Implementation Status of the "Comprehensive Health Check," Fukushima Health Management Survey (FY2011-FY2021)

1. Outline of the Comprehensive Health Check

(1) Purpose

The Great East Japan Earthquake and the accident at TEPCO's Fukushima Daiichi Nuclear Power Plant led to a large-scale evacuation of residents. Many of the evacuees have since been concerned about their own health, due primarily to drastic changes in their lifestyle, such as diet and exercise habits, in addition to the loss of opportunity to undergo necessary health checks. In response to this situation, the Comprehensive Health Check (CHC) has been conducted to ascertain people's health status and use such data for the prevention of lifestyle diseases and early detection and treatment of diseases in general.

(2) Coverage

- Residents registered in the covered area* from March 11, 2011 to April 1, 2012 (including those who moved out of the area)
- Residents registered in evacuation zones as of April 1 of the examination year
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

* Covered area: municipalities designated as evacuation zones in 2011
Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village, Minamisoma City, Tamura City, Kawamata Town, and parts of Date City (specifically recommended for evacuation)

(3) Health check items

Health check items differ according to age as follows.

Age group	Health check items
0-6 years old (preschool children and infants)	Height, weight [The items below are performed upon request] CBC (red blood cell count, hematocrit, hemoglobin, platelet count, white blood cell count and differential)
7-15 years old (from 1st to 9th grade)	Height, weight, blood pressure, CBC (red blood cell count, hematocrit, hemoglobin, platelet count, white blood cell count and differential) [The items below are performed upon request] Blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA1c, plasma glucose, serum creatinine, uric acid)
16 years old and older	Height, weight, abdominal circumference (BMI), blood pressure, CBC (red blood cell count, hematocrit, hemoglobin, platelet count, white blood cell count and differential), urinanalysis (urine sugar, urine protein, urine occult blood), blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA1c, plasma glucose, serum creatinine, estimated glomerular filtration rate [eGFR], uric acid) *The underlined values are not routinely measured during specific health checks.

2. Implementation Status for FY2011 to FY2020

(1) Methods

Health check venues are arranged as follows for the convenience of eligible persons.

Age group	Place of residence	Implementation method	Number of cooperating health check facilities in FY2020	Tabulation category
15 or younger	Those living in the prefecture	Pediatric health checks at designated health check facilities within the prefecture	89 facilities	Pediatric health check in the prefecture
	Those living outside the prefecture	Pediatric health checks at designated health check facilities outside the prefecture	319 facilities (of which, 200 facilities also accept those aged 16 or older)	Pediatric health check outside the prefecture
16 or older	Those living in the prefecture	Additional health check items are added to specific health checks or general health checks conducted by municipalities.	—	Municipal general health check in the prefecture
		Individual health checks conducted at designated health check facilities in the prefecture(*)	432 facilities	Individual health check in the prefecture
		Group health checks conducted by FMU(*)	44 group health checks conducted at 27 venues	Group health check in the prefecture
	Those living outside the prefecture	Additional health check items are added to specific health checks or general health checks conducted by municipalities.	—	Other *2
		Individual health checks conducted at designated health check facilities outside the prefecture	522 facilities (of which, 200 facilities also accept those aged 15 or younger)	Individual health check outside the prefecture

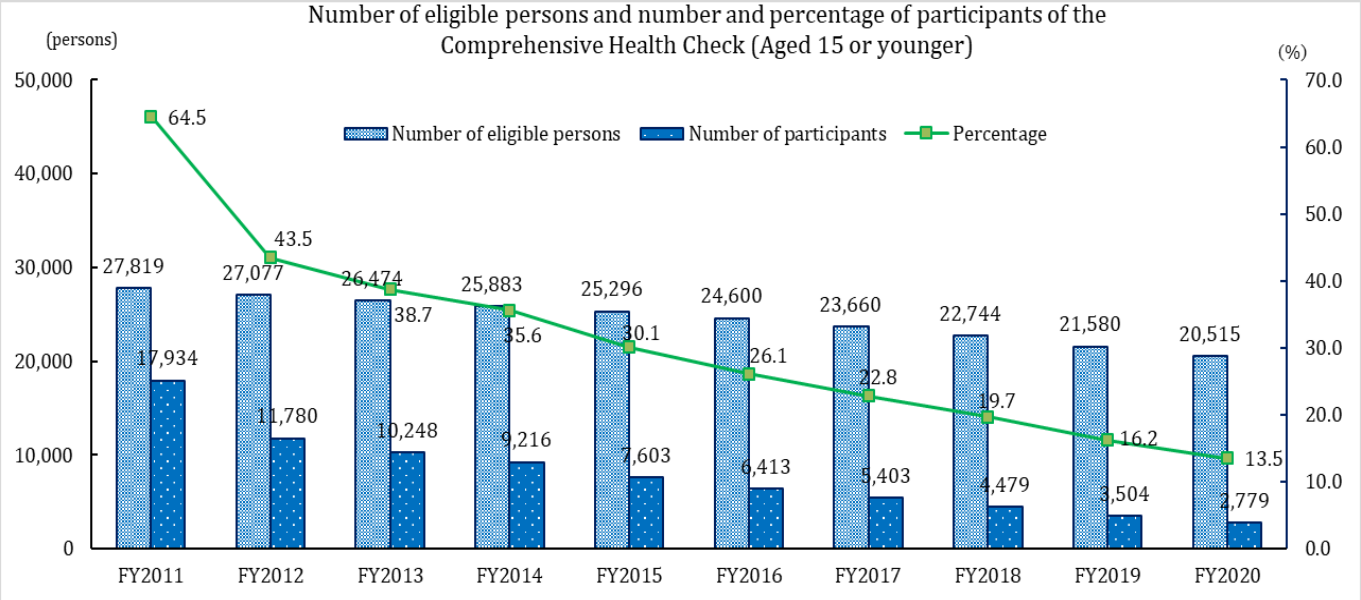
*2 Municipal health checks conducted outside the prefecture by cooperating facilities

(2) Participation status

A. Number of participants by method and by venue (in or outside the prefecture)

(a) Participants aged 15 or younger

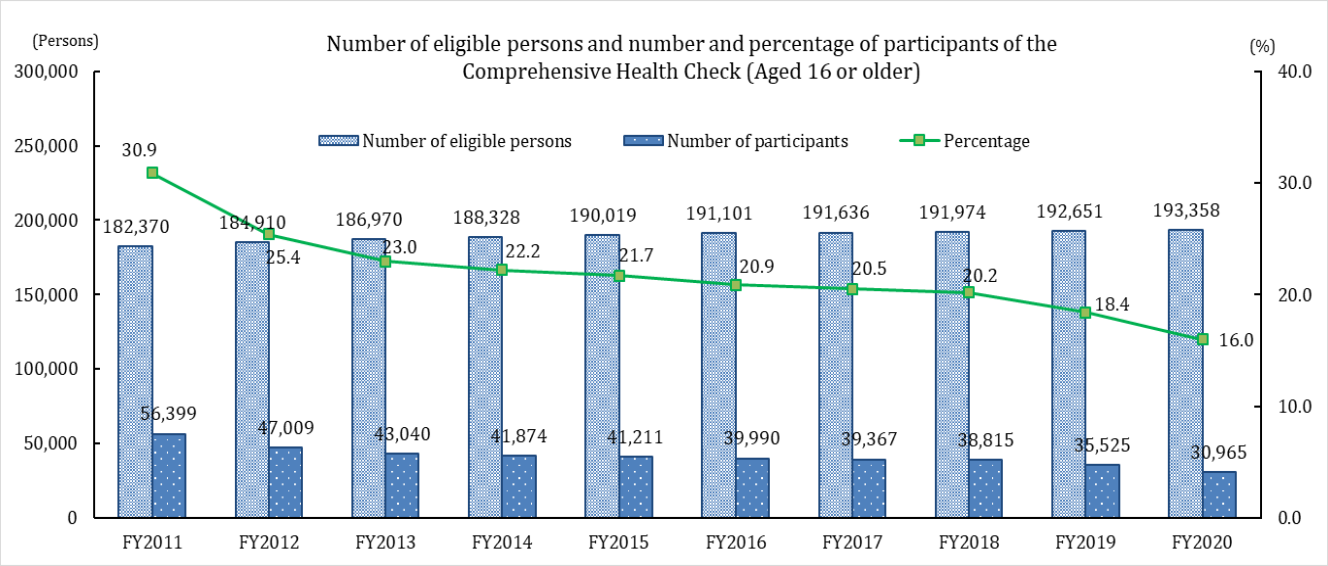
The participation rate for FY2020 was 13.5%, down by 2.7 points compared with a participation rate of 16.2% for FY2019. The major cause of this decrease in the number of participants is considered to be the spread of COVID-19, due to which people refrained from participation, for fear of infection.



	FY2011 Final data as of Sept. 11, 2012	FY2012 Final data as of July 5, 2013	FY2013 Final data as of Sept. 1, 2014	FY2014 Final data as of Sept. 1, 2015	FY2015 Final data as of Sept. 1, 2016	FY2016 Final data as of Dec. 31, 2017	FY2017 Final data as of Mar. 31, 2018	FY2018 Final data as of Mar. 31, 2019	FY2019 Final data as of Mar. 31, 2020	FY2020 Final data as of Mar. 31, 2021
Eligible persons	27,819	27,077	26,474	25,883	25,296	24,600	23,660	22,744	21,580	20,515
Participants in pediatric health checks in Fukushima	15,002	9,534	8,432	7,432	6,206	5,193	4,474	3,648	2,857	2,335
Participants in pediatric health checks outside Fukushima	2,949	2,283	1,822	1,792	1,403	1,226	929	834	650	444
Number of those participating in both of the above	17	37	6	8	6	6	0	3	3	0
Total (excluding those participating in both)	17,934	11,780	10,248	9,216	7,603	6,413	5,403	4,479	3,504	2,779
Participation rate	64.5%	43.5%	38.7%	35.6%	30.1%	26.1%	22.8%	19.7%	16.2%	13.5%

(b) Participants aged 16 or older

The participation rate for FY2020 was 16.0%, down by 2.4 points compared with the participation rate of 18.4% for FY2019. The major cause of the decrease in the number of participants is considered to be the delay in the commencement of heath checks as the declaration of a state of emergency was issued due to the spread of COVID-19, and the eligible persons' reluctance to participate for fear of infection, even after the declaration was lifted.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
	Final data as of Sept. 11, 2012	Final data as of July 5, 2013	Final data as of Sept. 1, 2014	Final data as of Sept. 1, 2015	Final data as of Sept. 1, 2016	Final data as of Dec. 31, 2017	Final data as of Mar. 31, 2018	Final data as of Mar. 31, 2019	Final data as of Mar. 31, 2020	Final data as of Mar. 31, 2021
Eligible persons	182,370	184,910	186,970	188,328	190,019	191,101	191,636	191,974	192,651	193,358
Participants in municipal general health checkes in the prefecture	8,798	23,907	25,604	25,913	26,195	26,636	26,411	26,140	25,255	19,002
Participants in individual health checkes in the prefecture	—	6,692	5,806	4,927	4,443	3,941	3,782	3,730	2,869	3,771
Participants in group health checkes in the prefecture	41,949	10,603	6,767	5,808	5,183	4,341	3,963	3,776	2,444	3,496
Participants in individual health checkes outside the prefecture	3,815	3,055	3,205	3,418	3,332	2,118	2,102	2,087	1,988	1,847
Other *1, *2	2,045	3,206	2,017	1,846	2,113	3,011	3,154	3,122	3,001	2,941
Number of those participating in both of the above	208	454	359	38	55	57	45	40	32	92
Total (excluding those participating in both)	56,399	47,009	43,040	41,874	41,211	39,990	39,367	38,815	35,525	30,965
Participation rate	30.9%	25.4%	23.0%	22.2%	21.7%	20.9%	20.5%	20.2%	18.4%	16.0%

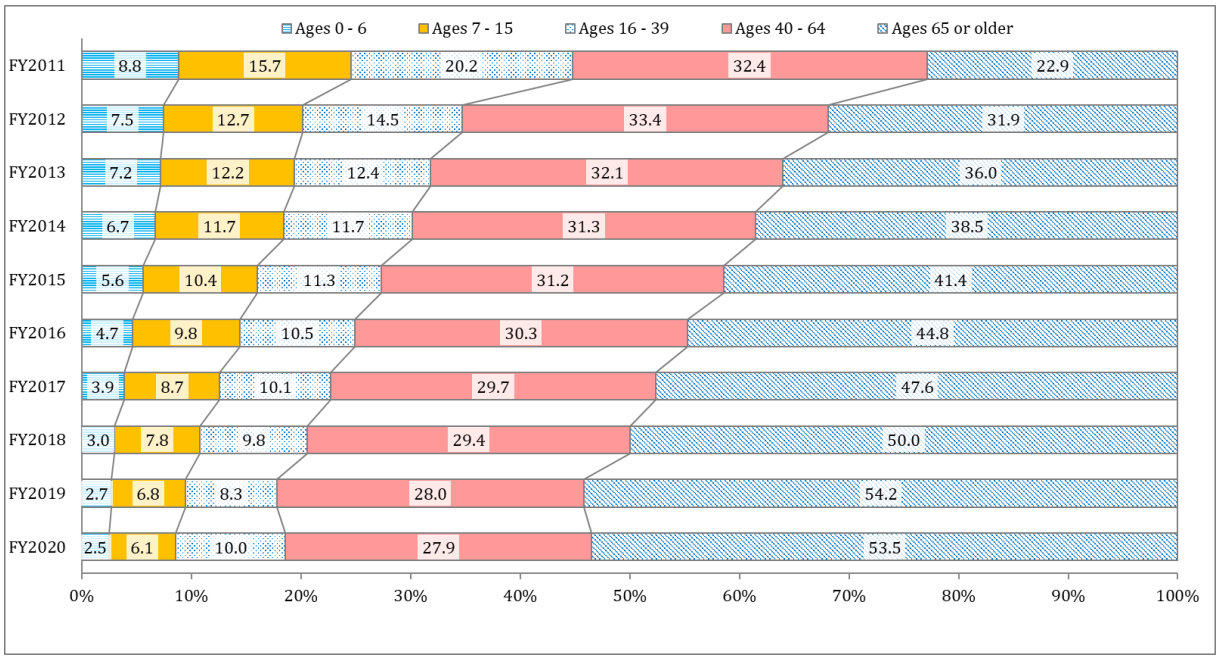
*1 Municipal health checks conducted in the prefecture by the county/municipal medical association or medical facilities
*2 Municipal health checks conducted outside the prefecture by cooperating facilities

B. Number of participants by age group

By age group, the numbers of participants aged 0 to 6, 7 to 15, and 40 to 64 have been decreasing year by year, while the number of participants aged 65 or older increased until FY2018 but has been decreasing thereafter. The number of participants aged 16 to 39 decreased until FY2019 but increased in FY2020.

By age group, the participation rate for participants aged 65 or older increased year by year until FY2019 but slightly decreased in FY2020, accounting for 53.5% of the total.

	Ages 0 to 6	Ages 7 to 15	Ages 16 to 39	Ages 40 to 64	Ages 65 or older
FY2011	6,462	11,481	14,762	23,651	16,726
FY2012	4,365	7,437	8,480	19,553	18,642
FY2013	3,802	6,429	6,536	16,922	18,969
FY2014	3,328	5,840	5,843	15,594	19,166
FY2015	2,655	4,903	5,354	14,748	19,559
FY2016	2,057	4,315	4,632	13,386	19,768
FY2017	1,647	3,712	4,309	12,677	20,299
FY2018	1,220	3,169	3,979	11,948	20,337
FY2019	959	2,457	2,984	10,095	19,529
FY2020	783	1,936	3,157	8,791	16,853



*Percentages in the graph are rounded and the total may not be 100%.
*Source: Materials for the 21st, 26th, 30th, 34th, 37th, and 41st meetings of the Oversight Committee for the Fukushima Health Management Survey.

[Reference]

FY2020 Number of eligible persons by area of residence (in the prefecture or outside the prefecture) *

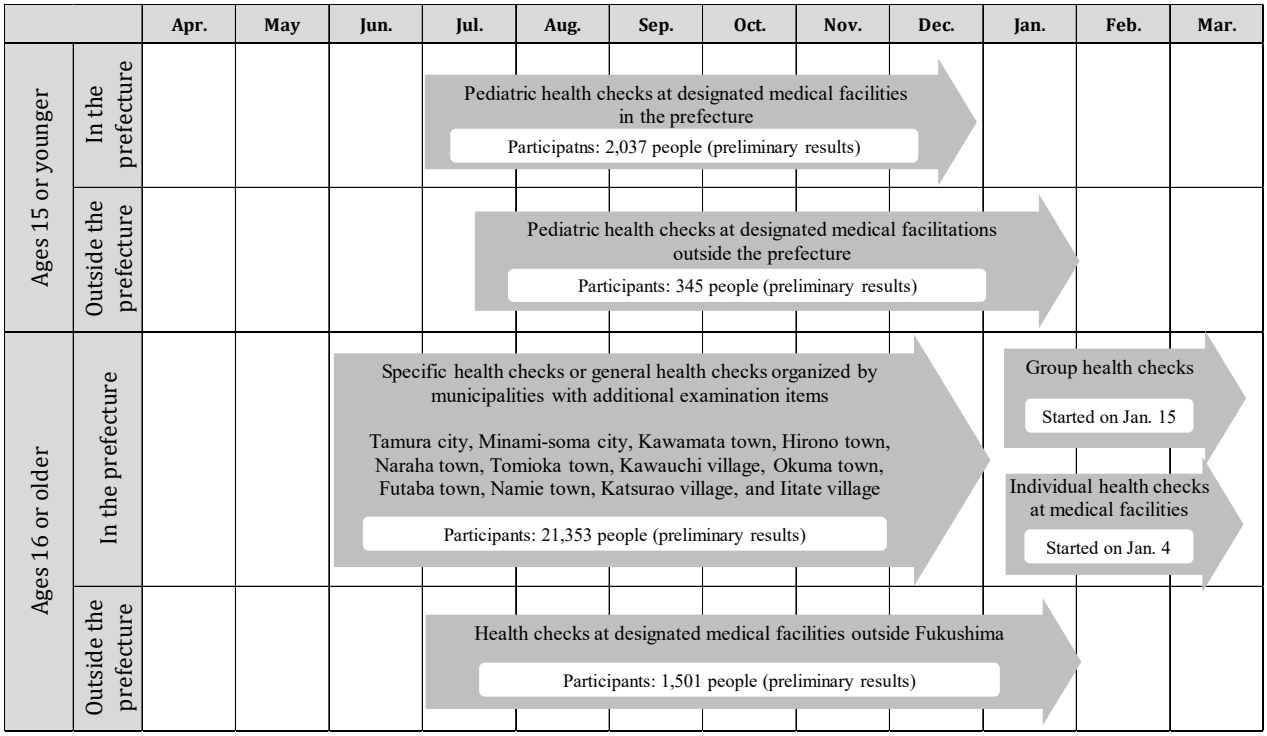
15 or younger	In the prefecture	Outside the prefecture	Total
Eligible persons	17,136	3,379	20,515
Participants	2,296	483	2,779
Participation rate	13.4%	14.3%	13.5%

16 or older	In the prefecture	Outside the prefecture	Total
Eligible persons	162,115	31,243	193,358
Participants	27,869	3,096	30,965
Participation rate	17.2%	9.9%	16.0%

*Eligible persons were divided into “in the prefecture” and “outside the prefecture” based on the mailing address to which health check invitations were sent. This method of division is different from that of dividing participants by health check type or by venue.

3. Implementation Status for FY2021 (as of December 31, 2021)

Covered population: 213,016 residents (19,440 persons aged 15 or younger, 193,576 persons aged 16 or older



(1) Eligible persons living in the prefecture

A. For those aged 16 or older

CHC was conducted simultaneously with specific health checks and general health checks by municipalities by adding some health check items to regular health check items (hereinafter referred to as "add-on health checks") in the same manner as in the previous fiscal year in the 12 municipalities, excluding Date City.

Additionally, group health checks and individual health checks at designated health check facilities were also conducted from January 2022, covering eligible persons who could not receive add-on health checks (at 419 cooperative health check facilities for individual health checks).

B. For those aged 15 or younger

In the same manner as in the previous fiscal year, pediatric health checks at designated health check facilities were conducted for a period of around six months from July to December 2021 (at 84 cooperative health check facilities).

(2) Eligible persons living outside the prefecture

After coordinating a venue for the eligible participants' prefecture of residence, we prepared and sent invitation for the health check starting from the end of June.

(3) Results report and feedback

A. Individual result report

The CHC individual results are mailed to each participant. In addition, face-to-face explanation of the results is offered to those aged 15 and under and their parents/guardians at the health check facilities where they received health checks.

B. Preparation of a leaflet

When sending invitations for group or individual health checks to eligible persons aged 16 or older, a

leaflet compiling what has become clear from the results of the CHC is enclosed. The leaflet theme changes every year: it was "Lifestyle Diseases" for FY2017, "Diabetes" for FY2018, "Metabolic Syndrome" for FY2019, and "The Basis of Your Diet" for FY2020. For FY2021, under the theme of "Significance of Continued Participation in the CHC," the leaflet explains diseases that increased after the earthquake and causes thereof, etc. using the results of the CHC and reasons for promoting annual participation in the CHC.

C. Preparation of Analysis reports on CHC results

We prepare CHC results analysis reports for each of the participating municipalities, showing temporal changes of their residents' health check results so that the residents can understand their health conditions.

We also perform additional analyses (e.g. analysis by age group and analysis of relationship between drinking, smoking, and exercising) upon request from these municipalities.

D. Holding health seminars

In order to deepen residents' understanding of the importance of receiving health checks every year and to support them to continue receiving health checks, we hold health seminars at events such as health check results reporting meetings and health classes organized by municipalities. In health seminars, medical doctors give health lectures to residents of the participating municipalities, presenting results and analyses of the CHC, and specialists offer individual consultations and blood pressure and blood glucose measurements.

Health seminars conducted in FY2021 as of December 31, 2021

Venue	Event name	Times	Contents
Naraha Town	Individual health consultation	2	・Individual consultation with health specialists ・Panel exhibition, leaflet distribution
	General health check	7	・Panel exhibition
Katsurao Village	CHC results reporting meeting	7	・Individual consultation with health specialists ・Panel exhibition, leaflet distribution
Tamura City	Tamura City Health Promotion Seminar for Residents	2	・lecture by a medical doctor ・Individual consultation with health specialists ・Blood glucose measurement ・Panel exhibition

Total 18

(4) Efforts to raise health awareness through the CHC

We have continuously conducted the following activities, using the CHC as an opportunity to raise residents' health awareness in the face of changing living conditions after a lapse of time since the Great East Japan Earthquake.

A. Publicity efforts

We have requested that municipal and prefectural governments run notices of the CHC in their public relations magazines to encourage as many residents as possible to receive health checks for prevention and/or treatment of diseases. We have also prepared posters and flyers to promote routine health checks and requested that medical facilities post them on the walls of their premises.

B. Use of the Fukushima Kenmin App

The Fukushima Kenmin App is a smartphone application developed by the prefectural government to promote the health of Fukushima residents. As a part of our efforts to encourage residents to take interest in their own health and improve their lifestyle habits, such as starting and continuing exercise routines using the Kenmin App, we enclose a Kenmin App flyer in invitations to individual or group health checks for those aged 16 or older and award points for the Kenmin App (100 points with an invitation, 200 points with a result report).

C. Securing venues for group health checks

Since the beginning of the CHC program, we have endeavored to secure health check venues in locations convenient to residents, for example, by setting up group health check venues in areas where there are many eligible residents. With the lifting of the evacuation orders, we have also set up new venues in the former evacuation zones and changed locations of venues in the area where there are only a small number of eligible residents.

D. Efforts to deepen residents' understanding of health

We prepared a pamphlet entitled "The Health Check is Your Body's Report Card," which summarizes how to read health check results, explains diseases and preventive methods, and emphasizes the necessity of health checks. The pamphlet was used as a textbook in our health seminars.

Report on the Results of the FY2020 Comprehensive Health Check Fukushima Health Management Survey (Participants Aged 15 or Younger)

< Supplementary Notes >

* Pediatric Health Checks were conducted during the following period.
  FY2011 : January to March 2012
  FY2012 to FY2020 : July to December of each fiscal year
* Percentages of obese participants were evaluated using BMI Standard Deviation Scores (BMI SDS), which were calculated based on heights and weights of the participants measured periodically at ages from 0 to 15, and the results from FY2011 to FY2020 were compared.
* Results of blood tests vary substantially by age, but since participants were divided broadly into two age groups, 0 to 6 years and 7 to 15 years, year-by-year comparisons are not possible and definitive conclusions cannot be drawn.
* Rules for describing tabulation results are the same as those used for *Vital Statistics in Japan* by the Ministry of Health, Labour and Welfare, including this nomenclature:
  When there is no data: -
  When the ratio is minor (lower than 0.05): 0.0%
* Reference materials
  FY2011 to FY2014: Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 21st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
  FY2015: Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 26th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
  FY2016: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 30th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
  FY2017: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 34th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
  FY2018: Material 4-4 "Tabulation Results by Health Check Item" for the 37th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
  FY2019: Material 3-4 "Tabulation Results by Health Check Item" for the 41st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

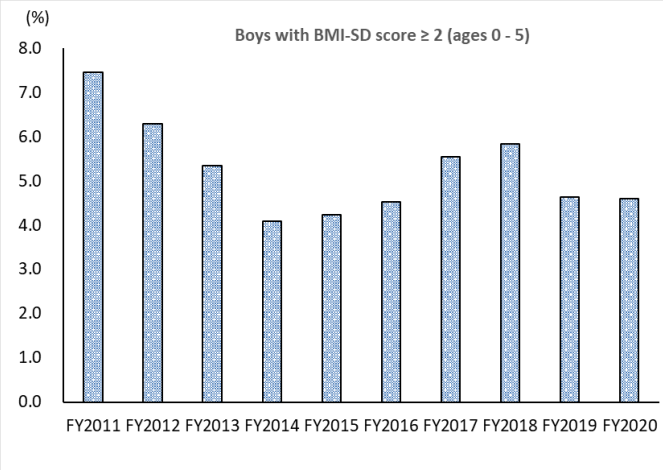
Physical Exam: (Percentage with obesity based on BMI SDS)

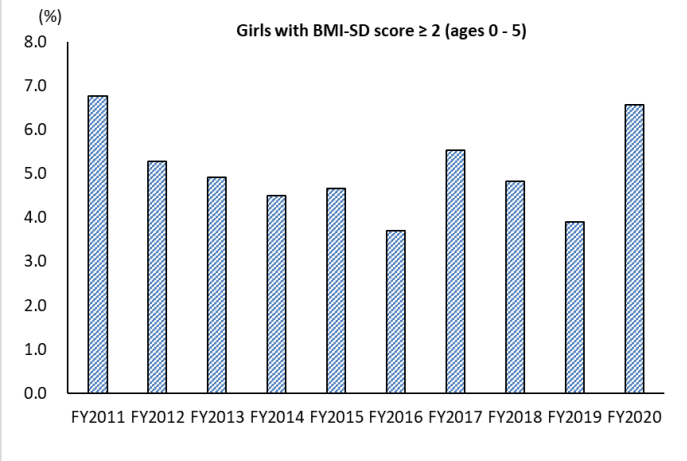
1. Results

[Participants aged 0 to 5]

The percentage of obese boys who were aged 0 to 5 at the time of the exam (BMI-SDS≧2), which was the highest in FY2011, showed a downward trend until FY2014 and then showed no specific trend thereafter.

The percentage of obese girls who were aged 0 to 5 at the time of the exam (BMI-SDS≧2), which was the highest in FY2011, showed a downward trend until FY2016 and then showed no specific trend thereafter.





BMI-SDS【0-5歳】

【Boys aged 0 - 5 at the time of health check】

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Participants	2,710	1,942	1,757	1,517	1,156	908	722	582	454	391
Average age	3.5	3.4	3.4	3.5	3.4	3.3	3.2	3.1	3.1	3.2
Average BMI-SDS	0.627	0.398	0.405	0.326	0.322	0.335	0.283	0.288	0.265	0.346
SD	1.011	1.082	1.032	1.033	0.989	1.029	1.047	1.103	1.096	1.038
SD score ≥ 2 (%)	7.5	6.3	5.4	4.1	4.2	4.5	5.5	5.8	4.6	4.6

【Girls aged 0 - 5 at the time of health check】

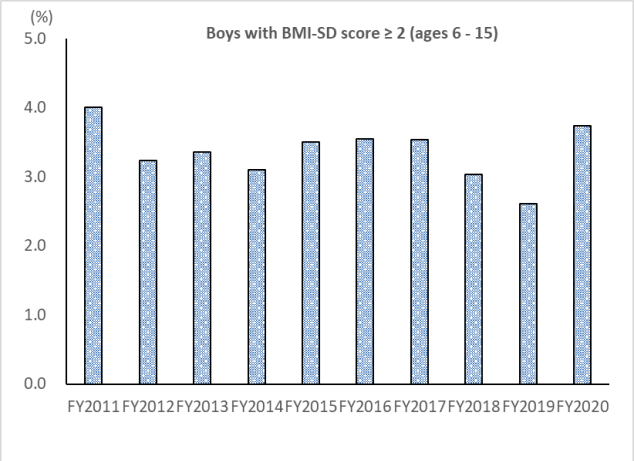
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Participants	2,688	1,955	1,667	1,467	1,181	893	741	539	437	320
Average age	3.5	3.3	3.4	3.5	3.5	3.4	3.3	3.3	3.2	3.2
Average BMI-SDS	0.558	0.332	0.304	0.278	0.314	0.317	0.339	0.291	0.265	0.447
SD	0.984	1.018	1.010	0.991	0.988	0.965	1.018	1.011	1.037	1.028
SD score ≥ 2 (%)	6.8	5.3	4.9	4.5	4.7	3.7	5.5	4.8	3.9	6.6

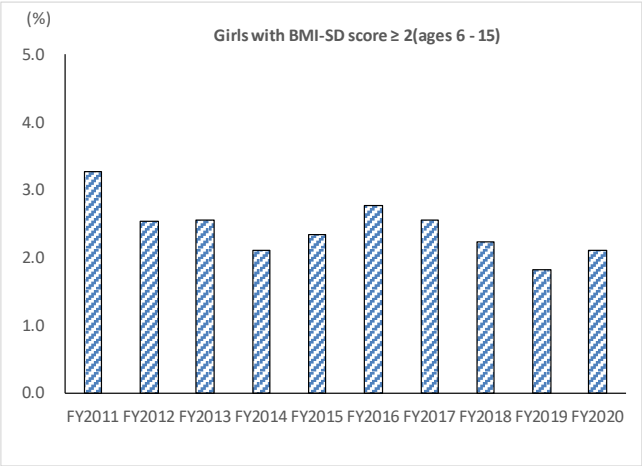
Cited file for calculation:

Growth Research Committee, The Japanese Association for Human Auxology/The Japanese Society for Pediatric Endocrinology: http://jspe.umin.jp/medical/chart_dl.html (final access on November 18, 2021)

[Participants aged 6 to 15]

The percentage of obese participants who were aged 6 to 15 at the time of the exam (BMI-SDS≥2), which was the highest in FY2011, showed a downward trend until FY2014 and then showed no specific trend thereafter either boys or girls.





【Boys aged 6 - 15 at the time of health check】

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Participants	6,318	4,042	3,484	3,165	2,711	2,367	1,981	1,650	1,266	1,016
Average age	10.9	10.6	10.6	10.6	10.7	10.7	10.6	10.8	11.0	11.3
Average BMI-SDS	0.168	0.066	0.090	0.051	0.046	0.018	0.076	0.061	0.045	0.154
SD	1.048	1.127	1.089	1.076	1.097	1.113	1.066	1.074	1.158	1.082
SD score ≥ 2 (%)	4.0	3.2	3.4	3.1	3.5	3.5	3.5	3.0	2.6	3.7

【Girls aged 6 - 15 at the time of health check】

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Participants	6,209	3,862	3,322	3,020	2,510	2,204	1,915	1,614	1,259	992
Average age	11.0	10.7	10.6	10.6	10.6	10.6	10.5	10.7	11.1	11.2
Average BMI-SDS	0.135	0.004	-0.001	-0.014	0.021	0.006	0.000	-0.011	-0.070	0.019
SD	0.993	1.023	1.002	0.988	0.981	1.017	0.991	1.002	1.000	1.007
SD score ≥ 2 (%)	3.3	2.5	2.6	2.1	2.4	2.8	2.6	2.2	1.8	2.1

Cited file for calculation:

Growth Research Committee, The Japanese Association for Human Auxology/The Japanese Society for Pediatric Endocrinology: http://jspe.umin.jp/medical/chart_dl.html (final access on November 18, 2021)

2. Explanation of the Graphs

A Body Mass Index Standard Deviation Score (BMI SDS) was calculated from height and weight and those with a BMI-SDS of 2 or higher were classified as obese.

3. Action Threshold

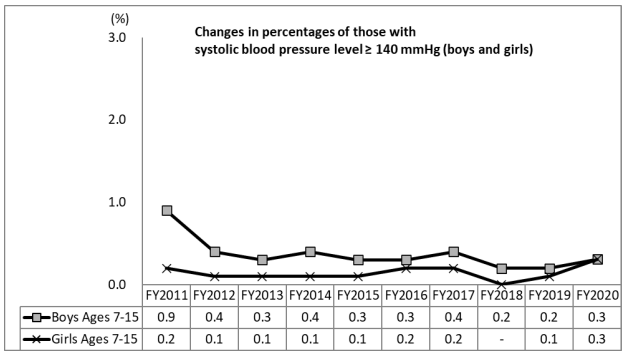
Item	Obese
BMI-SDS	≥ 2 SD

* When evaluating the physical constitution of Japanese children, it is considered appropriate to use thresholds based on the anthropometric data published by the Ministry of Health, Labour and Welfare and the Ministry of Education, Culture, Sports, Science and Technology in FY2000, as the standard values ("Fundamental Concept for the Evaluation of Japanese Children's Physical Constitution" prepared by the Joint Committee for Standard Values of the Japanese Society for Pediatric Endocrinology and the Japanese Association for Human Auxology).
In this report, the standard values calculated based on the FY2000 measurement results were used.

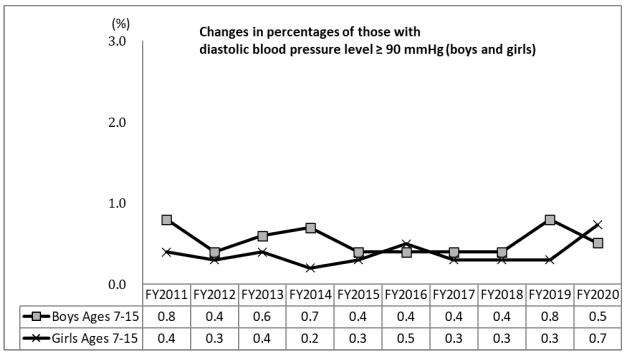
Physical Exam: Blood Pressure

1. Results

The percentage of boys with systolic blood pressures of 140 mmHg or over was the highest in FY2011 but showed a downward trend thereafter, while no specific trend was observed in the percentage of boys with diastolic blood pressures of 90 mmHg or over. The percentage of girls with systolic blood pressures of 140 mmHg or over showed no substantial changes. The percentage of girls with diastolic blood pressures of 90 mmHg or over had shown no substantial changes until FY2019 but showed an increase in FY2020.



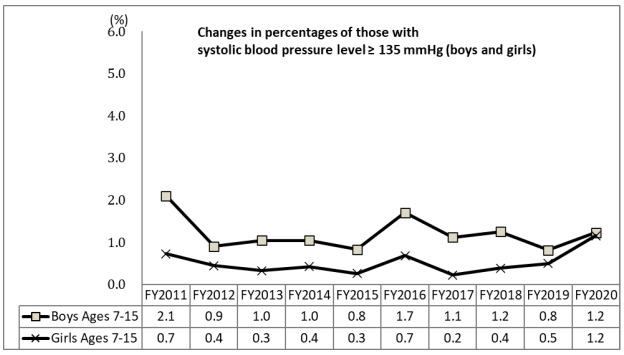
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Boys Ages 7-15	0.9	0.4	0.3	0.4	0.3	0.3	0.4	0.2	0.2	0.3
Girls Ages 7-15	0.2	0.1	0.1	0.1	0.1	0.2	0.2	-	0.1	0.3



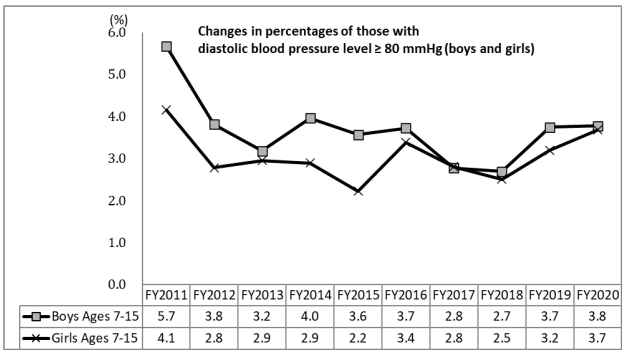
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Boys Ages 7-15	0.8	0.4	0.6	0.7	0.4	0.4	0.4	0.4	0.8	0.5
Girls Ages 7-15	0.4	0.3	0.4	0.2	0.3	0.5	0.3	0.3	0.3	0.7

The percentage of boys with systolic blood pressures of 135 mmHg or over was the highest in FY2011 and varied up and down thereafter. The percentage of boys with diastolic blood pressures of 80 mmHg or over was the highest in FY2011, showed a declining trend thereafter until FY2018, but slightly increased through FY2020.

