

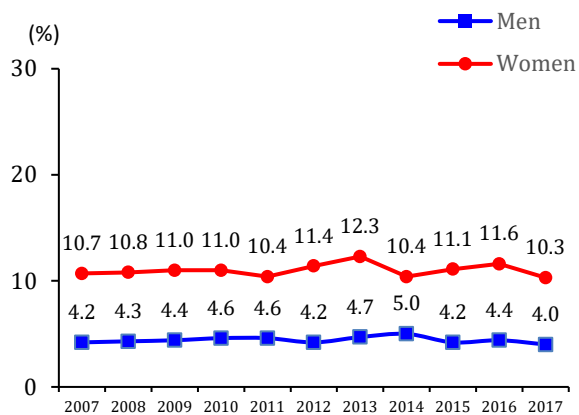


Figure 18-1. Annual Changes in the Proportion of Under- weight Persons (BMI < 18.5 kg/m²) (aged 20 years and over) (2007 to 2017)

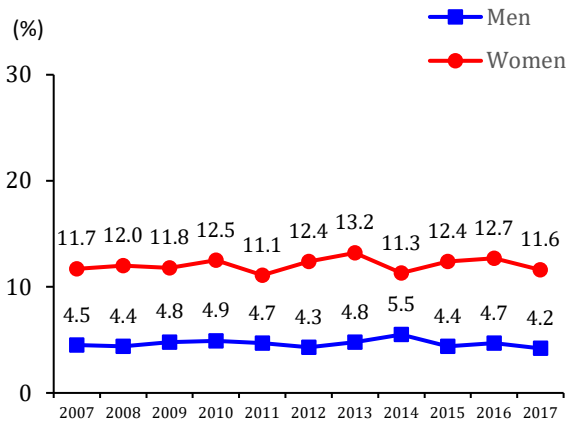


Figure 18-2. Annual Changes in the Age-adjusted Proportion of Underweight Persons (BMI < 18.5 kg/m²) (aged 20 years and over) (2007 to 2017)

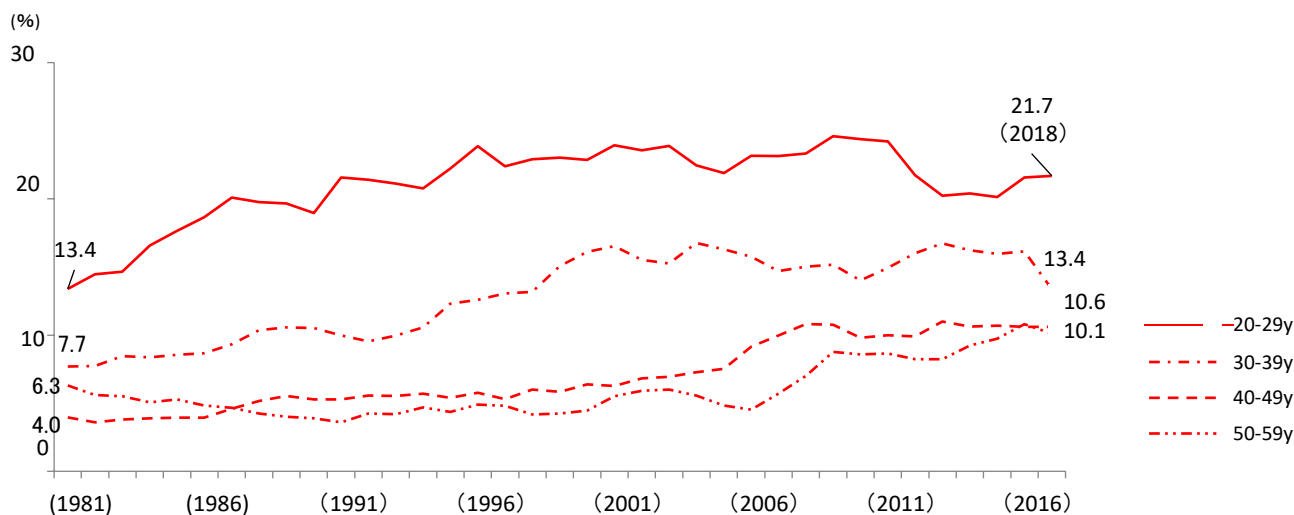


Figure 19. Proportion of underweight (BMI<18.5 kg/m²) individuals (aged 20 to 59 years, Women)

Prepared from smoothed results with moving averaging.

*Moving averaging refers to cumulatively adding the results of each year to those of the previous and following years and averaging out the total for three years in order to reduce any variations in results each year.

However, the results for 2017 are single-year results.

(Reference) Underweight (BMI<18.5 kg/m²) individuals

“Healthy Japan 21 (the second term)” indicates that underweight of young women was related to be increased risk for decreased bone mass and delivering a low birth weight baby.

2. Status Regarding Diabetes

The proportion of “persons in whom diabetes is strongly suspected” was 18.1% and 10.5%, respectively, among men and women, which has not changed significantly in the past 10 years. The proportion was higher in the older age category.

▼Determining “persons in whom diabetes is strongly suspected”

Of individuals who underwent haemoglobin A1c measurement, haemoglobin A1c (NGSP) level was 6.5% or above and answered “yes” on the question “whether they were receiving diabetes treatment”.

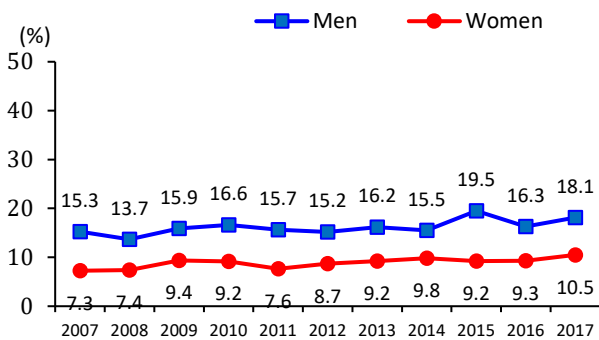


Figure 20-1. Annual Changes in the Proportion of “Persons in Whom Diabetes is Strongly Suspected” (aged 20 years and over) (2007 to 2017)

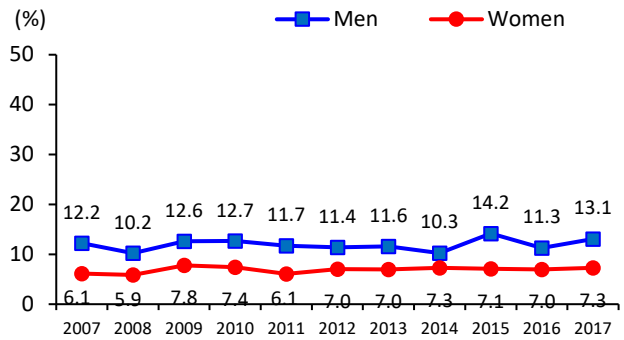


Figure 20-2. Annual Changes in the Age-adjusted Proportion of “Persons in Whom Diabetes is Strongly Suspected” (aged 20 years and over) (2007 to 2017)

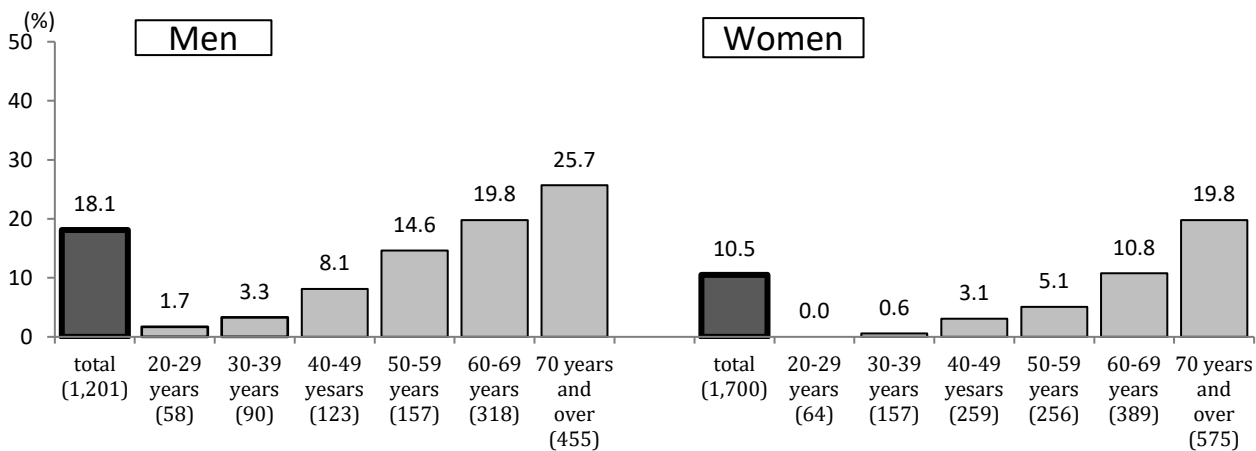


Figure 21. The Proportion of “persons in whom diabetes is strongly suspected” (aged 20 years and older, based on sex and age)

3. Status Regarding Blood Pressure

The mean systolic blood pressure in men and women were 135.2 and 128.9 mmHg, respectively. The values in both men and women have significantly decreased over the past 10 years.

The proportion of persons with a systolic blood pressure of 140 mmHg or higher in men and women were 37.0% and 27.8%, respectively. These values have decreased significantly in both men and women over the past 10 years.

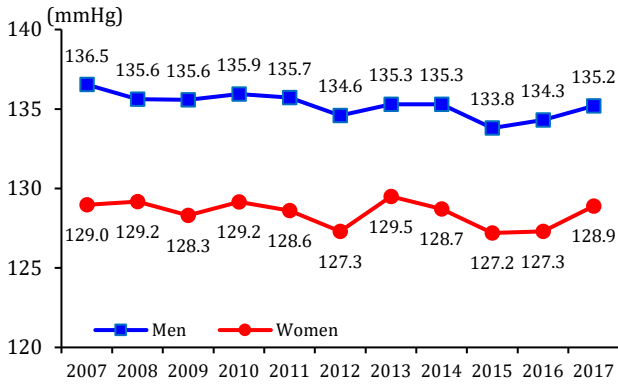


Figure 22-1. Annual Changes in the Mean Systolic Blood Pressure (aged 20 years and over) (2007 to 2017)

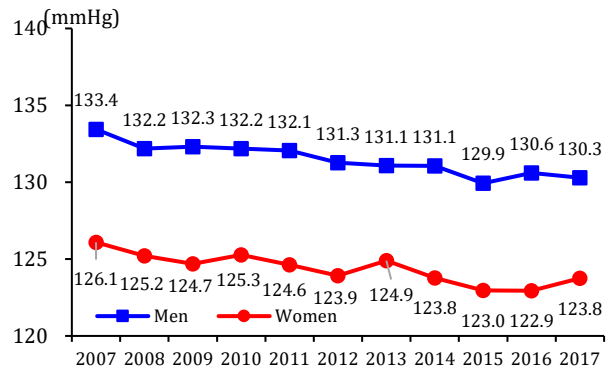


Figure 22-2. Annual Changes in the Age-adjusted Mean Systolic Blood Pressure (aged 20 years and over) (2007 to 2017)

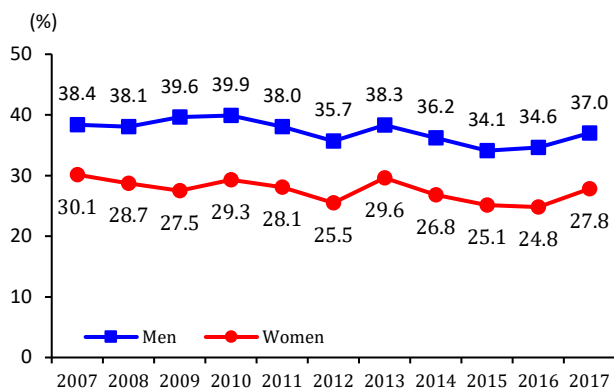


Figure 23-1. Annual Changes in the Proportion of Persons with a Systolic Blood Pressure of 140 mmHg or Higher (aged 20 years and over) (2007 to 2017)

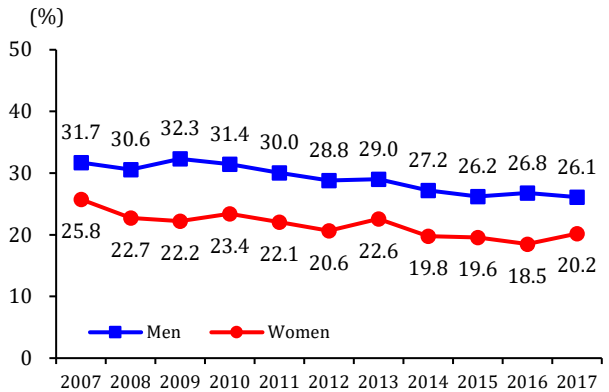


Figure 23-2. Annual Changes in the Age-adjusted Proportion of Persons with a Systolic Blood Pressure of 140 mmHg or Higher (aged 20 years and over) (2007 to 2017)

4. Status Regarding Blood Cholesterol

The proportion of persons with a serum total cholesterol level of 240 mg/dL or higher in men and women were 12.4% and 19.8%, respectively. There was no significant change in these proportions over the past 10 years.