The percentage of girls with systolic blood pressures of 135 mmHg or over had shown no substantial changes from FY2011 to FY2019, but showed an upward trend in FY2020. The percentage of girls with diastolic blood pressures of 80 mmHg or over was the highest in FY2011, varied up and down thereafter, and slightly increased through FY2020.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Boys Ages 7-15	2.1	0.9	1.0	1.0	0.8	1.7	1.1	1.2	0.8	1.2
Girls Ages 7-15	0.7	0.4	0.3	0.4	0.3	0.7	0.2	0.4	0.5	1.2



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Boys Ages 7-15	5.7	3.8	3.2	4.0	3.6	3.7	2.8	2.7	3.7	3.8
Girls Ages 7-15	4.1	2.8	2.9	2.9	2.2	3.4	2.8	2.5	3.2	3.7

2. Explanation of the Graphs

In the Guidelines for the Management of Hypertension (Japanese Society of Hypertension, 2019), systolic blood pressures of 140 mmHg or over and diastolic blood pressures of 90 mmHg are action values used for group and individual health checks for those aged 16 or older; systolic blood pressures of 135 mmHg or over and diastolic blood pressures of 80 mmHg or over are action values for higher-grade elementary school students.

3. Reference Intervals for Blood Pressure by Age Group and by Sex

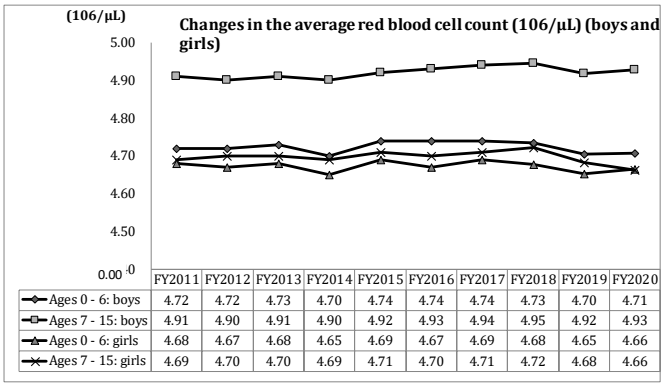
Age group	Systolic blood pressure level (mmHg)	Diastolic blood pressure level (mmHg)
Infants	≥120	≥70
Elementary school: Lower graders	≥130	≥80
Higher graders	≥135	≥80
Junior high school: Boys	≥140	≥85
Girls	≥135	≥80
High school	≥140	≥85

Source: Guidelines for the Management of Hypertension (Japanese Society of Hypertension, 2019)

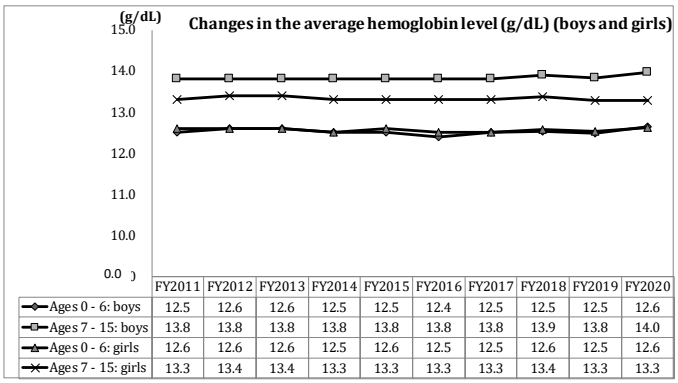
Peripheral Blood Test: Red Blood Cells, Hemoglobin, Hematocrit

1. Results

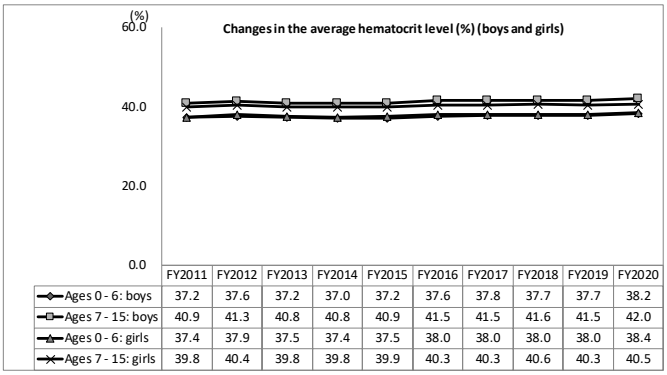
There were no substantial changes in red blood cell counts, hemoglobin, or hematocrit for either boys or girls in any age group.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	4.72	4.72	4.73	4.70	4.74	4.74	4.74	4.73	4.70	4.71
Ages 7 - 15: boys	4.91	4.90	4.91	4.90	4.92	4.93	4.94	4.95	4.92	4.93
Ages 0 - 6: girls	4.68	4.67	4.68	4.65	4.69	4.67	4.69	4.68	4.65	4.66
Ages 7 - 15: girls	4.69	4.70	4.70	4.69	4.71	4.70	4.71	4.72	4.68	4.66



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	12.5	12.6	12.6	12.5	12.5	12.4	12.5	12.5	12.5	12.6
Ages 7 - 15: boys	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.9	13.8	14.0
Ages 0 - 6: girls	12.6	12.6	12.6	12.5	12.6	12.5	12.5	12.6	12.5	12.6
Ages 7 - 15: girls	13.3	13.4	13.4	13.3	13.3	13.3	13.3	13.4	13.3	13.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	37.2	37.6	37.2	37.0	37.2	37.6	37.8	37.7	37.7	38.2
Ages 7 - 15: boys	40.9	41.3	40.8	40.8	40.9	41.5	41.5	41.6	41.5	42.0
Ages 0 - 6: girls	37.4	37.9	37.5	37.4	37.5	38.0	38.0	38.0	38.0	38.4
Ages 7 - 15: girls	39.8	40.4	39.8	39.8	39.9	40.3	40.3	40.6	40.3	40.5

2. Explanation of the Graphs

The graphs show changes in the average values of red blood cell counts, hemoglobin levels, and hematocrit levels.

3. Reference Intervals

Age	Red blood cells ($\times 10^{12}$/L)	Hemoglobin (g/dL)	Hematocrit (%)
At birth	5.25±0.40	16.6±1.5	53±4.5
1 day old	5.14±0.60	19.0±2.0	58±5.5
1 week old	4.86±0.60	17.9±1.5	56±6.0
1 month old	4.10±0.60	14.2±2.0	43±6.0
3 months old	3.70±0.35	11.3±1.0	33±3.0
6 months old	4.60±0.35	12.3±1.0	36±3.0
12 months old	4.60±0.40	11.6±0.75	36±1.5
Ages 1 – 4	4.70±0.35	12.6±0.5	38±1.5
Ages 4 – 12	4.80±0.30	13.0±1.0	40±2.5
Adult males	5.40±0.35	16.0±1.0	47±3.0
Adult females	48.0±0.30	14.0±1.0	42±2.5

* Average value ± standard deviation

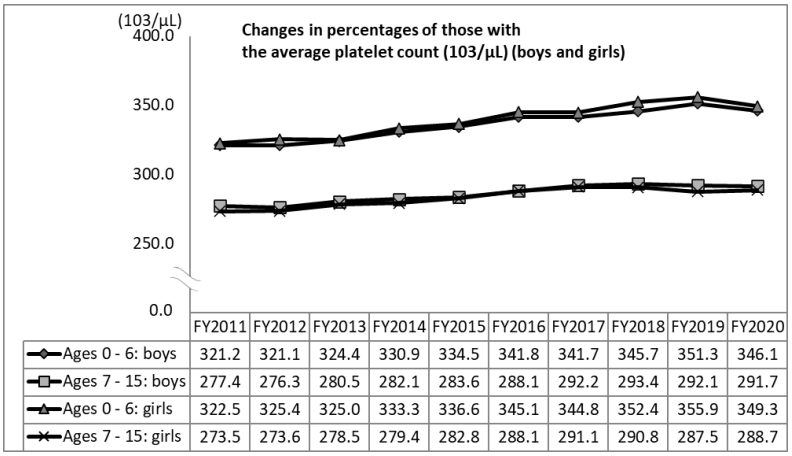
* By international consensus, red blood cell counts are expressed as numbers $\times 10^{12}$/L or $\times 10^{6}$/μL).

Source: Clinical Management of Laboratory Data in Pediatrics 2017 (2nd edition)

Peripheral Blood Test: Platelet Count

1. Results

There were no substantial changes in platelet counts for either boys or girls in any age group.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	321.2	321.1	324.4	330.9	334.5	341.8	341.7	345.7	351.3	346.1
Ages 7 - 15: boys	277.4	276.3	280.5	282.1	283.6	288.1	292.2	293.4	292.1	291.7
Ages 0 - 6: girls	322.5	325.4	325.0	333.3	336.6	345.1	344.8	352.4	355.9	349.3
Ages 7 - 15: girls	273.5	273.6	278.5	279.4	282.8	288.1	291.1	290.8	287.5	288.7

2. Explanation of the Graph

The graph shows changes in the average values of platelet counts.

3. Reference Interval

Item	Reference interval
Number of blood platelets ($\times 10^9$/L)	150 - 400

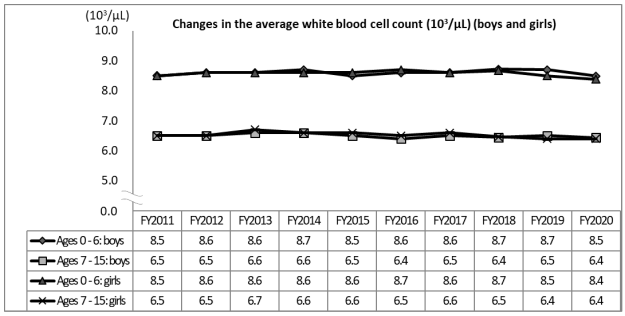
*By international consensus, platelet counts are expressed as numbers $\times 10^9$/L or $\times 10^3$/μL.

Source: Clinical Management of Laboratory Data in Pediatrics 2017 (2nd edition)

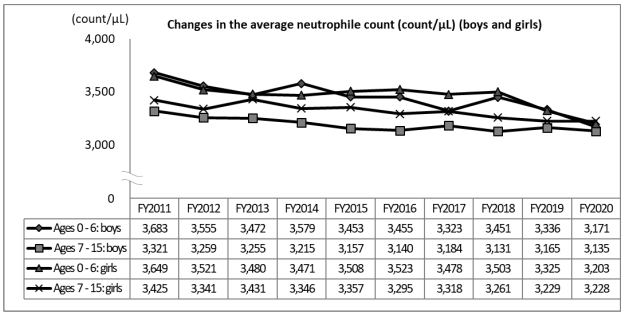
Peripheral Blood Test: White Blood Cell Count and Differential

1. Results

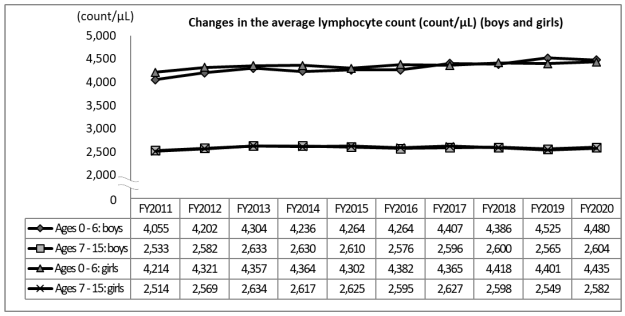
There were no substantial changes in white blood cell count or differential for either boys or girls in any age group.



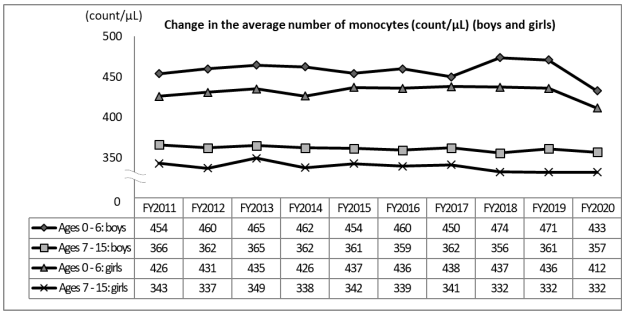
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	8.5	8.6	8.6	8.7	8.5	8.6	8.6	8.7	8.7	8.5
Ages 7 - 15: boys	6.5	6.5	6.6	6.6	6.5	6.4	6.5	6.4	6.5	6.4
Ages 0 - 6: girls	8.5	8.6	8.6	8.6	8.6	8.7	8.6	8.7	8.5	8.4
Ages 7 - 15: girls	6.5	6.5	6.7	6.6	6.6	6.5	6.6	6.5	6.4	6.4



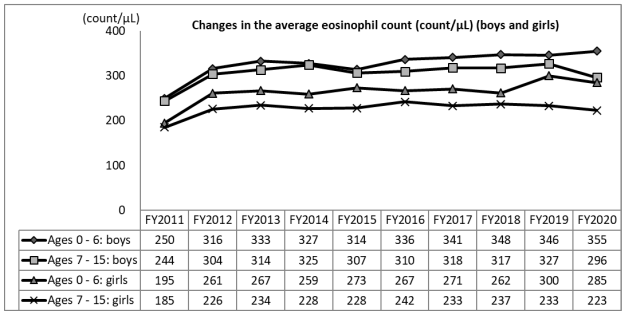
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	3,683	3,555	3,472	3,579	3,453	3,455	3,323	3,451	3,336	3,171
Ages 7 - 15: boys	3,321	3,259	3,255	3,215	3,157	3,140	3,184	3,131	3,165	3,135
Ages 0 - 6: girls	3,649	3,521	3,480	3,471	3,508	3,523	3,478	3,503	3,325	3,203
Ages 7 - 15: girls	3,425	3,341	3,431	3,346	3,357	3,295	3,318	3,261	3,229	3,228



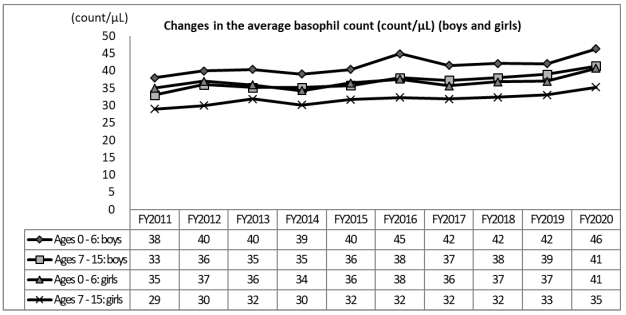
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	4,055	4,202	4,304	4,236	4,264	4,264	4,407	4,386	4,525	4,480
Ages 7 - 15: boys	2,533	2,582	2,633	2,630	2,610	2,576	2,596	2,600	2,565	2,604
Ages 0 - 6: girls	4,214	4,321	4,357	4,364	4,302	4,382	4,365	4,418	4,401	4,435
Ages 7 - 15: girls	2,514	2,569	2,634	2,617	2,625	2,595	2,627	2,598	2,549	2,582



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	454	460	465	462	454	460	450	474	471	433
Ages 7 - 15: boys	366	362	365	362	361	359	362	356	361	357
Ages 0 - 6: girls	426	431	435	426	437	436	438	437	436	412
Ages 7 - 15: girls	343	337	349	338	342	339	341	332	332	332



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	250	316	333	327	314	336	341	348	346	355
Ages 7 - 15: boys	244	304	314	325	307	310	318	317	327	296
Ages 0 - 6: girls	195	261	267	259	273	267	271	262	300	285
Ages 7 - 15: girls	185	226	234	228	228	242	233	237	233	223



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 0 - 6: boys	38	40	40	39	40	45	42	42	42	46
Ages 7 - 15: boys	33	36	35	35	36	38	37	38	39	41
Ages 0 - 6: girls	35	37	36	34	36	38	36	37	37	41
Ages 7 - 15: girls	29	30	32	30	32	32	32	32	33	35

2. Explanation of the Graphs

The graphs show changes in the average values of white blood cell counts and differentials.

3. Reference Intervals

Total number of white blood cells ($\times 10^9$/L)

Age	Average	Range	Age	Average	Range
At birth	18.1	9.0-30.0	Aged 1	11.4	6.0-17.5
12 hours old	22.8	13.0-38.0	Aged 2	10.6	6.0-17.0
24 hours old	18.9	9.4-34.0	Aged 4	9.1	5.5-15.5
1 week old	12.2	5.0-21.0	Aged 6	8.5	5.0-14.5
2 weeks old	11.4	5.0-20.0	Aged 8	8.3	4.5-13.5
1 month old	10.8	5.0-19.5	Aged 10	8.1	4.5-13.5
6 months old	11.9	6.0-17.5	Aged 16	7.8	4.5-13.0
			Aged 21	7.4	4.5-11.0

* By international consensus, white blood cell counts are expressed as numbers $\times 10^9$/L or $\times 10^3$/μL).

Source: Clinical Management of Laboratory Data in Pediatrics 2017 (2nd edition)

Neutrophil, lymphocyte, monocyte and eosinophil counts and percentages

(x10^3/μL; Range is the 95% confidence interval.)

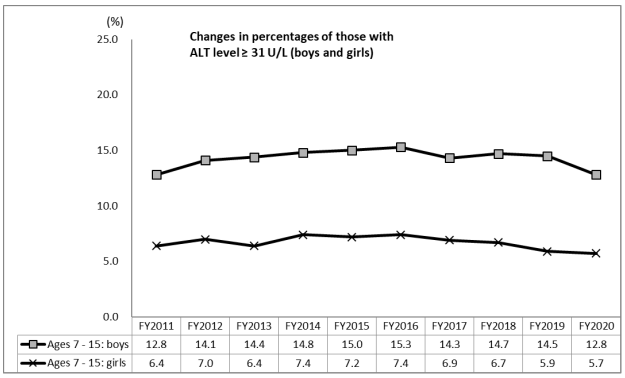
Age	Neutrophil count			Lymphocyte count			Monocyte count		Eosinophil count	
	Average	Range	%	Average	Range	%	Average	%	Average	%
At birth	11.0	6.0-26.0	61	5.5	2.0-11.0	31	1.1	6	0.4	2
12 hours old	15.5	6.0-28.0	68	5.5	2.0-11.0	24	1.2	5	0.5	2
24 hours old	11.5	5.0-21.0	61	5.8	2.0-11.5	31	1.1	6	0.5	2
1 week old	5.5	1.5-10.0	45	5.0	2.0-17.0	41	1.1	9	0.5	4
2 weeks old	4.5	1.0-9.5	40	5.5	2.0-17.0	48	1.0	9	0.4	3
1 month old	3.8	1.0-9.0	35	6.0	2.5-16.5	56	0.7	7	0.3	3
6 months old	3.8	1.0-8.5	32	7.3	4.0-13.5	61	0.6	5	0.3	3
Aged 1	3.5	1.5-8.5	31	7.0	4.0-10.5	61	0.6	5	0.3	3
Aged 2	3.5	1.5-8.5	33	6.3	3.0-9.5	59	0.5	5	0.3	3
Aged 4	3.8	1.5-8.5	42	4.5	2.0-8.0	50	0.5	5	0.3	3
Aged 6	4.3	1.5-8.0	51	3.5	1.5-7.0	42	0.4	5	0.2	3
Aged 8	4.4	1.5-8.0	53	3.3	1.5-6.8	39	0.4	4	0.2	2
Aged 10	4.4	1.8-8.0	54	3.1	1.5-6.5	38	0.4	4	0.2	2
Aged 16	4.4	1.8-8.0	57	2.8	1.2-5.2	35	0.4	5	0.2	3
Aged 21	4.4	1.8-7.7	59	2.5	1.0-4.8	34	0.3	4	0.2	3

Source: Clinical Management of Laboratory Data in Pediatrics 2017 (2nd edition)

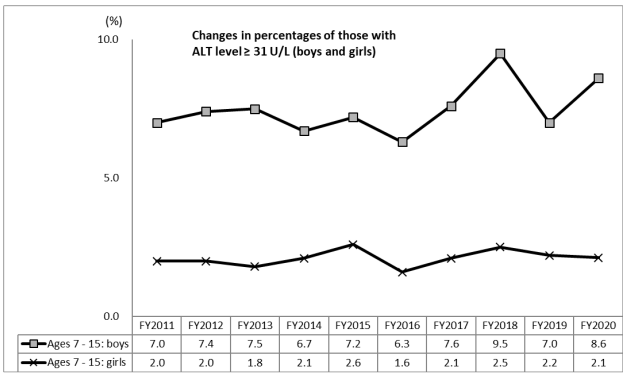
Liver Function: AST, ALT, γ-GT

1. Results

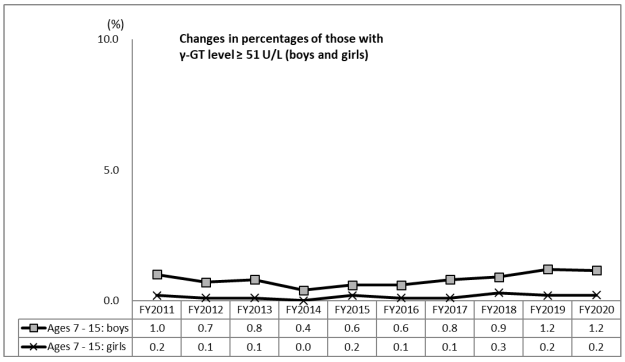
Liver dysfunction was found more often among boys than among girls in all fiscal years. The percentages showed no substantial changes for either boys or girls.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	12.8	14.1	14.4	14.8	15.0	15.3	14.3	14.7	14.5	12.8
Ages 7 - 15: girls	6.4	7.0	6.4	7.4	7.2	7.4	6.9	6.7	5.9	5.7



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	7.0	7.4	7.5	6.7	7.2	6.3	7.6	9.5	7.0	8.6
Ages 7 - 15: girls	2.0	2.0	1.8	2.1	2.6	1.6	2.1	2.5	2.2	2.1



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	1.0	0.7	0.8	0.4	0.6	0.6	0.8	0.9	1.2	1.2
Ages 7 - 15: girls	0.2	0.1	0.1	0.0	0.2	0.1	0.1	0.3	0.2	0.2

2. Explanation of the Graphs

An AST level of 31 U/L or over, an ALT level of 31 U/L or over, and a γ-GT level of 51 U/L or over are action criteria used for group and individual health checks for those aged 16 or older.

3. Reference Intervals

AST(GOT) (U/L)

Age	Males	Females
1 month old	19-61	20-71
6 months old	25-85	22-76
Aged 1	23-51	22-50
Aged 3	20-45	20-44
Aged 6	17-39	16-38
Aged 12	14-33	12-30
Adults	30 or lower	

ALT(GPT) (U/L)

Age	Males	Females
1 month old	10-50	11-68
6 months old	12-62	10-63
Aged 1	5-25	5-31
Aged 3	4-24	5-27
Aged 6	4-23	4-25
Aged 12	3-20	3-18
Adults	30 or lower	

γ—GT(U/L)

	Males	Females
Adults	0-50	0-30
From children to young adults	γ-GT levels normally reach adult values 5 to 6 months after birth.	
Newborns	5 to 6 times the normal upper limit	

Source: Clinical Management of Laboratory Data in Pediatrics 2017 (2nd edition)

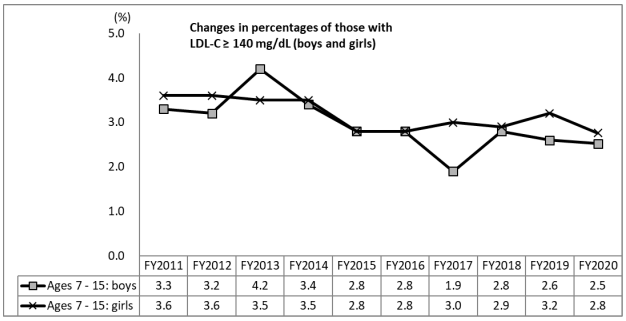
Lipids: LDL Cholesterol, Triglyceride, HDL Cholesterol

1. Results

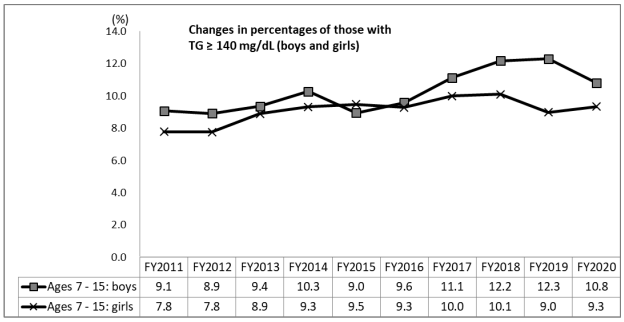
The percentage of boys with LDL-C levels of 140 mg/dL or over was variable with a slight downward trend. There were no substantial changes in the percentage of girls with LDL-C levels of 140 mg/dL or over.

The percentage of boys with triglyceride levels of 140 mg/dL or over showed an upward trend from FY2011 to FY2019, but decreased in FY2020. There were no substantial changes in the percentage of girls with triglyceride levels of 140 mg/dL or over.

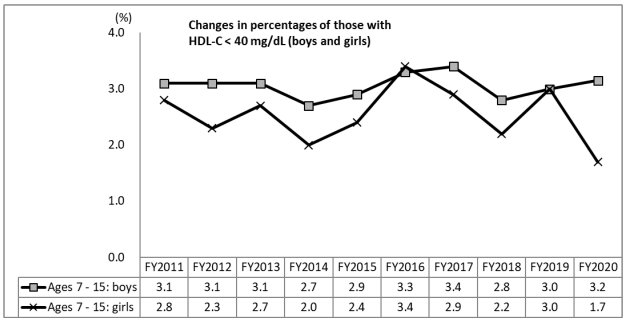
There were also no substantial changes in the percentage of boys with HDL-C levels lower than 40 mg/dL, while the percentage of girls with HDL-C levels lower than 40 mg/dL was variable with a downward trend in FY2020.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	3.3	3.2	4.2	3.4	2.8	2.8	1.9	2.8	2.6	2.5
Ages 7 - 15: girls	3.6	3.6	3.5	3.5	2.8	2.8	3.0	2.9	3.2	2.8



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	9.1	8.9	9.4	10.3	9.0	9.6	11.1	12.2	12.3	10.8
Ages 7 - 15: girls	7.8	7.8	8.9	9.3	9.5	9.3	10.0	10.1	9.0	9.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	3.1	3.1	3.1	2.7	2.9	3.3	3.4	2.8	3.0	3.2
Ages 7 - 15: girls	2.8	2.3	2.7	2.0	2.4	3.4	2.9	2.2	3.0	1.7

2. Explanation of the Graphs

Determination of hyperlipidemia was based on the following reference intervals.

3. Reference intervals for diagnosing hyperlipidemia for children (elementary and junior high school students, fasting blood sampling)

LDL cholesterol（LDL-C）	≥140 ㎎/dL
Triglycerides (TG)	≥140 ㎎/dL
HDL cholesterol（HDL-C）	< 40 ㎎/dL

Source: Japan Atherosclerosis Society (JAS) Guidelines for Prevention of Atherosclerotic Cardiovascular Diseases 2017

Blood Glucose: Fasting Blood Glucose, HbA1c

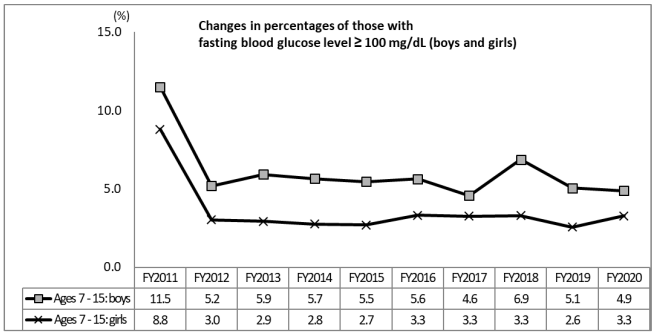
1. Results

Both for boys and girls, the percentages of those whose fasting blood glucose level was 100 mg/dL or over hit a peak in FY2011, decreased in FY2012, and maintained almost the same levels thereafter.

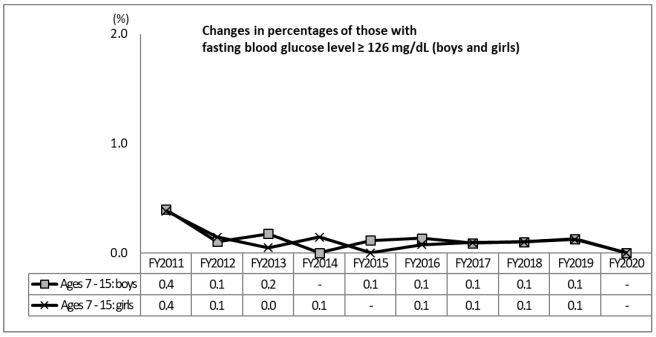
There were no substantial changes in the percentage of those with fasting blood glucose level of 126 mg/dL or over for either boys or girls.

The percentage of those with HbA1c levels of 5.6% or over cycled up and down both for boys and girls.

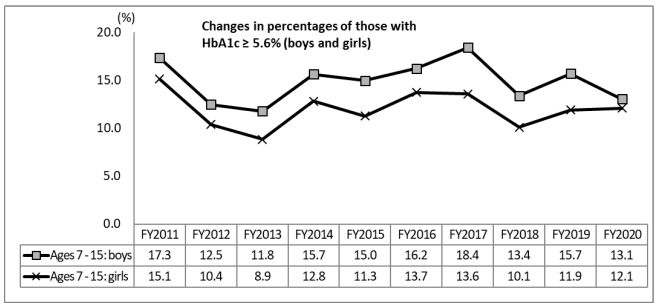
There were also no substantial differences in the percentages of those whose HbA1c level was 6.5% or over between boys and girls, and the percentages remained unchanged both for boys and girls.



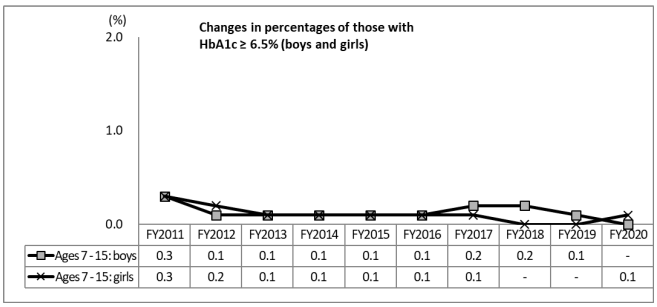
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	11.5	5.2	5.9	5.7	5.5	5.6	4.6	6.9	5.1	4.9
Ages 7 - 15: girls	8.8	3.0	2.9	2.8	2.7	3.3	3.3	3.3	2.6	3.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	0.4	0.1	0.2	-	0.1	0.1	0.1	0.1	0.1	-
Ages 7 - 15: girls	0.4	0.1	0.0	0.1	-	0.1	0.1	0.1	0.1	-



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	17.3	12.5	11.8	15.7	15.0	16.2	18.4	13.4	15.7	13.1
Ages 7 - 15: girls	15.1	10.4	8.9	12.8	11.3	13.7	13.6	10.1	11.9	12.1



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	-
Ages 7 - 15: girls	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-	-	0.1

2. Explanation of the Graphs

Determinations of the existence of a high blood glucose level (fasting blood glucose level of 100 mg/dL or over and HbA1c level of 5.6% or over) and diabetes (fasting blood glucose level of 126 mg/dL or over and HbA1c level of 6.5% or over) were based on the following reference intervals, applicable to children and adults.

3. Reference Intervals

Classification and determination criteria based on fasting blood glucose level and through 75g OGTT

	Measurement time			Classification
	Fasting		2-hours postprandial	
Blood glucose (Venous plasma level)	126 mg/dL or over	◀ or ▶	200 mg/dL or over	Diabetes
	Intermediate values, neither diabetic nor normal			Borderline
	Lower than 110 mg/dL	◀ and ▶	Lower than 140 mg/dL	Normal

(i) Early morning fasting blood glucose level: 126 mg/dL or over
(ii) Blood glucose level after 2-hour 75g OGTT: 200 mg/dL or over
(iii) Casual blood glucose level: 200 mg/dL or over
(iv) HbA1c level: 6.5% or over

Blood glucose levels matching any of (i) to (iv) are diagnostic of diabetes.

(v) Early morning fasting blood glucose level: Lower than 110 mg/dL
(vi) Blood glucose level after 2-hour 75g OGTT: Lower than 140 mg/dL

Blood glucose levels matching (v) and (vi) rule out a diagnosis of diabetes.

- Intermediate blood glucose values indicate a “borderline” condition that is neither diabetic nor normal.

Source: "Treatment Guide for Diabetes 2020-2021" by the Japan Diabetes Society

Criteria for conducting a detailed health check (additional check items based on a doctor's judgment)

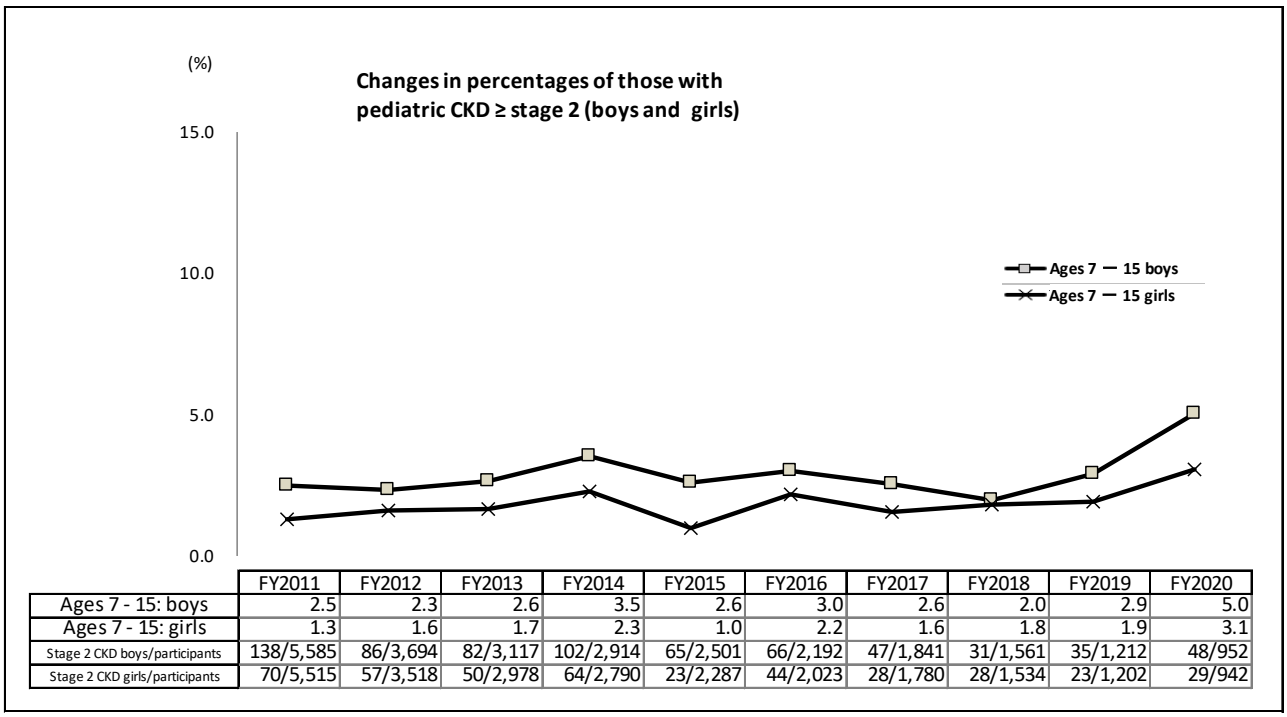
Blood glucose level	Fasting blood glucose level of 100 mg/dL or over and HbA1c level (NGSP level) of 5.6% or over or casual blood glucose level of 100 mg/dL or over

Source: "Guidelines for Smooth Implementation of Specified Health Checkups and Health Guidance (ver. 3.2) 2021" by the Ministry of Health, Labour and Welfare

Renal Function (Serum Creatinine)

1. Results

The percentage of children having stage 2 or higher chronic kidney disease showed no specific trend from FY2011 to FY2020 for either boys or girls.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	2.5	2.3	2.6	3.5	2.6	3.0	2.6	2.0	2.9	5.0
Ages 7 - 15: girls	1.3	1.6	1.7	2.3	1.0	2.2	1.6	1.8	1.9	3.1
Stage 2 CKD boys/participants	138/5,585	86/3,694	82/3,117	102/2,914	65/2,501	66/2,192	47/1,841	31/1,561	35/1,212	48/952
Stage 2 CKD girls/participants	70/5,515	57/3,518	50/2,978	64/2,790	23/2,287	44/2,023	28/1,780	28/1,534	23/1,202	29/942

2. Explanation of the Graph

The graph shows the percentages of children who were diagnosed as having stage 2 or higher chronic kidney disease, based on their serum creatinine levels and the following reference intervals.