The mean serum non-HDL cholesterol levels were 142.9 and 143.2 mg/dL, respectively. There was no significant change in these levels over the past 10 years.

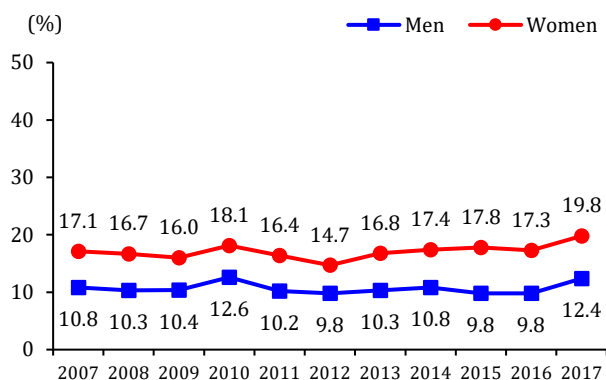


Figure 24-1. Annual Changes in the Proportion of Persons with Serum Total Cholesterol Level of 240 mg/dL or Higher (aged 20 years and over) (2007 to 2017)

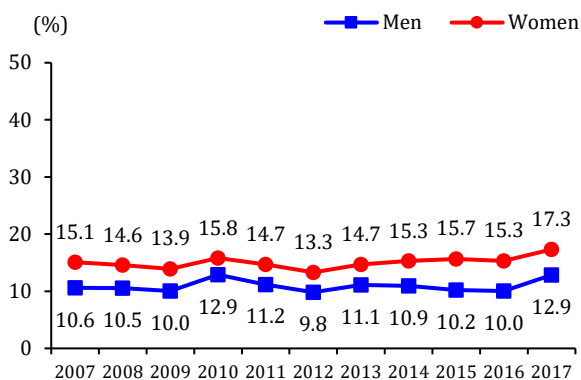


Figure 24-2. Annual Changes in the Age-adjusted Proportion of Persons with Serum Total Cholesterol Level of 240 mg/dL or Higher (aged 20 years and over) (2007 to 2017)

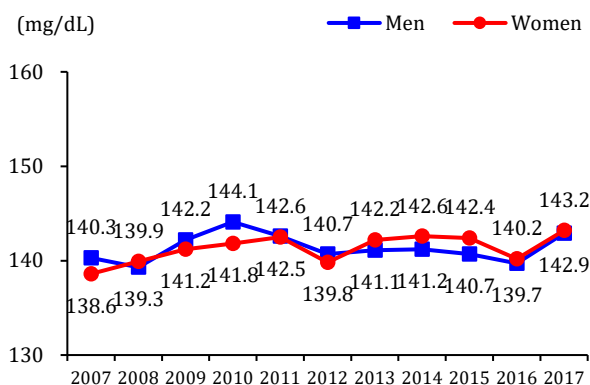


Figure 25-1. Annual Changes in the Mean Serum non-HDL Level (aged 20 years and over) (2007 to 2017)

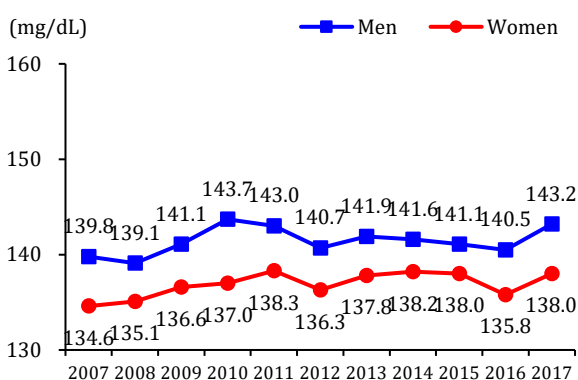


Figure 25-2. Annual Changes in the Age-adjusted Mean Serum non-HDL Level (aged 20 years and over) (2007 to 2017)

*non-HDL cholesterol (mg/dL) = total cholesterol (mg/dL) – HDL cholesterol (mg/dL)

Chapter 2. Status Regarding Nutrition/Dietary Habits

1. Salt Intake

The mean salt intake for all participants was 9.9 g. It was 10.8 g in men and 9.1 g in women. These values show a significant decrease in all participants, men and women over the past 10 years. Men aged 20 to 39 years and women aged 20 to 29 years had the lowest salt intake, whereas the persons aged 60 to 69 years had the highest intake among both men and women.

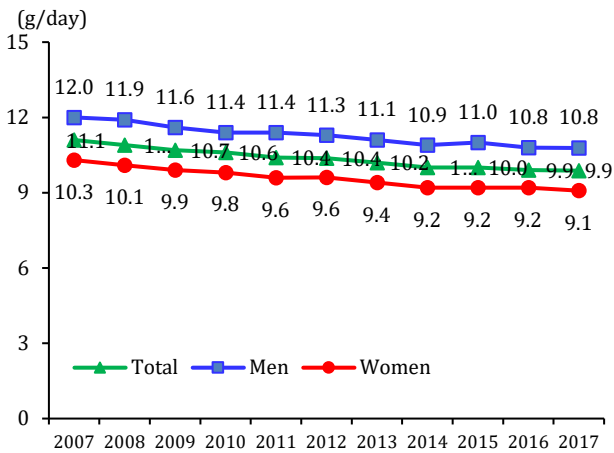


Figure 26-1. Annual Changes in the Mean Salt Intake (aged 20 years and over) (2007 to 2017)

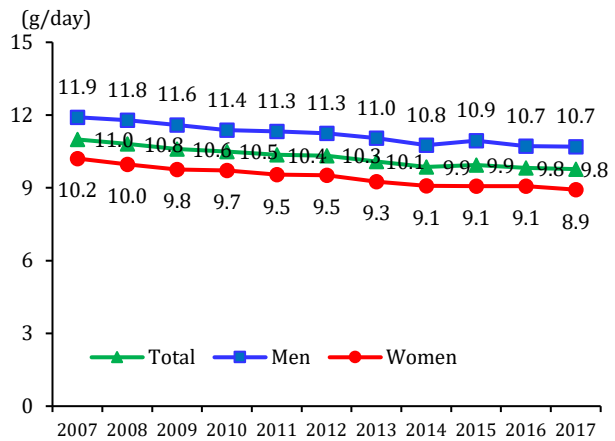


Figure 26-2. Annual Changes in the Age-adjusted Mean Salt Intake (aged 20 years and over) (2007 to 2017)

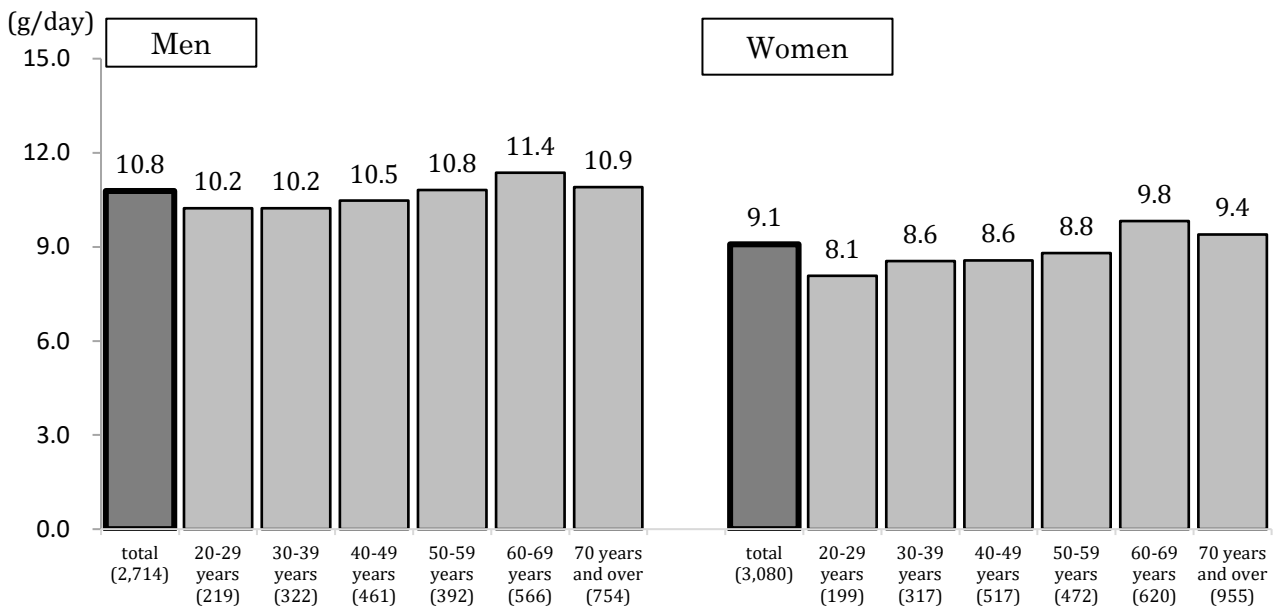


Figure 27. Mean Salt Intake (aged 20 years and over, based on sex and age)

2. Vegetable Intake

The mean vegetable intake was 288.2 g in all participants, and 295.4 g and 281.9 g in men and women, respectively, which has not changed significantly in the past 10 years.

Men aged 30 to 39 years and women aged 20 to 29 years had the lowest vegetable intake, whereas those aged 60 to 69 years had the highest intake among both men and women.