3. Reference Intervals

Table for determining chronic kidney disease (CKD) stages based on serum creatinine levels (mg/dL)

Age	Stage 2	Stage 3	Stage 4	Stage 5
7	0.50-	0.75-	1.49-	2.97-
8	0.54-	0.81-	1.61-	3.21-
9	0.55-	0.83-	1.65-	3.29-
10	0.55-	0.83-	1.65-	3.29-
11	0.61-	0.91-	1.81-	3.61-

Age	Stage 2		Stage 3		Stage 4		Stage 5	
Sex	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
12	0.71-	0.70-	1.07-	1.05-	2.13-	2.09-	4.25-	4.17-
13	0.79-	0.71-	1.19-	1.07-	2.37-	2.13-	4.73-	4.25-
14	0.87-	0.78-	1.31-	1.17-	2.61-	2.33-	5.21-	4.65-
15	0.91-	0.75-	1.37-	1.13-	2.73-	2.25-	5.45-	4.49-

Source: "Child Chronic Kidney Disease: Guidelines for Renal Impairment Diagnosis and Renal Function Assessment for Children" (2019)" by the Guidelines Editorial Board

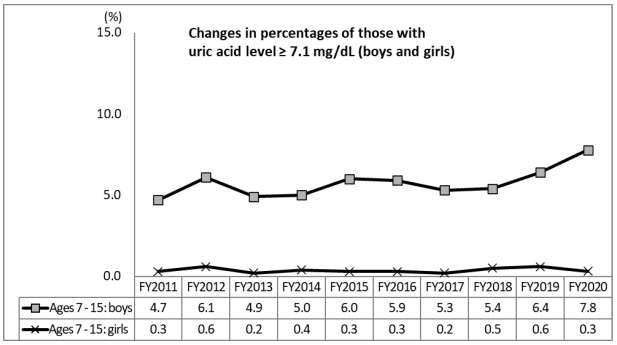
Uric Acid

1. Results

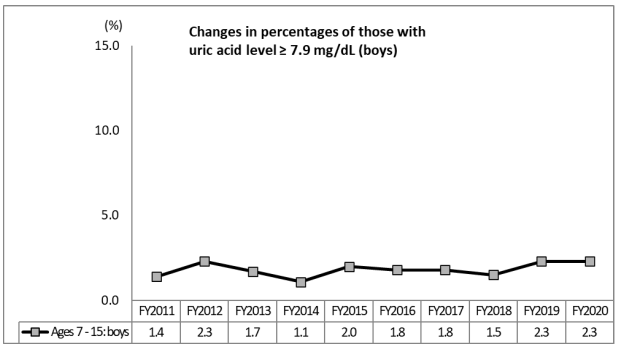
The percentage of boys with uric acid of 7.1 mg/dL or over slightly increased in FY2020, compared with the percentage in FY2011, but the percentage of girls with uric acid of 7.1 mg/dL or over showed no substantial changes.

There were no substantial changes in the percentage of boys with uric acid of 7.9 mg/dL or over.

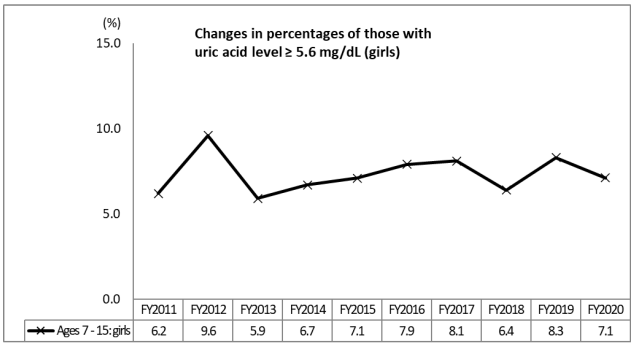
The percentage of girls with uric acid of 5.6 mg/dL or over was cyclic and slightly decreased in FY2020.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	4.7	6.1	4.9	5.0	6.0	5.9	5.3	5.4	6.4	7.8
Ages 7 - 15: girls	0.3	0.6	0.2	0.4	0.3	0.3	0.2	0.5	0.6	0.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: boys	1.4	2.3	1.7	1.1	2.0	1.8	1.8	1.5	2.3	2.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Ages 7 - 15: girls	6.2	9.6	5.9	6.7	7.1	7.9	8.1	6.4	8.3	7.1

2. Explanation of the Graphs

Determination of hyperuricemia was based on the following reference intervals.

3. Reference Intervals

Definition of hyperuricemia in the "Guidelines for the Management of Hyperuricemia and Gout" by the Japanese Society of Gout and Uric & Nucleic Acids.	Uric acid: 7.1 mg/dL or higher
Values exceeding the upper limits of the common reference intervals established by the Japanese Committee for Clinical Laboratory Standards	Uric acid Boys: 7.9 mg/dL or higher Girls: 5.6 mg/dL or higher

Report on the Results of the FY2020 Comprehensive Health Check Fukushima Health Management Survey (Participants Aged 16 or Older)

< Supplementary Notes >

* Participants aged 16 or older were divided into three age groups: 16 to 39 years, 40 to 64 years, and 65 years or older, with results compiled and shown accordingly.
* Because individuals shift from one age group to another, year-by-year comparisons are difficult, and definitive conclusions cannot be drawn.
* Rules for describing tabulation results are the same as those used for Vital Statistics in Japan by the Ministry of Health, Labour and Welfare.
  When there is no data: -
  When the ratio is minor (lower than 0.05): 0.0%

* Reference materials

FY2011 to FY2014: Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 21st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

FY2015: Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 26th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

FY2016: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 30th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

FY2017: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 34th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

FY2018: Material 4-4 "Tabulation Results by Health Check Item" for the 37th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

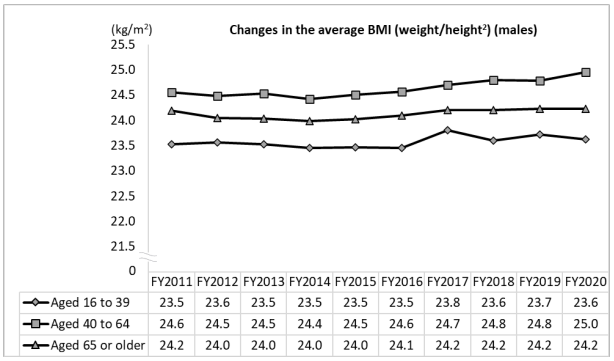
FY2019: Material 3-4 "Tabulation Results by Health Check Item" for the 41st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

Physical Exam: BMI

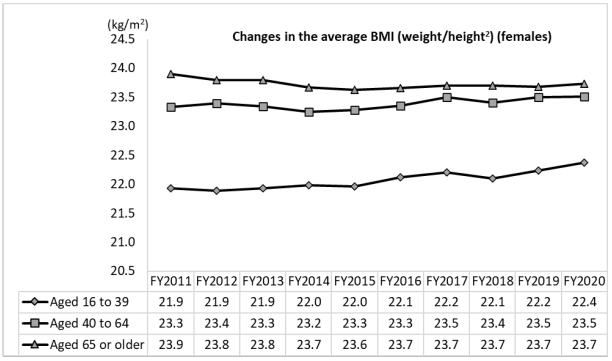
1. Results

Compared with the results for FY2016, the percentage of males with BMI of 25 kg/m^2 or over increased in FY2017 for all age groups, with no substantial changes thereafter to FY2020, except for those aged 40 to 64, which showed a slight increase in FY2020.

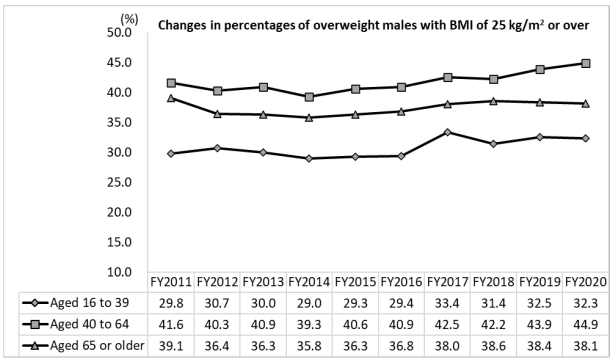
The percentage of females with BMI of 25 kg/m^2 or over showed an upward trend among those aged 16 to 39 from FY2011 to FY2019 but decreased slightly in FY2020. The same percentage increased slightly among those aged 40 to 64 and decreased slightly among those aged 65 or older in FY2020 compared with FY2011.



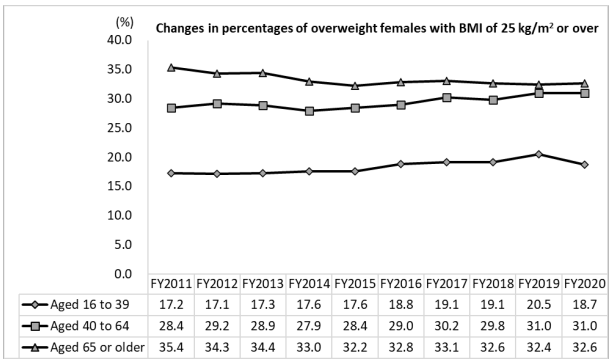
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	23.5	23.6	23.5	23.5	23.5	23.5	23.8	23.6	23.7	23.6
Aged 40 to 64	24.6	24.5	24.5	24.4	24.5	24.6	24.7	24.8	24.8	25.0
Aged 65 or older	24.2	24.0	24.0	24.0	24.0	24.1	24.2	24.2	24.2	24.2



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	21.9	21.9	21.9	22.0	22.0	22.1	22.2	22.1	22.2	22.4
Aged 40 to 64	23.3	23.4	23.3	23.2	23.3	23.3	23.5	23.4	23.5	23.5
Aged 65 or older	23.9	23.8	23.8	23.7	23.6	23.7	23.7	23.7	23.7	23.7



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	29.8	30.7	30.0	29.0	29.3	29.4	33.4	31.4	32.5	32.3
Aged 40 to 64	41.6	40.3	40.9	39.3	40.6	40.9	42.5	42.2	43.9	44.9
Aged 65 or older	39.1	36.4	36.3	35.8	36.3	36.8	38.0	38.6	38.4	38.1



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	17.2	17.1	17.3	17.6	17.6	18.8	19.1	19.1	20.5	18.7
Aged 40 to 64	28.4	29.2	28.9	27.9	28.4	29.0	30.2	29.8	31.0	31.0
Aged 65 or older	35.4	34.3	34.4	33.0	32.2	32.8	33.1	32.6	32.4	32.6

2. Explanation of the Graphs

A BMI was calculated based on measured heights and weights and those with a BMI level of 25 kg/m^2 or over were classified as obese.

BMI = Weight (kg) / Height (m) / Height (m)

3. Reference Intervals and Action Thresholds

Degrees of obesity

BMI (kg/m^2)	Classification	WHO standards
< 18.5	Underweight	Underweight
≥ 18.5 and < 25	Normal weight	Normal range
≥ 25 and < 30	Obese (level 1)	Pre-obese
≥ 30 and < 35	Obese (level 2)	Obese class Ⅰ
≥ 35 and < 40	Obese (level 3)	Obese class Ⅱ
≥ 40	Obese (level 4)	Obese class Ⅲ

Note 1) Obese persons (BMI≥25) are not necessarily medically required to reduce weight.
The standard weight (ideal weight) is obtained by multiplying the square of the height (m) by 22 (Standard weight (kg) = Height $(m)^2 \times 22$), based on a BMI of 22, which is supposed to pose the least risk of disease.

Note 2) BMI ≥ 35 is defined as severe obesity.

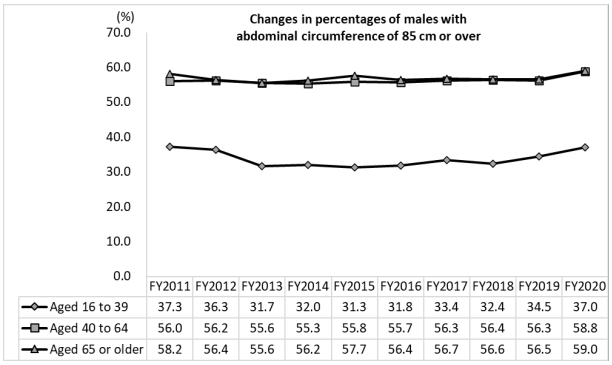
Source: "Guidelines for the Management of Obesity Disease 2016" by the Japan Society for the Study of Obesity

Physical Exam: Abdominal Circumference

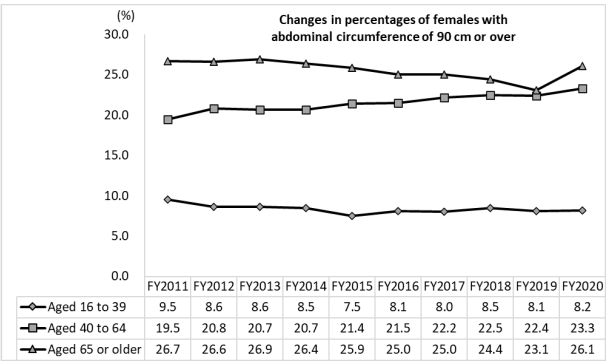
1. Results

The percentage of males with abdominal circumference of 85.0 cm or over decreased among those aged 16 to 39 from FY2011 to FY2013, remained almost the same from FY2014 onward, but showed an upward trend in FY2020.

The percentage of females with abdominal circumference of 90.0 cm or over increased among those aged 40 to 64 in FY2020 compared with the FY2011 level.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	37.3	36.3	31.7	32.0	31.3	31.8	33.4	32.4	34.5	37.0
Aged 40 to 64	56.0	56.2	55.6	55.3	55.8	55.7	56.3	56.4	56.3	58.8
Aged 65 or older	58.2	56.4	55.6	56.2	57.7	56.4	56.7	56.6	56.5	59.0



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	9.5	8.6	8.6	8.5	7.5	8.1	8.0	8.5	8.1	8.2
Aged 40 to 64	19.5	20.8	20.7	20.7	21.4	21.5	22.2	22.5	22.4	23.3
Aged 65 or older	26.7	26.6	26.9	26.4	25.9	25.0	25.0	24.4	23.1	26.1

2. Explanation of the Graphs

Levels of the waist circumference (abdominal circumference), which serve as one of the diagnostic criteria for metabolic syndrome, were evaluated based on the following reference intervals.

3. Reference Intervals

Diagnostic criteria for metabolic syndrome

Visceral fat (intra-abdominal fat) accumulation	
Waist circumference	Males ≥ 85 cm Females ≥ 90 cm
(Visceral fat area: Equivalent to ≥ 100 cm^2 for both males and females)	
Two or more of the following, in addition to the above	
Hypertriglyceridemia and/or Hypo-HDL cholesterolemia	≥ 150 mg/dL < 40 mg/dL for both males and females
Systolic blood pressure and/or Diastolic blood pressure	≥ 130 mmHg ≥ 85 mmHg
Fasting hyperglycemia	≥ 110 mg/dL

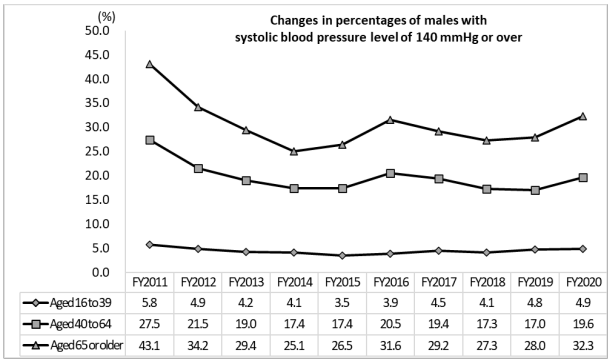
Source: "Definition and Diagnostic Criteria for Metabolic Syndrome (2005)" by the Metabolic Syndrome Diagnostic Standards Review Committee

Physical Exam: Blood Pressure

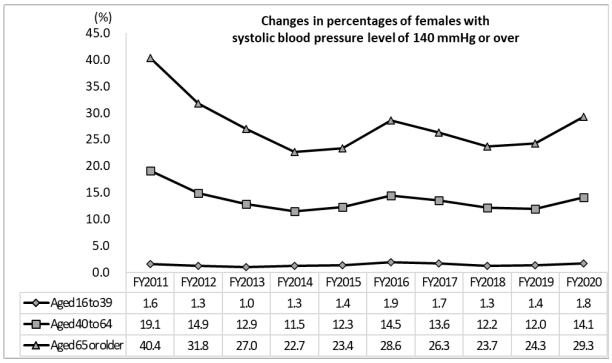
1. Results

The percentage of those with systolic blood pressure levels of 140 mmHg or over decreased both among males and females aged 40 or older from FY2011 to FY2014. These percentages showed an upward trend from FY2015 to FY2016, decreased thereafter until FY2019, and showed an upward trend again in FY2020.

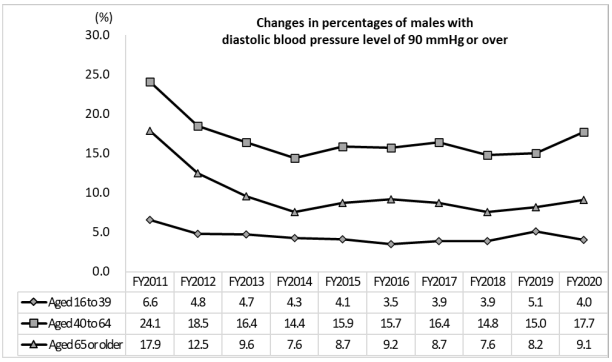
The percentage of those with diastolic blood pressure levels of 90 mmHg or over decreased both among males and females aged 40 or older from FY2011 to FY2014, remained almost the same from FY2015 onward, and showed an upward trend again in FY2020.



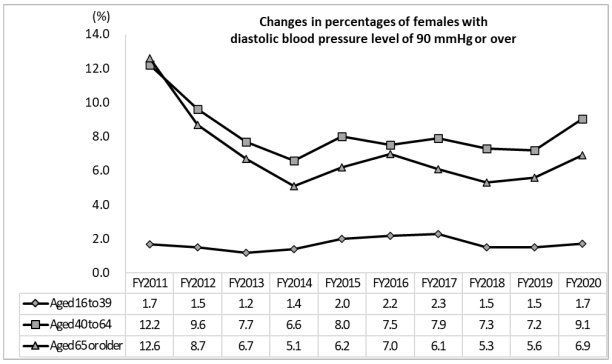
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	5.8	4.9	4.2	4.1	3.5	3.9	4.5	4.1	4.8	4.9
Aged 40 to 64	27.5	21.5	19.0	17.4	17.4	20.5	19.4	17.3	17.0	19.6
Aged 65 or older	43.1	34.2	29.4	25.1	26.5	31.6	29.2	27.3	28.0	32.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	1.6	1.3	1.0	1.3	1.4	1.9	1.7	1.3	1.4	1.8
Aged 40 to 64	19.1	14.9	12.9	11.5	12.3	14.5	13.6	12.2	12.0	14.1
Aged 65 or older	40.4	31.8	27.0	22.7	23.4	28.6	26.3	23.7	24.3	29.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	6.6	4.8	4.7	4.3	4.1	3.5	3.9	3.9	5.1	4.0
Aged 40 to 64	24.1	18.5	16.4	14.4	15.9	15.7	16.4	14.8	15.0	17.7
Aged 65 or older	17.9	12.5	9.6	7.6	8.7	9.2	8.7	7.6	8.2	9.1



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	1.7	1.5	1.2	1.4	2.0	2.2	2.3	1.5	1.5	1.7
Aged 40 to 64	12.2	9.6	7.7	6.6	8.0	7.5	7.9	7.3	7.2	9.1
Aged 65 or older	12.6	8.7	6.7	5.1	6.2	7.0	6.1	5.3	5.6	6.9

2. Explanation of the Graphs

Determinations of systolic hypertension and diastolic hypertension were based on the following reference intervals.

3. Reference Intervals

Classification of adults' blood pressure levels

Classification	Office blood pressure (mmHg)			Home blood pressure (mmHg)		
	Systolic BP		Diastolic BP	Systolic BP		Diastolic BP
Normal BP	< 120	and	< 80	< 115	and	< 75
High normal BP	120–129	and	< 80	115–124	and	< 75
High BP	130–139	and/or	80–89	125–134	and/or	75–84
Level 1 hypertension	140–159	and/or	90–99	135–144	and/or	85–89
Level 2 hypertension	160–179	and/or	100–109	145–159	and/or	90–99
Level 3 hypertension	≥ 180	and/or	≥ 110	≥ 160	and/or	≥ 100
(Isolated) systolic hypertension	≥ 140	and	< 90	≥ 135	and	< 85

Source: "Guidelines for the Management of Hypertension 2019" by the Japanese Society of Hypertension

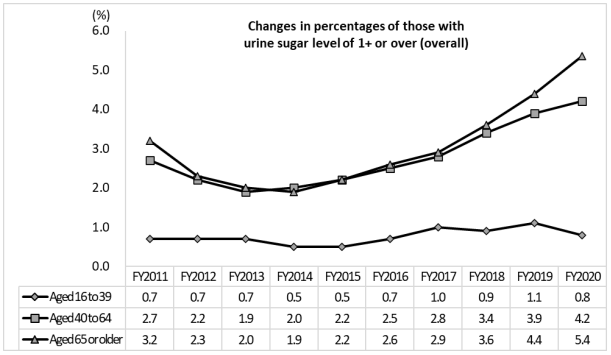
Urine Test: Urine Sugar, Urine Protein, Urine Occult Blood

1. Results

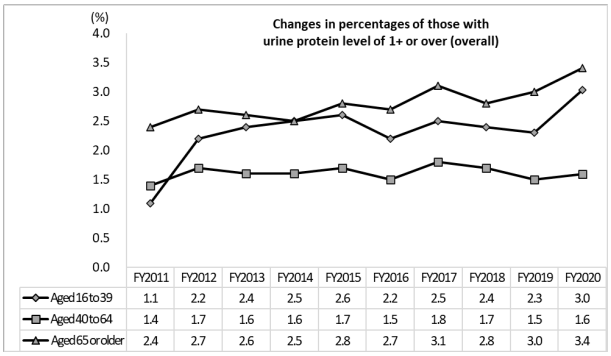
The percentage of those with a urine sugar level of 1+ or over showed an upward trend among those aged 40 or older from FY2015.

The percentage of those with a urine protein level of 1+ or over increased among those aged 16 to 39 and those aged 65 or older from FY2011 to FY2020.

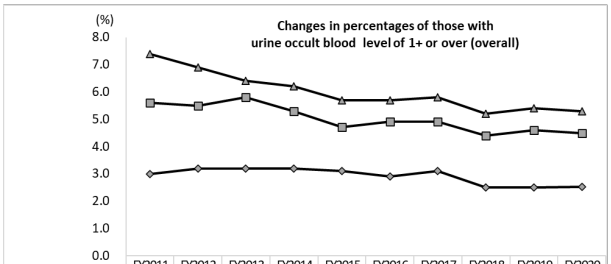
The percentage of those with a urine occult blood level of 1+ or over decreased among those aged 40 or older from FY2011 to FY2020.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.7	0.7	0.7	0.5	0.5	0.7	1.0	0.9	1.1	0.8
Aged40to64	2.7	2.2	1.9	2.0	2.2	2.5	2.8	3.4	3.9	4.2
Aged65orolder	3.2	2.3	2.0	1.9	2.2	2.6	2.9	3.6	4.4	5.4



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	1.1	2.2	2.4	2.5	2.6	2.2	2.5	2.4	2.3	3.0
Aged40to64	1.4	1.7	1.6	1.6	1.7	1.5	1.8	1.7	1.5	1.6
Aged65orolder	2.4	2.7	2.6	2.5	2.8	2.7	3.1	2.8	3.0	3.4



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	3.0	3.2	3.2	3.2	3.1	2.9	3.1	2.5	2.5	2.5
Aged40to64	5.6	5.5	5.8	5.3	4.7	4.9	4.9	4.4	4.6	4.5
Aged65orolder	7.4	6.9	6.4	6.2	5.7	5.7	5.8	5.2	5.4	5.3

*(+1) or over and excluding those on their period

2. Explanation of the Graphs

Determination of the existence of abnormalities in urine test results was based on the following reference intervals.

3. Screening Values (Diagnostic criteria used for group and individual health checks)

Item \ Diagnosis	Expected	Action Threshold	Abnormality
Urine sugar	(−)	(±)	(+) or over
Urine protein	(−)	(±)	(+) or over
Urine occult blood	(−)	(±)	(+) or over

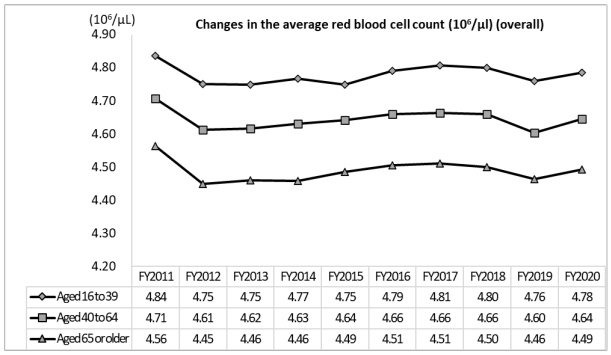
Peripheral Blood Test: Red Blood Cells, Hemoglobin, Hematocrit

1. Results

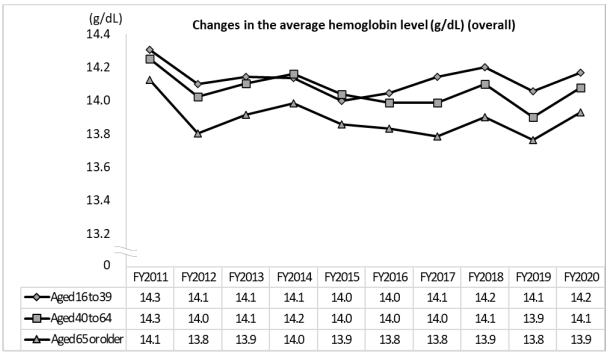
The average red blood cell count and the average hemoglobin level decreased for all age groups from FY2011 to FY2012, and remined almost the same thereafter.

The percentage of males with hemoglobin levels of 13.0 g/dL or lower increased among those aged 65 or older from FY2011 to FY2012 but remained flat thereafter. The percentage of females with hemoglobin levels of 12.0 g/dL or lower increased among those aged 65 or older from FY2011 to FY2012 and then fluctuated up and down thereafter.

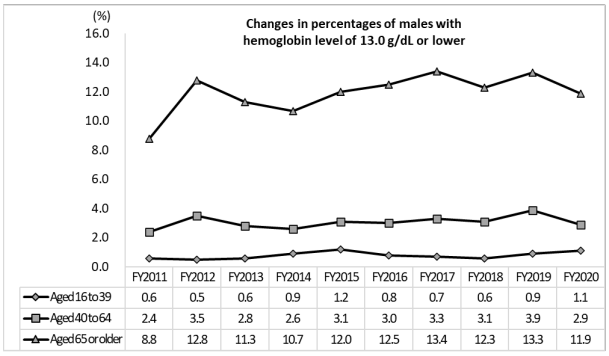
There were no substantial changes in hematocrit levels in any age groups.



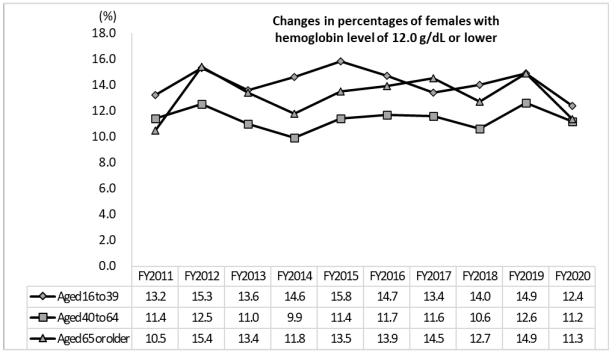
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	4.84	4.75	4.75	4.77	4.75	4.79	4.81	4.80	4.76	4.78
Aged40to64	4.71	4.61	4.62	4.63	4.64	4.66	4.66	4.66	4.60	4.64
Aged65orolder	4.56	4.45	4.46	4.46	4.49	4.51	4.51	4.50	4.46	4.49



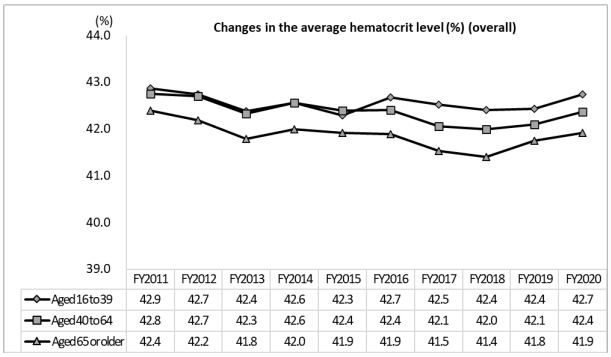
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	14.3	14.1	14.1	14.1	14.0	14.0	14.1	14.2	14.1	14.2
Aged40to64	14.3	14.0	14.1	14.2	14.0	14.0	14.0	14.1	13.9	14.1
Aged65orolder	14.1	13.8	13.9	14.0	13.9	13.8	13.8	13.9	13.8	13.9



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.6	0.5	0.6	0.9	1.2	0.8	0.7	0.6	0.9	1.1
Aged40to64	2.4	3.5	2.8	2.6	3.1	3.0	3.3	3.1	3.9	2.9
Aged65orolder	8.8	12.8	11.3	10.7	12.0	12.5	13.4	12.3	13.3	11.9



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	13.2	15.3	13.6	14.6	15.8	14.7	13.4	14.0	14.9	12.4
Aged40to64	11.4	12.5	11.0	9.9	11.4	11.7	11.6	10.6	12.6	11.2
Aged65orolder	10.5	15.4	13.4	11.8	13.5	13.9	14.5	12.7	14.9	11.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	42.9	42.7	42.4	42.6	42.3	42.7	42.5	42.4	42.4	42.7
Aged40to64	42.8	42.7	42.3	42.6	42.4	42.4	42.1	42.0	42.1	42.4
Aged65orolder	42.4	42.2	41.8	42.0	41.9	41.9	41.5	41.4	41.8	41.9

2. Explanation of the Graphs

The graphs show changes in average values of red blood cell counts, hemoglobin levels, and hematocrit levels. The WHO standards for anemia are 13.0 g/dL or lower for males and 12.0 g/dL or lower for females.

3. Reference Intervals

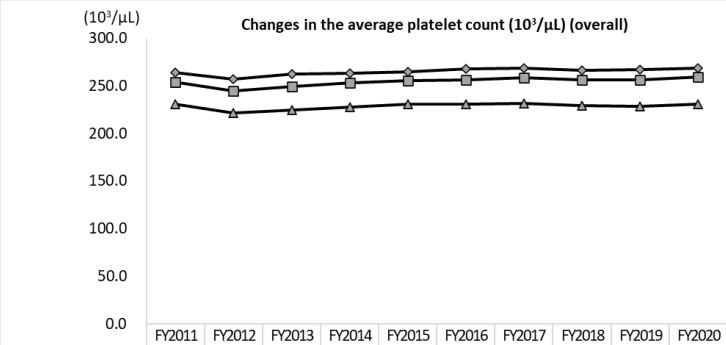
Item	Unit		Lower reference limit	Upper reference limit
Red blood cell count	$10^6/\mu L$	Male	4.35	5.55
		Female	3.86	4.92
Hemoglobin	g/dL	Male	13.7	16.8
		Female	11.6	14.8
Hematocrit	%	Male	40.7	50.1
		Female	35.1	44.4

Source: "Guidelines for Clinical Laboratory Tests 2018 (JSLM2018)" by the Japanese Society of Laboratory Medicine

Peripheral Blood Test: Platelet Count

1. Results

There were no substantial changes in the average platelet count from FY2011 to FY2020 in any age group.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	263.9	257.0	262.6	263.7	264.5	268.1	269.1	266.7	266.9	268.7
Aged40to64	254.2	244.9	249.7	252.9	255.6	256.3	258.7	256.5	256.5	259.5
Aged65orolder	230.9	221.6	225.1	228.0	230.8	230.6	231.3	229.0	228.4	230.5

2. Explanation of the Graph

The graph shows changes in average values of platelet counts.

3. Reference Intervals and Action Thresholds (Diagnostic criteria used for group and individual health checks)

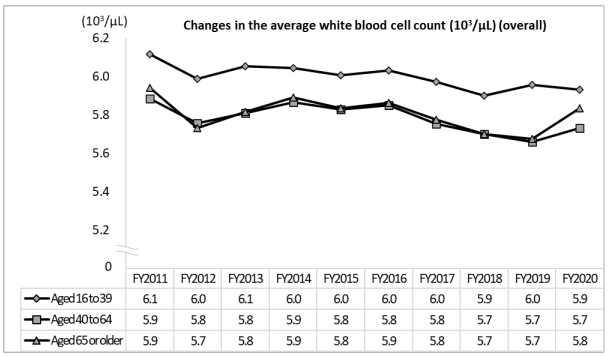
Diagnosis / Item	Reference Interval	Action Thresholds		Abnormality		Unit
Number of blood platelets	130–369	90–129	370–449	89 or lower	450 or over	×10³/μL

Peripheral Blood Test: White Blood Cell Count and Differential

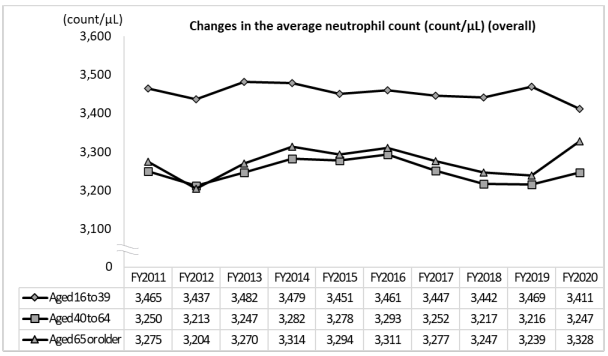
1. Results

There were no substantial changes in the average white blood cell count from FY2011 to FY2020 in any age group.

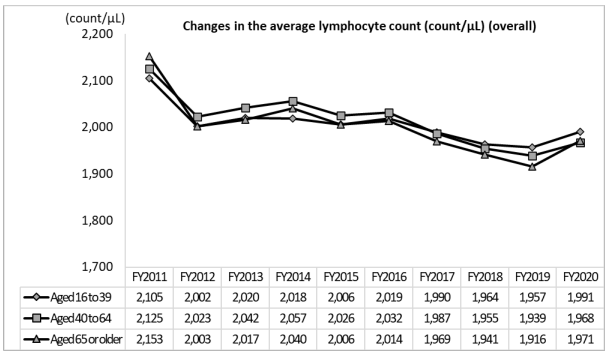
There were also no substantial changes in the average neutrophil, lymphocyte, monocyte and eosinophil counts from FY2011 to FY2020 in any age group. The average basophil count remained almost the same from FY2012 to FY2020 in all age groups.



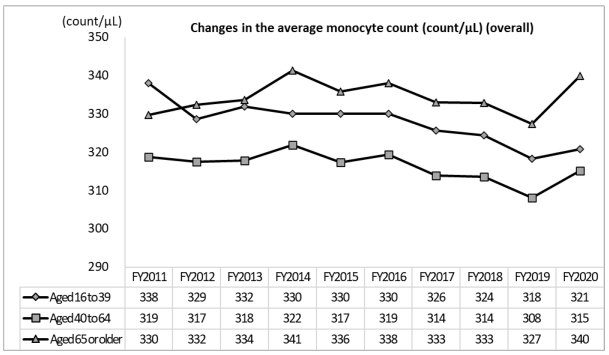
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	6.1	6.0	6.1	6.0	6.0	6.0	6.0	5.9	6.0	5.9
Aged40to64	5.9	5.8	5.8	5.9	5.8	5.8	5.8	5.7	5.7	5.7
Aged65orolder	5.9	5.7	5.8	5.9	5.8	5.9	5.8	5.7	5.7	5.8



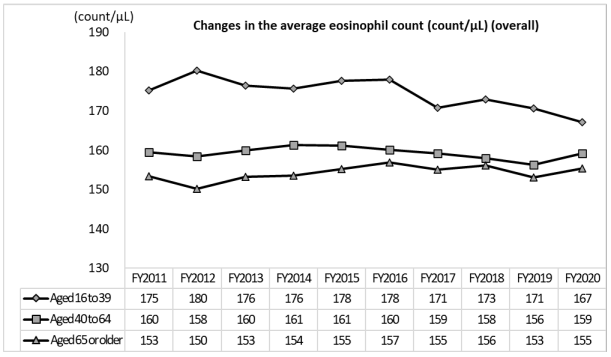
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	3,465	3,437	3,482	3,479	3,451	3,461	3,447	3,442	3,469	3,411
Aged40to64	3,250	3,213	3,247	3,282	3,278	3,293	3,252	3,217	3,216	3,247
Aged65orolder	3,275	3,204	3,270	3,314	3,294	3,311	3,277	3,247	3,239	3,328



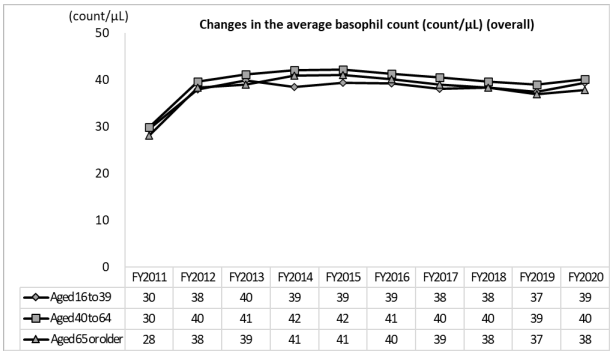
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	2,105	2,002	2,020	2,018	2,006	2,019	1,990	1,964	1,957	1,991
Aged40to64	2,125	2,023	2,042	2,057	2,026	2,032	1,987	1,955	1,939	1,968
Aged65orolder	2,153	2,003	2,017	2,040	2,006	2,014	1,969	1,941	1,916	1,971



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	338	329	332	330	330	330	326	324	318	321
Aged40to64	319	317	318	322	317	319	314	314	308	315
Aged65orolder	330	332	334	341	336	338	333	333	327	340



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	175	180	176	176	178	178	171	173	171	167
Aged40to64	160	158	160	161	161	160	159	158	156	159
Aged65orolder	153	150	153	154	155	157	155	156	153	155



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	30	38	40	39	39	39	38	38	37	39
Aged40to64	30	40	41	42	42	41	40	40	39	40
Aged65orolder	28	38	39	41	41	40	39	38	37	38

2. Explanation of the Graphs

The graphs show changes in average values of white blood cell counts and differentials.

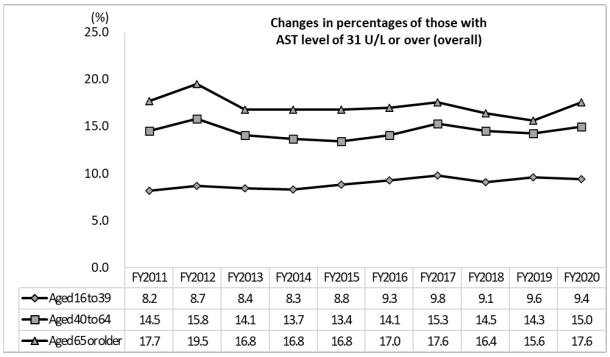
3. Reference Intervals and Action Thresholds (Diagnostic criteria used for group and individual health checks)

Item \ Diagnosis		Reference Interval	Action Thresholds		Abnormality		Unit
Number of white blood cells		4.0–9.5	3.0–3.9	9.6–11.0	2.9 or lower	11.1 or over	×10³/μL
Differential Leucocyte Counts (DLCs, Reference)	Neutrophils	40.0–75.0					%
	Lymphocytes	20.0–55.0					
	Monocytes	0–12.0					
	Eosinophils	0–10.0					
	Basophils	0–3.0					

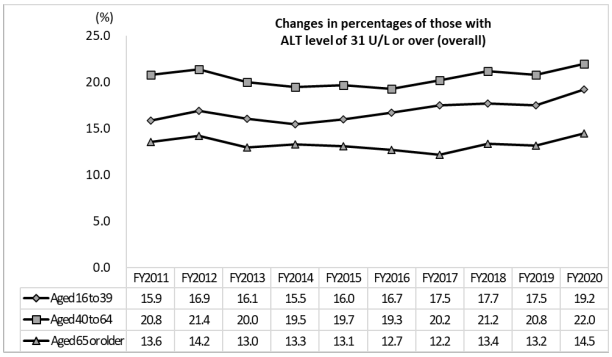
Liver Function: AST, ALT, γ-GT

1. Results

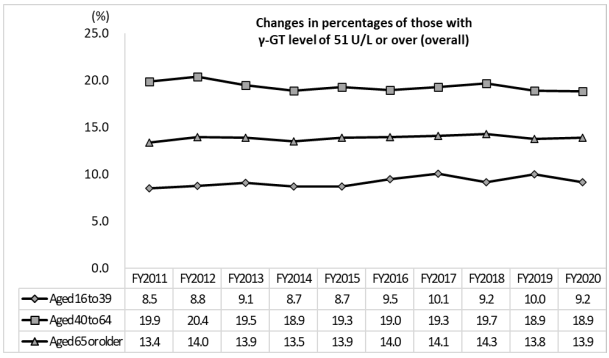
The percentages of those with AST of 31 U/L or over, those with ALT of 31 U/L or over, and those with γ-GT of 51 U/L or over showed no substantial changes in any age group.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	8.2	8.7	8.4	8.3	8.8	9.3	9.8	9.1	9.6	9.4
Aged 40 to 64	14.5	15.8	14.1	13.7	13.4	14.1	15.3	14.5	14.3	15.0
Aged 65 or older	17.7	19.5	16.8	16.8	16.8	17.0	17.6	16.4	15.6	17.6



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	15.9	16.9	16.1	15.5	16.0	16.7	17.5	17.7	17.5	19.2
Aged 40 to 64	20.8	21.4	20.0	19.5	19.7	19.3	20.2	21.2	20.8	22.0
Aged 65 or older	13.6	14.2	13.0	13.3	13.1	12.7	12.2	13.4	13.2	14.5



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	8.5	8.8	9.1	8.7	8.7	9.5	10.1	9.2	10.0	9.2
Aged 40 to 64	19.9	20.4	19.5	18.9	19.3	19.0	19.3	19.7	18.9	18.9
Aged 65 or older	13.4	14.0	13.9	13.5	13.9	14.0	14.1	14.3	13.8	13.9

2. Explanation of the Graphs

Determination of hepatic dysfunction was based on the following reference intervals.

3. Reference Intervals and Action Thresholds (Diagnostic criteria used for group and individual health checks)

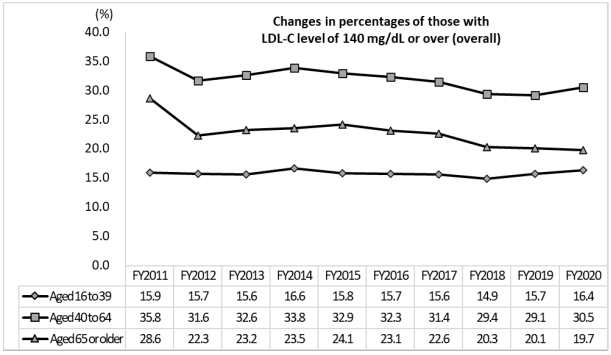
Item \ Diagnosis	Reference Interval	Action Threshold	Abnormality	Unit
AST (GOT)	30 or lower	31-50	51 or over	U/L
ALT (GPT)	30 or lower	31-50	51 or over	U/L
γ-GT	50 or lower	51-100	101 or over	U/L

Lipids: LDL Cholesterol, Triglyceride, HDL Cholesterol

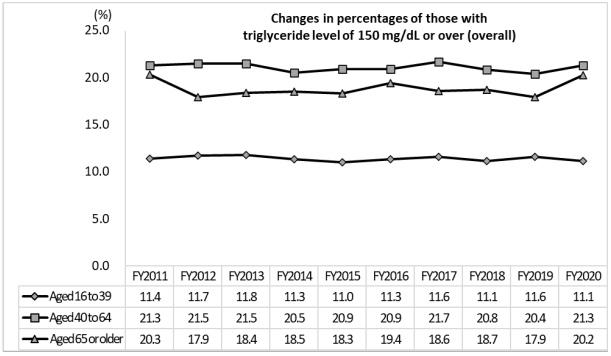
1. Results

The percentages of those with LDL-C of 140 mg/dL or over and those with triglycerides of 150 mg/dL or over slightly decreased among those aged 65 or older from FY2011 to FY2012, but remained almost the same thereafter.

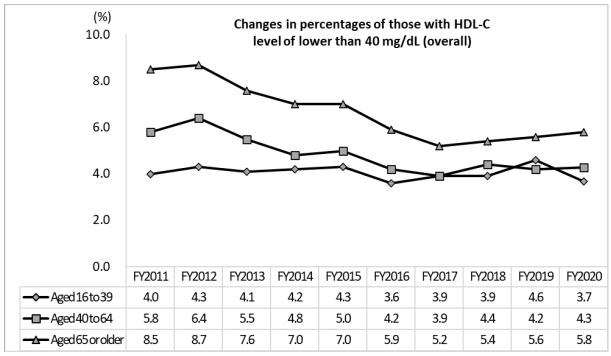
The percentages of those with HDL-C below 40 mg/dL were lower in FY2020 in all age groups compared with the levels in FY2011.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	15.9	15.7	15.6	16.6	15.8	15.7	15.6	14.9	15.7	16.4
Aged 40 to 64	35.8	31.6	32.6	33.8	32.9	32.3	31.4	29.4	29.1	30.5
Aged 65 or older	28.6	22.3	23.2	23.5	24.1	23.1	22.6	20.3	20.1	19.7



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	11.4	11.7	11.8	11.3	11.0	11.3	11.6	11.1	11.6	11.1
Aged 40 to 64	21.3	21.5	21.5	20.5	20.9	20.9	21.7	20.8	20.4	21.3
Aged 65 or older	20.3	17.9	18.4	18.5	18.3	19.4	18.6	18.7	17.9	20.2



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged 16 to 39	4.0	4.3	4.1	4.2	4.3	3.6	3.9	3.9	4.6	3.7
Aged 40 to 64	5.8	6.4	5.5	4.8	5.0	4.2	3.9	4.4	4.2	4.3
Aged 65 or older	8.5	8.7	7.6	7.0	7.0	5.9	5.2	5.4	5.6	5.8

2. Explanation of the Graphs

Determination of hyperlipidemia was based on the following reference intervals.

3. Reference Intervals

Diagnostic criteria for hyperlipidemia (fasting blood sampling)

LDL cholesterol	140 mg/dL or over	Hyper-LDL-cholesterolemia
	120–139 mg/dL	Borderline hyper-LDL-cholesterolemia
HDL cholesterol	Lower than 40 mg/dL	Hypo-HDL-cholesterolemia
Triglycerides (neutral fats)	150 mg/dL or over	Hypertriglyceridemia

Source: "Guidelines for the Prevention of Arteriosclerotic Diseases 2017" by the Japan Atherosclerosis Society

Blood Glucose (Fasting Blood Glucose, HbA1c)

1. Results

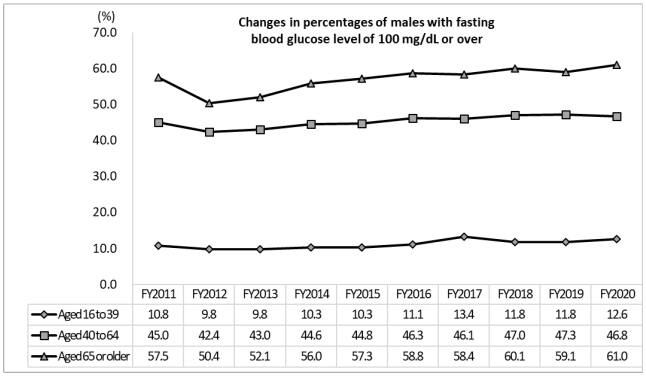
Among males and females aged 65 or older, the percentages of those with fasting blood glucose of 100 mg/dL or over decreased from FY2011 to FY2012, but showed slight increases thereafter until FY2020.

The percentage of males aged 65 or older with fasting blood glucose of 126 mg/dL or over was on a downward trend from FY2011 to FY2012, but showed slight increases thereafter until FY2020.

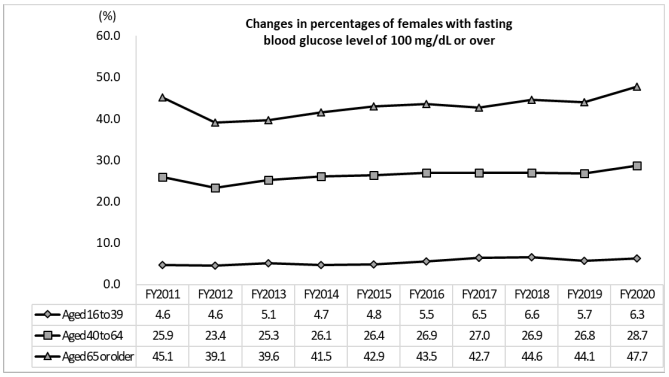
The percentage of females aged 65 or older with fasting blood glucose of 126 mg/dL or over was on a downward trend from FY2011 to FY2013, showed no substantial changes thereafter, but increased slightly in FY2020.

The percentages of those with HbA1c of 5.6% or over increased among all age groups from FY2011 to FY2019. The relevant percentages decreased slightly in FY2020 but were higher compared with the levels in FY2011.

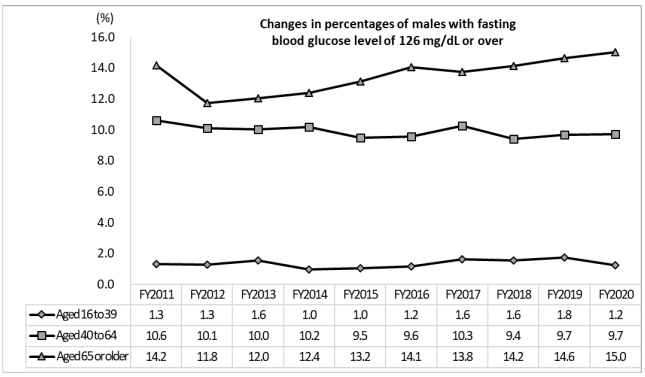
The percentage of those aged 65 or older who were diagnosed as having diabetes (HbA1c of 6.5% or over) was on an upward trend from FY2011 to FY2019, but decreased slightly in FY2020.



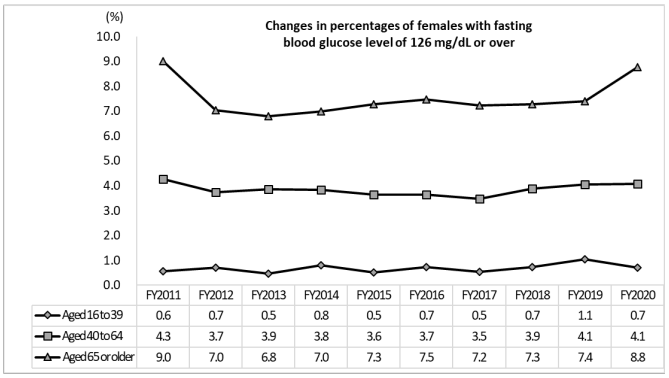
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	10.8	9.8	9.8	10.3	10.3	11.1	13.4	11.8	11.8	12.6
Aged40to64	45.0	42.4	43.0	44.6	44.8	46.3	46.1	47.0	47.3	46.8
Aged65orolder	57.5	50.4	52.1	56.0	57.3	58.8	58.4	60.1	59.1	61.0



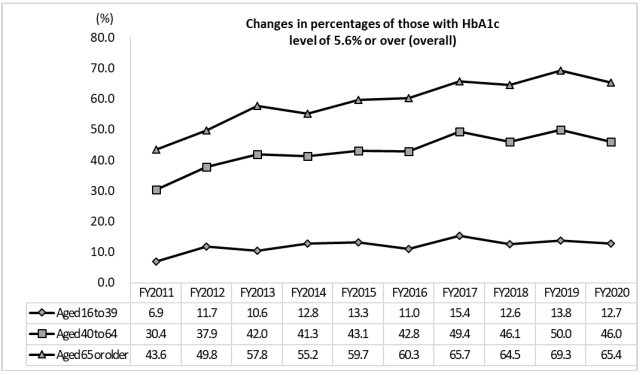
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	4.6	4.6	5.1	4.7	4.8	5.5	6.5	6.6	5.7	6.3
Aged40to64	25.9	23.4	25.3	26.1	26.4	26.9	27.0	26.9	26.8	28.7
Aged65orolder	45.1	39.1	39.6	41.5	42.9	43.5	42.7	44.6	44.1	47.7



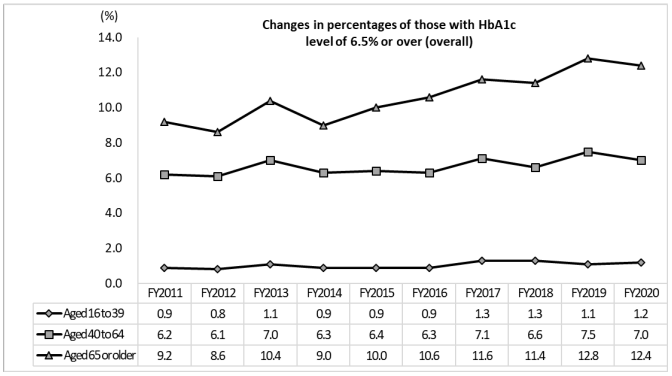
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	1.3	1.3	1.6	1.0	1.0	1.2	1.6	1.6	1.8	1.2
Aged40to64	10.6	10.1	10.0	10.2	9.5	9.6	10.3	9.4	9.7	9.7
Aged65orolder	14.2	11.8	12.0	12.4	13.2	14.1	13.8	14.2	14.6	15.0



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.6	0.7	0.5	0.8	0.5	0.7	0.5	0.7	1.1	0.7
Aged40to64	4.3	3.7	3.9	3.8	3.6	3.7	3.5	3.9	4.1	4.1
Aged65orolder	9.0	7.0	6.8	7.0	7.3	7.5	7.2	7.3	7.4	8.8



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	6.9	11.7	10.6	12.8	13.3	11.0	15.4	12.6	13.8	12.7
Aged40to64	30.4	37.9	42.0	41.3	43.1	42.8	49.4	46.1	50.0	46.0
Aged65orolder	43.6	49.8	57.8	55.2	59.7	60.3	65.7	64.5	69.3	65.4



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.9	0.8	1.1	0.9	0.9	0.9	1.3	1.3	1.1	1.2
Aged40to64	6.2	6.1	7.0	6.3	6.4	6.3	7.1	6.6	7.5	7.0
Aged65orolder	9.2	8.6	10.4	9.0	10.0	10.6	11.6	11.4	12.8	12.4

2. Explanation of the Graphs

Determinations of the existence of a high blood glucose (fasting blood glucose of 100 mg/dL or over and HbA1c of 5.6% or over) and diabetes (fasting blood glucose of 126 mg/dL or over and HbA1c of 6.5% or over) were based on the following reference intervals.

3. Reference Intervals

Classification and diagnostic criteria using fasting blood glucose and 75g OGTT

	Time of measurement			Classification
	At fasting		2 hours postprandial	
Blood glucose (Venous plasma level)	126 mg/dL or over	OR	200 mg/dL or over	Diabetes
	Intermediate values, neither diabetic nor normal			Borderline
	Less than 110 mg/dL	AND	Less than 140 mg/dL	Normal

1) Fasting plasma glucose of 126 mg/dL or over in the early morning
2) Plasma glucose of 200 mg/dL or over at 2 hours after a 75g OGTT
3) Casual plasma glucose of 200 mg/dL or over
4) HbA1c level of 6.5% or over

If any of the items 1) through 4) apply, the person will be diagnosed as having diabetes.

5) Fasting plasma glucose of lower than 110 mg/dL in the early morning
6) Plasma glucose of lower than 140 mg/dL at 2 hours after a 75g OGTT

If the blood glucose level is 5) or 6), the person will be diagnosed as normal.

●Individuals who are not diagnosed as diabetic or normal will be classified as borderline.

Source: "Japanese Clinical Practice Guideline for Diabetes 2020–2021" by the Japan Diabetes Society

Criteria for conducting a detailed health check (additional check items based on a doctor's judgment)

Blood glucose level	Fasting blood glucose of 100 mg/dL or over and HbA1c (NGSP level) of 5.6% or over or casual blood glucose of 100 mg/dL or over

Source: "Guidelines for Smooth Implementation of Specified Health Checkups and Health Guidance (ver. 3.2) 2021" by the Ministry of Health, Labour and Welfare

Renal Function (Serum Creatinine, eGFR)

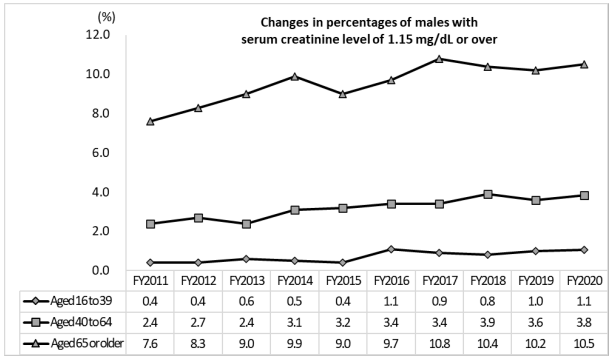
1. Results

The percentage of males with serum creatinine of 1.15 mg/dL or over increased slightly among those aged 40 to 64 from FY2011 to FY2020, while the relevant percentage for males aged 65 or older continued to increase until FY2017, exceeded 10%, and maintained that level until FY2020.

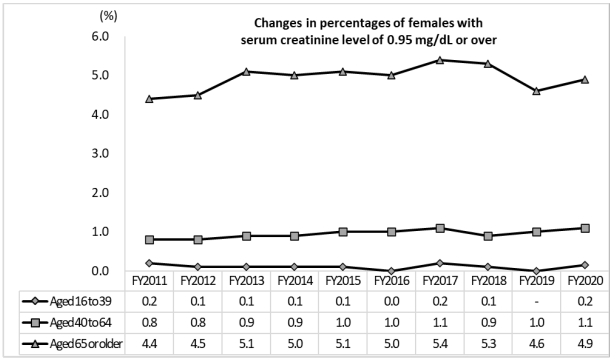
The percentage of females aged 65 or older with serum creatinine of 0.95 mg/dL or over exceeded 5% in FY2013, maintained that level until FY2018, and decreased to 4.9% in FY2020.

The percentage of males aged 40 to 64 with eGFR lower than 60mL/min/1.73m^2 was on an upward trend from FY2011 to FY2019 but decreased slightly in FY2020. The relevant percentage for males aged 65 or older showed an upward trend from FY2011 to FY2020.

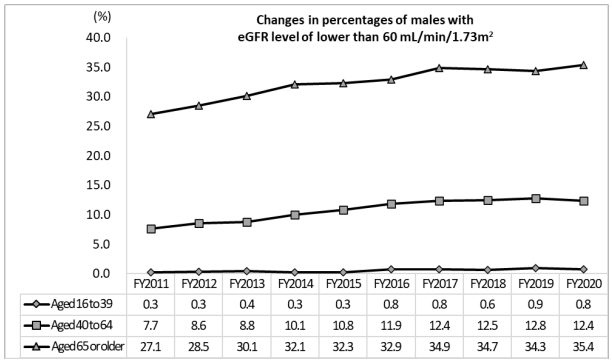
The percentage of females aged 40 or older with eGFR lower than 60mL/min/1.73m^2 was on an upward trend from FY2011 to FY2017, showed a downward trend thereafter until FY2019, and increased slightly in FY2020.



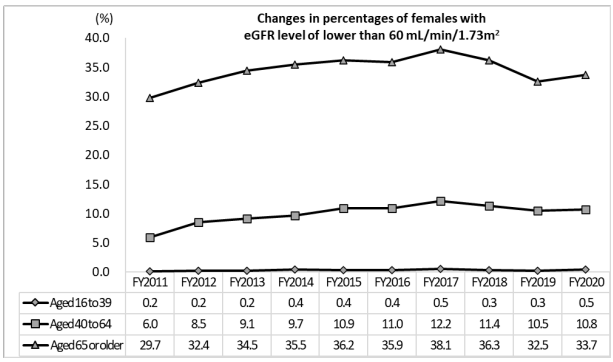
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.4	0.4	0.6	0.5	0.4	1.1	0.9	0.8	1.0	1.1
Aged40to64	2.4	2.7	2.4	3.1	3.2	3.4	3.4	3.9	3.6	3.8
Aged65orolder	7.6	8.3	9.0	9.9	9.0	9.7	10.8	10.4	10.2	10.5



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.2	0.1	0.1	0.1	0.1	0.0	0.2	0.1	-	0.2
Aged40to64	0.8	0.8	0.9	0.9	1.0	1.0	1.1	0.9	1.0	1.1
Aged65orolder	4.4	4.5	5.1	5.0	5.1	5.0	5.4	5.3	4.6	4.9



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.3	0.3	0.4	0.3	0.3	0.8	0.8	0.6	0.9	0.8
Aged40to64	7.7	8.6	8.8	10.1	10.8	11.9	12.4	12.5	12.8	12.4
Aged65orolder	27.1	28.5	30.1	32.1	32.3	32.9	34.9	34.7	34.3	35.4



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.2	0.2	0.2	0.4	0.4	0.4	0.5	0.3	0.3	0.5
Aged40to64	6.0	8.5	9.1	9.7	10.9	11.0	12.2	11.4	10.5	10.8
Aged65orolder	29.7	32.4	34.5	35.5	36.2	35.9	38.1	36.3	32.5	33.7

2. Explanation of the Graphs

The graphs show the percentages of those with eGFR lower than 60mL/min/1.73m^2, which is one of the diagnostic criteria for chronic kidney diseases.

3. Reference Intervals and Action Thresholds (Criteria used for Group and Individual Health Checks)

Item \ Diagnosis		Reference Interval	Action Threshold	Abnormality	Unit
Serum creatinine (enzymatic method)	Males	0.45–1.14	1.15–1.34	1.35 or over	mg/dL
	Females	0.35–0.94	0.95–1.14	1.15 or over	
eGFR (estimated glomerular filtration rate)		60.0 or over	45.0–59.9	44.9 or lower	mL/min./1.73m^2

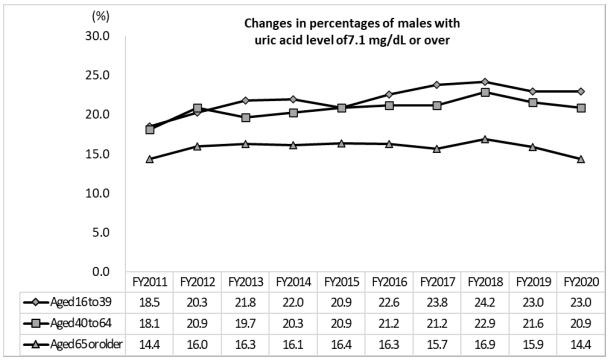
Renal Function: Uric Acid

1. Results

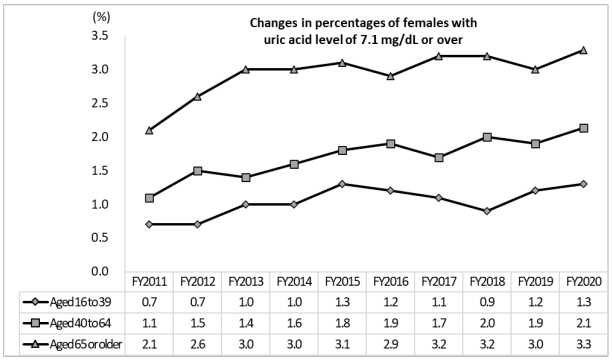
The percentage of males with uric acid of 7.1 mg/dL or over increased for all age groups from FY2011 to FY2018 but decreased slightly in FY2020. The percentage among females slightly increased in all age groups from FY2011 to FY2020.

The percentage of males with uric acid of 7.9 mg/dL or over increased among those aged 16 to 39 from FY2011 to FY2020.

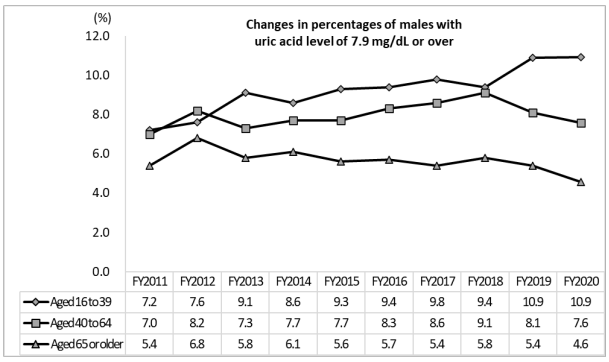
The percentage of females with uric acid of 5.6 mg/dL or over increased from FY2011 to FY2020 in all age groups.



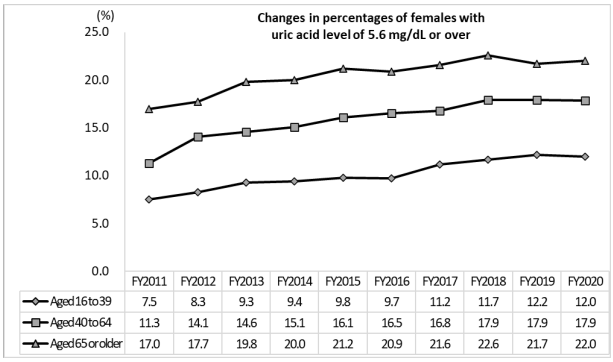
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	18.5	20.3	21.8	22.0	20.9	22.6	23.8	24.2	23.0	23.0
Aged40to64	18.1	20.9	19.7	20.3	20.9	21.2	21.2	22.9	21.6	20.9
Aged65orolder	14.4	16.0	16.3	16.1	16.4	16.3	15.7	16.9	15.9	14.4



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	0.7	0.7	1.0	1.0	1.3	1.2	1.1	0.9	1.2	1.3
Aged40to64	1.1	1.5	1.4	1.6	1.8	1.9	1.7	2.0	1.9	2.1
Aged65orolder	2.1	2.6	3.0	3.0	3.1	2.9	3.2	3.2	3.0	3.3



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	7.2	7.6	9.1	8.6	9.3	9.4	9.8	9.4	10.9	10.9
Aged40to64	7.0	8.2	7.3	7.7	7.7	8.3	8.6	9.1	8.1	7.6
Aged65orolder	5.4	6.8	5.8	6.1	5.6	5.7	5.4	5.8	5.4	4.6



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Aged16to39	7.5	8.3	9.3	9.4	9.8	9.7	11.2	11.7	12.2	12.0
Aged40to64	11.3	14.1	14.6	15.1	16.1	16.5	16.8	17.9	17.9	17.9
Aged65orolder	17.0	17.7	19.8	20.0	21.2	20.9	21.6	22.6	21.7	22.0

2. Explanation of the Graphs

Determination of hyperuricemia was based on the following reference intervals.

3. Reference Intervals

Definition of hyperuricemia in the "Guidelines for Management of Hyperuricemia and Gout" by the Japanese Society of Gout and Uric & Nucleic Acids	Uric acid of 7.1 mg/dL or higher
Levels that exceed the upper limit of the common reference interval established by the Japanese Committee for Clinical Laboratory Standards	Uric acid of 7.9 mg/dL or higher for males and 5.6 mg/dL or higher for females

FY2020 Comprehensive Health Check
Fukushima Health Management Survey
Results of Tabulation by Health Check Item

[Coverage]

- Residents registered at covered areas* from March 11, 2011 to April 1, 2012 (also after moving out from those covered areas)
- Residents registered at evacuation zones, etc. as of April 1 of the examination year
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

* Covered areas: Municipalities designated as the evacuation zone in 2011
Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village, Minamisoma City, Tamura City and Kawamata Town, and parts of Date City (containing specific spots recommended for evacuation)

[Examination Items]

Age Group	Examination items
0-6 years old (Preschool children and infants)	Height, weight [The items below are performed upon request] CBC (number of red blood cells, hematocrit, hemoglobin, platelet count, number of white blood cells, differential white blood count)
7-15 years old (from 1st to 9th grades)	Height, weight CBC (number of red blood cells, hematocrit, hemoglobin, platelet count, number of white blood cells, differential white blood count) [The items below are performed upon request] Blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA1c, plasma glucose, serum creatinine, uric acid)
16 years old and older	Height, weight, abdominal circumference (BMI), blood pressure, CBC (number of red blood cells, hematocrit, hemoglobin, platelet count, number of white blood cells, differential white blood count), Urine test (urine sugar, urine protein, urine occult blood), Blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA1c, plasma glucose, serum creatinine, estimated glomerular filtration rate [eGFR],uric acid) The underlined values are not routinely measured during regular health checks.

* As general age categories and items for the Comprehensive Health Check do not correspond, we classified the participants into five age groups, namely, those aged 0 to 6, those aged 7 to 15, those aged 16 to 39, those aged 40 to 64, and those aged 65 or older, and tabulated the results by each

* For each health check item, tabulation was conducted by age group and by gender.

* Tabulation results include those who received health checks twice or more in the same fiscal year.

* Rules for describing tabulation results are the same as those used for the Vital Statistics in Japan by the Ministry of Health, Labour and Welfare.

When there is no data: -

When an item is not applicable to the relevant age group: ・

When it is inappropriate to indicate data: …

When the ratio is minor (lower than 0.05): 0.0%

* The Data in this document are presented with the same items as those in the previous reports to make comparison possible. Therefore, the results may not correspond to the graphs shown in the Report on the Results of the FY2020 Comprehensive Health Check.