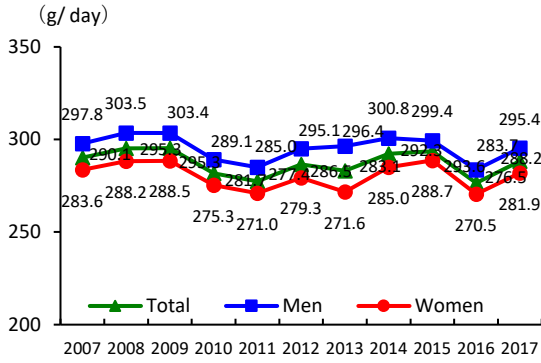


Figure 28-1. Annual Changes in the Mean Vegetable Intake (aged 20 years and over) (2007 to 2017)

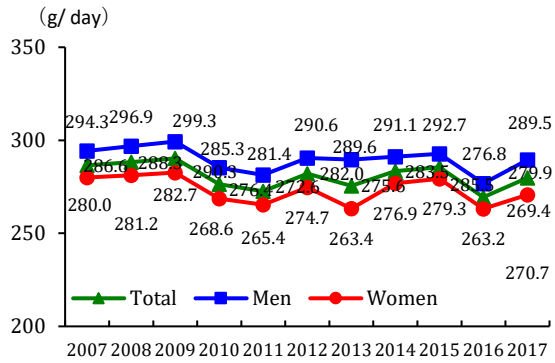


Figure 28-2. Annual Changes in the Age-adjusted Mean Vegetable Intake (aged 20 years and over) (2007 to 2017)

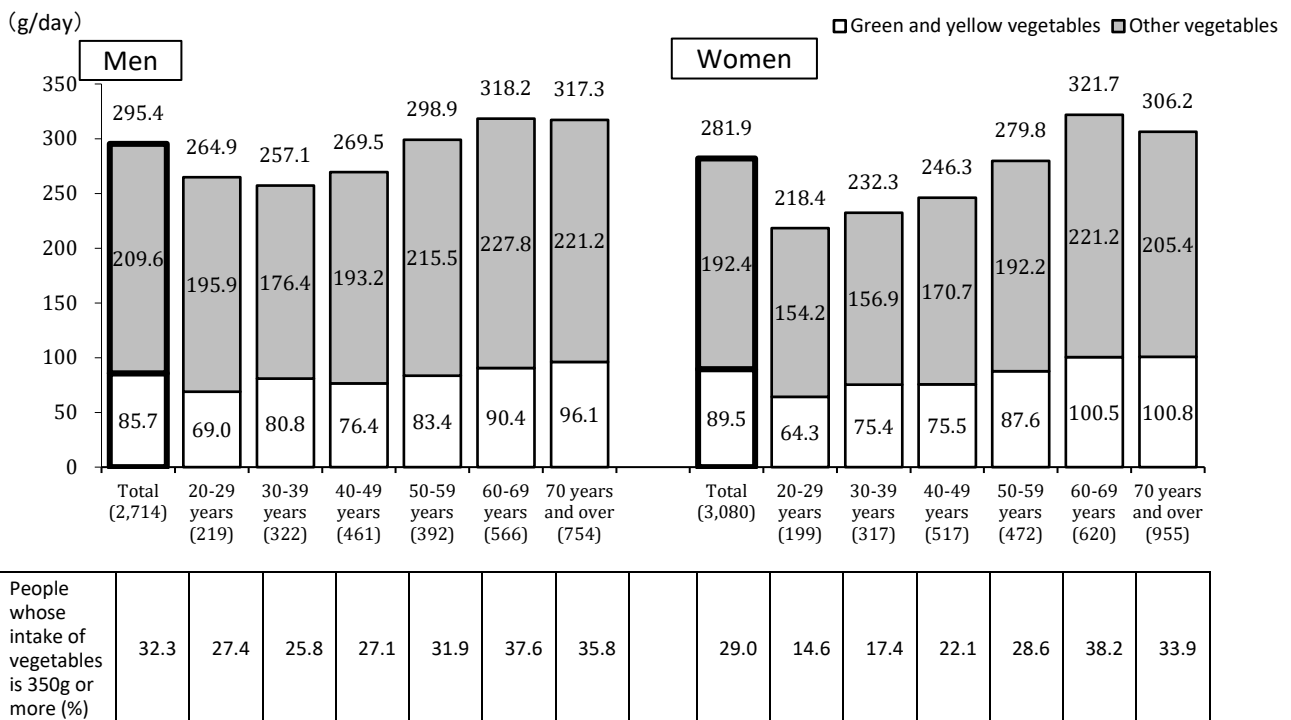


Figure 29. Mean Vegetable Intake (aged 20 years and over, based on sex and age)

3. Breakfast Skipping

The breakfast skipping rate among men and women were 15.0% and 10.2%, respectively. The highest proportion of persons skipping breakfast were observed in persons aged 20 to 29 years in both men (30.6%) and women (23.6%).

▼ Breakfast skipping rate

The breakfast skipping rate was defined as the proportion of individuals who skipped breakfast on the day of the survey (any one day). Breakfast skipping refers any of the following: not eating at all, consuming only supplements such as tablets or nutrition-supplement drink, or consuming only foods/drinks such as confectionery, fruits, dairy products, or soft drinks.

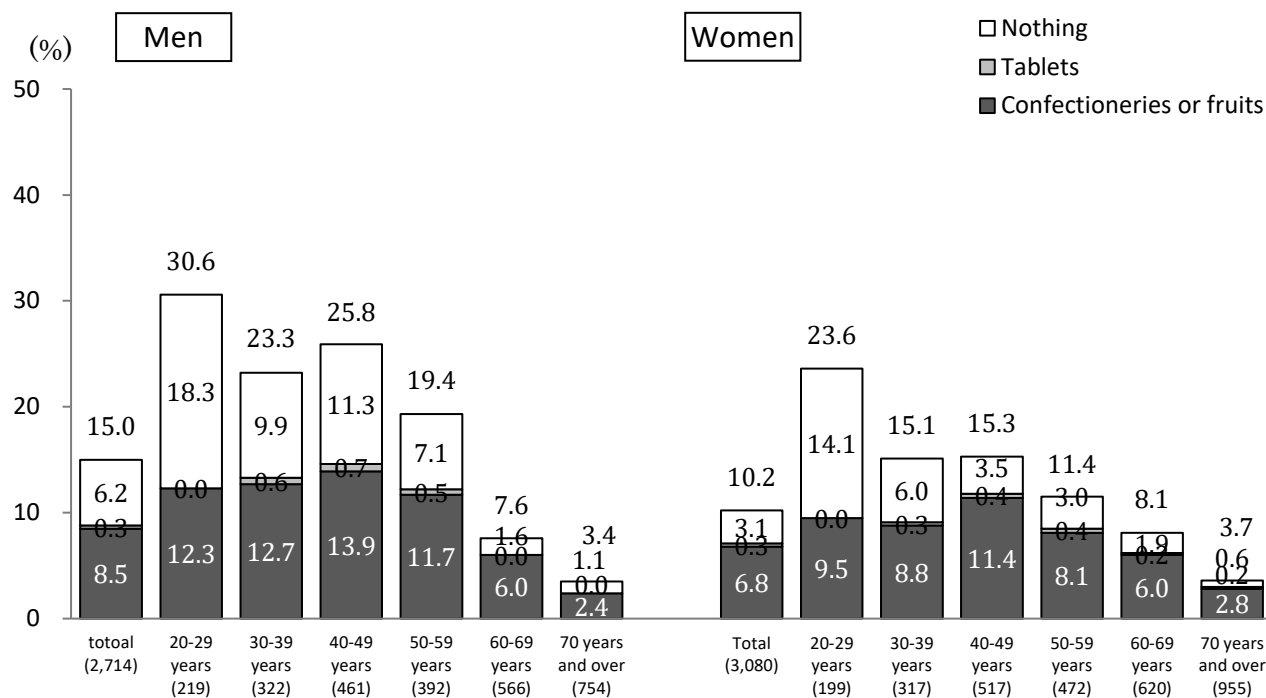


Figure 30. Details of Breakfast Skipping (aged 20 years and over, based on sex and age)

Table 2. Annual Changes in Breakfast Skipping Rate (aged 20 years and over, based on sex and age) (2007 to 2017)

(%)

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Men	Total	14.7	15.8	15.5	15.2	16.1	14.2	14.4	14.3	14.3	15.4	15.0
	20-29 years	28.6	30.0	33.0	29.7	34.1	29.5	30.0	37.0	24.0	37.4	30.6
	30-39 years	30.2	27.7	29.2	27.0	31.5	25.8	26.4	29.3	25.6	26.5	23.3
	40-49 years	17.9	25.7	19.3	20.5	23.5	19.6	21.1	21.9	23.8	25.6	25.8
	50-59 years	11.8	15.1	12.4	13.7	15.0	13.1	17.8	13.4	16.4	18.0	19.4
	60-69 years	7.4	8.1	9.1	9.2	6.3	7.9	6.6	8.5	8.0	6.7	7.6
	70 years and over	3.4	4.6	4.9	4.2	3.7	3.9	4.1	3.2	4.2	3.3	3.4
Women	Total	10.5	12.8	10.9	10.9	11.9	9.7	9.8	10.5	10.1	10.7	10.2
	20-29 years	24.9	26.2	23.2	28.6	28.8	22.1	25.4	23.5	25.3	23.1	23.6
	30-39 years	16.3	21.7	18.1	15.1	18.1	14.8	13.6	18.3	14.4	19.5	15.1
	40-49 years	12.8	14.8	12.1	15.2	16.0	12.1	12.2	13.5	13.7	14.9	15.3
	50-59 years	9.7	13.4	10.6	10.4	11.2	9.2	13.8	10.7	11.8	11.8	11.4
	60-69 years	5.1	8.6	7.2	5.4	7.6	6.5	5.2	7.4	6.7	6.3	8.1
	70 years and over	3.8	5.2	4.7	4.6	3.8	3.6	3.8	4.4	3.8	4.1	3.7

Values are presented as percentages.

Chapter 3. Physical Activity, Exercise, and Sleep

1. Exercise Habits

The proportions of persons who exercised regularly was 35.9% and 28.6% in men and women, respectively. These proportions showed no significant change in men over the past 10 years, but showed a decrease in women. The lowest proportion of those who exercised regularly was observed among individuals aged 30 to 39 years in men and individuals aged 20 to 29 years in women (14.7% and 11.6%, respectively).

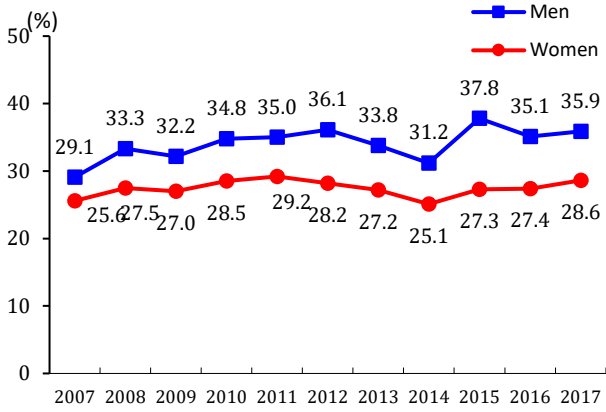


Figure 31-1. Annual Changes in the Proportion of Persons who exercised regularly (aged 20 years and over) (2007 to 2017)

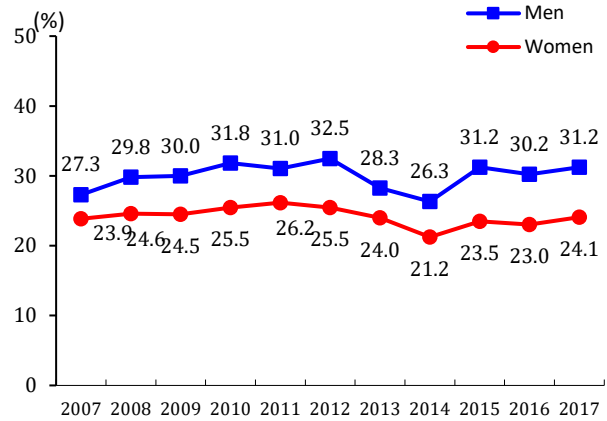


Figure 31-2. Annual Changes in the Age-adjusted Proportion of Persons who exercised regularly (aged 20 years and over) (2007 to 2017)

* Regular exercise was defined as exercise activities for 30 minutes or longer per session, twice a week or more for at least one year.