Height

Height (cm) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	783	3.5	94.8
7 to 15	1,936	11.4	144.9
16 to 39	3,157	28.9	163.1
40 to 64	8,788	54.8	161.0
65 or older	16,845	73.7	156.0

Height (cm) (males)					
Age group	Number of participants	Average age	Average value	150 cm or shorter	170 cm or taller
0 to 6	425	3.5	94.7	…	…
7 to 15	982	11.5	146.4	…	…
16 to 39	1,238	27.8	170.9	0.6%	57.0%
40 to 64	3,158	55.0	169.3	0.2%	46.1%
65 or older	7,852	73.8	163.0	2.1%	12.8%

Height (cm) (females)					
Age group	Number of participants	Average age	Average value	140 cm or shorter	160 cm or taller
0 to 6	358	3.5	95.0	…	…
7 to 15	954	11.4	143.3	…	…
16 to 39	1,919	29.6	158.0	0.2%	36.7%
40 to 64	5,630	54.6	156.4	0.2%	26.1%
65 or older	8,993	73.6	150.0	5.3%	4.5%

Weight

Weight (kg) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	783	3.5	14.9
7 to 15	1,936	11.4	40.3
16 to 39	3,156	28.9	61.1
40 to 64	8,791	54.8	62.6
65 or older	16,852	73.7	58.5

Weight (kg) (males)					
Age group	Number of participants	Average age	Average value	50 kg or less	70 kg or over
0 to 6	425	3.5	14.9	...	...
7 to 15	982	11.5	41.8	...	...
16 to 39	1,238	27.8	69.1	5.5%	42.3%
40 to 64	3,160	55.0	71.6	1.4%	51.6%
65 or older	7,856	73.8	64.4	5.7%	26.0%

Weight (kg) (females)					
Age group	Number of participants	Average age	Average value	45 kg or less	65 kg or over
0 to 6	358	3.5	14.9	...	...
7 to 15	954	11.4	38.8	...	...
16 to 39	1,918	29.6	55.9	12.5%	15.7%
40 to 64	5,631	54.6	57.5	8.6%	20.6%
65 or older	8,996	73.6	53.4	16.2%	10.2%

1. Physical Exam (1) BMI

BMI (Weight/Height^2) (overall)					
Age group	Number of participants	Average age	Average value	18 kg/m^2 or lower	25 kg/m^2 or over
0 to 6	·	·	·	·	·
7 to 15	·	·	·	·	·
16 to 39	3,156	28.9	22.9	8.2%	24.0%
40 to 64	8,788	54.8	24.0	3.8%	36.0%
65 or older	16,845	73.7	24.0	3.0%	35.2%

BMI (Weight/Height^2) (males)					
Age group	Number of participants	Average age	Average value	18 kg/m^2 or lower	25 kg/m^2 or over
0 to 6	·	·	·	·	·
7 to 15	·	·	·	·	·
16 to 39	1,238	27.8	23.6	7.0%	32.3%
40 to 64	3,158	55.0	25.0	1.5%	44.9%
65 or older	7,852	73.8	24.2	1.7%	38.1%

BMI (Weight/Height^2) (females)					
Age group	Number of participants	Average age	Average value	18 kg/m^2 or lower	25 kg/m^2 or over
0 to 6	·	·	·	·	·
7 to 15	·	·	·	·	·
16 to 39	1,918	29.6	22.4	9.0%	18.7%
40 to 64	5,630	54.6	23.5	5.1%	31.0%
65 or older	8,993	73.6	23.7	4.0%	32.6%

1. Physical Exam (2) Abdominal Circumference

Abdominal circumference (cm) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	820	28.2	78.0
40 to 64	8,786	54.8	84.6
65 or older	10,924	69.9	85.7

Abdominal circumference (cm) (males)				
Age group	Number of participants	Average age	Average value	85 cm or over
0 to 6	·	·	·	·
7 to 15	·	·	·	·
16 to 39	381	28.2	81.4	37.0%
40 to 64	3,158	55.0	87.8	58.8%
65 or older	5,050	70.0	87.1	59.0%

Abdominal circumference (cm) (females)				
Age group	Number of participants	Average age	Average value	90 cm or over
0 to 6	·	·	·	·
7 to 15	·	·	·	·
16 to 39	439	28.2	75.0	8.2%
40 to 64	5,628	54.6	82.9	23.3%
65 or older	5,874	69.9	84.4	26.1%

1. Physical Exam (3) Blood Pressure

Systolic blood pressure (mmHg) (overall)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	·	·	·	·
7 to 15	1,934	11.4	106.5	0.3%
16 to 39	3,157	28.9	112.9	3.0%
40 to 64	8,791	54.8	125.2	16.1%
65 or older	16,853	73.7	133.0	30.7%

Systolic blood pressure (mmHg) (males)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	·	·	·	·
7 to 15	981	11.5	107.4	0.3%
16 to 39	1,238	27.8	117.6	4.9%
40 to 64	3,160	55.0	128.3	19.6%
65 or older	7,856	73.8	133.5	32.3%

Systolic blood pressure (mmHg) (females)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	·	·	·	·
7 to 15	953	11.4	105.5	0.3%
16 to 39	1,919	29.6	109.8	1.8%
40 to 64	5,631	54.6	123.5	14.1%
65 or older	8,997	73.6	132.5	29.3%

Diastolic blood pressure (mmHg) (overall)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	·	·	·	·
7 to 15	1,934	11.4	61.6	0.6%
16 to 39	3,157	28.9	67.4	2.6%
40 to 64	8,791	54.8	76.1	12.2%
65 or older	16,853	73.7	74.4	7.9%

Diastolic blood pressure (mmHg) (males)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	·	·	·	·
7 to 15	981	11.5	61.7	0.5%
16 to 39	1,238	27.8	69.6	4.0%
40 to 64	3,160	55.0	79.5	17.7%
65 or older	7,856	73.8	75.3	9.1%

Diastolic blood pressure (mmHg) (females)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	·	·	·	·
7 to 15	953	11.4	61.6	0.7%
16 to 39	1,919	29.6	65.9	1.7%
40 to 64	5,631	54.6	74.2	9.1%
65 or older	8,997	73.6	73.7	6.9%

2. Urine Test (1) Urine Sugar

Urine sugar (overall)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	3,137	28.9	0.8%
40 to 64	8,780	54.8	4.2%
65 or older	16,808	73.7	5.4%

Urine sugar (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,238	27.8	1.3%
40 to 64	3,156	55.0	7.4%
65 or older	7,840	73.8	8.0%

Urine sugar (females)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,899	29.7	0.5%
40 to 64	5,624	54.7	2.5%
65 or older	8,968	73.6	3.1%

2. Urine Test (2) Urine Protein

Urine protein (overall)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	3,137	28.9	3.0%
40 to 64	8,780	54.8	1.6%
65 or older	16,808	73.7	3.4%

Urine protein (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,238	27.8	3.9%
40 to 64	3,156	55.0	2.1%
65 or older	7,840	73.8	5.2%

Urine protein (females)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,899	29.7	2.5%
40 to 64	5,624	54.7	1.3%
65 or older	8,968	73.6	1.9%

2. Urine Test (3) Urine Occult Blood

Urine occult blood (overall)				
Age group	Number of participants	Average age	(1+) or over	(1+) or over and excluding those on their period
0 to 6	·	·	·	·
7 to 15	·	·	·	·
16 to 39	3,136	29.0	6.3%	2.5%
40 to 64	8,780	54.8	5.9%	4.5%
65 or older	16,806	73.7	5.3%	5.3%

Urine occult blood (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,238	27.8	1.2%
40 to 64	3,156	55.0	2.2%
65 or older	7,839	73.8	3.5%

Urine occult blood (females)				
Age group	Number of participants	Average age	(1+) or over	(1+) or over and excluding those on their period
0 to 6	·	·	·	·
7 to 15	·	·	·	·
16 to 39	1,898	29.7	9.6%	3.4%
40 to 64	5,624	54.7	8.0%	5.7%
65 or older	8,967	73.6	6.8%	6.8%

3. Peripheral Blood Test (1)-1 Red Blood Cells

Red blood cell count (10^6/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	4.69
7 to 15	1,930	11.4	4.80
16 to 39	3,154	28.9	4.78
40 to 64	8,788	54.8	4.64
65 or older	16,850	73.7	4.49

Red blood cell count (10^6/μL) (males)						
Age group	Number of participants	Average age	Average value	3.69×10^6/μL or lower	3.99×10^6/μL or lower	5.80×10^6/μL or over
0 to 6	388	3.5	4.71	-	0.5%	0.3%
7 to 15	979	11.5	4.93	-	0.1%	0.8%
16 to 39	1,237	27.8	5.21	-	-	7.0%
40 to 64	3,158	55.0	4.93	0.5%	2.0%	2.7%
65 or older	7,855	73.8	4.66	3.1%	8.6%	0.9%

Red blood cell count (10^6/μL) (females)						
Age group	Number of participants	Average age	Average value	3.39×10^6/μL or lower	3.69×10^6/μL or lower	5.50×10^6/μL or over
0 to 6	322	3.6	4.66	-	-	0.6%
7 to 15	951	11.4	4.66	0.2%	0.4%	0.5%
16 to 39	1,917	29.7	4.51	0.1%	1.3%	0.5%
40 to 64	5,630	54.6	4.48	0.2%	1.5%	0.5%
65 or older	8,995	73.6	4.35	1.2%	4.8%	0.3%

3. Peripheral Blood Test (1)-2 Hemoglobin

Hemoglobin (g/dL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	12.6
7 to 15	1,930	11.4	13.6
16 to 39	3,154	28.9	14.2
40 to 64	8,788	54.8	14.1
65 or older	16,850	73.7	13.9

Hemoglobin (g/dL) (males)						
Age group	Number of participants	Average age	Average value	12.0 g/dL or lower	13.0 g/dL or lower	18.0 g/dL or over
0 to 6	388	3.5	12.6	24.7%	67.3%	-
7 to 15	979	11.5	14.0	3.3%	20.3%	-
16 to 39	1,237	27.8	15.7	0.3%	1.1%	0.8%
40 to 64	3,158	55.0	15.3	0.8%	2.9%	1.3%
65 or older	7,855	73.8	14.6	4.1%	11.9%	0.6%

Hemoglobin (g/dL) (females)						
Age group	Number of participants	Average age	Average value	11.0 g/dL or lower	12.0 g/dL orlower	16.0 g/dL orover
0 to 6	322	3.6	12.6	2.8%	22.0%	-
7 to 15	951	11.4	13.3	1.6%	7.8%	-
16 to 39	1,917	29.7	13.2	4.0%	12.4%	0.4%
40 to 64	5,630	54.6	13.4	4.1%	11.2%	0.7%
65 or older	8,995	73.6	13.3	2.6%	11.3%	0.6%

3. Peripheral Blood Test (1)-3 Hematocrit

Hematocrit (%) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	38.3
7 to 15	1,930	11.4	41.3
16 to 39	3,154	28.9	42.7
40 to 64	8,788	54.8	42.4
65 or older	16,850	73.7	41.9

Hematocrit (%) (males)						
Age group	Number of examinees (people)	Average age	Average value	35.9% or lower	37.9% or lower	55.0% or over
0 to 6	388	3.5	38.2	19.8%	48.7%	-
7 to 15	979	11.5	42.0	2.9%	11.0%	-
16 to 39	1,237	27.8	46.6	0.2%	0.2%	0.2%
40 to 64	3,158	55.0	45.5	0.7%	1.7%	0.3%
65 or older	7,855	73.8	43.7	3.4%	7.3%	0.3%

Hematocrit (%) (females)						
Age group	Number of participants	Average age	Average value	28.9% or lower	32.9% or lower	48.0% or over
0 to 6	322	3.6	38.4	-	1.9%	-
7 to 15	951	11.4	40.5	0.3%	0.5%	0.1%
16 to 39	1,917	29.7	40.3	0.3%	1.9%	0.5%
40 to 64	5,630	54.6	40.6	0.4%	2.0%	1.1%
65 or older	8,995	73.6	40.4	0.2%	1.6%	0.9%

3. Peripheral Blood Test (2) Platelet Count

Platelet count (10^3/μL) (overall)							
Age group	Number of participants	Average age	Average value	89×10^3/μL or lower	129×10^3/μL or lower	370×10^3/μL or over	450×10^3/μL or over
0 to 6	710	3.6	347.6	0.1%	0.1%	31.5%	9.3%
7 to 15	1,930	11.4	290.2	0.1%	0.2%	9.9%	1.1%
16 to 39	3,153	28.9	268.7	0.1%	0.3%	4.9%	0.4%
40 to 64	8,785	54.8	259.5	0.1%	0.6%	4.5%	0.8%
65 or older	16,839	73.7	230.5	0.3%	1.9%	1.6%	0.4%

Platelet count (10^3/μL) (males)							
Age group	Number of participants	Average age	Average value	89×10^3/μL or lower	129×10^3/μL or lower	370×10^3/μL or over	450×10^3/μL or over
0 to 6	388	3.5	346.1	0.3%	0.3%	30.7%	9.0%
7 to 15	979	11.5	291.7	0.1%	0.1%	11.0%	1.1%
16 to 39	1,236	27.9	262.9	-	0.3%	3.6%	0.3%
40 to 64	3,157	55.0	251.7	0.2%	0.8%	3.2%	0.5%
65 or older	7,849	73.8	222.0	0.4%	2.5%	1.4%	0.4%

Platelet count (10^3/μL) (females)							
Age group	Number of participants	Average age	Average value	89×10^3/μL or lower	129×10^3/μL or lower	370×10^3/μL or over	450×10^3/μL or over
0 to 6	322	3.6	349.3	-	-	32.6%	9.6%
7 to 15	951	11.4	288.7	0.1%	0.3%	8.8%	1.1%
16 to 39	1,917	29.7	272.5	0.2%	0.4%	5.7%	0.5%
40 to 64	5,628	54.6	263.9	0.1%	0.5%	5.3%	0.9%
65 or older	8,990	73.6	238.0	0.3%	1.4%	1.8%	0.4%

3. Peripheral Blood Test (3)-1 White Blood Cell Count

White blood cell count (10^3/μL) (overall)							
Age group	Number of participants	Average age	Average value	2.9×10^3/μL or lower	3.9×10^3/μL or lower	9.6×10^3/μL or over	11.1×10^3/μL or over
0 to 6	710	3.6	8.4	-	0.3%	24.6%	11.4%
7 to 15	1,930	11.4	6.4	0.2%	2.5%	4.8%	1.3%
16 to 39	3,154	28.9	5.9	0.4%	7.8%	2.8%	0.8%
40 to 64	8,788	54.8	5.7	1.0%	9.9%	2.3%	0.8%
65 or older	16,850	73.7	5.8	0.6%	7.4%	1.9%	0.6%

White blood cell count (10^3/μL) (males)							
Age group	Number of participants	Average age	Average value	2.9×10^3/μL or lower	3.9×10^3/μL or lower	9.6×10^3/μL or over	11.1×10^3/μL or over
0 to 6	388	3.5	8.5	-	0.3%	25.8%	12.9%
7 to 15	979	11.5	6.4	0.1%	2.1%	5.0%	1.6%
16 to 39	1,237	27.8	5.9	0.2%	7.7%	2.9%	1.1%
40 to 64	3,158	55.0	6.1	0.3%	6.0%	3.8%	1.4%
65 or older	7,855	73.8	6.0	0.3%	5.9%	2.5%	0.7%

White blood cell count (10^3/μL) (females)							
Age group	Number of participants	Average age	Average value	2.9×10^3/μL or lower	3.9×10^3/μL or lower	9.6×10^3/μL or over	11.1×10^3/μL or over
0 to 6	322	3.6	8.4	-	0.3%	23.3%	9.6%
7 to 15	951	11.4	6.4	0.2%	2.8%	4.5%	1.1%
16 to 39	1,917	29.7	5.9	0.6%	7.9%	2.7%	0.5%
40 to 64	5,630	54.6	5.5	1.3%	12.1%	1.5%	0.4%
65 or older	8,995	73.6	5.7	0.8%	8.8%	1.5%	0.5%

3. Peripheral Blood Test (3)-2 Neutrophil count

Neutrophil count (count/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	3,186
7 to 15	1,930	11.4	3,181
16 to 39	3,153	28.9	3,411
40 to 64	8,788	54.8	3,247
65 or older	16,849	73.7	3,328

Neutrophil count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	388	3.5	3,171
7 to 15	979	11.5	3,135
16 to 39	1,236	27.8	3,308
40 to 64	3,158	55.0	3,441
65 or older	7,855	73.8	3,467

Neutrophil count (count/μL) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	322	3.6	3,203
7 to 15	951	11.4	3,228
16 to 39	1,917	29.7	3,478
40 to 64	5,630	54.6	3,138
65 or older	8,994	73.6	3,208

3. Peripheral Blood Test (3)-3 Lymphocyte Count

Lymphocyte count (count/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	4,459
7 to 15	1,930	11.4	2,593
16 to 39	3,153	28.9	1,991
40 to 64	8,788	54.8	1,968
65 or older	16,849	73.7	1,971

Lymphocyte count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	388	3.5	4,480
7 to 15	979	11.5	2,604
16 to 39	1,236	27.8	2,054
40 to 64	3,158	55.0	2,043
65 or older	7,855	73.8	1,943

Lymphocyte count (count/μL) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	322	3.6	4,435
7 to 15	951	11.4	2,582
16 to 39	1,917	29.7	1,950
40 to 64	5,630	54.6	1,926
65 or older	8,994	73.6	1,996

3. Peripheral Blood Test (3)-4 Monocyte Count

Monocyte count (count/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	423
7 to 15	1,930	11.4	345
16 to 39	3,153	28.9	321
40 to 64	8,788	54.8	315
65 or older	16,849	73.7	340

Monocyte count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	388	3.5	433
7 to 15	979	11.5	357
16 to 39	1,236	27.8	339
40 to 64	3,158	55.0	356
65 or older	7,855	73.8	373

Monocyte count (count/μL) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	322	3.6	412
7 to 15	951	11.4	332
16 to 39	1,917	29.7	309
40 to 64	5,630	54.6	292
65 or older	8,994	73.6	311

3. Peripheral Blood Test (3)-5 Eosinophil Count

Eosinophil count (count/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	323
7 to 15	1,930	11.4	260
16 to 39	3,153	28.9	167
40 to 64	8,788	54.8	159
65 or older	16,849	73.7	155

Eosinophil count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	388	3.5	355
7 to 15	979	11.5	296
16 to 39	1,236	27.8	194
40 to 64	3,158	55.0	187
65 or older	7,855	73.8	179

Eosinophil count (count/μL) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	322	3.6	285
7 to 15	951	11.4	223
16 to 39	1,917	29.7	150
40 to 64	5,630	54.6	144
65 or older	8,994	73.6	135

3. Peripheral Blood Test (3)-6 Basophil Count

Basophil count (count/μL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	710	3.6	44
7 to 15	1,930	11.4	38
16 to 39	3,153	28.9	39
40 to 64	8,788	54.8	40
65 or older	16,849	73.7	38

Basophil count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	388	3.5	46
7 to 15	979	11.5	41
16 to 39	1,236	27.8	41
40 to 64	3,158	55.0	44
65 or older	7,855	73.8	39

Basophil count (count/μL) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	322	3.6	41
7 to 15	951	11.4	35
16 to 39	1,917	29.7	38
40 to 64	5,630	54.6	38
65 or older	8,994	73.6	36

4. Blood Biochemistry (1)-1 Liver Function (AST)

AST (U/L) (overall)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	23.2	9.3%	0.6%
16 to 39	3,155	28.9	21.4	9.4%	2.4%
40 to 64	8,788	54.8	24.5	15.0%	3.0%
65 or older	16,850	73.7	26.0	17.6%	2.7%

AST (U/L) (males)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	24.8	12.8%	1.1%
16 to 39	1,237	27.8	25.3	17.2%	4.4%
40 to 64	3,158	55.0	27.3	23.3%	4.7%
65 or older	7,855	73.8	27.1	21.7%	3.5%

AST (U/L) (females)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	21.6	5.7%	0.2%
16 to 39	1,918	29.6	18.9	4.4%	1.0%
40 to 64	5,630	54.6	23.0	10.4%	2.1%
65 or older	8,995	73.6	25.0	13.9%	2.0%

4. Blood Biochemistry (1)-2 Liver Function (ALT)

ALT (U/L) (overall)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	16.1	5.4%	1.8%
16 to 39	3,155	28.9	23.9	19.2%	8.4%
40 to 64	8,788	54.8	25.3	22.0%	7.4%
65 or older	16,850	73.7	22.1	14.5%	3.6%

ALT (U/L) (males)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	18.8	8.6%	2.9%
16 to 39	1,237	27.8	35.0	37.6%	16.9%
40 to 64	3,158	55.0	32.0	36.0%	13.0%
65 or older	7,855	73.8	24.1	19.1%	4.7%

ALT (U/L) (females)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	13.3	2.1%	0.7%
16 to 39	1,918	29.6	16.7	7.4%	3.0%
40 to 64	5,630	54.6	21.6	14.1%	4.2%
65 or older	8,995	73.6	20.4	10.5%	2.6%

4. Blood Biochemistry (1)-3 Liver Function (γ-GT)

γ to GT (U/L) (overall)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	14.5	0.7%	0.2%
16 to 39	3,155	28.9	25.4	9.2%	2.4%
40 to 64	8,788	54.8	39.1	18.9%	6.0%
65 or older	16,850	73.7	34.0	13.9%	3.8%

γ to GT (U/L) (males)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	16.2	1.2%	0.3%
16 to 39	1,237	27.8	36.9	19.1%	4.9%
40 to 64	3,158	55.0	58.0	34.2%	12.1%
65 or older	7,855	73.8	43.7	21.9%	6.4%

γ to GT (U/L) (females)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	12.9	0.2%	-
16 to 39	1,918	29.6	18.1	2.8%	0.8%
40 to 64	5,630	54.6	28.5	10.3%	2.6%
65 or older	8,995	73.6	25.4	6.9%	1.5%

4. Blood Biochemistry (2)-1 Lipids (LDL Cholesterol)

LDL-C (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	91.7	11.2%	2.6%
16 to 39	3,155	28.9	111.0	34.0%	16.4%
40 to 64	8,788	54.8	124.9	54.3%	30.5%
65 or older	16,850	73.7	115.5	42.6%	19.7%

LDL-C (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	89.6	9.2%	2.5%
16 to 39	1,237	27.8	115.5	41.1%	23.0%
40 to 64	3,158	55.0	123.1	53.0%	28.9%
65 or older	7,855	73.8	111.9	38.7%	16.5%

LDL-C (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	93.9	13.2%	2.8%
16 to 39	1,918	29.6	108.1	29.4%	12.1%
40 to 64	5,630	54.6	125.9	55.0%	31.4%
65 or older	8,995	73.6	118.6	46.0%	22.6%

4. Blood Biochemistry (2)-2 Lipids (Triglyceride)

Triglyceride (TG) (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	79.1	7.9%	0.7%
16 to 39	3,155	28.9	88.6	11.1%	1.6%
40 to 64	8,788	54.8	117.0	21.3%	3.2%
65 or older	16,850	73.7	115.2	20.2%	2.0%

Triglyceride (TG) (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	79.1	8.6%	0.9%
16 to 39	1,237	27.8	110.2	17.8%	3.6%
40 to 64	3,158	55.0	145.6	32.1%	6.3%
65 or older	7,855	73.8	120.6	23.5%	2.7%

Triglyceride (TG) (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	79.2	7.2%	0.4%
16 to 39	1,918	29.6	74.7	6.8%	0.4%
40 to 64	5,630	54.6	101.0	15.2%	1.5%
65 or older	8,995	73.6	110.4	17.4%	1.3%

4. Blood Biochemistry (2)-3 Lipids (HDL Cholesterol)

HDL-C (mg/dL) (overall)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	·	·	·	·
7 to 15	1,894	11.4	61.5	2.4%
16 to 39	3,155	28.9	62.4	3.7%
40 to 64	8,788	54.8	64.1	4.3%
65 or older	16,850	73.7	60.6	5.8%

HDL-C (mg/dL) (males)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	·	·	·	·
7 to 15	952	11.5	61.3	3.2%
16 to 39	1,237	27.8	55.9	6.6%
40 to 64	3,158	55.0	57.0	9.0%
65 or older	7,855	73.8	56.5	9.4%

HDL-C (mg/dL) (females)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	·	·	·	·
7 to 15	942	11.4	61.8	1.7%
16 to 39	1,918	29.6	66.7	1.8%
40 to 64	5,630	54.6	68.1	1.7%
65 or older	8,995	73.6	64.2	2.6%

4. Blood Biochemistry (3)-1 Blood Glucose (Fasting Blood Glucose)

Fasting blood glucose (mg/dL) (overall)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	·	·	·	·	·	·
7 to 15	1,203	11.7	87.0	0.3%	-	-
16 to 39	2,746	28.9	89.1	2.4%	0.8%	0.3%
40 to 64	7,522	54.6	99.5	15.5%	5.0%	1.6%
65 or older	12,926	73.3	105.7	28.1%	9.5%	2.4%

Fasting blood glucose (mg/dL) (males)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	·	·	·	·	·	·
7 to 15	593	11.8	87.7	0.3%	-	-
16 to 39	1,051	27.8	91.0	3.0%	1.0%	0.4%
40 to 64	2,690	54.9	104.0	23.2%	7.7%	2.6%
65 or older	6,067	73.4	108.4	34.0%	12.4%	3.1%

Fasting blood glucose (mg/dL) (females)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	·	·	·	·	·	·
7 to 15	610	11.6	86.4	0.3%	-	-
16 to 39	1,695	29.5	88.0	2.1%	0.6%	0.3%
40 to 64	4,832	54.4	96.9	11.3%	3.5%	1.0%
65 or older	6,859	73.2	103.2	22.8%	7.0%	1.7%

4. Blood Biochemistry (3)-2 Blood Glucose (HbA1c)

HbA1c (%) (NGSP) (overall)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	·	·	·	·	·	·
7 to 15	1,892	11.4	5.3	0.2%	-	-
16 to 39	3,154	28.9	5.3	2.4%	0.8%	0.5%
40 to 64	8,788	54.8	5.6	16.3%	3.8%	1.3%
65 or older	16,851	73.7	5.8	29.2%	5.4%	1.3%

HbA1c (%) (NGSP) (males)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	·	·	·	·	·	·
7 to 15	950	11.5	5.3	0.3%	-	-
16 to 39	1,237	27.8	5.3	3.0%	0.8%	0.6%
40 to 64	3,158	55.0	5.7	19.9%	5.9%	2.1%
65 or older	7,855	73.8	5.9	31.5%	6.6%	1.5%

HbA1c (%) (NGSP) (females)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	·	·	·	·	·	·
7 to 15	942	11.4	5.3	0.1%	-	-
16 to 39	1,917	29.7	5.3	2.1%	0.7%	0.4%
40 to 64	5,630	54.6	5.6	14.3%	2.7%	0.9%
65 or older	8,996	73.6	5.8	27.3%	4.2%	1.0%

4. Blood Biochemistry (4)-1 Renal Function (Serum Creatinine)

Serum creatinine (mg/dL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	·	·	·
7 to 15	1,894	11.4	0.51
16 to 39	3,155	28.9	0.71
40 to 64	8,788	54.8	0.74
65 or older	16,850	73.7	0.80

Serum creatinine (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	1.15 mg/dL or over	1.35 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	952	11.5	0.53	-	-
16 to 39	1,237	27.8	0.84	1.1%	0.1%
40 to 64	3,158	55.0	0.89	3.8%	1.0%
65 or older	7,855	73.8	0.93	10.5%	3.8%

Serum creatinine (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	0.95 mg/dL or over	1.15 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	942	11.4	0.49	-	-
16 to 39	1,918	29.6	0.62	0.2%	-
40 to 64	5,630	54.6	0.65	1.1%	0.3%
65 or older	8,995	73.6	0.70	4.9%	1.6%

4. Blood Biochemistry (4)-2 Renal Function (eGFR)

eGFR (mL/min/1.73m^2) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	3,155	28.9	93.9
40 to 64	8,788	54.8	74.6
65 or older	16,850	73.7	65.3

eGFR (mL/min/1.73m^2) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,237	27.8	93.0
40 to 64	3,158	55.0	74.0
65 or older	7,855	73.8	65.1

eGFR (mL/min/1.73m^2) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	·	·	·
7 to 15	·	·	·
16 to 39	1,918	29.6	94.5
40 to 64	5,630	54.6	74.9
65 or older	8,995	73.6	65.4

4. Blood Biochemistry (4)-3 Renal Function (Uric Acid)

Uric acid (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	7.1 mg/dL or over	8.0 mg/dL or over
0 to 6	·	·	·	·	·
7 to 15	1,894	11.4	4.7	4.1%	1.1%
16 to 39	3,155	28.9	5.1	9.8%	3.8%
40 to 64	8,788	54.8	5.1	8.9%	2.8%
65 or older	16,848	73.7	5.2	8.5%	2.2%

Uric acid (mg/dL) (males)						
Age group	Number of participants	Average age	Average value	7.1 mg/dL or over	7.9 mg/dL or over	8.0 mg/dL or over
0 to 6	·	·	·	·	·	·
7 to 15	952	11.5	5.0	7.8%	2.3%	2.0%
16 to 39	1,237	27.8	6.2	23.0%	10.9%	9.3%
40 to 64	3,158	55.0	6.1	20.9%	7.6%	6.7%
65 or older	7,854	73.8	5.7	14.4%	4.6%	3.8%

Uric acid (mg/dL) (females)						
Age group	Number of participants	Average age	Average value	5.6 mg/dL or over	7.1 mg/dL or over	8.0 mg/dL or over
0 to 6	·	·	·	·	·	·
7 to 15	942	11.4	4.3	7.1%	0.3%	0.2%
16 to 39	1,918	29.6	4.4	12.0%	1.3%	0.3%
40 to 64	5,630	54.6	4.6	17.9%	2.1%	0.6%
65 or older	8,994	73.6	4.7	22.0%	3.3%	0.7%

Report on the Results of Pregnancy and Birth Survey for FY2020

1. Outline

1.1 Purpose

We address anxieties associated with pregnancy and childbirth and provide necessary support through assessing participants' physical and mental health. The survey also aims to improve perinatal care in Fukushima Prefecture by listening to people's needs and expectations.

1.2 Covered population

11,382 persons who meet either of the following conditions:

(i) Those who received Maternal and Child Health Handbooks from municipal offices in Fukushima Prefecture from August 1, 2019 to July 31, 2020

(ii) Those who had handbooks issued in other prefectures during the same period as in (i), but who returned to their hometown in Fukushima for child-birth

[For reference]

Year Surveyed	Survey population
FY2011	16,001
FY2012	14,516
FY2013	15,218
FY2014	15,125
FY2015	14,572
FY2016	14,154
FY2017	13,552
FY2018	12,838
FY2019	11,909
FY2020	11,382

1.3 Survey methods

A. Survey sheet: Self-administered questionnaire

B. Dates of questionnaire distribution

[Group 1] *November 2, 2020, January 15, 2021, and March 12, 2021

[Group 2] Distributed on an as-needed basis with cooperation of the obstetric clinics/hospitals in Fukushima Prefecture

*For Group 1, questionnaires were sent at 3 separate intervals depending on expected delivery date, based on pregnancy registration information provided by all 59 municipalities in Fukushima Prefecture.

For FY2017 survey: When we requested the municipalities to provide pregnancy registration information, we asked them to exclude miscarriages, stillbirths, and cases in which the survival of a baby could not be confirmed; we report only the number of these cases.

For FY2016 survey: We excluded miscarriages, stillbirths, and cases in which the survival of the baby could not be confirmed from the mailing list if we had received this information from municipalities before sending.

For FY2015 and previous surveys: We sent the questionnaire to all pregnant women in the prefecture.

C. Response method: by post or online

*Online responses were accepted from November 2, 2020 to April 30, 2021.

1.4 Survey items

The major survey items are as follows:

A. Mental health of expectant mothers
B. Current living conditions (e.g., evacuation status, separation of family members)
C. Conditions of delivery and mothers' health conditions during pregnancy
D. Confidence in child rearing
E. Expectations for the next pregnancy

1.5 Data tabulation period
Responses received from November 2, 2020 to December 17, 2021

2. Summary of Survey Results

Survey results are as shown in 5.1, 5.2, and 5.3 of "5 Pregnancy and Birth Survey for FY2020."
Note that the number of valid responses by category may not match valid responses in total due to missing values in each category.

2.1 Response rates (See Table 1-1)
The total number of responses (response rate) for FY2020 was 6,359 (55.9%), the number of valid responses was 6,330, and the number of invalid responses was 29. Of these, the number of online responses (response rate) was 2,076 (32.6%).

[For reference]

Year surveyed	Number of responses (response rate)	By post	Online	Percentage of online responses
FY2011	9,316 (58.2%)	9,316		
FY2012	7,181 (49.5%)	7,181		
FY2013	7,260 (47.7%)	7,260		
FY2014	7,132 (47.2%)	7,132		
FY2015	7,031 (48.3%)	7,031		
FY2016	7,326 (51.8%)	6,179	1,147	15.7%
FY2017	6,449 (47.6%)	5,272	1,177	18.3%
FY2018	6,649 (51.8%)	5,429	1,220	18.3%
FY2019	6,328 (53.1%)	4,895	1,433	22.6%
FY2020	6,359 (55.9%)	4,283	2,076	32.6%

2.2 Number of respondents by region (See Tables 1-1 and 1-2)

A. The number of respondents (response rate) by region of residence for the FY2020 Survey was as follows: 1,640 (58.9%) in Kenpoku, 1,844 (54.4%) in Kenchu, 484 (56.9%) in Kennan, 367 (45.4%) in Soso, 1,103 (55.0%) in Iwaki, 764 (56.3%) in Aizu, 64 (64.0%) in Minamiaizu, and 93 in other prefectures.
B. Most respondents were in the 30-34 age group, followed by 25-29 and 35-39 age groups.

2.3 Survey results

A. Pregnancy outcomes (See Tables 9-2, 13-3, 14-8, and Tables 14-21 through 14-24)
   (a) The proportions of miscarriages and induced abortions among the covered population that were not known at the time of receiving information from the municipalities or which were reported afterwards were 0.41% and 0.09%, respectively. (Q9)

[For reference]

Year surveyed	Proportion of miscarriages	Proportion of induced abortion	Note (Covered population)
FY2011	0.77%	0.06%	We sent the questionnaire to all pregnant women in the prefecture.
FY2012	0.81%	0.08%	
FY2013	0.78%	0.04%	
FY2014	0.62%	0.07%	
FY2015	0.81%	0.16%	
FY2016	0.85%	0.16%	We excluded miscarriages, stillbirths, and cases in which the survival of the baby could not be confirmed from the mailing list if we had received this information from municipalities before sending the questionnaire.
FY2017	0.34%	0.06%	When we requested the municipalities to provide pregnancy registration information, we asked them to exclude miscarriages, stillbirths, and cases in which the survival of the baby could not be confirmed; we report only the number of these cases.
FY2018	0.43%	0.02%	
FY2019	0.41%	0.10%	
FY2020	0.41%	0.09%	

* The FY2017 and subsequent surveys are not comparable with the FY2016 and prior surveys because the target groups are different.

(b) The proportion of preterm deliveries was 4.4%. (Q13)

[For reference]

Year surveyed	Proportion of preterm deliveries
FY2011	4.6%
FY2012	5.6%
FY2013	5.2%
FY2014	5.3%
FY2015	5.6%
FY2016	5.3%
FY2017	5.3%
FY2018	5.2%
FY2019	5.1%
FY2020	4.4%

Percentages for FY2011–2018 differ from those reported in the Pregnancy and Birth Survey Report (2011-2018) due to a change of the total number of preterm deliveries after excluding stillbirths.

Reference: According to the 2020 Vital Statistics of the Ministry of Health, Labor and Welfare, the proportion of preterm deliveries among all childbirths in Japan was 5.5%

(c) The proportion of low birth weight infants (less than 2,500g) was 8.1%. (Q14)

[For reference]

Years surveyed	Proportion of low birth weight infants
FY2011	8.6%
FY2012	9.2%
FY2013	9.6%
FY2014	9.8%
FY2015	9.4%
FY2016	9.2%
FY2017	9.2%
FY2018	9.0%
FY2019	9.1%
FY2020	8.1%

Percentages for FY2011–2018 differ from those reported in the Pregnancy and Birth Survey Report (2011-2018) due to a change of the total number of preterm deliveries after excluding stillbirths.

Reference: According to the 2020 Vital Statistics of the Ministry of Health, Labour and Welfare, the proportion of low birth weight infants among all childbirths in Japan was 9.2%.

(d) The incidence of congenital anomalies in singleton pregnancies was 2.21%. The most frequent anomaly was cardiovascular malformation with an incidence of 0.61%. (Q14)

[For reference]

Year surveyed	Incidence of congenital anomalies in singleton pregnancies	Incidence of cardiovascular malformation
FY2011	2.85%	0.89%
FY2012	2.39%	0.79%
FY2013	2.35%	0.91%
FY2014	2.30%	0.74%
FY2015	2.24%	0.75%
FY2016	2.55%	0.91%
FY2017	2.38%	0.62%
FY2018	2.19%	0.92%
FY2019	2.71%	0.85%
FY2020	2.21%	0.61%

Reference: In general, it is reported that the incidence of congenital anomalies in singleton pregnancies is 3 to 5 %, and the natural incidence rate of cardiovascular malformation is about 1%.

B. Mental health of mothers (See Tables 4-1 through 4-3)

The proportion of mothers with depressive symptoms was 18.0%.

For information, according to the national maternal and child health plan in Japan (Sukoyaka Oyako 21), the proportions of mothers suspected of experiencing postnatal depression (based on the Edinburgh Postnatal Depression Scale) were 8.4% in FY2013 and 9.8% in FY2017.

The proportion with postnatal depression in the FY2020 survey (based on the Edinburgh Postnatal Depression Scale) is estimated to be 10.0%. (Reference used for calculation: Mishina H, et al. Pediatr Int. 2009; 51: 48.)

[For reference]

Year surveyed	Proportion of those with depressive symptoms
FY2011	27.1%
FY2012	25.5%
FY2013	24.5%
FY2014	23.4%
FY2015	22.0%
FY2016	21.1%
FY2017	20.7%
FY2018	18.4%
FY2019	18.3%
FY2020	18.0%

C. Perinatal care (See Table 3)

3.9% of mothers answered “no” or “not at all” to a question if they received sufficient antenatal and delivery care. (Q3)

[For reference]

Year surveyed	Proportion of those who answered “no” or “not at all”
FY2011	No applicable question
FY2012	3.5%
FY2013	2.3%
FY2014	2.7%
FY2015	2.4%
FY2016	2.1%
FY2017	1.7%
FY2018	1.7%
FY2019	1.4%
FY2020	3.9%

D. Family life and child rearing (See Tables 5-1 and 15)

The proportion of those who are still living as evacuees (in temporary houses or other accommodations) is on the decrease and the current rate is 1.2% overall for Fukushima Prefecture. (Q5)

[For reference]

Year surveyed	Proportion of those who are still living as evacuees
FY2011	No applicable question
FY2012	7.7%
FY2013	5.5%
FY2014	4.9%
FY2015	3.8%
FY2016	3.4%
FY2017	2.3%
FY2018	1.8%
FY2019	1.6%
FY2020	1.2%

17.5% answered that they sometimes lose confidence in child rearing. (Q15)

[For reference]

Year surveyed	Proportion of those who sometimes feel unconfident in child rearing
FY2011	No applicable question
FY2012	15.4%
FY2013	17.5%
FY2014	16.6%
FY2015	17.7%
FY2016	16.6%
FY2017	18.1%
FY2018	17.7%
FY2019	18.8%
FY2020	17.5%

Reference: According to the 2013 Health and Welfare Science Research "Study on Final Evaluation/Problem Analysis of Healthy Parents and Children 21 and Promotion of Next National Health Movement" (Yamagata Zentaro Group), 19.3% of mothers answered at the health checkup for 3- and 4-month-old children that they did not have confidence in child rearing.

E. Expectations for the next pregnancy (See Tables 17-1 through 17-3)

- The proportion of those who anticipate another pregnancy was 50.0%.
- The following services were requested by those who anticipate another pregnancy: improvement of preschool, care for longer hours, or day care for sick children, 76.7%; improvement of childbirth and parental leaves, 72.4%.
- The reasons for not anticipating another pregnancy were as follows: no desire, 53.9%; age- or health-related reasons, 36.5%. The proportion of those who answered that they were not planning a pregnancy due to worries about radiation effects was 0.2%.

[For reference]

Year surveyed	Proportion of those anticipating another pregnancy	Proportion of those not anticipating another pregnancy due to worries about radiation effects
FY2011	No applicable question	No applicable question
FY2012	52.9%	14.8%
FY2013	52.8%	5.6%
FY2014	57.1%	3.9%
FY2015	53.3%	1.6%
FY2016	54.6%	1.2%
FY2017	52.4%	0.8%
FY2018	52.2%	0.5%
FY2019	51.3%	0.5%
FY2020	50.0%	0.2%

Reference: Percentages of couples married for less than 10 years who were planning a pregnancy was 60% in the 14th National Fertility Survey in 2010 (51% among those who already had a child) and 57% in the 15th National Fertility Survey in 2015 (50% among those who already had a child).

F. Free comments (See Table 18)

- 871 respondents (13.8%) provided comments in the free comments section.
- The most frequently discussed issues were about child rearing (24.8%) followed by matters related to COVID-19 (24.7%).
- The proportion of those who wrote comments on radiation effects on the fetus and child was 0.5%.

[For reference]

Year surveyed	Number of those who provided comments in the free comments section	Proportion of those who wrote comments on radiation effects on fetus and child
FY2011	3,722 (42.2%)	29.6%
FY2012	1,481 (20.7%)	26.4%
FY2013	867 (12.0%)	12.9%
FY2014	745 (10.5%)	9.5%
FY2015	1,101 (15.7%)	5.2%
FY2016	965 (13.3%)	6.1%
FY2017	799 (12.4%)	4.8%
FY2018	881 (13.4%)	1.8%
FY2019	818 (13.0%)	2.1%
FY2020	871 (13.8%)	0.5%

2.4 Summary

A. Pregnancy outcomes

The proportions of preterm deliveries and low birth weight infants decreased from the results up to FY2019. The incidence of congenital anomalies in singleton pregnancies also decreased, and was not notably higher than the generally reported incidence of 3 – 5%.

B. Mental health of mothers

The proportion of those with depressive symptoms decreased over time. The proportion of those suspected of experiencing postnatal depression based on the Edinburgh Postnatal Depression Scale was 9.8% in the FY2017 Survey, and is expected to be 10.0% in the FY2020 Main Survey.

C. Perinatal care

The proportion of those who answered “no” or “not at all” to a question if they received sufficient care during pregnancy and delivery had shown a decreasing trend over time since FY2012, but increased in the FY2020 Survey.

D. Free comments

The most frequently discussed issues were about child rearing, followed by matters related to COVID-19. Concern about radiation effects on the fetus and child came up most frequently in FY2011 and 2012, but has decreased since then.

3. Outline of Post-Survey Support

3.1 Purpose

To alleviate anxieties of those among all the FY2020 Pregnancy and Birth Survey respondents who were judged as requiring consultation and support by providing consultation and support via telephone or email by midwives and public health nurses.

3.2 Coverage for support (See Table 19)

Among respondents of FY2020 Pregnancy and Birth Survey who returned their response between November 2, 2020 and December 17, 2021, those judged as requiring support were covered with telephone consultation and support.

3.3 Criteria for Support (See Table 20)

Respondents who fall under one of the following:

A. Those who responded “yes” to two questions regarding depressive symptoms (Q4-1, Q4-2); and/or
B. Those who wrote comments that suggest the need for support (in the free comment section or other parts of the questionnaire.).

Ex.) Those who appeared to have a severely depressed mood
Those in need of support for child rearing

Those who are concerned about radiation dose
Those who complain of poor physical condition
Those who want direct, substantial response
Those who requested support

3.4 Methods
Consultation and support via telephone and email

4. Summary of Support Results

The results of the support are as shown in "5.4 Status of Support" under "5. Tabulated Results of Pregnancy and Birth Survey for FY2020" below.

4.1 Number of support candidates (See Tables 19 and 20)

- Of 6,359 respondents who returned their response from November 2, 2020 through December 17, 2021, 688 persons, or 10.8%, were judged as in need of telephone consultation and support.
- Of these, 6.0% were judged to be in need of support based on the criteria for depressive symptoms and 4.8% were judged to be in need of support based on free comments. Since 2012, the content of free comments has also been used to judge support needs so that support can be extended to a larger number of people.

[For reference]

Years surveyed	Number of respondents	Support based on depressive symptoms	Support based on free comments	Support candidates
FY2011	9,316	1,224 (13.1%)	177 (1.9%)	1,401 (15.0%)
FY2012	7,181	751 (10.5%)	353 (4.9%)	1,104 (15.4%)
FY2013	7,260	744 (10.2%)	357 (4.9%)	1,101 (15.2%)
FY2014	7,132	645 (9.0%)	185 (2.6%)	830 (11.6%)
FY2015	7,031	549 (7.8%)	364 (5.2%)	913 (13.0%)
FY2016	7,326	573 (7.8%)	378 (5.2%)	951 (13.0%)
FY2017	6,449	449 (7.0%)	350 (5.4%)	799 (12.4%)
FY2018	6,649	424 (6.4%)	287 (4.3%)	711 (10.7%)
FY2019	6,328	376 (5.9%)	292 (4.6%)	668 (10.6%)
FY2020	6,359	380 (6.0%)	308 (4.8%)	688 (10.8%)

Cases falling under both criteria (depressive symptoms and free comments) were counted as depressive symptoms.

4.2 Contents of consultation (See Table 21)

- The most frequently discussed issue was child rearing (life) (54.5%), followed by physical and mental health of mothers (52.0%) and family life (11.2%). (Issues relating to "child rearing" include breastfeeding volume, baby food, growth/development, how to relate to children, etc.)
- The proportion of consultation related to radiation effects and anxiety was 0.6%.

[For reference]

Year surveyed	Content			Proportion of consultations related to radiation effects and anxiety
	1st	2nd	3rd	
FY2011	Concerns about radiation effects and anxiety 29.2%	Physical and mental health of mothers 20.2%	Child rearing (life) 14.0%	29.2%
FY2012	Physical and mental health of mothers 33.4%	Child rearing (life) 26.7%	Concerns about radiation effects and anxiety 23.7%	23.7%
FY2013	Physical and mental health of mothers 42.5%	Child rearing (life) 38.7%	Physical and mental health of children 20.3%	17.1%
FY2014	Physical and mental health of mothers 49.5%	Child rearing (life) 36.1%	Family life 20.5%	9.5%
FY2015	Physical and mental health of mothers 53.1%	Child rearing (life) 40.9%	Family life 21.8%	5.9%
FY2016	Physical and mental health of mothers 59.8%	Child rearing (life) 43.4%	Family life 19.5%	5.0%
FY2017	Physical and mental health of mothers 55.6%	Child rearing (life) 51.8%	Family life 16.4%	4.1%
FY2018	Physical and mental health of mothers 53.2%	Child rearing (life) 41.4%	Physical and mental health of children 16.0%	3.4%
FY2019	Physical and mental health of mothers 48.1%	Child rearing (life) 42.5%	Physical and mental health of children 12.1%	1.5%
FY2020	Child rearing (life) 54.5%	Physical and mental health of mothers 52.0%	Family life 11.2%	0.6%

4.3 Reasons for ending support (See Table 22)

Reasons for ending support include “listened carefully” (supporters listened carefully and helped to sort out the respondent’s problems) in 494 cases (71.8%), followed by “provided information” (supporters provided relevant information and administrative service contact information) in 359 cases (52.2%), and “confirmed consultation availability” (supporters confirmed that the respondent had already seen a doctor or has someone to consult with) in 111 cases (16.1%). Note: Multiple answers were allowed. The denominator of percentages is the total number of those requiring support.

4.4 Conclusions

- The proportion of support candidates based on depressive symptoms in FY2020 Survey was on par with FY2019.
- The most frequently discussed issue in the consultation in FY2020 was “child rearing (life),” followed by “physical and mental health of mothers,” which had been the most frequently discussed issue since FY2012. Issues related to the effects and anxiety of radiation became less frequent over time.

5. Tabulated Results of Pregnancy and Birth Survey for FY2020

In the following tabulations, "Outside Fukushima" indicates those who temporarily returned to Fukushima to give birth. The survey questionnaires were distributed to them and responses were collected from them with cooperation of obstetric clinics and hospitals in Fukushima Prefecture.

5.1 Number of questionnaires sent and responses received

[Table 1-1] Number of distribution and response

Region	Questionnaires sent		Responses received		Online responses	
Kenpoku	2,784	24.5%	1,640	58.9%	564	34.4%
Kenchu	3,387	29.8%	1,844	54.4%	594	32.2%
Kennan	850	7.5%	484	56.9%	165	34.1%
Soso	808	7.1%	367	45.4%	106	28.9%
Iwaki	2,004	17.6%	1,103	55.0%	374	33.9%
Aizu	1,356	11.9%	764	56.3%	222	29.1%
Minamiaizu	100	0.9%	64	64.0%	17	26.6%
Outside Fukushima	93	0.8%	93	100.0%	34	36.6%
Total	11,382	100.0%	6,359	55.9%	2,076	32.6%

The total number of respondents is 6,330 out of 6,359, with 29 invalid responses excluded.
Each category includes non-responses and invalid responses. Percentages have been rounded and may not total to 100%

[Table 1-2] Age group of respondents (age is as of the time of occurrence i.e., delivery, stillbirth)

Region	Ages 15 - 19		Ages 20 - 24		Ages 25 - 29		Ages 30 - 34		Ages 35 - 39		Ages 40 - 44		Ages 45 - 49		Non-response/ invalid response[1)]		Total
Kenpoku	6	0.4%	104	6.4%	445	27.2%	570	34.9%	399	24.4%	90	5.5%	0	0.0%	20	1.2%	1,634
Kenchu	6	0.3%	142	7.7%	494	26.8%	685	37.2%	388	21.1%	96	5.2%	1	0.1%	28	1.5%	1,840
Kennan	4	0.8%	43	8.9%	125	25.8%	177	36.6%	108	22.3%	18	3.7%	1	0.2%	8	1.7%	484
Soso	3	0.8%	30	8.2%	119	32.5%	123	33.6%	69	18.9%	18	4.9%	1	0.3%	3	0.8%	366
Iwaki	4	0.4%	95	8.7%	308	28.1%	392	35.7%	214	19.5%	62	5.6%	1	0.1%	22	2.0%	1,098
Aizu	4	0.5%	57	7.5%	203	26.6%	287	37.6%	155	20.3%	43	5.6%	0	0.0%	15	2.0%	764
Minamiaizu	0	0.0%	6	9.4%	19	29.7%	22	34.4%	13	20.3%	4	6.3%	0	0.0%	0	0.0%	64
Outside Fukushima	0	0.0%	0	0.0%	28	35.0%	43	53.8%	9	11.3%	0	0.0%	0	0.0%	0	0.0%	80
Total	27	0.4%	477	7.5%	1,741	27.5%	2,299	36.3%	1,355	21.4%	331	5.2%	4	0.1%	96	1.5%	6,330

[1)] Non-response/invalid response: responses without the date of occurrences.

5.2 Results by question item

[Table 2] Do you usually consider yourself healthy? (Q2)

Region	Very healthy		somewhat healthy		Not so healthy		Not healthy		Non-response/ invalid response [1)]		Total
Kenpoku	436	26.7%	1,137	69.6%	50	3.1%	7	0.4%	4	0.2%	1,634
Kenchu	546	29.7%	1,222	66.4%	64	3.5%	5	0.3%	3	0.2%	1,840
Kennan	139	28.7%	331	68.4%	13	2.7%	1	0.2%	0	0.0%	484
Soso	100	27.3%	253	69.1%	10	2.7%	2	0.5%	1	0.3%	366
Iwaki	336	30.6%	716	65.2%	35	3.2%	3	0.3%	8	0.7%	1,098
Aizu	197	25.8%	527	69.0%	33	4.3%	3	0.4%	4	0.5%	764
Minamiaizu	22	34.4%	40	62.5%	2	3.1%	0	0.0%	0	0.0%	64
Outside Fukushima	29	36.3%	49	61.3%	2	2.5%	0	0.0%	0	0.0%	80
Total	1,805	28.5%	4,275	67.5%	209	3.3%	21	0.3%	20	0.3%	6,330

[Table 3] Did you receive sufficient antenatal or delivery care for the current pregnancy? (Q3)

Region	Very much		Yes		Not sure		No		Not at all		Non-response/ invalid response		Total
Kenpoku	496	30.4%	881	53.9%	190	11.6%	52	3.2%	8	0.5%	7	0.4%	1,634
Kenchu	540	29.3%	1,025	55.7%	194	10.5%	64	3.5%	11	0.6%	6	0.3%	1,840
Kennan	160	33.1%	264	54.5%	46	9.5%	11	2.3%	3	0.6%	0	0.0%	484
Soso	115	31.4%	205	56.0%	29	7.9%	16	4.4%	0	0.0%	1	0.3%	366
Iwaki	373	34.0%	563	51.3%	112	10.2%	40	3.6%	4	0.4%	6	0.5%	1,098
Aizu	213	27.9%	436	57.1%	80	10.5%	28	3.7%	5	0.7%	2	0.3%	764
Minamiaizu	22	34.4%	33	51.6%	6	9.4%	2	3.1%	1	1.6%	0	0.0%	64
Outside Fukushima	28	35.0%	41	51.3%	9	11.3%	2	2.5%	0	0.0%	0	0.0%	80
Total	1,947	30.8%	3,448	54.5%	666	10.5%	215	3.4%	32	0.5%	22	0.3%	6,330

[Table 4-1] Have you often felt down or depressed during the past month? (Q4-1)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	297	18.2%	1,332	81.5%	5	0.3%	1,634
Kenchu	318	17.3%	1,515	82.3%	7	0.4%	1,840
Kennan	73	15.1%	410	84.7%	1	0.2%	484
Soso	57	15.6%	307	83.9%	2	0.5%	366
Iwaki	169	15.4%	923	84.1%	6	0.5%	1,098
Aizu	138	18.1%	624	81.7%	2	0.3%	764
Minamiaizu	10	15.6%	54	84.4%	0	0.0%	64
Outside Fukushima	13	16.3%	66	82.5%	1	1.3%	80
Total	1,075	17.0%	5,231	82.6%	24	0.4%	6,330

[Table 4-2] During the past month, have you often felt uninterested in or unable to truly enjoy things? (Q4-2)

Region	Yes		No		Non-response/ Invalid response		Total
Kenpoku	129	7.9%	1,500	91.8%	5	0.3%	1,634
Kenchu	132	7.2%	1,701	92.4%	7	0.4%	1,840
Kennan	28	5.8%	455	94.0%	1	0.2%	484
Soso	28	7.7%	336	91.8%	2	0.5%	366
Iwaki	65	5.9%	1,027	93.5%	6	0.5%	1,098
Aizu	49	6.4%	713	93.3%	2	0.3%	764
Minamiaizu	4	6.3%	60	93.8%	0	0.0%	64
Outside Fukushima	7	8.8%	72	90.0%	1	1.3%	80
Total	442	7.0%	5,864	92.6%	24	0.4%	6,330

[Table 4-3] Depressive symptoms (those who answered "yes" to both or either of Q4-1 and Q4-2)

Region	Yes to both questions		Yes to either of the question		No to both questions		Non-response/ invalid response		Total
Kenpoku	112	6.9%	202	12.4%	1,315	80.5%	5	0.3%	1,634
Kenchu	112	6.1%	226	12.3%	1,495	81.3%	7	0.4%	1,840
Kennan	23	4.8%	55	11.4%	405	83.7%	1	0.2%	484
Soso	24	6.6%	37	10.1%	303	82.8%	2	0.5%	366
Iwaki	54	4.9%	126	11.5%	912	83.1%	6	0.5%	1,098
Aizu	44	5.8%	99	13.0%	619	81.0%	2	0.3%	764
Minamiaizu	4	6.3%	6	9.4%	54	84.4%	0	0.0%	64
Outside Fukushima	5	6.3%	10	12.5%	64	80.0%	1	1.3%	80
Total	378	6.0%	761	12.0%	5,167	81.6%	24	0.4%	6,330

Proportion of those with depressive symptoms:18.0% (378 checked both boxes of Yes + 761 checked either of Yes/total of 6,330)

[Table 5-1] Are you evacuated from your home? (Q5)

Region	Yes, I am living in temporary housing		Yes, I am living in other kind of accommo-dation		Have evacuated but returned home		Have never been evacuated		Non-response/ invalid response		Total
Kenpoku	0	0.0%	6	0.4%	72	4.4%	1,536	94.0%	20	1.2%	1,634
Kenchu	0	0.0%	5	0.3%	91	4.9%	1,727	93.9%	17	0.9%	1,840
Kennan	0	0.0%	1	0.2%	11	2.3%	463	95.7%	9	1.9%	484
Soso	0	0.0%	60	16.4%	81	22.1%	219	59.8%	6	1.6%	366
Iwaki	0	0.0%	6	0.5%	197	17.9%	879	80.1%	16	1.5%	1,098
Aizu	0	0.0%	1	0.1%	9	1.2%	745	97.5%	9	1.2%	764
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	64	100.0%	0	0.0%	64
Outside Fukushima	0	0.0%	0	0.0%	1	1.3%	79	98.8%	0	0.0%	80
Total	0	0.0%	79	1.2%	462	7.3%	5,712	90.2%	77	1.2%	6,330

[Table 5-2] Are you living apart from family members you previously lived with because of evacuation? (Q5)
This question is for 79 respondents who answered Yes to the previous question.

Region	Yes		No		Non-response/ Invalid response		Total
Kenpoku	5	83.3%	1	16.7%	0	0.0%	6
Kenchu	2	40.0%	3	60.0%	0	0.0%	5
Kennan	0	0.0%	1	100.0%	0	0.0%	1
Soso	30	50.0%	30	50.0%	0	0.0%	60
Iwaki	1	16.7%	5	83.3%	0	0.0%	6
Aizu	1	100.0%	0	0.0%	0	0.0%	1
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0
Total	39	49.4%	40	50.6%	0	0.0%	79

[Table 5-3] Are you communicating well with your family? (Q5)
This question is for 39 respondents who answered Yes to the previous question.

Region	Yes		No		Not sure		Non-response/ invalid response		Total
Kenpoku	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5
Kenchu	2	100.0%	0	0.0%	0	0.0%	0	0.0%	2
Kennan	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Soso	27	90.0%	3	10.0%	0	0.0%	0	0.0%	30
Iwaki	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Aizu	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	36	92.3%	3	7.7%	0	0.0%	0	0.0%	39

[Table 6] With whom are you living? Check all that apply. (Q6) (Multiple answers are allowed).

Region	No one		Husband or partner		Children		Parents or parents-in-law		Other		Valid response
Kenpoku	1	0.1%	1,543	94.4%	1,464	89.6%	336	20.6%	79	4.8%	1,634
Kenchu	0	0.0%	1,736	94.4%	1,632	88.7%	398	21.6%	101	5.5%	1,839
Kennan	0	0.0%	454	94.2%	436	90.5%	145	30.1%	33	6.8%	482
Soso	0	0.0%	339	93.1%	336	92.3%	97	26.6%	20	5.5%	364
Iwaki	1	0.1%	1,031	94.6%	962	88.3%	216	19.8%	43	3.9%	1,090
Aizu	0	0.0%	717	94.1%	677	88.8%	255	33.5%	58	7.6%	762
Minami-aizu	0	0.0%	62	96.9%	57	89.1%	22	34.4%	7	10.9%	64
Outside Fukushima	0	0.0%	74	92.5%	56	70.0%	10	12.5%	0	0.0%	80
Total	2	0.0%	5,956	94.3%	5,620	89.0%	1,479	23.4%	341	5.4%	6,315

The denominator of percentages is the sum of valid responses to Q6. Proportions may not total to 100.0% because of the multiple answers.

[Table 7-1] Did you smoke (or, Were you smoking?) around the time of your pregnancy registration? (Q7-1)

District	Have never smoked		Quit before detecting pregnancy		Quit after detecting pregnancy		Yes		Non-response/ Invalid response		Total
Kenpoku	1,285	78.6%	140	8.6%	151	9.2%	56	3.4%	2	0.1%	1,634
Kenchu	1,415	76.9%	171	9.3%	171	9.3%	80	4.3%	3	0.2%	1,840
Kennan	361	74.6%	39	8.1%	59	12.2%	24	5.0%	1	0.2%	484
Soso	261	71.3%	41	11.2%	45	12.3%	16	4.4%	3	0.8%	366
Iwaki	776	70.7%	118	10.7%	128	11.7%	70	6.4%	6	0.5%	1,098
Aizu	569	74.5%	87	11.4%	73	9.6%	31	4.1%	4	0.5%	764
Minamiaizu	54	84.4%	4	6.3%	5	7.8%	1	1.6%	0	0.0%	64
Out of Fukushima	65	81.3%	11	13.8%	1	1.3%	3	3.8%	0	0.0%	80
Total	4,786	75.6%	611	9.7%	633	10.0%	281	4.4%	19	0.3%	6,330

[Table 7-2] Did you smoke during the pregnancy? (Q7-2)

Region	No		Yes		Non-response/ invalid response		Total
Kenpoku	1,602	98.0%	28	1.7%	4	0.2%	1,634
Kenchu	1,805	98.1%	29	1.6%	6	0.3%	1,840
Kennan	473	97.7%	10	2.1%	1	0.2%	484
Soso	358	97.8%	6	1.6%	2	0.5%	366
Iwaki	1,054	96.0%	36	3.3%	8	0.7%	1,098
Aizu	746	97.6%	15	2.0%	3	0.4%	764
Minamiaizu	63	98.4%	1	1.6%	0	0.0%	64
Outside Fukushima	80	100.0%	0	0.0%	0	0.0%	80
Total	6,181	97.6%	125	2.0%	24	0.4%	6,330

[Table 7-3] Do you smoke now? (Q7-3)

Region	No		Yes		Non-response/ invalid response		Total
Kenpoku	1,586	97.1%	44	2.7%	4	0.2%	1,634
Kenchu	1,755	95.4%	77	4.2%	8	0.4%	1,840
Kennan	459	94.8%	22	4.5%	3	0.6%	484
Soso	347	94.8%	17	4.6%	2	0.5%	366
Iwaki	1,036	94.4%	56	5.1%	6	0.5%	1,098
Aizu	728	95.3%	33	4.3%	3	0.4%	764
Minamiaizu	63	98.4%	1	1.6%	0	0.0%	64
Outside Fukushima	80	100.0%	0	0.0%	0	0.0%	80
Total	6,054	95.6%	250	3.9%	26	0.4%	6,330

[Table 8] Did you give birth to one baby (singleton) or two (twins) (including the cases of stillbirth)? (Q8)

Region	Singleton		Twins		Non-response/ invalid response		Total
Kenpoku	1,621	99.2%	13	0.8%	0	0.0%	1,634
Kenchu	1,826	99.2%	14	0.8%	0	0.0%	1,840
Kennan	479	99.0%	5	1.0%	0	0.0%	484
Soso	361	98.6%	5	1.4%	0	0.0%	366
Iwaki	1,090	99.3%	7	0.6%	1	0.1%	1,098
Aizu	757	99.1%	7	0.9%	0	0.0%	764
Minamiaizu	64	100.0%	0	0.0%	0	0.0%	64
Outside Fukushima	80	100.0%	0	0.0%	0	0.0%	80
Total	6,278	99.2%	51	0.8%	1	0.0%	6,330

[Table 9-1] Details of pregnancy (Q9)

Region	Natural conception		Ovarian hyper-stimulation		Artificial insemination		In vitro fertilization		Ovarian hyperstimulation and artificial insemination		Ovarian hyper stimulation and in vitro fertilization		Non-response/ Invalid response		Total
Kenpoku	1,457	89.2%	62	3.8%	22	1.3%	71	4.3%	6	0.4%	13	0.8%	3	0.2%	1,634
Kenchu	1,686	91.6%	36	2.0%	24	1.3%	72	3.9%	2	0.1%	17	0.9%	3	0.2%	1,840
Kennan	450	93.0%	12	2.5%	9	1.9%	8	1.7%	3	0.6%	2	0.4%	0	0.0%	484
Soso	329	89.9%	12	3.3%	7	1.9%	16	4.4%	0	0.0%	0	0.0%	2	0.5%	366
Iwaki	991	90.3%	27	2.5%	24	2.2%	33	3.0%	5	0.5%	11	1.0%	7	0.6%	1,098
Aizu	681	89.1%	31	4.1%	16	2.1%	29	3.8%	2	0.3%	2	0.3%	3	0.4%	764
Minamiaizu	60	93.8%	1	1.6%	1	1.6%	2	3.1%	0	0.0%	0	0.0%	0	0.0%	64
Outside Fukushima	77	96.3%	1	1.3%	1	1.3%	1	1.3%	0	0.0%	0	0.0%	0	0.0%	80
Total	5,731	90.5%	182	2.9%	104	1.6%	232	3.7%	18	0.3%	45	0.7%	18	0.3%	6,330

[Table 9-2] Pregnancy results (Q9)

District	Delivered		Miscarriage		Induced abortion		Stillbirth		Total
Kenpoku	1,623	99.33%	8	0.49%	2	0.12%	1	0.06%	1,634
Kenchu	1,833	99.62%	6	0.33%	1	0.05%	0	0.00%	1,840
Kennan	482	99.59%	1	0.21%	0	0.00%	1	0.21%	484
Soso	365	99.73%	0	0.00%	0	0.00%	1	0.27%	366
Iwaki	1,085	98.64%	9	0.82%	3	0.27%	3	0.27%	1,100
Aizu	760	99.35%	2	0.26%	0	0.00%	3	0.39%	765
Minamiaizu	64	100.00%	0	0.00%	0	0.00%	0	0.00%	64
Out of Fukushima	80	100.00%	0	0.00%	0	0.00%	0	0.00%	80
Total	6,292	99.35%	26	0.41%	6	0.09%	9	0.14%	6,333

*Basically, a birth of twins is counted as 1 Delivered. However, for 3 cases of twins with different outcomes, the results were counted separately. For example, twin pregnancies with a sound delivery and a miscarriage are counted as 1 Delivered and 1 Miscarriage.

[Table 10-1] Have you ever had a miscarriage? (Q10-1)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	370	22.6%	1,253	76.7%	11	0.7%	1,634
Kenchu	346	18.8%	1,478	80.3%	16	0.9%	1,840
Kennan	92	19.0%	388	80.2%	4	0.8%	484
Soso	83	22.7%	279	76.2%	4	1.1%	366
Iwaki	244	22.2%	842	76.7%	12	1.1%	1,098
Aizu	159	20.8%	600	78.5%	5	0.7%	764
Minamiaizu	17	26.6%	46	71.9%	1	1.6%	64
Outside Fukushima	12	15.0%	67	83.8%	1	1.3%	80
Total	1,323	20.9%	4,953	78.2%	54	0.9%	6,330

[Table 10-2] Have you ever had induced abortion? (Q10-2)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	199	12.2%	1,403	85.9%	32	2.0%	1,634
Kenchu	213	11.6%	1,575	85.6%	52	2.8%	1,840
Kennan	58	12.0%	413	85.3%	13	2.7%	484
Soso	37	10.1%	322	88.0%	7	1.9%	366
Iwaki	166	15.1%	905	82.4%	27	2.5%	1,098
Aizu	120	15.7%	623	81.5%	21	2.7%	764
Minamiaizu	5	7.8%	57	89.1%	2	3.1%	64
Outside Fukushima	9	11.3%	66	82.5%	5	6.3%	80
Total	807	12.7%	5,364	84.7%	159	2.5%	6,330

[Table 10-3] Have you ever had a stillbirth? (Q10-3)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	22	1.3%	1,599	97.9%	13	0.8%	1,634
Kenchu	26	1.4%	1,796	97.6%	18	1.0%	1,840
Kennan	4	0.8%	477	98.6%	3	0.6%	484
Soso	8	2.2%	354	96.7%	4	1.1%	366
Iwaki	13	1.2%	1,069	97.4%	16	1.5%	1,098
Aizu	9	1.2%	749	98.0%	6	0.8%	764
Minamiaizu	1	1.6%	62	96.9%	1	1.6%	64
Outside Fukushima	0	0.0%	79	98.8%	1	1.3%	80
Total	83	1.3%	6,185	97.7%	62	1.0%	6,330

[Table 10-4] Have you ever given birth? (Q10-4)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	897	54.9%	698	42.7%	39	2.4%	1,634
Kenchu	931	50.6%	855	46.5%	54	2.9%	1,840
Kennan	261	53.9%	211	43.6%	12	2.5%	484
Soso	206	56.3%	152	41.5%	8	2.2%	366
Iwaki	565	51.5%	506	46.1%	27	2.5%	1,098
Aizu	412	53.9%	332	43.5%	20	2.6%	764
Minamiaizu	36	56.3%	26	40.6%	2	3.1%	64
Outside Fukushima	26	32.5%	49	61.3%	5	6.3%	80
Total	3,334	52.7%	2,829	44.7%	167	2.6%	6,330

[Table 10-5] Have you ever had twins? (Q10-5)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	13	0.8%	1,608	98.4%	13	0.8%	1,634
Kenchu	11	0.6%	1,810	98.4%	19	1.0%	1,840
Kennan	1	0.2%	479	99.0%	4	0.8%	484
Soso	1	0.3%	360	98.4%	5	1.4%	366
Iwaki	7	0.6%	1,075	97.9%	16	1.5%	1,098
Aizu	7	0.9%	753	98.6%	4	0.5%	764
Minamiaizu	0	0.0%	62	96.9%	2	3.1%	64
Outside Fukushima	0	0.0%	79	98.8%	1	1.3%	80
Total	40	0.6%	6,226	98.4%	64	1.0%	6,330

[Table 11-1] Did you suffer from any disease prior to the current pregnancy? (Q11)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	493	30.2%	1,139	69.7%	2	0.1%	1,634
Kenchu	571	31.0%	1,267	68.9%	2	0.1%	1,840
Kennan	136	28.1%	345	71.3%	3	0.6%	484
Soso	109	29.8%	257	70.2%	0	0.0%	366
Iwaki	327	29.8%	765	69.7%	6	0.5%	1,098
Aizu	229	30.0%	534	69.9%	1	0.1%	764
Minamiaizu	18	28.1%	46	71.9%	0	0.0%	64
Outside Fukushima	25	31.3%	55	68.8%	0	0.0%	80
Total	1,908	30.1%	4,408	69.6%	14	0.2%	6,330

[Table 11-2] Incidence of each disease among those who responded "yes" to Q11
(Valid response: 1,907 Non-response/invalid response: 1)

Region	Other allergic disease[1)]		Respiratory disease[2)]		Mental disease[3)]		Thyroid disease		Intestinal disease		Heart disease[4)]		Cerebral disease[5)]		Hypertension		Cancer	
Kenpoku	257	38.9%	115	17.4%	85	12.9%	46	7.0%	21	3.2%	14	2.1%	16	2.4%	10	1.5%	9	1.4%
Kenchu	332	44.9%	135	18.3%	53	7.2%	32	4.3%	19	2.6%	15	2.0%	16	2.2%	13	1.8%	11	1.5%
Kennan	69	38.5%	34	19.0%	17	9.5%	14	7.8%	6	3.4%	3	1.7%	5	2.8%	2	1.1%	4	2.2%
Soso	54	36.7%	27	18.4%	15	10.2%	13	8.8%	2	1.4%	4	2.7%	5	3.4%	2	1.4%	4	2.7%
Iwaki	174	38.9%	99	22.1%	35	7.8%	24	5.4%	19	4.3%	12	2.7%	9	2.0%	12	2.7%	12	2.7%
Aizu	121	40.7%	54	18.2%	25	8.4%	25	8.4%	9	3.0%	5	1.7%	3	1.0%	7	2.4%	2	0.7%
Minamiaizu	7	25.0%	3	10.7%	2	7.1%	4	14.3%	1	3.6%	3	10.7%	1	3.6%	0	0.0%	0	0.0%
Outside Fukushima	21	48.8%	10	23.3%	5	11.6%	1	2.3%	1	2.3%	1	2.3%	1	2.3%	0	0.0%	1	2.3%
Total	1,035	40.7%	477	18.8%	237	9.3%	159	6.3%	78	3.1%	57	2.2%	56	2.2%	46	1.8%	43	1.7%

Region	Hyperlipemia		Diabetes		Collagen disease[6)]		Blood disorders[7)]		Liver Disease[8)]		Communicable disease[9)]		Neuro-muscular disease[10)]		Other		Total
Kenpoku	10	1.5%	5	0.8%	3	0.5%	4	0.6%	2	0.3%	3	0.5%	3	0.5%	58	8.8%	661
Kenchu	7	0.9%	5	0.7%	9	1.2%	10	1.4%	3	0.4%	7	0.9%	2	0.3%	70	9.5%	739
Kennan	0	0.0%	2	1.1%	1	0.6%	0	0.0%	2	1.1%	0	0.0%	0	0.0%	20	11.2%	179
Soso	1	0.7%	1	0.7%	0	0.0%	0	0.0%	2	1.4%	0	0.0%	1	0.7%	16	10.9%	147
Iwaki	3	0.7%	6	1.3%	6	1.3%	2	0.4%	5	1.1%	0	0.0%	0	0.0%	29	6.5%	447
Aizu	3	1.0%	5	1.7%	2	0.7%	5	1.7%	2	0.7%	2	0.7%	2	0.7%	25	8.4%	297
Minamiaizu	1	3.6%	0	0.0%	1	3.6%	0	0.0%	1	3.6%	1	3.6%	1	3.6%	2	7.1%	28
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	4.7%	43
Total	25	1.0%	24	0.9%	22	0.9%	21	0.8%	17	0.7%	13	0.5%	9	0.4%	222	8.7%	2,541

1) Atopic dermatitis, allergic rhinitis, etc. 2) Pneumonia, asthma, etc. 3) Depression, schizophrenia, etc.
4) Myocardial infarction, angina pectoris, arrhythmia, congenital heart disease, etc. 5) Cerebral apoplexy, epilepsy, etc.
6) Lupus erythematosus, etc. 7) Idiopathic thrombocytopenia, etc. 8) Chronic hepatitis, etc. 9) Tuberculosis, etc. 10) Myasthenia gravis, etc. *Multiple answers were allowed.

[Table 11-3] Names of diseases suffered by the respondents who responded “yes” to Q11 and chose “other.” (Multiple answers were allowed).