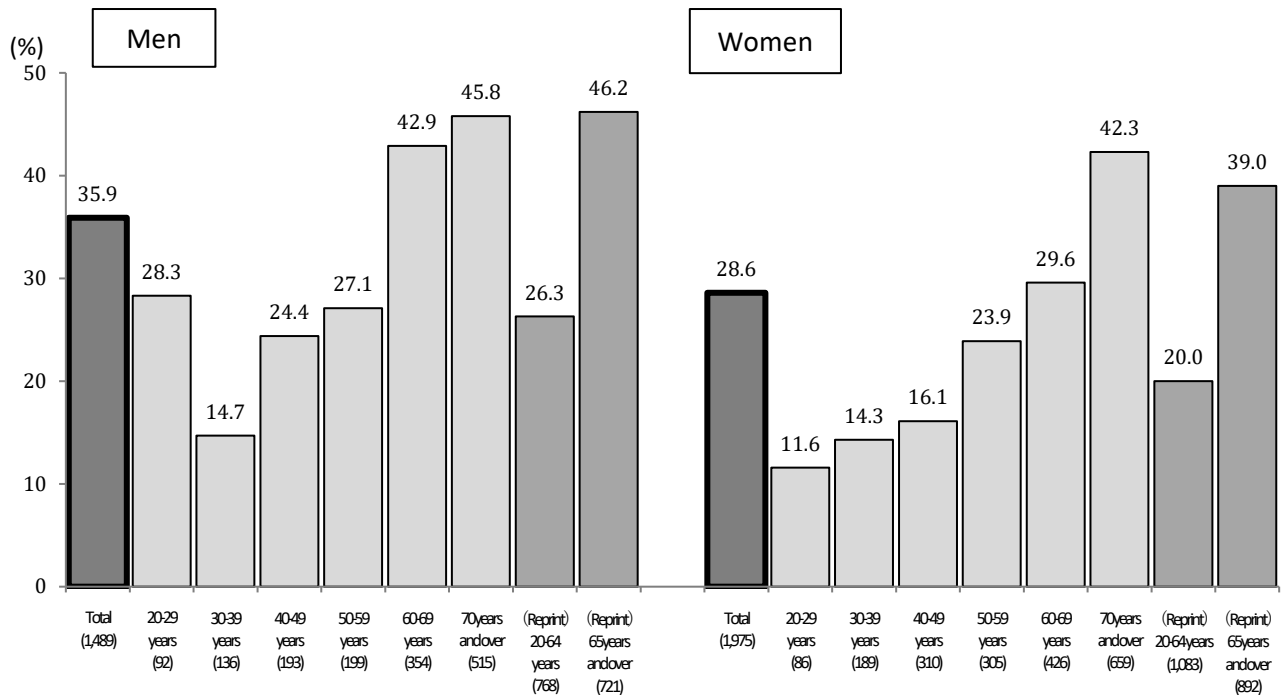


Figure 32. Proportion of Persons with Regular Exercise (aged 20 years and over, based on sex and age)

2. Number of Steps Taken Daily

The mean number of steps walked by men and women were 6,846 and 5,867, respectively, and these numbers showed no significant changes over the past 10 years.

The mean number of steps for men and women aged 20-64 years was 7,636 and 6,657, respectively, while that for men and women aged 65 years and over was 5,597 and 4,726, respectively.

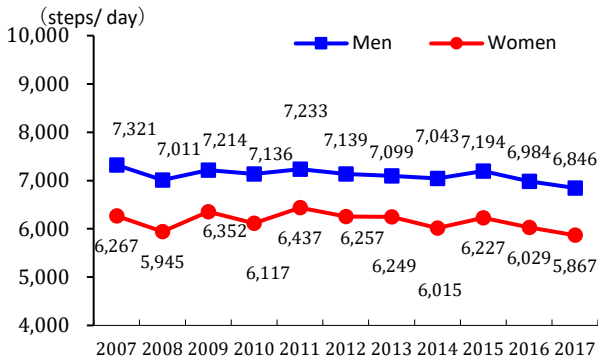


Figure 33-1. Annual Changes in the Mean Number of Steps (aged 20 years and over) (2007 to 2017)

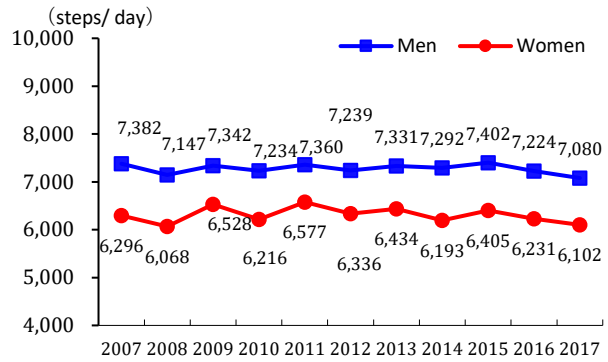


Figure 33-2. Annual Changes in the Age-adjusted Mean Number of Steps (aged 20 years and over) (2007 to 2017)

* The participants of the surveys in 2012 or later taking less than 100 steps or 50,000 steps and over were excluded from the figures above.

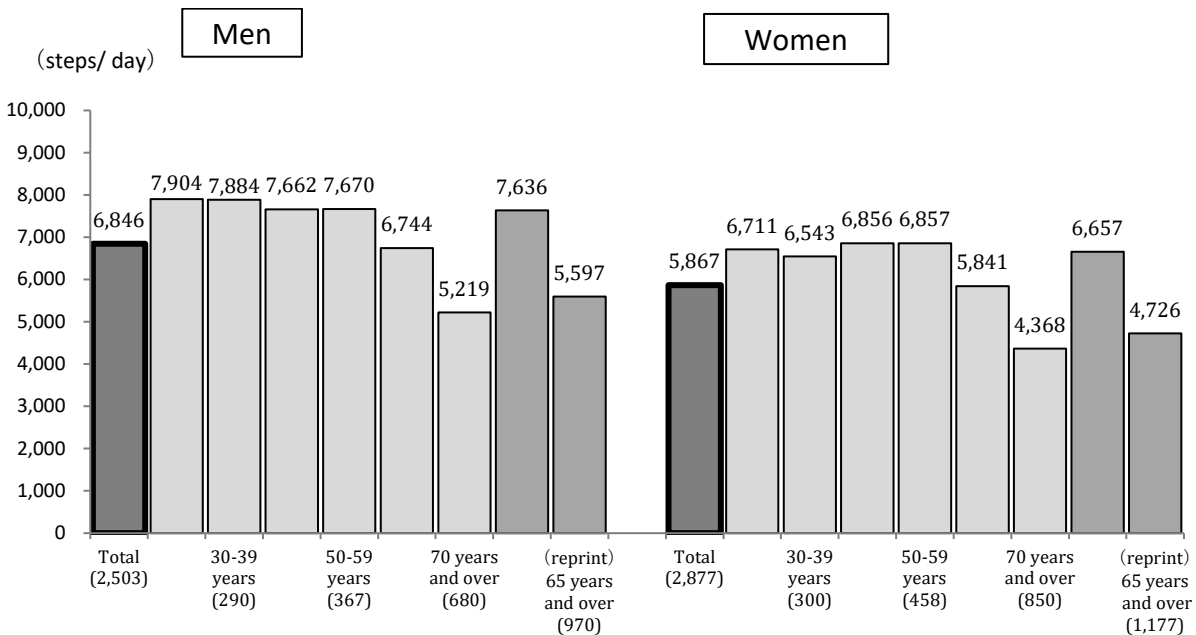


Figure 34. Mean Number of Steps (aged 20 years and over, based on sex and age)

* The persons taking less than 100 steps or 50,000 steps and over were excluded.

3. Sleep

The proportion of those whose mean sleeping duration during the past month was 6-7 hours/day was the highest and the value was 35.0% in men and 33.4% in women. The proportion of individuals who slept for less than 6 hours was 36.1% for men and 42.1% for women. The highest proportion of those who slept for less than 6 hours was observed both among men and women aged 40 to 49 years. (48.5% and 52.4%, respectively). The proportion of persons with not enough sleep during the past one month was 20.2%. Lack of sleep showed a significantly increasing trend since 2009 surveys.

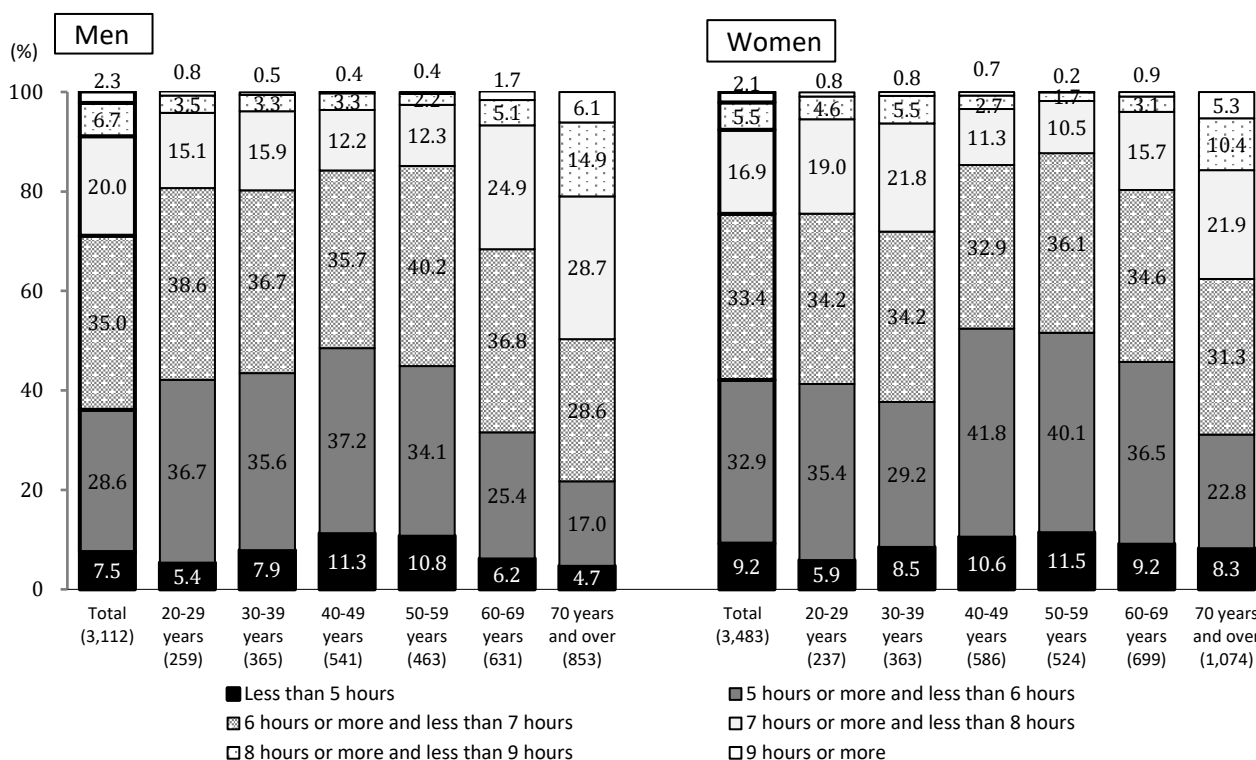


Figure 35. Proportion of mean sleep duration per day (aged 20 years and over, based on sex and age)

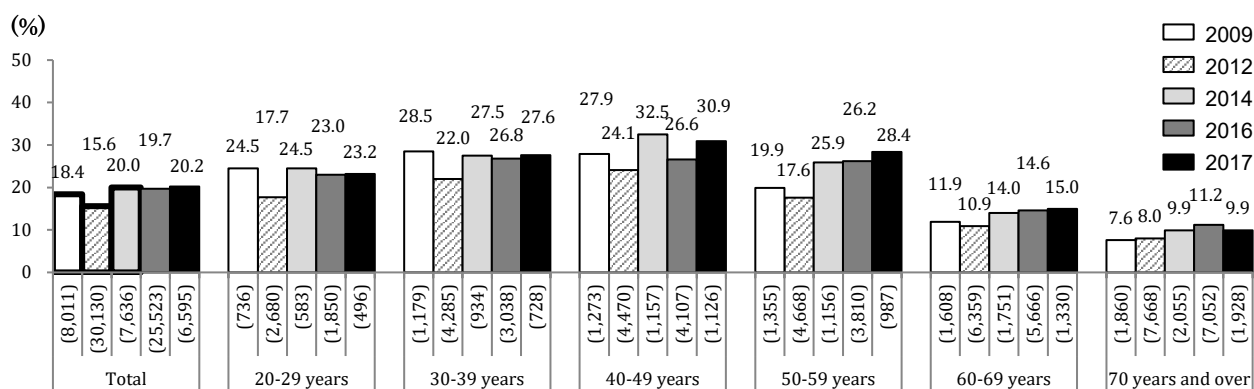


Figure 36. Annual Changes in the Proportion of Persons with not enough Sleep (aged 20 years and over, total of men and women, based on age) (2009, 2012, 2014, 2016 and 2017)

*Persons with not enough sleep were those who responded that resting during sleep was “not enough” or “no sleep.”

*The age-adjusted proportion (total number) of persons with shortage sleep in 2009, 2012, 2014, 2016 and 2017 was 19.4%, 16.3%, 21.7%, 20.9% and 21.9%, respectively. A significant increase was observed from 2009.

Chapter 4. Status Related to Alcohol Consumption and Smoking

1. Alcohol Consumption

The proportions of those who drink alcohol at a level which increases the risk of lifestyle-related diseases were 14.7% and 8.6% in men and women, respectively. Compared to the proportions noted in 2010, there was no significant change in men, but a significant increase was observed in women. The highest proportions were observed both in men and women aged 40 to 49 years (21.4% and 15.2%, respectively).

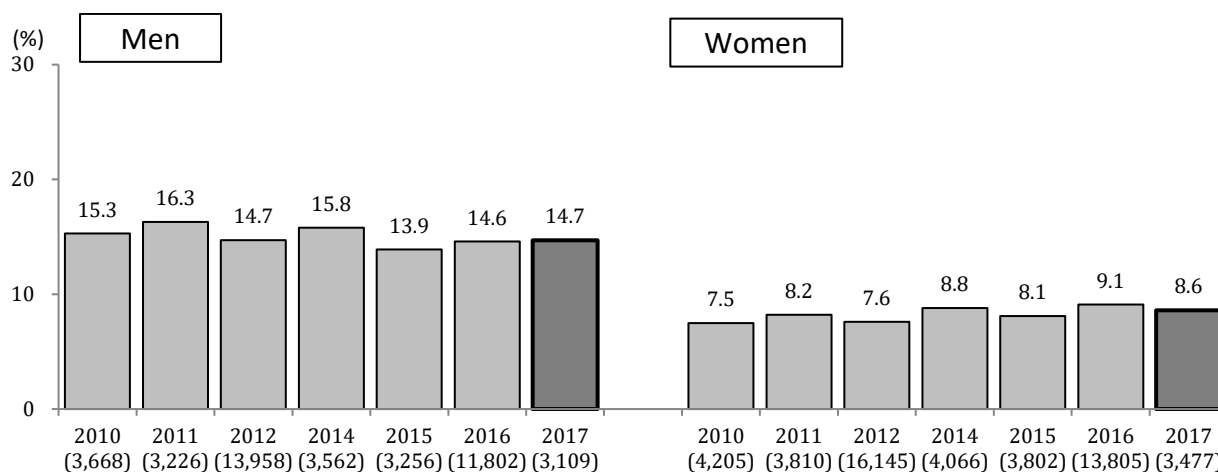


Figure 37. Annual changes in proportion of persons who drink alcohol at a level which increases the risk of lifestyle-related diseases (aged 20 years and over, based on sex) (2010, 2011, 2012, 2014, 2015, 2016, and 2017)

*Not implemented in 2013

* “Those who drink alcohol at a level which increases the risk of lifestyle-related diseases” refers to men and women who consumed 40 g or more and 20 g or more, respectively of pure alcohol daily. This included:

(1) Men who consumed 360 mL or more of sake every day, 360 mL or more 5 to 6 times a week, 540 mL or more 3 to 4 times a week, 900 mL or more once or twice a week or 900 mL or more 1 to 3 times a month.

(2) Women who consumed 180 mL or more of sake every day, 180 mL or more 5 to 6 times a week, 180 mL or more 3 to 4 times a week, 540 mL or more once or twice a week or 900 mL or more 1 to 3 times a month.

The age-adjusted proportions of men and women who consumed alcohol at a level which increases the risk of lifestyle-related diseases were 15.3% and 8.0%, respectively in 2010, 16.5% and 8.9%, respectively in 2011, 14.6% and 7.9%, respectively in 2012, 15.7% and 9.5%, respectively in 2014, 13.6% and 8.6%, respectively in 2015, 14.7% and 9.5%, respectively in 2016, and 14.8% and 9.3%, respectively in 2017. Compared to the trends from 2010, there was no significant change in men, but a significant increase was observed in women.

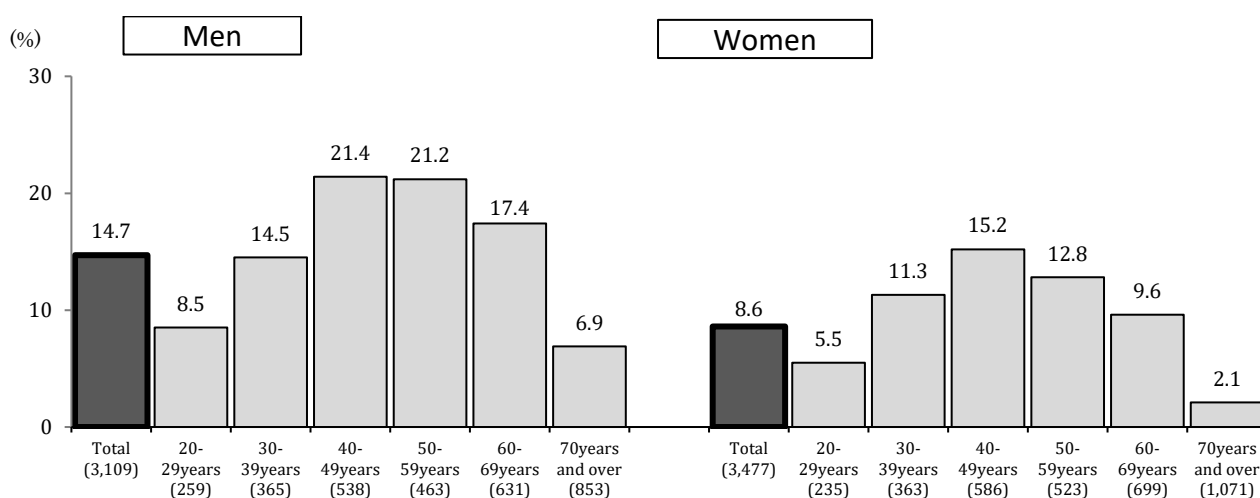


Figure 38. Proportion of persons who drink alcohol at a level which increase the risk of lifestyle-related diseases (aged 20 years and over, based on sex and age)

2. Smoking Status

The proportion of regular smokers was 17.7%; 29.4% in men and 7.2% in women. There has been a significant decrease in the numbers of regular smokers among both men and women over the past 10 years. The highest proportion of regular smokers were men and women aged 30 to 49 years, and approximately 40% of them were regular smokers.

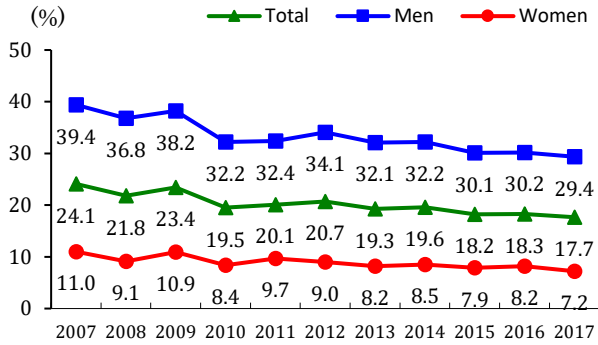


Figure 39-1. Annual changes in the proportion of regular smokers (aged 20 years and over) (2007 to 2017)

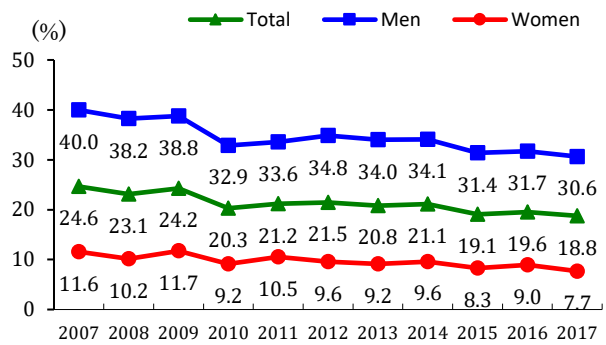


Figure 39-2. Annual changes in the age-adjusted proportion of regular smokers (aged 20 years and over) (2007 to 2017)

*“Regular smokers” refers to those who reported: smoking every day or sometimes (after 2013); smoking every day or sometimes during the past month (in respondents who reported smoking cigarettes) (from 2011 to 2012); and smoking (or had smoked) 100 cigarettes or more in a total of 6 months or longer (from 2007 to 2010).

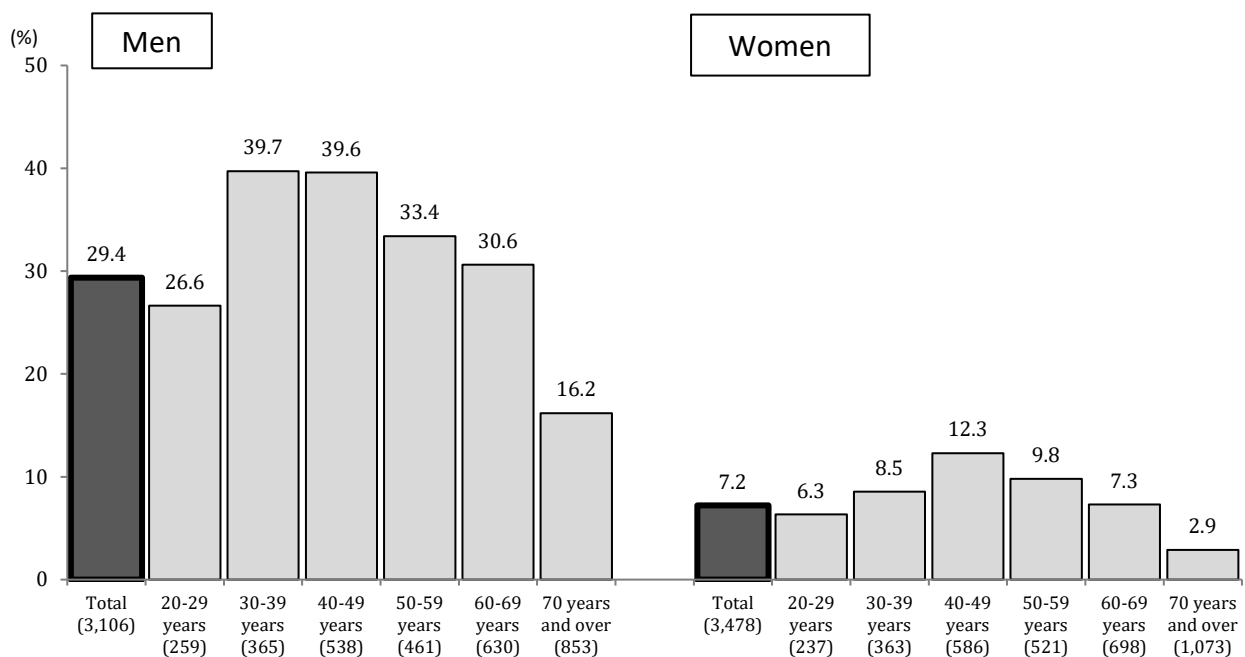


Figure 40. Proportion of regular smokers (aged 20 years and over, based on sex and age)

3. Willingness to Quit Smoking

Among the regular smokers, the proportion of those willing to quit smoking was 28.9%; 26.1 % among men and 39.0% among women.