Ovarian tumor	67	Ectopic endometriosis	2	Submandibular Gland Ulcers	1	Vocal polyps	1
Uterine fibroid	28	Psoriasis	2	Submandibular salivary stone disease	1	Tongue cysts	1
Endometriosis	18	Adenomyosis uteri	2	Jaw deformity	1	Condyloma acuminatum	1
Meniere's disease	14	Purpura	2	Giant Ureteral Disease	1	Alopecia	1
Cervical intraepithelial neoplasm	7	Renal cysts	2	Scleritis	1	Cholelithiasis	1
Polycystic ovary syndrome	7	Herpes zoster	2	Thoracic outlet syndrome	1	Mastopathy	1
Hearing difficulty	6	Herniated disc	2	Myopic choroidal neovascularization	1	Mammary fibroadenoma	1
Pyelonephritis	5	Sinusitis	2	Acidophilic angioedema	1	Uremia	1
Hydatidiform mole	5	Retinal detachment	2	Cervical duct polyp	1	Febrile convulsions	1
Endometrial polyp	4	Fallopian tube edema	2	Glomerulonephritis	1	Scoliosis	1
Hyperprolactinemia	3	IgA vasculitis	1	Lipoma	1	Developmental disorders	1
Uterine polyps	3	SAPHO syndrome	1	Hemorrhoids	1	Alopecia generalisata	1
Palmoplantar pustulosis	3	Cushing's syndrome	1	Aural fistula	1	Non-ossifying fibroma	1
Nephritis	3	Sarcoidosis	1	Mediastinal tumor	1	Retinal artery occlusion	1
Kawasaki disease	3	Narcolepsy	1	Upper arm soft tissue tumor	1	Pear-shaped muscle syndrome	1
Ureteral stone disease	3	Nephrotic syndrome	1	Deep vein thrombosis	1	Dermatofibrosarcoma Protuberans	1
Tonsillitis	3	Uveitis	1	Vitiligo vulgaris	1	Glaucoma	1
Pancreatitis	3	Mitochondrial disease	1	Kidney stones	1	Tonsillar hypertrophy	1
IgA nephropathy	2	Overactive bladder	1	Renal atrophy	1	Cystitis	1

[Table 12-1] Did you suffer from any disease during the current pregnancy? (Q12)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	443	27.1%	1,184	72.5%	7	0.4%	1,634
Kenchu	471	25.6%	1,366	74.2%	3	0.2%	1,840
Kennan	115	23.8%	367	75.8%	2	0.4%	484
Soso	108	29.5%	258	70.5%	0	0.0%	366
Iwaki	257	23.4%	833	75.9%	8	0.7%	1,098
Aizu	267	34.9%	495	64.8%	2	0.3%	764
Minamiaizu	22	34.4%	42	65.6%	0	0.0%	64
Outside Fukushima	20	25.0%	60	75.0%	0	0.0%	80
Total	1,703	26.9%	4,605	72.7%	22	0.3%	6,330

Region	Incidence of all diseases [1)]		Valid response
Kenpoku	443	27.2%	1,627
Kenchu	471	25.6%	1,837
Kennan	115	23.9%	482
Soso	108	29.5%	366
Iwaki	257	23.6%	1,090
Aizu	267	35.0%	762
Minamiaizu	22	34.4%	64
Outside Fukushima	20	25.0%	80
Total	1,703	27.0%	6,308

[1)] The denominator of percentages is the sum of valid responses ("yes" + "no").

[Table 12-2] Incidence of each disease (Multiple answers were allowed.)

Region	Threatened premature delivery		Threatened abortion		Gestational diabetes mellitus		Pregnancy hypertension		Oligo-hydramnios		Infectious disease[1)]		Premature delivery		Placenta previa	
Kenpoku	174	10.7%	129	7.9%	93	5.7%	55	3.4%	21	1.3%	27	1.7%	22	1.4%	17	1.0%
Kenchu	184	10.0%	97	5.3%	84	4.6%	72	3.9%	49	2.7%	25	1.4%	22	1.2%	20	1.1%
Kennan	35	7.3%	22	4.6%	26	5.4%	24	5.0%	12	2.5%	10	2.1%	2	0.4%	2	0.4%
Soso	45	12.3%	18	4.9%	23	6.3%	22	6.0%	6	1.6%	6	1.6%	3	0.8%	6	1.6%
Iwaki	93	8.5%	54	5.0%	70	6.4%	31	2.8%	15	1.4%	13	1.2%	12	1.1%	8	0.7%
Aizu	122	16.0%	75	9.8%	50	6.6%	29	3.8%	18	2.4%	13	1.7%	10	1.3%	9	1.2%
Minamiaizu	10	15.6%	5	7.8%	4	6.3%	2	3.1%	3	4.7%	4	6.3%	1	1.6%	1	1.6%
Outside Fukushima	7	8.8%	4	5.0%	4	5.0%	0	0.0%	0	0.0%	1	1.3%	0	0.0%	3	3.8%
Total	670	10.6%	404	6.4%	354	5.6%	235	3.7%	124	2.0%	99	1.6%	72	1.1%	66	1.0%

Region	Mental problems including insomnia and anxiety		Poly-hydramnios		Cerebral apoplexy		Trauma		Thrombosis[2)]		Miscarriage		Other		Valid responses
Kenpoku	13	0.8%	4	0.2%	0	0.0%	1	0.1%	1	0.1%	1	0.1%	30	1.8%	1,627
Kenchu	7	0.4%	12	0.7%	1	0.1%	1	0.1%	0	0.0%	0	0.0%	28	1.5%	1,837
Kennan	2	0.4%	1	0.2%	1	0.2%	0	0.0%	0	0.0%	0	0.0%	9	1.9%	482
Soso	3	0.8%	2	0.5%	1	0.3%	0	0.0%	1	0.3%	0	0.0%	8	2.2%	366
Iwaki	6	0.6%	10	0.9%	1	0.1%	0	0.0%	1	0.1%	1	0.1%	21	1.9%	1,090
Aizu	6	0.8%	5	0.7%	0	0.0%	1	0.1%	0	0.0%	0	0.0%	18	2.4%	762
Minamiaizu	0	0.0%	1	1.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	64
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.5%	80
Total	37	0.6%	35	0.6%	4	0.1%	3	0.0%	3	0.0%	2	0.0%	116	1.8%	6,308

1) Pneumonia, influenza, tetanus, etc. 2) Thrombosis (economy-class Syndrome), pulmonary embolism
*The denominator of percentages is 6,308 respondents who responded "yes" or "no" to Q12. Percentages do not total to 100.0 due to multiple answers.

[Table 12-3] Names of diseases/conditions suffered by the respondents who responded “yes” to Q12 and chose "other." (Multiple answers were allowed).

Uterine fibroids	25	Hypothyroidism	2	Pleurisy	1	Gallstone	1
Prurigo gestationis	7	Descent of uterus	2	Erythema nodosum	1	Appendicitis	1
Cervical polyps	6	Cervical atresia	2	Angiogenic granuloma	1	mesentery cyst	1
Ovarian tumor	6	Premature abruption of the normal placenta	2	Goiter	1	Ulcerative colitis	1
Asthma	6	Hearing difficulty	2	Sciatic neuralgia	1	Low cerebrospinal fluid pressure syndrome	1
Herpes zoster	5	Placenta accreta	2	Endometriosis	1	Idiopathic thrombocytopenic purpura	1
Cervical epithelial tumor	4	Condyloma	1	Cervical cancer	1	Breast cancer	1
Pyelonephritis	4	Pityriasis Rosea Gibert	1	Dysautonomia	1	Ureteral calculus	1
Polyps	3	Bartholin's gland abscess	1	Carpal tunnel syndrome	1	Pregnancy thrombocytopenia	1
Varicose veins	3	Mallory-Weiss syndrome	1	Heart valve disease	1	Arrhythmia	1
Vasa Previa	3	Meniere's disease	1	Phlebitis	1	Epidemic keratoconjunctivitis	1
Sinusitis	3	Facial nerve palsy	1	Threatened uterus rupture	1	Urticaria	1
Bronchitis	2	Ischemic enterocolitis	1	Twin-to-twin transfusion syndrome	1		

[Table 12-4] Those who gave birth after 12 weeks (or 4 months) of pregnancy

Region	Singleton		Twins		Non-response/ invalid response		Total
Kenpoku	1,615	99.2%	13	0.8%	0	0.0%	1,628
Kenchu	1,821	99.2%	14	0.8%	0	0.0%	1,835
Kennan	479	99.0%	5	1.0%	0	0.0%	484
Soso	361	98.6%	5	1.4%	0	0.0%	366
Iwaki	1,083	99.4%	6	0.6%	0	0.0%	1,089
Aizu	753	99.1%	7	0.9%	0	0.0%	760
Minami-aizu	64	100.0%	0	0.0%	0	0.0%	64
Outside Fukushima	80	100.0%	0	0.0%	0	0.0%	80
Total	6,256	99.2%	50	0.8%	0	0.0%	6,306

[Table 13-1] How many weeks’ gestation were you when you gave birth? (Q13)
Singletons

Region	Week 12 - 21		Week 22 - 23		Week 24 - 27		Week 28 - 31		Week 32 - 36		Week 37 - 41		Week 42 -		Total
Kenpoku	0	0.0%	0	0.0%	1	0.1%	6	0.4%	51	3.2%	1,547	96.1%	5	0.3%	1,610
Kenchu	0	0.0%	0	0.0%	1	0.1%	5	0.3%	69	3.8%	1,741	95.8%	1	0.1%	1,817
Kennan	0	0.0%	0	0.0%	0	0.0%	1	0.2%	19	4.0%	457	95.8%	0	0.0%	477
Soso	0	0.0%	0	0.0%	1	0.3%	3	0.8%	9	2.5%	346	96.1%	1	0.3%	360
Iwaki	0	0.0%	1	0.1%	0	0.0%	1	0.1%	37	3.4%	1,032	95.7%	7	0.6%	1,078
Aizu	0	0.0%	0	0.0%	0	0.0%	4	0.5%	30	4.0%	715	95.3%	1	0.1%	750
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	2	3.1%	5	7.8%	57	89.1%	0	0.0%	64
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	80	100.0%	0	0.0%	80
Total	0	0.0%	1	0.0%	3	0.0%	22	0.4%	220	3.5%	5,975	95.8%	15	0.2%	6,236

In Tables 13-2 to 14-28 where the first child and the second child of twins were counted separately, the gestational weeks of the first and the second children are not equal due to cases of miscarriage or stillbirth of the 2nd child at or after the 12th week.

[Table 13-2] How many weeks' gestation were you when you gave birth? (Q13)
Twins

Region	Week 12 - 21		Week 22 - 23		Week 24 - 27		Week 28 - 31		Week 32 - 36		Week 37 - 41		Week 42 -		Total
Kenpoku	0	0.0%	0	0.0%	0	0.0%	2	7.7%	6	23.1%	18	69.2%	0	0.0%	26
Kenchu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	10	35.7%	18	64.3%	0	0.0%	28
Kennan	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	20.0%	8	80.0%	0	0.0%	10
Soso	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	40.0%	6	60.0%	0	0.0%	10
Iwaki	0	0.0%	0	0.0%	2	18.2%	0	0.0%	0	0.0%	9	81.8%	0	0.0%	11
Aizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	30.8%	9	69.2%	0	0.0%	13
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	0	0.0%	0	0.0%	2	2.0%	2	2.0%	26	26.5%	68	69.4%	0	0.0%	98

[Table 13-3] Distribution of gestational week and proportion of premature birth
Singletons and twins

Region	Number of deliveries by weeks (Singletons and twins)							Total	Total of W22-36	Preterm birth rate[1)]
	W12 - 21	W22 - 23	W24 - 27	W28 - 31	W32 - 36	W37 - 41	W42 -			
	a							b	c	c/b-a
Kenpoku	0	0	1	8	57	1,565	5	1,636	66	4.0%
Kenchu	0	0	1	5	79	1,759	1	1,845	85	4.6%
Kennan	0	0	0	1	21	465	0	487	22	4.5%
Soso	0	0	1	3	13	352	1	370	17	4.6%
Iwaki	0	1	2	1	37	1,041	7	1,089	41	3.8%
Aizu	0	0	0	4	34	724	1	763	38	5.0%
Minamiaizu	0	0	0	2	5	57	0	64	7	10.9%
Outside Fukushima	0	0	0	0	0	80	0	80	0	0.0%
Total	0	1	5	24	246	6,043	15	6,334	276	4.4%

∗ A premature birth is one that occurs between 22 and 36 weeks of pregnancy.
1) The denominator for premature birth rates is the total number of deliveries (6,334) excluding those who had an unknown number of fetuses, delivered at an unknown number of weeks, or delivered at less than 12 weeks, minus the number of deliveries at less than 22 weeks (0).

[Table 13-4] Details of delivery, Singletons (Q13)

Region	Spontaneous labor		Vacuum extraction or forceps delivery		Cesarean section		Non-response/ invalid response		Total
Kenpoku	1,062	65.8%	234	14.5%	308	19.1%	11	0.7%	1,615
Kenchu	1,204	66.1%	197	10.8%	408	22.4%	12	0.7%	1,821
Kennan	332	69.3%	61	12.7%	85	17.7%	1	0.2%	479
Soso	198	54.8%	79	21.9%	82	22.7%	2	0.6%	361
Iwaki	731	67.5%	109	10.1%	234	21.6%	9	0.8%	1,083
Aizu	447	59.4%	92	12.2%	211	28.0%	3	0.4%	753
Minamiaizu	33	51.6%	8	12.5%	23	35.9%	0	0.0%	64
Outside Fukushima	54	67.5%	11	13.8%	15	18.8%	0	0.0%	80
Total	4,061	64.9%	791	12.6%	1,366	21.8%	38	0.6%	6,256

[Table 13-5] Details of delivery, The first child of twins (Q13)

Region	Spontaneous labor		Vacuum extraction or forceps delivery		Cesarean section		Non-response/ invalid response		Total
Kenpoku	1	7.7%	0	0.0%	12	92.3%	0	0.0%	13
Kenchu	1	7.1%	1	7.1%	12	85.7%	0	0.0%	14
Kennan	0	0.0%	0	0.0%	5	100.0%	0	0.0%	5
Soso	0	0.0%	0	0.0%	5	100.0%	0	0.0%	5
Iwaki	1	16.7%	0	0.0%	5	83.3%	0	0.0%	6
Aizu	1	14.3%	1	14.3%	5	71.4%	0	0.0%	7
Minamiazu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	4	8.0%	2	4.0%	44	88.0%	0	0.0%	50

[Table 13-6] Details of delivery, The second child of twins (Q13)

Region	Spontaneous labor		Vacuum extraction or forceps delivery		Cesarean section		Non-response/ invalid response		Total
Kenpoku	1	7.7%	0	0.0%	12	92.3%	0	0.0%	13
Kenchu	1	7.1%	1	7.1%	12	85.7%	0	0.0%	14
Kennan	0	0.0%	0	0.0%	5	100.0%	0	0.0%	5
Soso	0	0.0%	0	0.0%	5	100.0%	0	0.0%	5
Iwaki	0	0.0%	0	0.0%	5	100.0%	0	0.0%	5
Aizu	0	0.0%	2	33.3%	4	66.7%	0	0.0%	6
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	2	4.2%	3	6.3%	43	89.6%	0	0.0%	48

In Tables 14-1 to 14-14, the sum of males and females may not match with the total due to "Non-response/invalid response."

[Table 14-1] Delivery status, Male-female ratio by region/Singletons and twins (Q14)

Region	Males		Females		Non-response/ invalid response		Total
Kenpoku	764	46.6%	793	48.3%	84	5.1%	1,641
Kenchu	894	48.4%	897	48.5%	58	3.1%	1,849
Kennan	260	53.2%	215	44.0%	14	2.9%	489
Soso	185	49.9%	177	47.7%	9	2.4%	371
Iwaki	554	50.6%	500	45.7%	40	3.7%	1,094
Aizu	358	46.7%	380	49.6%	28	3.7%	766
Minamiaizu	31	48.4%	32	50.0%	1	1.6%	64
Outside Fukushima	39	48.8%	38	47.5%	3	3.8%	80
Total	3,085	48.6%	3,032	47.7%	237	3.7%	6,354

[Table 14-2] Weight at delivery, Singletons/Male and female combined (Q14)

Region	<1.0 kg		1.0-<1.5 kg		1.5-<2.0 kg		2.0-<2.5 kg		2.5-<3.0 kg	
Kenpoku	2	0.1%	4	0.2%	9	0.6%	85	5.3%	616	38.1%
Kenchu	6	0.3%	2	0.1%	17	0.9%	117	6.4%	719	39.5%
Kennan	2	0.4%	3	0.6%	6	1.3%	32	6.7%	177	37.0%
Soso	0	0.0%	2	0.6%	2	0.6%	19	5.3%	138	38.2%
Iwaki	5	0.5%	2	0.2%	5	0.5%	73	6.7%	415	38.3%
Aizu	1	0.1%	3	0.4%	4	0.5%	46	6.1%	292	38.8%
Minamiaizu	0	0.0%	1	1.6%	2	3.1%	1	1.6%	29	45.3%
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	3	3.8%	30	37.5%
Total	16	0.3%	17	0.3%	45	0.7%	376	6.0%	2,416	38.6%

Region	3.0-<3.5 kg		3.5-<4.0 kg		4.0-<4.5 kg		≥4.5 kg		Non-response/ invalid response		Total
Kenpoku	715	44.3%	169	10.5%	12	0.7%	0	0.0%	3	0.2%	1,615
Kenchu	782	42.9%	161	8.8%	15	0.8%	0	0.0%	2	0.1%	1,821
Kennan	212	44.3%	42	8.8%	4	0.8%	0	0.0%	1	0.2%	479
Soso	163	45.2%	33	9.1%	4	1.1%	0	0.0%	0	0.0%	361
Iwaki	449	41.5%	121	11.2%	9	0.8%	1	0.1%	3	0.3%	1,083
Aizu	324	43.0%	72	9.6%	8	1.1%	0	0.0%	3	0.4%	753
Minami-aizu	26	40.6%	4	6.3%	1	1.6%	0	0.0%	0	0.0%	64
Outside Fukushima	40	50.0%	6	7.5%	1	1.3%	0	0.0%	0	0.0%	80
Total	2,711	43.3%	608	9.7%	54	0.9%	1	0.0%	12	0.2%	6,256

[Table 14-3] Weight at delivery, Singletons/Male (Q14)

Region	<1.0 kg		1.0-<1.5 kg		1.5-<2.0 kg		2.0-<2.5 kg		2.5-<3.0 kg	
Kenpoku	2	0.3%	2	0.3%	3	0.4%	39	5.2%	260	34.4%
Kenchu	2	0.2%	0	0.0%	8	0.9%	54	6.2%	338	38.5%
Kennan	2	0.8%	3	1.2%	4	1.6%	11	4.3%	77	30.0%
Soso	0	0.0%	0	0.0%	1	0.6%	7	3.9%	62	34.4%
Iwaki	3	0.5%	1	0.2%	5	0.9%	26	4.7%	185	33.5%
Aizu	0	0.0%	1	0.3%	4	1.1%	18	5.1%	127	36.2%
Minamiaizu	0	0.0%	0	0.0%	2	6.5%	0	0.0%	12	38.7%
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	2	5.1%	11	28.2%
Total	9	0.3%	7	0.2%	27	0.9%	157	5.2%	1,072	35.2%

Region	3.0-<3.5 kg		3.5-<4.0 kg		4.0-<4.5 kg		≥4.5 kg		Non-response/ invalid response		Total
Kenpoku	342	45.2%	100	13.2%	8	1.1%	0	0.0%	0	0.0%	756
Kenchu	380	43.3%	88	10.0%	8	0.9%	0	0.0%	0	0.0%	878
Kennan	131	51.0%	27	10.5%	1	0.4%	0	0.0%	1	0.4%	257
Soso	90	50.0%	18	10.0%	2	1.1%	0	0.0%	0	0.0%	180
Iwaki	248	44.8%	76	13.7%	7	1.3%	1	0.2%	1	0.2%	553
Aizu	155	44.2%	43	12.3%	2	0.6%	0	0.0%	1	0.3%	351
Minamiaizu	13	41.9%	3	9.7%	1	3.2%	0	0.0%	0	0.0%	31
Outside Fukushima	21	53.8%	4	10.3%	1	2.6%	0	0.0%	0	0.0%	39
Total	1,380	45.3%	359	11.8%	30	1.0%	1	0.0%	3	0.1%	3,045

[Table 14-4] Weight at delivery, Singletons/Female (Q14)

Region	<1.0 kg		1.0-<1.5 kg		1.5-<2.0 kg		2.0-<2.5 kg		2.5-<3.0 kg	
Kenpoku	0	0.0%	2	0.3%	6	0.8%	40	5.2%	325	41.9%
Kenchu	3	0.3%	2	0.2%	9	1.0%	59	6.7%	362	40.9%
Kennan	0	0.0%	0	0.0%	2	1.0%	21	10.0%	93	44.5%
Soso	0	0.0%	2	1.2%	1	0.6%	11	6.4%	76	44.2%
Iwaki	2	0.4%	1	0.2%	0	0.0%	45	9.2%	218	44.5%
Aizu	1	0.3%	2	0.5%	0	0.0%	27	7.2%	156	41.7%
Minamiaizu	0	0.0%	1	3.1%	0	0.0%	1	3.1%	16	50.0%
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	1	2.6%	17	44.7%
Total	6	0.2%	10	0.3%	18	0.6%	205	6.9%	1,263	42.4%

Region	3.0-<3.5 kg		3.5-<4.0 kg		4.0-<4.5 kg		≥4.5 kg		Non-response/ invalid response		Total
Kenpoku	340	43.8%	58	7.5%	4	0.5%	0	0.0%	1	0.1%	776
Kenchu	378	42.7%	66	7.4%	7	0.8%	0	0.0%	0	0.0%	886
Kennan	77	36.8%	13	6.2%	3	1.4%	0	0.0%	0	0.0%	209
Soso	68	39.5%	14	8.1%	0	0.0%	0	0.0%	0	0.0%	172
Iwaki	185	37.8%	38	7.8%	1	0.2%	0	0.0%	0	0.0%	490
Aizu	154	41.2%	28	7.5%	5	1.3%	0	0.0%	1	0.3%	374
Minami-aizu	13	40.6%	1	3.1%	0	0.0%	0	0.0%	0	0.0%	32
Outside Fukushima	18	47.4%	2	5.3%	0	0.0%	0	0.0%	0	0.0%	38
Total	1,233	41.4%	220	7.4%	20	0.7%	0	0.0%	2	0.1%	2,977

[Table 14-5] Weight at delivery, Twins/Male and female combined (Q14)

Region	<1.0 kg		1.0-<1.5 kg		1.5-<2.0 kg		2.0-<2.5 kg		2.5-<3.0 kg		3.0-<3.5 kg		≥3.5 kg		Total
Kenpoku	0	0.0%	2	7.7%	4	15.4%	15	57.7%	5	19.2%	0	0.0%	0	0.0%	26
Kenchu	0	0.0%	0	0.0%	3	10.7%	16	57.1%	8	28.6%	1	3.6%	0	0.0%	28
Kennan	0	0.0%	0	0.0%	2	20.0%	7	70.0%	1	10.0%	0	0.0%	0	0.0%	10
Soso	0	0.0%	0	0.0%	1	10.0%	6	60.0%	3	30.0%	0	0.0%	0	0.0%	10
Iwaki	2	18.2%	0	0.0%	0	0.0%	6	54.5%	2	18.2%	1	9.1%	0	0.0%	11
Aizu	0	0.0%	0	0.0%	4	30.8%	4	30.8%	5	38.5%	0	0.0%	0	0.0%	13
Minami-aizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	2	2.0%	2	2.0%	14	14.3%	54	55.1%	24	24.5%	2	2.0%	0	0.0%	98

[Table 14-6] Weight at delivery, Twins/Male (Q14)

Region	<1.0 kg		1.0-<1.5 kg		1.5-<2.0 kg		2.0-<2.5 kg		2.5-<3.0 kg		3.0-<3.5 kg		Non-response/ Invalid response		Total
Kenpoku	0	0.0%	0	0.0%	1	12.5%	5	62.5%	2	25.0%	0	0.0%	0	0.0%	8
Kenchu	0	0.0%	0	0.0%	3	18.8%	10	62.5%	2	12.5%	1	6.3%	0	0.0%	16
Kennan	0	0.0%	0	0.0%	1	33.3%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	3
Soso	0	0.0%	0	0.0%	1	20.0%	3	60.0%	1	20.0%	0	0.0%	0	0.0%	5
Iwaki	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0 %	0	0.0%	0	0.0%	1
Aizu	0	0.0%	0	0.0%	4	57.1%	1	14.3%	2	28.6%	0	0.0%	0	0.0%	7
Minami-aizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	0	0.0%	0	0.0%	10	25.0%	21	52.5%	8	20.0%	1	2.5%	0	0.0%	40

[Table 14-7] Weight at delivery, Twins/Female (Q14)

District	<1.0 kg		1.0 – <1.5 kg		1.5 – <2.0 kg		2.0 – <2.5 kg		2.5 – <3.0 kg		3.0 – <3.5 kg		Non-response/ Invalid response		Total
Kenpoku	0	0.0%	2	11.8%	3	17.6%	9	52.9%	3	17.6%	0	0.0%	0	0.0%	17
Kenchu	0	0.0%	0	0.0%	0	0.0%	5	45.5%	6	54.5%	0	0.0%	0	0.0%	11
Kennan	0	0.0%	0	0.0%	1	16.7%	4	66.7%	1	16.7%	0	0.0%	0	0.0%	6
Soso	0	0.0%	0	0.0%	0	0.0%	3	60.0%	2	40.0%	0	0.0%	0	0.0%	5
Iwaki	2	20.0%	0	0.0%	0	0.0%	6	60.0%	1	10.0%	1	10.0%	0	0.0%	10
Aizu	0	0.0%	0	0.0%	0	0.0%	3	50.0%	3	50.0%	0	0.0%	0	0.0%	6
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	2	3.6%	2	3.6%	4	7.3%	30	54.5%	16	29.1%	1	1.8%	0	0.0%	55

[Table 14-8] Weight at delivery, Singletons and twins (Q14)
Excluding 20 singleton or twin stillbirths and 9 missing or invalid responses.

Region	<1.0 kg	1.0-<1.5 kg	1.5-<2.0 kg	2.0-<2.5 kg	2.5-<3.0 kg	3.0-<3.5 kg	3.5-<4.0 kg	4.0-<4.5 kg	≥4.5 kg	Total	Low birth weight infant	Pro-port-ion of low birth weight infant
Kenpoku	0	6	13	100	621	714	169	12	0	1,635	119	7.3%
Kenchu	3	2	20	133	727	783	161	15	0	1,844	158	8.6%
Kennan	1	2	8	39	178	212	42	4	0	486	50	10.3%
Soso	0	2	3	25	141	162	33	4	0	370	30	8.1%
Iwaki	3	1	5	79	417	450	121	9	1	1,086	88	8.1%
Aizu	1	2	8	50	295	324	72	8	0	760	61	8.0%
Minamiaizu	0	1	2	1	29	26	4	1	0	64	4	6.3%
Outside Fukushima	0	0	0	3	30	40	6	1	0	80	3	3.8%
Total	8	16	59	430	2,438	2,711	608	54	1	6,325	513	8.1%

*Low birth weight infants are newborns weighing less than 2.5 kg at birth.

[Table 14-9] Height at delivery, Singletons/Male and female combined (Q14)

Region	<47 cm		47-<48 cm		48-<49 cm		49-<50 cm		50-<51 cm	
Kenpoku	137	8.5%	174	10.8%	252	15.6%	355	22.0%	401	24.8%
Kenchu	201	11.0%	172	9.4%	289	15.9%	354	19.4%	414	22.7%
Kennan	40	8.4%	31	6.5%	58	12.1%	91	19.0%	118	24.6%
Soso	42	11.6%	40	11.1%	57	15.8%	62	17.2%	76	21.1%
Iwaki	98	9.0%	81	7.5%	165	15.2%	200	18.5%	250	23.1%
Aizu	89	11.8%	101	13.4%	122	16.2%	160	21.2%	165	21.9%
Minami-aizu	10	15.6%	10	15.6%	11	17.2%	13	20.3%	15	23.4%
Outside Fukushima	4	5.0%	9	11.3%	19	23.8%	17	21.3%	24	30.0%
Total	621	9.9%	618	9.9%	973	15.6%	1,252	20.0%	1,463	23.4%

Region	51-<52 cm		≥52 cm		Non-response/ invalid response		Total
Kenpoku	189	11.7%	103	6.4%	4	0.2%	1,615
Kenchu	253	13.9%	131	7.2%	7	0.4%	1,821
Kennan	74	15.4%	63	13.2%	4	0.8%	479
Soso	49	13.6%	35	9.7%	0	0.0%	361
Iwaki	159	14.7%	125	11.5%	5	0.5%	1,083
Aizu	70	9.3%	38	5.0%	8	1.1%	753
Minamiaizu	4	6.3%	1	1.6%	0	0.0%	64
Outside Fukushima	3	3.8%	4	5.0%	0	0.0%	80
Total	801	12.8%	500	8.0%	28	0.4%	6,256

[Table 14-10] Height at delivery, Singletons/Male (Q14)

Region	<47 cm		47-<48 cm		48-<49 cm		49-<50 cm		50-<51 cm	
Kenpoku	48	6.3%	71	9.4%	99	13.1%	163	21.6%	198	26.2%
Kenchu	75	8.5%	74	8.4%	146	16.6%	157	17.9%	207	23.6%
Kennan	20	7.8%	16	6.2%	23	8.9%	42	16.3%	64	24.9%
Soso	15	8.3%	19	10.6%	26	14.4%	30	16.7%	41	22.8%
Iwaki	39	7.1%	28	5.1%	88	15.9%	85	15.4%	125	22.6%
Aizu	34	9.7%	47	13.4%	54	15.4%	71	20.2%	79	22.5%
Minamiaizu	4	12.9%	5	16.1%	3	9.7%	5	16.1%	10	32.3%
Outside Fukushima	1	2.6%	3	7.7%	7	17.9%	9	23.1%	13	33.3%
Total	236	7.8%	263	8.6%	446	14.6%	562	18.5%	737	24.2%

Region	51-<52 cm		≥52 cm		Non-response/ invalid response		Total
Kenpoku	105	13.9%	72	9.5%	0	0.0%	756
Kenchu	133	15.1%	83	9.5%	3	0.3%	878
Kennan	49	19.1%	42	16.3%	1	0.4%	257
Soso	28	15.6%	21	11.7%	0	0.0%	180
Iwaki	104	18.8%	83	15.0%	1	0.2%	553
Aizu	41	11.7%	23	6.6%	2	0.6%	351
Minamiaizu	3	9.7%	1	3.2%	0	0.0%	31
Outside Fukushima	3	7.7%	3	7.7%	0	0.0%	39
Total	466	15.3%	328	10.8%	7	0.2%	3,045

[Table 14-11] Height at delivery, Singletons/Female (Q14)

Region	<47 cm		47-<48cm		48-<49 cm		49-<50 cm		50-<51 cm	
Kenpoku	82	10.6%	92	11.9%	137	17.7%	179	23.1%	182	23.5%
Kenchu	119	13.4%	94	10.6%	137	15.5%	183	20.7%	196	22.1%
Kennan	19	9.1%	15	7.2%	35	16.7%	44	21.1%	52	24.9%
Soso	26	15.1%	21	12.2%	30	17.4%	30	17.4%	34	19.8%
Iwaki	57	11.6%	50	10.2%	72	14.7%	107	21.8%	116	23.7%
Aizu	53	14.2%	52	13.9%	62	16.6%	83	22.2%	80	21.4%
Minamiaizu	6	18.8%	5	15.6%	8	25.0%	7	21.9%	5	15.6%
Outside Fukushima	2	5.3%	6	15.8%	12	31.6%	8	21.1%	9	23.7%
Total	364	12.2%	335	11.3%	493	16.6%	641	21.5%	674	22.6%

Region	51-<52 cm		≥52 cm		Non-response/ invalid response		Total
Kenpoku	76	9.8%	26	3.4%	2	0.3%	776
Kenchu	110	12.4%	45	5.1%	2	0.2%	886
Kennan	24	11.5%	17	8.1%	3	1.4%	209
Soso	19	11.0%	12	7.0%	0	0.0%	172
Iwaki	50	10.2%	36	7.3%	2	0.4%	490
Aizu	27	7.2%	11	2.9%	6	1.6%	374
Minamiaizu	1	3.1%	0	0.0%	0	0.0%	32
Outside Fukushima	0	0.0%	1	2.6%	0	0.0%	38
Total	307	10.3%	148	5.0%	15	0.5%	2,977

[Table 14-12] Height at delivery, Twins/Male and female combined (Q14)

Region	<44 cm		44-<45 cm		45-<46 cm		46-<47 cm		47-<48 cm		48-<49 cm		≥49 cm		Non-response/ invalid response		Total
Kenpoku	7	26.9%	7	26.9%	0	0.0%	4	15.4%	5	19.2%	1	3.8%	2	7.7%	0	0.0%	26
Kenchu	5	17.9%	2	7.1%	10	35.7%	3	10.7%	3	10.7%	4	14.3%	1	3.6%	0	0.0%	28
Kennan	2	20.0%	1	10.0%	5	50.0%	1	10.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	10
Soso	0	0.0%	1	10.0%	1	10.0%	1	10.0%	2	20.0%	1	10.0%	2	20.0%	2	20.0%	10
Iwaki	2	18.2%	2	18.2%	3	27.3%	2	18.2%	0	0.0%	0	0.0%	2	18.2%	0	0.0%	11
Aizu	3	23.1%	1	7.7%	3	23.1%	1	7.7%	0	0.0%	5	38.5%	0	0.0%	0	0.0%	13
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	19	19.4%	14	14.3%	22	22.4%	12	12.2%	11	11.2%	11	11.2%	7	7.1%	2	2.0%	98

[Table 14-13] Height at delivery, Twins/Male (Q14)

Region	<44 cm		44-<45 cm		45-<46 cm		46-<47 cm		47-<48 cm		48-<49 cm		≥49 cm		Non-response/ invalid response		Total
Kenpoku	1	12.5%	2	25.0%	0	0.0%	1	12.5%	2	25.0%	1	12.5%	1	12.5%	0	0.0%	8
Kenchu	4	25.0%	2	12.5%	5	31.3%	0	0.0%	2	12.5%	2	12.5%	1	6.3%	0	0.0%	16
Kennan	1	33.3%	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3
Soso	0	0.0%	0	0.0%	1	20.0%	1	20.0%	2	40.0%	0	0.0%	1	20.0%	0	0.0%	5
Iwaki	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	1
Aizu	2	28.6%	1	14.3%	2	28.6%	0	0.0%	0	0.0%	2	28.6%	0	0.0%	0	0.0%	7
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	8	20.0%	5	12.5%	10	25.0%	2	5.0%	6	15.0%	5	12.5%	4	10.0%	0	0.0%	40

[Table 14-14] Height at delivery, Twins/Female (Q14)

Region	<44 cm		44-<45 cm		45-<46 cm		46-<47 cm		47-<48 cm		48-<49 cm		≥49 cm		Non-response/ invalid response		Total
Kenpoku	5	29.4%	5	29.4%	0	0.0%	3	17.6%	3	17.6%	0	0.0%	1	5.9%	0	0.0%	17
Kenchu	1	9.1%	0	0.0%	5	45.5%	2	18.2%	1	9.1%	2	18.2%	0	0.0%	0	0.0%	11
Kennan	1	16.7%	1	16.7%	2	33.3%	1	16.7%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	6
Soso	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	1	20.0%	2	40.0%	5
Iwaki	2	20.0%	2	20.0%	3	30.0%	2	20.0%	0	0.0%	0	0.0%	1	10.0%	0	0.0%	10
Aizu	1	16.7%	0	0.0%	1	16.7%	1	16.7%	0	0.0%	3	50.0%	0	0.0%	0	0.0%	6
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	10	18.2%	9	16.4%	11	20.0%	9	16.4%	5	9.1%	6	10.9%	3	5.5%	2	3.6%	55

[Table 14-15] Apparent death of the newborn, Singletons (Q14)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	12	0.7%	1,584	98.1%	19	1.2%	1,615
Kenchu	32	1.8%	1,773	97.4%	16	0.9%	1,821
Kennan	5	1.0%	469	97.9%	5	1.0%	479
Soso	4	1.1%	354	98.1%	3	0.8%	361
Iwaki	12	1.1%	1,054	97.3%	17	1.6%	1,083
Aizu	4	0.5%	744	98.8%	5	0.7%	753
Minamiaizu	0	0.0%	64	100.0 %	0	0.0%	64
Outside Fukushima	0	0.0%	78	97.5%	2	2.5%	80
Total	69	1.1%	6,120	97.8%	67	1.1%	6,256

[Table 14-16] Resuscitation, Singletons
Responses of 69 respondents who answered “yes” about apparent death in newborns.

Region	Yes		No		Not sure		Non-response/ invalid response		Total
Kenpoku	6	50.0%	1	8.3%	5	41.7%	0	0.0%	12
Kenchu	21	65.6%	3	9.4%	6	18.8%	2	6.3%	32
Kennan	3	60.0%	0	0.0%	2	40.0%	0	0.0%	5
Soso	2	50.0%	1	25.0%	1	25.0%	0	0.0%	4
Iwaki	9	75.0%	0	0.0%	2	16.7%	1	8.3%	12
Aizu	4	100.0 %	0	0.0%	0	0.0%	0	0.0%	4
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	45	65.2%	5	7.2%	16	23.2%	3	4.3%	69

[Table 14-17] Apparent death of the newborn, The first child of twins

Region	Yes	No	Non-response/ invalid response	Total
Kenpoku	0	13	0	13
Kenchu	0	14	0	14
Kennan	0	5	0	5
Soso	0	5	0	5
Iwaki	1	5	0	6
Aizu	0	7	0	7
Minamiaizu	0	0	0	0
Outside Fukushima	0	0	0	0
Total	1	49	0	50

[Table 14-18] Resuscitation, The first child of twins
Response from 1 respondent who answered “yes” about apparent death of the newborn.