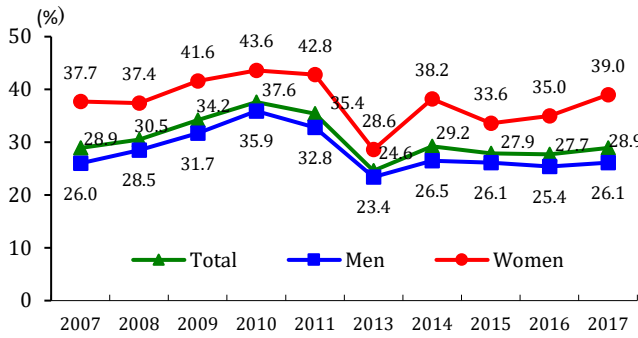


Figure 41-1. Annual changes in the proportion of those willing to quit smoking (aged 20 years and over) (2007 to 2017)

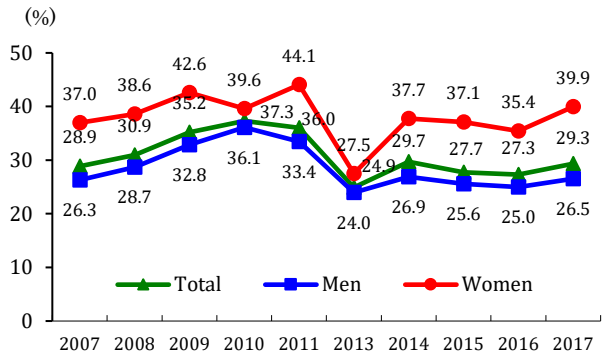


Figure 41-2. Annual changes in the age-adjusted proportion of those willing to quit smoking (aged 20 years and over) (2007 to 2017)

*Not implemented in 2012.

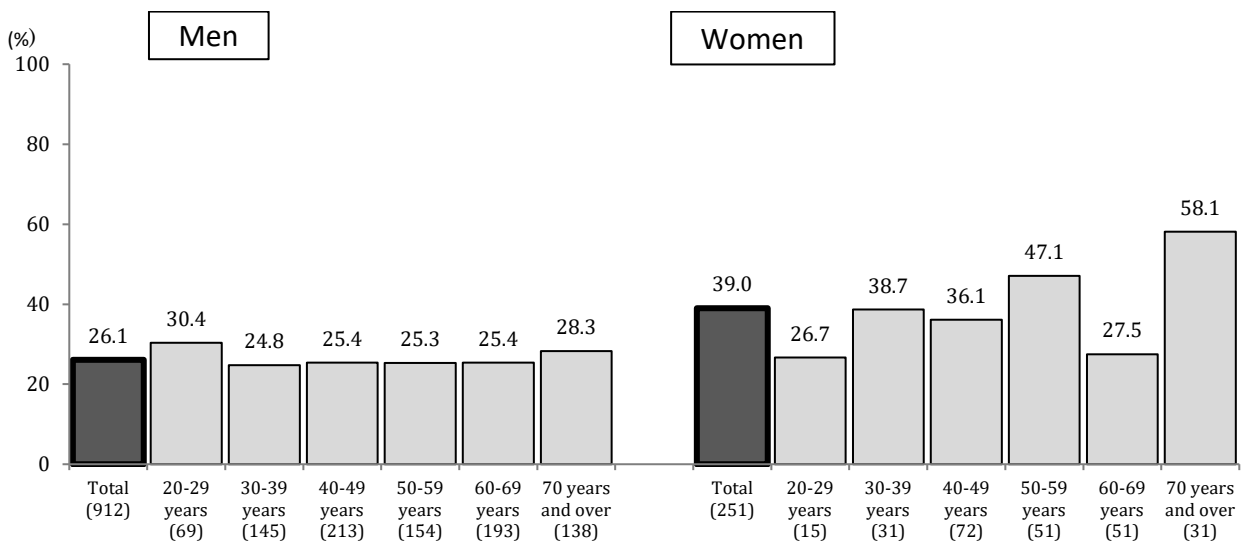
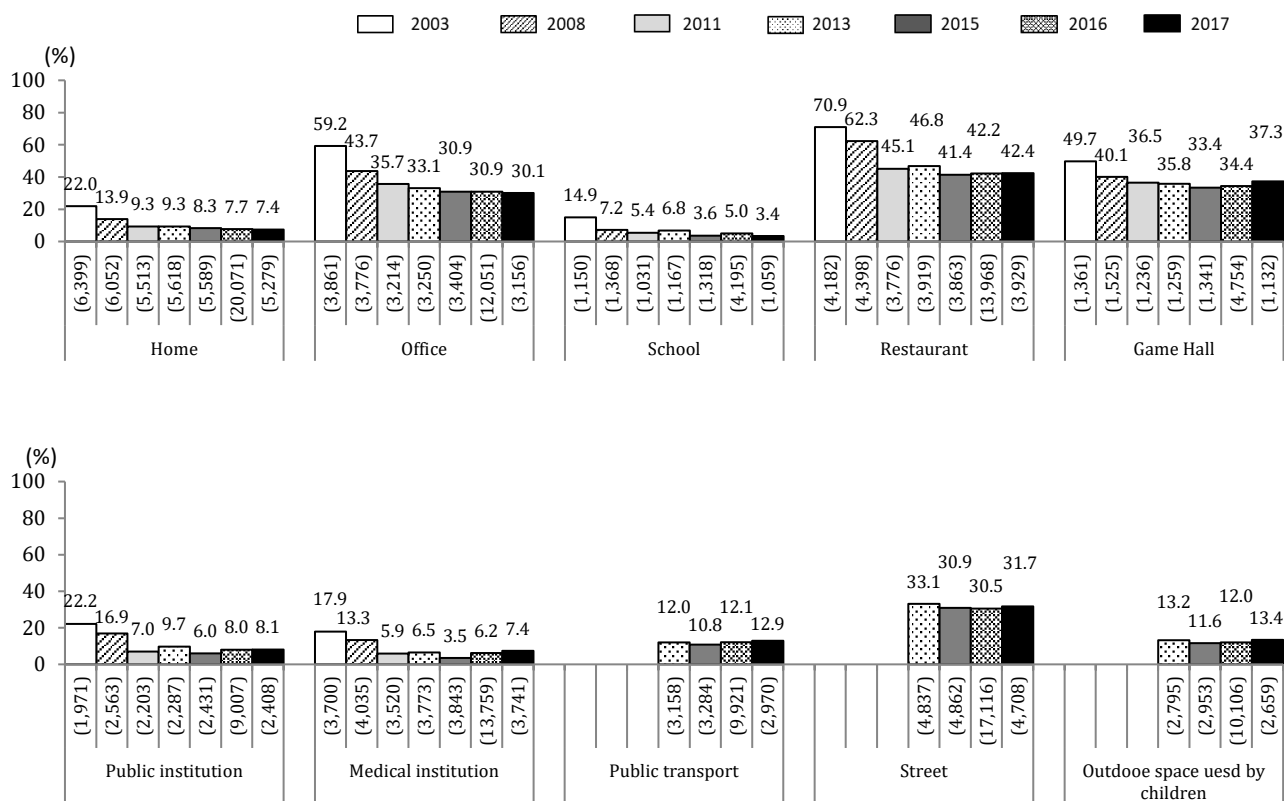


Figure 42. Proportion of individuals willing to quit smoking (aged 20 years and over, based on sex and age)

4. Passive Smoking

The proportion of individuals potentially exposed to passive smoke, excluding current smokers, was highest at restaurants (42.4%), followed by amusement places (37.3%), on the street (31.7%), workplace (30.1%),



Question: Were you possibly exposed to passive smoke within the past month?

Regular smokers refer to individuals who reported regular smoking.

“Persons who were possibly exposed to passive smoke” are defined as individuals who are exposed to passive smoke at home every day or at other places more than once a month.

Respondents working in high-exposure locations such as a school, restaurant, or amusement place, listed their response in the workplace column.

* The location and situation (e.g., indoor or outdoor) in which passive smoking occurred was unclear.

Figure 43. Annual changes in the proportion of individuals potentially exposed to passive smoke (aged 20 years and over, total of men and women, excluding current smokers) (2003, 2008, 2011, 2013, 2015, 2016, and 2017)

< Appendix > Status of Intake by Nutrients/Food Groups

1. Intake of Nutrients

Table 3. Age-dependent nutrient intake (1 year or older, total of men and women,)

	Total	1-6 years	7-14 years	15-19 years	20-29 years	30-39 years	40-49 years	50-59 years	60-69 years	70-79 years	80 years and over	20 years and over (reprints)	65-74 years (reprints)	75 years and over (reprints)
Participants (n)	6,962	373	512	283	418	639	978	864	1,186	1,149	560	5,794	1,287	1,071
Energy	kcal	1,897	1,253	2,023	2,184	1,912	1,915	1,924	1,996	1,909	1,736	1,914	1,956	1,808
Protein	g	69.4	42.8	72.1	78.8	68.3	67.2	67.4	71.7	72.9	65.0	70.4	73.7	68.6
Animal protein	g	37.8	24.1	41.7	47.0	38.8	36.4	36.3	39.6	38.5	33.6	37.9	38.9	35.9
Fat	g	59.0	39.8	67.0	73.1	63.9	60.9	61.5	60.9	61.8	54.7	47.2	58.9	50.0
Animal fat	g	30.0	20.7	36.9	40.1	32.3	30.5	30.9	30.7	30.3	27.5	24.0	29.5	25.6
Saturated fatty acid	g	16.22	12.29	21.08	20.73	17.53	16.80	16.70	16.23	16.37	14.50	12.79	15.82	13.42
Monounsaturated fatty acid	g	20.34	13.10	22.46	25.97	22.70	21.79	21.11	21.31	18.36	15.47	20.34	19.82	16.52
Omega-6 fatty acid	g	10.03	6.19	10.39	11.77	10.61	10.43	10.47	10.89	9.55	8.16	10.16	10.11	8.69
Omega-3 fatty acid	g	2.18	1.19	1.98	2.18	2.01	2.07	2.09	2.31	2.51	2.41	2.08	2.26	2.22
Cholesterol	mg	319	195	312	407	343	317	307	339	347	322	277	324	298
Carbohydrate	g	255.4	177.0	275.0	292.1	253.4	251.7	250.5	262.7	264.3	252.2	257.0	263.4	258.4
Dietary fiber	g	14.4	8.4	13.6	13.0	12.3	12.8	13.2	14.3	16.4	17.4	15.5	15.0	16.4
Water-soluble dietary fiber	g	3.4	2.0	3.3	3.1	3.0	3.1	3.2	3.4	3.8	4.0	3.5	3.5	3.7
Water-insoluble dietary fiber	g	10.5	6.1	9.9	9.5	8.9	9.4	9.6	10.4	12.0	12.7	11.4	10.9	12.0
Vitamin A	µgRE	519	450	528	530	468	477	468	494	560	584	543	522	556
Vitamin D	µg	6.9	3.8	5.7	6.1	5.0	5.6	5.8	7.3	8.0	9.0	8.3	7.3	8.6
Vitamin E	mg	6.6	4.1	6.4	6.8	6.2	6.4	6.4	6.8	7.4	7.1	6.2	6.8	6.5
Vitamin K	µg	229	116	188	218	199	204	214	245	267	264	244	240	253
Vitamin B ₁	mg	0.87	0.53	0.93	1.00	0.85	0.85	0.86	0.88	0.94	0.89	0.81	0.88	0.84
Vitamin B ₂	mg	1.18	0.80	1.31	1.24	1.11	1.05	1.10	1.19	1.27	1.27	1.18	1.19	1.23
Niacin	mg	14.4	7.3	12.5	14.1	13.5	14.0	14.7	15.7	16.1	15.5	13.3	15.0	14.4
Vitamin B ₆	mg	1.12	0.67	1.06	1.12	1.01	1.02	1.05	1.15	1.25	1.27	1.15	1.15	1.21
Vitamin B ₁₂	µg	5.6	3.2	5.2	4.9	4.6	4.7	4.9	5.8	6.4	6.9	6.1	5.8	6.6
Folate	µg	281	152	235	255	244	237	255	286	323	344	317	294	329
Pantothenic acid	mg	5.53	3.80	6.19	6.05	5.16	5.17	5.20	5.59	5.90	5.89	5.42	5.55	5.66
Vitamin C	mg	94	47	70	74	69	66	76	88	114	134	123	100	129
Sodium	mg	3,749	2,075	3,403	3,726	3,626	3,700	3,727	3,824	4,158	4,080	3,719	3,889	3,868
Salt equivalent	g	9.5	5.3	8.6	9.5	9.2	9.4	9.5	9.7	10.6	10.4	9.4	9.9	9.8
Potassium	mg	2,250	1,380	2,224	2,109	1,904	1,978	2,050	2,279	2,544	2,631	2,388	2,315	2,507
Calcium	mg	514	394	673	495	428	428	446	498	553	582	546	509	566
Magnesium	mg	240	139	228	222	205	219	225	248	273	275	246	248	258
Phosphorus	mg	988	651	1,088	1,058	906	924	929	1,008	1,070	1,066	959	998	1,010
Iron	mg	7.5	4.3	6.8	7.4	6.9	6.8	7.1	7.7	8.4	8.7	7.7	7.8	8.2
Zinc	mg	8.1	5.3	8.9	9.6	8.1	8.1	7.9	8.2	8.4	8.2	7.5	8.1	7.9
Copper	mg	1.12	0.68	1.10	1.18	1.06	1.08	1.07	1.14	1.22	1.23	1.14	1.15	1.18
Fat-energy ratio	%	27.7	27.6	29.6	30.0	29.8	28.5	28.3	27.7	25.5	24.2	27.4	26.7	24.6
Carbohydrate-energy ratio	%	57.5	58.8	56.1	55.4	55.7	57.3	57.1	56.6	57.2	59.1	60.8	57.7	60.2
Animal protein ratio	%	52.7	54.1	57.0	58.0	55.2	52.0	51.8	53.4	51.9	51.1	50.0	52.0	50.5
Cereal-energy ratio	%	40.4	40.8	40.3	43.9	43.3	43.6	42.2	39.9	37.8	38.2	40.3	40.2	39.6

Abbreviations: RE, retinol equivalents

Nutrient values are shown as mean value per person per day.

The intake from fortified foods and supplements could not be determined.

Table 4. Age-dependent nutrient intake in male participants (1 year or older)

	Total	1-6 years	7-14 years	15-19 years	20-29 years	30-39 years	40-49 years	50-59 years	60-69 years	70-79 years	80 years and over	20 years and over (reprints)	65-74 years (reprints)	75 years and over (reprints)	
Participants (n)	3,319	197	267	141	219	322	461	392	566	516	238	2,714	585	476	
Energy	kcal	2,099	1,302	2,132	2,486	2,111	2,134	2,153	2,164	2,218	2,103	1,935	2,134	2,192	1,980
Protein	g	75.3	44.3	76.3	90.1	73.9	74.7	74.0	79.3	80.6	78.2	70.8	76.7	80.0	73.6
Animal protein	g	41.4	24.7	43.9	55.0	41.8	41.4	39.9	44.7	43.3	41.6	36.4	41.6	42.5	38.5
Fat	g	63.4	41.1	70.6	79.9	69.0	66.6	66.7	65.0	66.0	58.3	50.9	63.5	63.2	53.0
Animal fat	g	32.7	21.1	38.9	44.6	35.1	34.1	34.2	34.1	32.6	29.7	26.0	32.3	31.3	27.6
Saturated fatty acid	g	17.16	12.69	22.07	21.91	18.57	18.05	17.76	16.69	17.21	15.25	13.65	16.75	16.65	14.09
Monounsaturated fatty acid	g	22.10	13.48	23.54	28.47	24.73	24.05	23.87	23.05	23.09	19.66	16.72	22.25	21.68	17.57
Omega-6 fatty acid	g	10.87	6.41	11.06	13.05	11.68	11.57	11.53	11.21	11.81	10.11	8.97	11.07	10.97	9.31
Omega-3 fatty acid	g	2.37	1.24	2.06	2.53	2.12	2.27	2.33	2.62	2.71	2.60	2.25	2.47	2.69	2.36
Cholesterol	mg	340	196	317	452	357	345	318	371	370	350	299	347	370	319
Carbohydrate	g	280.7	184.9	289.5	338.2	281.5	284.6	282.5	279.8	288.1	285.7	279.7	283.8	289.3	280.0
Dietary fiber	g	14.6	8.7	14.1	13.9	12.8	13.1	13.5	14.3	16.3	17.5	16.8	15.2	17.0	17.0
Water-soluble dietary fiber	g	3.5	2.1	3.4	3.3	3.2	3.1	3.2	3.4	3.9	4.0	3.8	3.6	4.0	3.8
Water-insoluble dietary fiber	g	10.7	6.3	10.3	10.1	9.1	9.6	9.8	10.4	11.9	12.8	12.4	11.1	12.5	12.5
Vitamin A	µgRE	530	445	542	574	508	516	468	488	570	566	611	532	552	587
Vitamin D	µg	7.2	3.9	6.0	7.2	5.0	5.9	6.3	8.1	8.2	9.3	9.0	7.6	8.8	9.0
Vitamin E	mg	6.8	4.3	6.6	7.3	6.5	6.8	6.6	7.0	7.6	7.3	6.7	7.0	7.6	6.8
Vitamin K	µg	235	119	208	245	201	215	219	259	271	263	255	245	266	257
Vitamin B ₁	mg	0.93	0.54	0.98	1.14	0.95	0.94	0.94	1.00	0.94	0.89	0.95	0.99	0.89	0.89
Vitamin B ₂	mg	1.22	0.84	1.38	1.34	1.15	1.10	1.12	1.24	1.31	1.30	1.26	1.22	1.34	1.26
Niacin	mg	15.7	7.6	13.2	16.4	14.9	15.9	16.2	17.9	17.5	16.8	14.6	16.5	17.3	15.4
Vitamin B ₆	mg	1.20	0.70	1.12	1.27	1.08	1.12	1.13	1.26	1.32	1.34	1.28	1.24	1.33	1.30
Vitamin B ₁₂	µg	6.1	3.3	5.0	6.2	5.0	5.2	5.3	6.7	6.9	7.5	6.9	6.4	7.5	7.2
Folate	µg	285	154	243	275	261	248	260	292	323	343	340	299	340	336
Pantothenic acid	mg	5.87	3.95	6.55	6.81	5.47	5.57	5.51	5.99	6.23	6.17	5.98	5.90	6.24	6.02
Vitamin C	mg	90	48	71	80	71	66	74	84	105	126	134	96	116	129
Sodium	mg	4,052	2,101	3,532	4,062	4,030	4,028	4,124	4,257	4,475	4,392	4,081	4,245	4,508	4,172
Salt equivalent	g	10.3	5.3	9.0	10.3	10.2	10.2	10.5	10.8	11.4	11.2	10.4	10.8	11.5	10.6
Potassium	mg	2,318	1,429	2,338	2,301	2,002	2,074	2,128	2,336	2,581	2,676	2,603	2,382	2,646	2,621
Calcium	mg	520	417	698	528	435	435	447	484	554	583	584	510	583	581
Magnesium	mg	252	145	241	244	218	234	239	262	285	287	269	261	290	273
Phosphorus	mg	1,052	678	1,147	1,184	963	1,000	996	1,078	1,133	1,126	1,047	1,064	1,146	1,076
Iron	mg	7.8	4.4	7.0	8.1	7.3	7.3	7.5	8.2	8.7	8.9	8.4	8.2	8.9	8.6
Zinc	mg	8.9	5.4	9.5	10.9	8.9	9.1	8.8	9.2	9.2	8.7	8.3	8.9	9.1	8.4
Copper	mg	1.20	0.71	1.16	1.34	1.13	1.18	1.16	1.24	1.31	1.29	1.25	1.24	1.32	1.25
Fat-energy ratio	%	26.9	27.7	29.6	28.8	29.2	27.8	27.7	26.7	26.6	24.6	23.4	26.5	25.7	23.7
Carbohydrate-energy ratio	%	58.6	58.7	56.0	56.6	56.5	58.0	58.4	58.5	58.8	60.4	62.0	59.0	59.6	61.3
Animal protein ratio	%	53.2	53.6	56.6	59.4	55.0	53.2	52.2	54.4	52.3	51.5	49.5	52.5	51.6	50.5
Cereal-energy ratio	%	42.2	40.5	40.8	46.4	45.5	44.9	44.7	42.6	40.0	39.8	40.9	42.3	39.7	40.7

Abbreviations: RE, retinol equivalents

Nutrient values are shown as mean value per person per day.

The intake from fortified foods and supplements could not be determined.

Table 5. Age-dependent nutrient intake in female participants (1 year or older)

	Total	1–6 years	7–14 years	15–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80 years and over	20 years and over (reprints)	65–74 years (reprints)	75 years and over (reprints)	
Participants (n)	3,643	176	245	142	199	317	517	472	620	633	322	3,080	702	595	
Energy	kcal	1,713	1,198	1,903	1,885	1,694	1,685	1,704	1,724	1,794	1,750	1,588	1,720	1,759	1,671
Protein	g	64.0	41.3	67.6	67.6	62.2	59.7	61.5	65.4	69.3	68.6	60.7	64.9	68.4	64.6
Animal protein	g	34.5	23.4	39.3	39.1	35.6	31.4	33.0	35.3	36.7	36.1	31.6	34.6	35.9	33.9
Fat	g	55.0	38.4	63.1	66.4	58.3	55.1	56.8	57.5	58.0	51.8	44.5	54.8	54.4	47.6
Animal fat	g	27.5	20.3	34.7	35.5	29.3	26.9	27.9	27.9	28.2	25.6	22.5	26.9	26.8	24.0
Saturated fatty acid	g	15.36	11.83	20.01	19.55	16.39	15.52	15.76	15.85	15.60	13.89	12.15	15.00	14.71	12.88
Monounsaturated fatty acid	g	18.73	12.67	21.27	23.47	20.47	19.05	19.94	19.50	19.68	17.29	14.54	18.65	18.28	15.67
Omega-6 fatty acid	g	9.26	5.94	9.66	10.50	9.43	9.27	9.53	9.85	10.05	9.09	7.57	9.36	9.39	8.19
Omega-3 fatty acid	g	2.01	1.14	1.90	1.84	1.88	1.87	1.88	2.06	2.32	2.25	1.95	2.08	2.26	2.11
Cholesterol	mg	301	194	306	363	328	289	298	312	327	299	261	303	309	280
Carbohydrate	g	232.4	168.2	259.1	246.3	222.4	227.8	224.2	226.2	239.4	246.8	231.8	233.3	241.7	241.2
Dietary fiber	g	14.3	8.2	13.0	12.1	11.8	12.5	13.0	14.3	16.5	17.3	14.6	14.8	16.8	15.9
Water-soluble dietary fiber	g	3.4	2.0	3.1	2.9	2.8	3.0	3.1	3.4	3.8	4.0	3.4	3.5	3.9	3.7
Water-insoluble dietary fiber	g	10.4	6.0	9.4	8.8	8.6	9.2	9.4	10.5	12.1	12.6	10.7	10.8	12.3	11.7
Vitamin A	µgRE	510	456	512	487	425	438	469	499	552	599	492	514	588	532
Vitamin D	µg	6.6	3.7	5.4	5.0	5.0	5.3	5.5	6.6	7.8	8.8	7.7	7.0	8.3	8.2
Vitamin E	mg	6.4	3.9	6.1	6.3	5.8	6.1	6.3	6.7	7.3	7.0	5.8	6.6	7.0	6.4
Vitamin K	µg	224	112	166	191	196	194	210	234	264	265	235	236	263	250
Vitamin B ₁	mg	0.81	0.51	0.86	0.85	0.75	0.75	0.79	0.83	0.89	0.85	0.74	0.82	0.86	0.80
Vitamin B ₂	mg	1.14	0.76	1.24	1.15	1.05	1.00	1.08	1.15	1.24	1.25	1.13	1.15	1.22	1.20
Niacin	mg	13.1	7.1	11.6	11.8	11.9	12.2	13.3	13.9	14.9	14.5	12.4	13.7	14.3	13.5
Vitamin B ₆	mg	1.05	0.64	0.99	0.97	0.93	0.92	0.97	1.06	1.18	1.22	1.05	1.08	1.19	1.14
Vitamin B ₁₂	µg	5.1	3.0	5.4	3.7	4.1	4.2	4.6	5.0	5.9	6.4	5.6	5.3	6.1	6.1
Folate	µg	277	149	226	235	227	226	250	281	322	345	300	290	334	323
Pantothenic acid	mg	5.21	3.63	5.81	5.30	4.81	4.75	4.92	5.27	5.61	5.67	5.01	5.25	5.59	5.36
Vitamin C	mg	97	46	69	68	68	65	77	91	123	140	114	104	131	129
Sodium	mg	3,473	2,046	3,262	3,393	3,182	3,367	3,373	3,465	3,869	3,827	3,452	3,575	3,854	3,624
Salt equivalent	g	8.8	5.2	8.3	8.6	8.1	8.6	8.6	8.8	9.8	9.7	8.8	9.1	9.8	9.2
Potassium	mg	2,187	1,326	2,100	1,919	1,796	1,880	1,981	2,232	2,511	2,594	2,229	2,256	2,524	2,415
Calcium	mg	509	369	646	462	420	421	445	511	552	582	518	508	561	554
Magnesium	mg	229	133	214	201	190	203	213	237	262	265	229	236	261	246
Phosphorus	mg	929	622	1,023	933	843	847	869	950	1,013	1,016	895	939	1,005	956
Iron	mg	7.2	4.1	6.5	6.7	6.4	6.4	6.8	7.3	8.2	8.5	7.3	7.5	8.2	7.9
Zinc	mg	7.4	5.1	8.3	8.3	7.3	7.1	7.2	7.4	7.7	7.7	7.0	7.4	7.6	7.4
Copper	mg	1.05	0.65	1.03	1.03	0.97	0.98	1.00	1.05	1.15	1.18	1.05	1.08	1.16	1.12
Fat-energy ratio	%	28.4	27.5	29.6	31.2	30.5	29.2	29.6	29.7	28.7	26.3	24.8	28.2	27.4	25.2
Carbohydrate-energy ratio	%	56.6	58.8	56.1	54.3	54.7	56.5	55.9	55.0	55.7	58.0	59.9	56.6	56.9	59.3
Animal protein ratio	%	52.3	54.7	57.5	56.7	55.3	50.8	51.5	52.5	51.5	50.7	50.3	51.5	51.0	50.5
Cereal-energy ratio	%	38.7	41.1	39.8	41.5	40.8	42.2	39.9	37.6	35.8	36.8	39.8	38.4	36.6	38.7

Abbreviations: RE, retinol equivalents

Nutrient values are shown as mean value per person per day.

The intake from fortified foods and supplements could not be determined.

2. Intake by Food Groups

Table 6. Age-dependent intake by food groups in participants (1 year or older)

	Total	1–6 years	7–14 years	15–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60–69 years	70–79 years	80 years and over	20 years and over (reprints)	65–74 years (reprints)	75 years and over (reprints)
Total														
Participants (n)	6,962	373	512	283	418	639	978	864	1,186	1,149	560	5,794	1,287	1,071
Cereals	421.8	268.7	445.2	530.8	457.2	461.5	442.3	422.9	416.9	401.5	390.4	424.3	407.4	397.4
Potatoes and starches	52.7	37.4	59.9	57.2	48.3	51.2	45.6	51.2	53.8	58.9	58.4	52.8	54.9	59.0
Sugars and sweeteners	6.8	3.6	6.8	6.3	6.0	6.3	6.5	6.1	7.3	7.9	8.1	7.0	7.5	8.3
Pulses	62.8	30.1	56.3	48.4	47.8	52.8	57.1	67.0	74.4	77.9	68.2	66.2	75.0	73.3
Nuts and seeds	2.6	1.1	1.8	1.3	1.7	2.0	2.3	2.6	3.6	3.5	3.1	2.9	3.5	3.3
Vegetables	276.1	144.7	247.7	252.0	242.8	244.8	257.2	288.4	320.0	320.1	292.8	288.2	320.7	303.3
Green and yellow vegetables	83.9	49.0	70.3	75.8	66.8	78.1	75.9	85.7	95.6	100.9	94.3	87.7	97.5	95.7
Fruits	105.0	86.3	91.5	79.5	64.8	52.1	62.2	79.3	130.9	170.9	157.9	108.7	149.0	169.3
Mushrooms	16.1	6.7	14.3	11.0	12.8	14.4	14.3	18.1	20.2	19.4	15.9	17.2	19.6	17.7
Seaweeds	9.9	6.1	8.2	8.1	8.0	7.5	8.2	9.3	10.7	14.5	11.9	10.4	12.6	13.3
Fish and shellfish	64.4	30.4	46.2	50.6	49.5	51.1	53.3	68.8	79.7	85.9	72.4	68.8	83.7	78.0
Meats	98.5	58.4	111.9	157.7	129.4	114.7	115.0	105.2	92.4	75.3	63.0	97.0	81.3	68.3
Eggs	37.6	21.0	31.3	50.2	39.7	36.5	34.8	40.6	43.2	38.4	34.3	38.6	40.9	36.8
Milks	135.7	195.8	320.7	154.3	97.2	94.2	91.0	111.5	122.6	133.9	140.1	114.6	128.6	139.4
Fats and oils	11.3	7.0	11.5	14.7	13.4	12.6	12.5	12.1	12.4	9.6	7.4	11.4	11.0	7.9
Confectioneries	26.8	27.5	39.2	29.6	27.0	23.7	24.4	24.1	27.4	25.8	25.9	25.5	26.4	25.7
Beverages	623.4	233.3	328.1	440.1	546.1	657.8	696.0	728.5	750.0	684.4	581.6	683.5	725.0	615.8
Seasonings and spices	86.5	43.5	71.7	76.4	81.6	87.9	88.8	94.0	96.7	94.0	83.2	91.1	95.8	87.4
Males														
Subjects of analysis (n)	3,319	197	267	141	219	322	461	392	566	516	238	2,714	585	476
Cereals	491.0	279.4	476.5	637.9	532.5	537.9	531.1	513.7	492.1	460.6	442.3	500.2	477.1	448.4
Potatoes and starches	53.2	37.4	56.4	62.9	51.3	46.8	46.2	51.1	57.1	57.9	64.6	53.5	55.8	61.5
Sugars and sweeteners	6.8	3.9	6.4	6.7	6.2	6.2	6.5	5.9	7.6	8.2	8.5	7.1	8.1	8.4
Pulses	63.7	31.5	64.1	47.7	48.4	53.4	57.9	64.3	77.7	77.1	75.4	66.8	75.5	78.4
Nuts and seeds	2.5	1.3	1.8	0.5	2.0	1.9	2.0	2.4	3.4	3.6	3.8	2.8	3.6	3.5
Vegetables	282.8	143.6	260.6	277.9	264.9	257.1	269.5	298.9	318.2	319.9	311.7	295.4	321.7	308.6
Green and yellow vegetables	82.4	48.9	73.9	82.0	69.0	80.8	76.4	83.4	90.4	95.6	97.3	85.7	91.0	95.6
Fruits	95.4	92.9	95.4	84.7	49.6	43.6	51.7	62.4	108.8	161.2	181.0	96.2	134.2	174.6
Mushrooms	16.0	6.3	14.5	10.0	12.1	15.3	14.5	18.1	19.9	19.7	16.1	17.2	20.6	17.7
Seaweeds	10.0	6.4	8.3	8.0	8.8	7.7	8.7	9.7	10.4	14.4	12.5	10.5	11.8	13.9
Fish and shellfish	69.8	30.6	43.9	63.7	50.7	55.8	59.0	81.6	86.2	94.6	80.2	75.5	94.5	83.8
Meats	114.9	58.8	123.7	186.7	149.1	141.2	135.3	127.5	106.5	84.0	68.1	114.3	90.0	76.4
Eggs	39.1	20.4	31.1	53.1	39.3	38.7	34.5	43.3	45.3	41.8	37.2	40.5	44.8	39.3
Milks	132.8	215.0	334.9	172.3	92.4	83.7	78.4	85.5	117.5	127.7	148.6	104.9	125.9	140.2
Fats and oils	12.4	7.5	11.5	16.1	15.2	14.4	13.7	13.1	13.7	10.5	7.7	12.7	12.5	8.3
Confectioneries	23.9	30.2	40.3	27.7	24.4	20.7	18.1	16.8	24.1	24.6	23.6	21.7	25.0	23.9
Beverages	674.6	216.9	335.1	464.6	627.2	720.9	742.7	822.9	832.0	748.9	628.1	752.1	831.3	653.5
Seasonings and spices	95.9	41.9	75.6	85.8	89.8	100.0	102.6	109.8	106.1	103.4	93.1	102.3	105.2	97.2
Females														
Subjects of analysis (n)	3,643	176	245	142	199	317	517	472	620	633	322	3,080	702	595
Cereals	358.8	256.6	410.9	424.5	374.4	383.8	363.2	347.5	348.3	353.3	352.1	357.4	349.3	356.5
Potatoes and starches	52.2	37.4	63.6	51.5	45.0	55.7	45.0	51.3	50.9	59.7	53.8	52.2	54.1	57.0
Sugars and sweeteners	6.7	3.3	7.2	5.8	5.9	6.4	6.5	6.3	7.0	7.8	7.8	6.9	7.0	8.1
Pulses	61.9	28.5	47.8	49.1	47.0	52.3	56.4	69.2	71.3	78.5	62.9	65.6	74.6	69.2
Nuts and seeds	2.7	0.8	2.0	2.0	1.3	2.1	2.6	2.8	3.8	3.5	2.6	2.9	3.5	3.1
Vegetables	270.0	145.8	233.5	226.4	218.4	232.3	246.3	279.8	321.7	320.2	278.8	281.9	319.8	299.1
Green and yellow vegetables	85.2	49.2	66.4	69.6	64.3	75.4	75.5	87.6	100.5	105.2	92.2	89.5	102.9	95.8
Fruits	113.8	79.0	87.3	74.4	81.6	60.8	71.6	93.3	151.1	178.8	140.9	119.7	161.4	165.0
Mushrooms	16.3	7.3	14.1	12.0	13.5	13.4	14.1	18.1	20.6	19.3	15.8	17.1	18.8	17.8
Seaweeds	9.8	5.8	8.1	8.1	7.0	7.3	7.8	8.9	10.9	14.7	11.5	10.3	13.2	12.9
Fish and shellfish	59.4	30.1	48.7	37.6	48.2	46.3	48.2	58.3	73.8	78.7	66.7	62.9	74.7	73.4
Meats	83.6	58.0	98.9	128.9	107.7	87.8	97.0	86.6	79.5	68.3	59.2	81.8	74.0	61.8
Eggs	36.2	21.6	31.5	47.5	40.1	34.3	35.1	38.4	41.4	35.6	32.2	36.9	37.7	34.8
Milks	138.3	174.3	305.2	136.4	102.4	104.8	102.1	133.2	127.2	138.9	133.8	123.1	130.8	138.8
Fats and oils	10.3	6.6	11.5	13.3	11.4	10.8	11.4	11.3	11.2	8.8	7.2	10.3	9.8	7.5
Confectioneries	29.4	24.4	38.1	31.4	29.8	26.7	30.0	30.1	30.5	26.8	27.7	28.9	27.6	27.1
Beverages	576.7	251.6	320.5	415.9	456.9	593.7	654.4	650.1	675.2	631.8	547.2	623.1	636.4	585.6
Seasonings and spices	77.9	45.2	67.4	67.0	72.6	75.6	76.6	80.9	88.1	86.3	75.8	81.1	88.0	79.6