Region	Yes	No	Not sure	Total
Kenpoku	0	0	0	0
Kenchu	0	0	0	0
Kennan	0	0	0	0
Soso	0	0	0	0
Iwaki	1	0	0	1
Aizu	0	0	0	0
Minamiaizu	0	0	0	0
Outside Fukushima	0	0	0	0
Total	1	0	0	1

[Table 14-19] Apparent death of the newborn, The 2nd child of twins

Region	Yes	No	Non-response/ invalid response	Total
Kenpoku	0	13	0	13
Kenchu	0	14	0	14
Kennan	0	5	0	5
Soso	0	5	0	5
Iwaki	1	4	0	5
Aizu	0	6	0	6
Minamiaizu	0	0	0	0
Outside Fukushima	0	0	0	0
Total	1	47	0	48

[Table 14-20] Resuscitation, The 2nd child of twins
Responses from 2 respondents who answered “yes” about apparent death of the newborn.

Region	Yes	No	Not sure	Total
Kenpoku	0	0	0	0
Kenchu	0	0	0	0
Kennan	0	0	0	0
Soso	0	0	0	0
Iwaki	1	0	0	1
Aizu	0	0	0	0
Minamiaizu	0	0	0	0
Outside Fukushima	0	0	0	0
Total	1	0	0	1

[Table 14-21] Newborns with birth defects/congenital anomalies, Singletons
Responses from 6,256 respondents with singleton delivery at or after 12 weeks.

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	33	2.0%	1,566	97.0%	16	1.0%	1,615
Kenchu	47	2.6%	1,760	96.7%	14	0.8%	1,821
Kennan	13	2.7%	460	96.0%	6	1.3%	479
Soso	6	1.7%	352	97.5%	3	0.8%	361
Iwaki	20	1.8%	1,051	97.0%	12	1.1%	1,083
Aizu	18	2.4%	731	97.1%	4	0.5%	753
Minamiaizu	0	0.0%	63	98.4%	1	1.6%	64
Outside Fukushima	0	0.0%	79	98.8%	1	1.3%	80
Total	137	2.2%	6,062	96.9%	57	0.9%	6,256

[Table 14-22] Incidence of birth defects/congenital anomalies, Singletons

Region	Incidence of congenital anomalies*1)		Valid response
Kenpoku	33	2.06%	1,599
Kenchu	47	2.60%	1,807
Kennan	13	2.75%	473
Soso	6	1.68%	358
Iwaki	20	1.87%	1,071
Aizu	18	2.40%	749
Minamiaizu	0	0.00%	63
Outside Fukushima	0	0.00%	79
Total	137	2.21%	6,199

*1) The denominator of percentage is the sum of valid responses (those who responded either “yes” or “no” to the question on congenital anomalies in singletons).
The above incidence rates differ from those in the report on FY2011 survey results, which were calculated including invalid responses.

[Table 14-23] Incidence of diseases*1)
Responses from 137 respondents who answered “yes” to the question on birth defects/congenital anomalies in singletons (multiple answers were allowed).

Region	Cataract	Heart malform-ation	Kidney/ urinary tract anomaly	Spina bifida	Hydro-cephalus	Cleft lip and palate	Anal atresia	Polydactyly /Syndactyly	Other
Kenpoku	1	8	5	0	1	6	1	3	13
Kenchu	0	15	4	0	0	7	1	3	21
Kennan	1	3	4	0	0	1	0	2	5
Soso	0	2	0	0	0	1	0	0	4
Iwaki	0	5	1	1	0	2	1	3	8
Aizu	0	5	2	1	0	3	0	2	6
Minamiaizu	0	0	0	0	0	0	0	0	0
Outside Fukushima	0	0	0	0	0	0	0	0	0
Total	2	38	16	2	1	20	3	13	57
Incidence rate	0.03%	0.61%	0.26%	0.03%	0.02%	0.32%	0.05%	0.21%	0.92%

*1) The denominator of incident rates is the number of valid responses (6,199 respondents who answered “yes” or “no” in the question on birth defects/congenital anomalies in singletons.

[Table 14-24] Breakdown of "other" anomalies mentioned in the responses from those who answered “yes” about congenital anomalies in singletons (multiple answers were allowed).

Secondary ear	8	Pierre-Robin syndrome	1	Cryptorchidism	1	Situs inversus	1
Down syndrome	5	Poland syndrome	1	Ovarian cyst	1	Chylothorax	1
Hearing difficulty	3	Corpus callosum defect	1	Incontinentia pigmenti	1	Lymphangioma	1
Nasal stenosis	3	Congenital clasped thumb	1	Congenital epulis	1	Poland syndrome	1
Umbilical cord hernia	3	Diaphragmatic hernia	1	Multiple cerebellar infarcts	1	Knee hyperextension	1
Chromosomal abnormalities	2	Congenital cytomegalovirus	1	Congenital pulmonary airway malformation	1	Subependymal hemorrhage	1
Simple hemangioma	2	Tracheomalacia	1	Holoprosencephaly	1	Rib malformations	1
Undescended testicle	2	Myotonic dystrophy	1	Lateral cervical fistula	1	Umbilical hernia	1
Clubfoot	2	Ear malformation	1	Facial paralysis	1	Aural fistula	1
5p deletion syndrome	1	Fetal pleural effusion	1				

[Table 14-25] Newborns with birth defects/congenital anomalies, Twins
Responses from 98 respondents with twin delivery at or after 12 weeks. (Table 13-2)

Region	Yes		No		Non-response/ invalid response		Total
Kenpoku	0	0.0%	26	100.0%	0	0.0%	26
Kenchu	1	3.6%	25	89.3%	2	7.1%	28
Kennan	0	0.0%	10	100.0%	0	0.0%	10
Soso	0	0.0%	10	100.0%	0	0.0%	10
Iwaki	1	9.1%	10	90.9%	0	0.0%	11
Aizu	0	0.0%	13	100.0%	0	0.0%	13
Minamiaizu	0	0.0%	0	0.0%	0	0.0%	0
Outside Fukushima	0	0.0%	0	0.0%	0	0.0%	0
Total	2	2.0%	94	95.9%	2	2.0%	98

[Table 14-26] Incidence of birth defects/congenital anomalies, Twins

Region	Incidence of congenital anomalies[1)]		Valid response
Kenpoku	0	0.00%	26
Kenchu	1	3.85%	26
Kennan	0	0.00%	10
Soso	0	0.00%	10
Iwaki	1	9.09%	11
Aizu	0	0.00%	13
Minamiaizu	0	0.00%	0
Outside Fukushima	0	0.00%	0
Total	2	2.08%	96

1)The denominator of incident rates is the number of valid responses (sum of “yes” and “no” in the question on birth defects/congenital anomalies in twins).
* The above incidence rates differ from those in the report on FY 2011 survey results, which were calculated including invalid responses.

[Table 14-27] Breakdown of diseases
Responses from 2 respondents who answered “yes” to the question on birth defects/congenital anomalies in twins (multiple answers were allowed).

Region	Cataract	Heart malform-ation	Kidney/ urinary tract anomaly	Spina bifida	Micro-Cephaly	Hydro-cephalus	Cleft lip and plate	Gastro-intestinal atresia	Anal atresia	Poly-dactyly/ syndactyly	Other
Kenpoku	0	0	0	0	0	0	0	0	0	0	0
Kenchu	0	0	1	0	0	0	0	0	0	0	0
Kennan	0	0	0	0	0	0	0	0	0	0	0
Soso	0	0	0	0	0	0	0	0	0	0	0
Iwaki	0	1	0	0	0	0	0	0	0	0	0
Aizu	0	0	0	0	0	0	0	0	0	0	0
Minamiaizu	0	0	0	0	0	0	0	0	0	0	0
Outside Fukushima	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	0	0

[Table 15] Do you sometimes lose confidence in child rearing? (Q15)
Responses from 6,292 respondents who gave birth.

Region	Yes		No		Not sure		Non-response/ invalid response		Total
Kenpoku	304	18.7%	605	37.3%	702	43.3%	12	0.7%	1,623
Kenchu	332	18.1%	676	36.9%	805	43.9%	20	1.1%	1,833
Kennan	78	16.2%	227	47.1%	170	35.3%	7	1.5%	482
Soso	63	17.3%	147	40.3%	153	41.9%	2	0.5%	365
Iwaki	166	15.3%	496	45.7%	410	37.8%	13	1.2%	1,085
Aizu	132	17.4%	297	39.1%	325	42.8%	6	0.8%	760
Minamiaizu	7	10.9%	28	43.8%	28	43.8%	1	1.6%	64
Outside Fukushima	17	21.3%	25	31.3%	38	47.5%	0	0.0%	80
Total	1,099	17.5%	2,501	39.7%	2,631	41.8%	61	1.0%	6,292

Table 16-1 to 16-5 show the results of 6,269 newborns (6,176 singletons, 93 twins, and 0 unknown) who received the 1-month-old health check within 60 days after delivery.

[Table 16-1] Average number of days from birth to the 1-month-old health check

Region	Respondents	Average number of days at the time of health check
Kenpoku	1,629	34.9
Kenchu	1,833	32.6
Kennan	479	32.6
Soso	363	32.8
Iwaki	1,072	32.9
Aizu	749	32.8
Minamiaizu	64	32.0
Outside Fukushima	80	32.8
Total	6,269	33.3

Table 16-2 to 16-5 include responses which do not indicate the baby's gender, and therefore the sum of males and females does not match the total number of newborns. The number of non-responses/invalid responses is shown in the far-right column. (n) = number of valid responses

[Table 16-2] Weight, Singletons Mean (g)±SD (n)

Region	Total		Male		Femal		Non-response/ Invalid response
Kenpoku	4318.4 ± 566.9	(1,596)	4447.9 ± 605.1	(747)	4188.9 ± 499.0	(768)	7
Kenchu	4193.6 ± 551.7	(1,797)	4284.3 ± 552.9	(865)	4095.0 ± 531.5	(877)	9
Kennan	4232.9 ± 533.1	(464)	4341.5 ± 575.7	(249)	4094.9 ± 449.2	(202)	5
Soso	4175.2 ± 587.0	(353)	4303.9 ± 600.7	(176)	4026.2 ± 532.9	(168)	2
Iwaki	4189.2 ± 538.4	(1,062)	4308.4 ± 571.8	(543)	4050.2 ± 458.6	(480)	1
Aizu	4197.5 ± 521.2	(734)	4308.6 ± 532.2	(346)	4081.2 ± 485.0	(361)	2
Minamiaizu	4073.2 ± 667.2	(64)	4192.4 ± 685.2	(31)	3953.6 ± 648.6	(32)	0
Outside Fukushima	4248.9 ± 538.9	(80)	4442.6 ± 590.2	(39)	4069.3 ± 417.2	(38)	0
Total	4227.1 ± 554.4	(6,150)	4339.3 ± 577.4	(2,996)	4104.7 ± 503.1	(2,926)	26

[Table 16-3] Weight, Twins Mean (g) ±SD (n)

Region	Total		Male		Female		Non-response/ Invalid response
Kenpoku	3579.5 ± 741.7	(26)	3935.0 ± 438.6	(8)	3446.5 ± 819.8	(17)	0
Kenchu	3310.6 ± 399.5	(25)	3252.1 ± 449.6	(15)	3422.7 ± 319.8	(9)	2
Kennan	3164.9 ± 338.8	(10)	3044.7 ± 289.6	(3)	3187.5 ± 392.0	(6)	0
Soso	3572.0 ± 248.5	(8)	3632.8 ± 294.9	(5)	3470.7 ± 132.7	(3)	0
Iwaki	3357.2 ± 666.3	(9)	4580.0	(1)	3204.4 ± 516.7	(8)	0
Aizu	3437.2 ± 572.7	(13)	3275.4 ± 607.5	(7)	3625.8 ± 514.7	(6)	0
Minamiaizu	-	(0)	-	(0)	-	(0)	0
Outside Fukushima	-	(0)	-	(0)	-	(0)	0
Total	3417.1 ± 561.4	(91)	3463.3 ± 550.6	(39)	3394.3 ± 586.4	(49)	2

Report on the Results of the Second Follow-up Survey
Covering FY2012 Pregnancy and Birth Survey Respondents

1. Outline

(1) Purpose

To continue to provide support to those who were pregnant or nursing around the time of the 3.11 disaster, by assessing their health conditions through a second follow-up survey of FY2012 Pregnancy and Birth Survey (PBS) respondents.

(2) Background

The PBS found a high prevalence of depressive symptoms among respondents immediately after the disaster. Accordingly, follow-up surveys were conducted in FY2015 through FY2018, covering respondents of FY2011-FY2014 surveys at four years post-partum, when loss of confidence in child rearing tends to increase.

Respondents to the FY2011 and FY2012 PBS showed strong concerns about radiation effects and high depressive symptoms. Such tendencies were also observed in their follow-ups, from which it was considered that they were still impacted by the disaster.

Respondents to the FY2013 and FY2014 PBS, on the other hand, indicated fewer depressive symptoms; their main concerns were general issues in child rearing. Therefore, in the FY2019 and FY2020 PBS, we conducted a second follow-up (and offered support) for the FY2011 and FY2012 PBS respondents, respectively, instead of the planned four-year post-partum follow-up for FY2015 and FY2016 PBS respondents.

(3) Covered population

Of FY2012 PBS respondents (excluding those who miscarried, terminated their pregnancy, or had a stillbirth), 5,152 persons, identified through municipal records to be living with children in their respective municipalities, were covered.

[For reference]

Survey year	Survey	Covered respondents	No. of persons
FY2015	First Follow-up	FY2011 PBS respondents	7,252
FY2016		FY2012 PBS respondents	5,602
FY2017		FY2013 PBS respondents	5,734
FY2018		FY2014 PBS respondents	5,856
FY2019	Second Follow-up	FY2011 PBS respondents	6,643
FY2020		FY2012 PBS respondents	5,152

(4) Survey methods

A. Survey sheet: self-administered questionnaire (post card)
B. Date of questionnaire distribution: January 15, 2021
C. Response methods: by post or online
*Online responses were accepted from January 15 to April 30, 2021.

(5) Survey items

The following items and a free comment section were in the questionnaire.
How many children do you have? ( )
How old is your youngest child? ( ) years and ( ) months
Q1. Do you usually consider yourself healthy?
□Yes, I think I am very healthy. □Yes, I think I am healthy. □ No, I don't think I am so healthy. □No, I don't think I am healthy.
Q2. Have you often felt down or depressed during the past month?
□Yes □No
Q3. During the past month, have you often felt uninterested in or unable to truly enjoy things?
□Yes □No
Q4. Do you sometimes feel unconfident about child rearing?
□Yes □No □Neither yes nor no
Q5. Please check all the boxes that describe what you are worried about regarding radiation effects.
□Water □Food □Your child's outdoor activities □Your child's health □Prejudice □Genetic effects □Other

Q6. Has your child ever had a disease that required hospitalization?
□Yes (disease name:) □No
Q7. Please check all the boxes that describe what you are anxious about regarding your child.
□Mental and physical development □Diseases □Lifestyle habits □School life □Other

(6) Data tabulation period
Responses returned from January 15 to August 31, 2021 were tabulated for this report.

[For reference]

Survey Year	Survey	Data tabulation period (Period for accepting online responses)
FY2015	Follow-up Survey Covering FY2011 Survey Respondents ("First Follow-up for FY2011")	September 14, 2015–May 31, 2016 (Online response was not available)
FY2016	Follow-up Survey Covering FY2012 Survey Respondents ("First Follow-up for FY2012")	November 22, 2016–June 30, 2017 (November 22, 2016–June 30, 2017)
FY2017	Follow-up Survey Covering FY2013 Survey Respondents ("First Follow-up for FY2013")	January 12–August 31, 2018 (January 12–April 30, 2018)
FY2018	Follow-up Survey Covering FY2014 Survey Respondents ("First Follow-up for FY2014")	January 11–August 31, 2019 (January 11–April 30, 2019)
FY2019	Second Follow-up Survey Covering FY201 Survey Respondents ("Second Follow-up for FY2011")	January 10–August 31, 2020 (January 10–April 30, 2020)
FY2020	Second Follow-up Survey Covering FY2012 Survey Respondents ("Second Follow-up for FY2012")	January 15–August 31, 2021 (January 15–April 30, 2021)

2. Interim summary of survey results

Survey results are as shown below in 5.1 through 5.3, under "5. Tabulated Results of the Second Follow-up for FY2012." Note that the totals may not match the sum of valid responses due to missing values in each question item.

(1) Number of responses (response rate) (See Table 1)
The number of responses (response rate) in the Second Follow-up for FY2012 was 2,178 (42.3%) and the number of valid responses was 2,178 (there were no invalid responses). Among them, the number of online responses (response rate) was 901 (41.4%).

[For reference]

Survey year	Survey	Total	Breakdown by response method		
		Responses (response rate)	by post	online	Percentage of online responses
FY2015	First Follow-up for FY2011	2,554 (35.2%)	2,554	-	-
FY2016	First Follow-up for FY2012	2,021 (36.1%)	1,719	302	14.9%
FY2017	First Follow-up for FY2013	2,706 (47.2%)	2,062	644	23.8%
FY2018	First Follow-up for FY2014	2,719 (46.4%)	1,951	768	28.2%
FY2019	Second Follow-up for FY2011	2,354 (35.4%)	1,641	713	30.3%
FY2020	Second Follow-up for FY2012	2,178 (42.3%)	1,277	901	41.4%

(2) Number of responses, by area of residence (See Table 1)

The number of responses (with response rates in parentheses) by area of residence in the Second Follow-up for FY2012 was as follows: 713 (51.7%) in Kenpoku, 579 (39.7%) in Kenchu, 154 (38.6%) in Kennan, 106 (34.0%) in Soso, 352 (36.8%) in Iwaki, 248 (42.0%) in Aizu, and 26 (48.1%) in Minamiaizu.

[For reference]

Survey year	Survey	Respondents by district (%)						
		Kenpoku	Kenchu	Kennan	Soso	Iwaki	Aizu	Minamiaizu
FY2015	First Follow-up for FY2011	679 (38.7)	721 (32.7)	168 (34.1)	256 (34.9)	434 (35.9)	271 (34.5)	25 (34.7)
FY2016	First Follow-up for FY2012	675 (45.3)	508 (32.2)	165 (36.4)	113 (30.5)	330 (32.5)	212 (33.4)	18 (29.0)
FY2017	First Follow-up for FY2013	770 (49.4)	716 (47.1)	204 (44.0)	192 (46.6)	479 (46.0)	315 (46.9)	30 (44.1)
FY2018	First Follow-up for FY2014	753 (51.5)	815 (45.8)	194 (45.9)	175 (41.8)	480 (46.7)	281 (40.5)	21 (38.9)
FY2019	Second Follow-up for FY2011	655 (40.4)	639 (31.2)	125 (28.7)	181 (30.4)	447 (38.9)	281 (38.7)	26 (37.7)
FY2020	Second Follow-up for FY2012	713 (51.7)	579 (39.7)	154 (38.6)	106 (34.0)	352 (36.8)	248 (42.0)	26 (48.1)

[For reference]

Survey year	Survey	Respondents by district (%)						
		Kenpoku	Kenchu	Kennan	Soso	Iwaki	Aizu	M
FY2015	First Follow-up for FY2011	679 (38.7)	721 (32.7)	168 (34.1)	256 (34.9)	434 (35.9)	271 (34.5)	
FY2016	First Follow-up for FY2012	675 (45.3)	508 (32.2)	165 (36.4)	113 (30.5)	330 (32.5)	212 (33.4)	
FY2017	First Follow-up for FY2013	770 (49.4)	716 (47.1)	204 (44.0)	192 (46.6)	479 (46.0)	315 (46.9)	
FY2018	First Follow-up for FY2014	753 (51.5)	815 (45.8)	194 (45.9)	175 (41.8)	480 (46.7)	281 (40.5)	
FY2019	Second Follow-up for FY2011	655 (40.4)	639 (31.2)	125 (28.7)	181 (30.4)	447 (38.9)	281 (38.7)	
FY2020	Second Follow-up for FY2012	713 (51.7)	579 (39.7)	154 (38.6)	106 (34.0)	352 (36.8)	248 (42.0)	

(3) Maternal mental health conditions (See Table 4–7)

A. The proportion of mothers who responded that their subjective health was poor ("Not so healthy" or "Not healthy") was 9.4%. The proportion was 9.3% in the First Follow-up for FY2012, four years prior (Q1).

[For reference]

Survey	Second Follow-up	First Follow-up	Main Survey
FY2011 survey respondents	9.8%	9.6%	No applicable question
FY2012 survey respondents	9.4%	9.3%	3.8%
FY2013 survey respondents	-	7.9%	3.7%

FY2014 survey respondents	-	7.9%	3.9%

B. The proportion of mothers who were deemed as having depressive symptoms was 27.1%. The proportion was 25.7% in the First Follow-up for FY2012, four years prior (Q2, Q3).

[For reference]

Survey	Second Follow-up	First Follow-up	Main Survey
FY2011 survey respondents	24.3%	25.6%	27.1%
FY2012 survey respondents	27.1%	25.7%	25.5%
FY2013 survey respondents	-	23.5%	24.5%
FY2014 survey respondents	-	22.5%	23.4%

Reference: According to the 2010 national survey to assess toddlers' health status (conducted by the Japanese Society of Child Health), 21.8% of mothers with children aged 1 to 6 years (pre-school) responded that they cannot say they are in good mental condition.

(4) Family life and child rearing (See Table 8)

The proportion of mothers who responded that they sometimes feel unconfident about child rearing was 18.8%. The proportion was 18.2% in the First Follow-up for FY2012, four years prior (Q4).

[For reference]

Survey	Second Follow-up	First Follow-up	Main Survey
FY2011 survey respondents	19.1%	15.8%	No applicable question
FY2012 survey respondents	18.8%	18.2%	15.4%
FY2013 survey respondents	-	16.7%	17.5%
FY2014 survey respondents	-	17.7%	16.6%

Reference: According to the 2010 national survey to assess toddlers' health status (conducted by the Japanese Society of Child Health), 23.0% of mothers with children aged 1 to 6 (pre-school children) responded that they sometimes feel unconfident about child rearing.

(5) Anxiety about radiation effects (See Table 9)

The proportion of mothers who checked at least one box in the list of anxieties about radiation effects was 84.0%. Among them, the proportion of those who checked the box for the child's health was 62.8% (Q5).

[For reference]

Survey	Those who checked at least one box for anxiety about radiation effects		Those who checked the box for child's health	
	Second Follow-up	First Follow-up	Second Follow-up	First Follow-up
FY2011 survey respondents	87.2%	94.2%	68.1%	79.5%
FY2012 survey respondents	84.0%	90.9%	62.8 %	68.7%
FY2013 survey respondents	-	87.5%	-	66.3%
FY2014 survey respondents	-	85.4%	-	63.3%

(6) Children's health conditions and mothers' anxiety about their children (See Tables 10-1, 10-2, and 11)

A. The proportion of mothers who responded that hospitalization had been required for a child's disease was 27.2%. Major diseases for hospitalization included pneumonia, respiratory syncytial virus infection, bronchitis, and Kawasaki disease (Q6).

[For reference]

Survey	Second Follow-up	First Follow-up
FY2011 survey respondents	26.5%	24.7%
FY2012 survey respondents	27.2%	24.4%
FY2013 survey respondents	-	23.7%
FY2014 survey respondents	-	25.3%

B. The proportion of mothers who checked at least one box in the list of anxieties about their children was 72.5% (Q7).

[For reference]

Survey	Those who checked at least one box for anxiety about their children		Those who checked the box for anxiety about physical and mental development		Those who checked the box for anxiety about diseases	
	Second Follow-up	First Follow-up	Second Follow-up	First Follow-up	Second Follow-up	First Follow-up
FY2011 survey respondents	68.8%	70.8%	50.8%	56.1%	34.3%	57.6%
FY2012 survey respondents	72.5%	66.9%	52.2%	56.9%	26.6%	45.5%
FY2013 survey respondents	-	61.2%	-	57.4%	-	40.4%
FY2014 survey respondents	-	63.4%	-	56.9%	-	38.7%

(7) Content of free comments (See Tables 12-1 and 12-2)

A total of 248 respondents (11.4%) wrote comments in the free comment section. The most frequently raised topics were those related with the COVID 19 pandemic, positive comments about this survey, and consultation about child rearing.

[For reference]

Survey Year	Survey	Those who wrote comments (%)	No. 1 topic	No. 2 topic	No. 3 topic	No. 4 topic	No. 5 topic
FY 2015	First Follow-up for FY2011	383 (15.0%)	Anxiety about radiation effects on fetus/child 53(13.8%)	Positive comments about this survey 47(12.3%)	Opinions/com-plaints about this survey 44(11.5%)	Request for information on radiation and survey results 37(9.7%)	Request regarding thyroid examination 23(6.0%)
FY 2016	First Follow-up for FY2012	186 (9.2%)	Positive comments about this survey 33(17.7%)	Opinions/com-plaints about this survey 24(12.9%)	Anxiety about radiation effects on fetus/child 23(12.4%)	Consultation about child rearing 17(9.1%)	Request for improved parenting support 14(7.5%)
FY 2017	First Follow-up for FY2013	208 (7.7%)	Positive comments about this survey 36(17.3%)	Opinions/com-plaints about this survey 25(12.0%)	Anxiety about radiation effects on fetus/child 24(11.5%)	Mother's own poor mental health 16(7.7%)	Request for improved parenting support 15(7.5%)
FY 2018	First Follow-up for FY2014	198 (7.3%)	Positive comments about this survey 42(21.2%)	Opinions/com-plaints about this survey 26(13.1%)	Consultation about child rearing 17(8.6%)	Anxiety about radiation effects on fetus/child 14(7.1%)	Request for improved parenting support 14(7.1%)
FY 2019	Second Follow-up for FY2011	304 (12.9%)	Consultation about child rearing 82(27.0%)	Anxiety about radiation effects on fetus/child 53(17.4%)	Mother's own poor physical health 36(11.8%)	Positive comments about this survey 28(9.2%)	Mother's own poor mental health 26(8.6%)
FY 2020	Second Follow-up for FY2012	248 (11.4%)	COVID19 pandemic 54(21.8%)	Positive comments about this survey 47(19.0%)	Consultation about child rearing 44(17.7%)	Anxiety about radiation effects on fetus/child 37(14.9%)	Mother's own poor mental health 30(12.1%)

(8) Conclusion

The proportion of mothers with depressive symptoms in the Second Follow-up for FY2012 Survey Respondents showed a temporal increase, compared with the FY2012 Main Survey eight years prior and the First Follow-up for FY2012 four years prior.

There was also an increase in the proportion of mothers with anxieties about their children and the proportion of mothers with poor subjective health while the proportion of mothers with anxieties about radiation effects showed a decline.

A. The response rate was 42.3%, which is higher than the First Follow-up for FY2012, four years prior.
B. 9.4% of the respondents had poor subjective health (those who responded "not so healthy" or "not healthy"). This was at a similar level compared with the First Follow-up for FY2012, four years prior.
C. 27.1% of the respondents had depressive symptoms, and a temporal increase was shown compared with the FY2012 Main Survey eight years prior and the First Follow-up for FY2012 four years prior. It was also higher than the Second Follow-up for FY2011 conducted last year.
D. 84.0% of the respondents checked at least one box in the list of anxieties about radiation effects. This was a decrease from the First Follow-up for FY2012 four years prior and the Second Follow-up for FY2011 last year.
E. 72.5% of the respondents checked at least one box in the list of anxieties about their children. This was higher than the First Follow-up for FY2012 four years prior and the Second Follow-up for FY2011 last year. Most common anxiety was about physical and mental development of their children (52.2%).
F. There were 11.4% of the respondents who wrote in the free comment section. The most frequently raised topic was the COVID 19 pandemic, followed by positive comments about this survey and consultation about child rearing.

3. Outline of Post-Survey Support

(1) Purpose

To address anxieties of the Second Follow-up of FY2012 Survey respondents who were deemed to be in need of counselling and support by providing telephone/online counselling and support from midwives and public health nurses.

(2) Support eligible respondents (See Table 13)

Among respondents to the Second Follow-up for the FY2012 Survey, those who were judged to be needed telephone counselling or support ("support required respondents").

(3) Selection criteria for providing support (See Table 14)

Respondents who fall under either one of the following:

A: Those who responded "yes" to two questions regarding depressive symptoms (Q2, Q3)
B: Those who wrote comments implying the need for support (in the free comment section or other parts of the questionnaire)
e.g., any comments in which we can see or perceive severe depression, need of support in child rearing, anxieties about radiation levels, poor health conditions, request for direct response or counseling, or request for support.

(4) Methods

Telephone and email counselling and support

4. Summary of Results of Post-Survey Support

Detailed results of post-survey support are as shown below in 5. Interim Results of the Second Follow-up for the FY2012 Survey Respondents, subpart (4) Implementation status of post-survey support,

(1) Number of respondents requiring support (See Tables 13 and 14)

Of 2,178 respondents from January 15 to August 31, 2021, there were 386 who were judged to be needed telephone counselling and support.

Since the FY2017 Survey, we started to include as candidates for support those who expressed specific anxieties in places other than the questionnaire's free comment section. As a result, the proportion of respondents requiring support was 17.7% in total, with 13.2% based on Criteria A and 4.5% based on Criteria B.

[For reference]

Survey Year	Survey	Respondents	Support required respondents based on Criteria A (%)	Support required respondents based on Criteria B (%)		Total support required respondents (%)
				Based on comments in the free comment section	Based on comments in other parts in the questionnaire	
FY2015	First Follow-up for FY2011	2,554	299 (11.7%)	76 (3.0%)	-	375 (14.7%)
FY2016	First Follow-up for FY2012	2,021	209 (10.3%)	47 (2.3%)	-	256 (12.7%)
FY2017	First Follow-up for FY2013	2,706	277 (10.2%)	51 (1.9%)	65 (2.4%)	393 (14.5%)
FY2018	First Follow-up for FY2014	2,719	265 (9.7%)	31 (1.1%)	84 (3.1%)	380 (14.0%)
FY2019	Second Follow-up for FY2011	2,354	295 (12.5%)	92 (3.9%)	34 (1.4%)	421 (17.9%)
FY2020	Second Follow-up for FY2012	2,178	287 (13.2%)	70 (3.2%)	29 (1.3%)	386 (17.7%)

* If a respondent falls under both Criteria A and B, the person was counted as a support candidate based on Criteria A.

(2) Topics mentioned during support provision (See Table 15)

The most common topics mentioned by respondents were “mother’s own physical and mental health conditions” (32.9%), followed by “child rearing (daily life)” (18.9%), based on the same support criteria as those in the previous follow-up surveys.

The proportion of “questions and anxiety about radiation effects” was 8.3%.

[For reference]

Survey year	Survey	Most frequently raised topics (%)					Support candidates	
		No. 1	No. 2	No. 3	No. 4	No. 5		
FY2015	First Follow-up for FY2011 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 129 (34.4%)	Questions and anxiety about radiation effects 96 (25.6%)	Child rearing (daily life) 81 (21.6%)	Child's physical and/or mental health 68 (18.1%)	Family life 52 (13.9%)	375	
FY2016	First Follow-up for FY2012 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 115 (44.9%)	Child rearing (daily life) 59 (23.0%)	Child's physical and/or mental health 58 (22.7%)	Questions and anxiety about radiation effects 34 (13.3%)	Family life 27 (10.5%)	256	
FY2017 *1	First Follow-up for FY2013 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 118 (36.0%)	Child rearing (daily life) 91 (27.7%)	Family life 48 (14.6%)	Questions and anxiety about radiation effects 43 (13.1%)	Child's physical and/or mental health 32 (9.8%)	328	393
	*(based on comments in other parts of the questionnaire) *2*	*Child rearing (daily life) 30 (46.2%)*	*Questions and anxiety about radiation effects 17 (26.2%)*	*Child's physical and/or mental health 6 (9.2%)*	*Mother's own physical and/or mental health 4 (6.2%)*	*Family life 2 (3.1%)*	*65*	
FY2018 *1	First Follow-up for FY2014 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 78 (26.4%)	Child rearing (daily life) 36 (12.2%)	Family life 19 (6.4%)	Questions and anxiety about radiation effects 17 (5.7%)	Child's physical and/or mental health 16 (5.4%)	296	380
	(based on comments in other parts of the questionnaire)	*Questions and anxiety about radiation effects 19 (22.6%)*	*Child rearing (daily life) 9 (10.7%)*	*Child's physical and/or mental health 8 (9.5%)*	*Mother's own physical and/or mental health 4 (4.8%)*	*Family life 3 (3.6%)*	*84*	
FY2019 *1	Second Follow-up for FY2011 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 113 (29.2%)	Child rearing (daily life) 69 (17.8%)	Child's physical and/or mental health 39 (10.1%)	Questions and anxiety about radiation effects 25 (6.5%)	Family life 20 (5.2%)	387	421
	(based on comments in other parts of the questionnaire)	*Child's physical and/or mental health 8 (23.5%)*	*Child rearing (daily life) 6 (17.6%)*	*Mother's own physical and/or mental health 4 (11.8%)*	*Questions and anxiety about radiation effects 3 (8.8%)*	*Family life/ evacuation life 1 (2.9%)*	*34*	
FY2020 *1	Second Follow-up for FY2012 (based on the depression questions+free comment section)	Mother's own physical and/or mental health 121 (33.9%)	Child rearing (daily life) 68 (19.0%)	Child's physical and/or mental health 46 (12.9%)	Questions and anxiety about radiation effects 27 (7.6%)	Family life 20 (5.6%)	357	386
	(based on comments in other parts of the questionnaire)	*Mother's own physical and/or mental health 6 (20.7%)*	*Child rearing (daily life) 5 (17.2%)*	*Questions and anxiety about radiation effects 5 (17.2%)*	*Child's physical and/or mental health 4 (13.8%)*	*Family life/ evacuation life 34 0 (0.0%)*	*29*	

*1 The support criteria and data entry method (questionnaire format, data entry staff, etc.) were changed in the First Follow-up for FY2013 and those that followed.
*2 This criterion was added in the First Follow-up for FY2013 and those that followed.

(3) Reasons for ending support (See Table 16)

The most common reasons for ending support were "listened carefully" (supporters listened carefully and helped to sort out the respondent's problems) in 217 cases (56.2%), followed by "provided information" (supporters provided information on relevant municipal contact points and other useful information) in 107 cases (27.7%). Support ended because support required respondents were "absent" at the time of phone call in 73 cases (18.9%). (Note: Multiple answers allowed.)

[For reference]

Survry Year	Survey	No. 1 reason	No. 2 reason	No. 3 reason	Absent
FY2015	First Follow-up for FY2011	Listened carefully*1 197(52.5%)	Provided information *2 105(28.0%)	Confirmed consultation availability *3 29(7.7%)	131 (34.9%)
FY2016	First Follow-up for FY2012	Listened carefully 159(62.1%)	Provided information 53(20.7%)	Confirmed consultation availability 26(10.2%)	70 (27.3%)
FY2017	First Follow-up for FY2013	Listened carefully 245(62.3%)	Provided information 133(33.8%)	Confirmed consultation availability 66(16.8%)	119 (30.3%)
FY2018	First Follow-up for FY2014	Listened carefully 229(60.3%)	Provided information 90(23.7%)	Confirmed consultation availability 55(14.5%)	124 (32.6%)
FY2019	Second Follow-up for FY2011	Listened carefully 217(51.5%)	Provided information 98(23.3%)	Confirmed consultation availability 37(8.8%)	98 (23.3%)
FY2020	Second Follow-up for FY2012	Listened carefully 217(56.2%)	Provided information 107(27.7%)	Confirmed consultation availability 32(8.3%)	73 (18.9%)

*1 Support ended after listening carefully and helping the mother sort out her problems.
*2 Support ended after providing information on relevant municipal departments and other useful information.
*3 Support ended after confirming that the mother had already seen a doctor or has someone to consult with.

(4) Conclusion

A. The proportion of those deemed to be needed support based on the questions asking about depressive symptoms was 13.2%, and this is an increase from last year's Second Follow-up for FY2011.
B. The most frequently mentioned topics during support was "mother's physical and/or mental health" according to the same criteria for support that were used in the previous follow-up surveys. "Questions and anxieties about radiation effects" decreased from the First Follow-up for FY2012 four years prior but increased from the Second Follow-up for FY2011 last year.
C. The most common reason for ending support was "listened carefully" (supporters listened carefully and helped the mother sort out her problems).

5. Interim Results of the Second Follow-up for FY2012

Covered population: 5,152 respondents of the FY2012 Pregnancy and Birth Survey, who gave a live birth and were confirmed to be living with their children as of September 2020

Tabulated responses: 2,178 responses received from January 15 to August 31, 2021. Survey sheets were sent out by post on January 15, 2021.

*The sum of individual percentages for each question item may not add up to 100%, due to rounding.

(1) Number of survey sheets sent and returned

【Table 1】

Region	No. of survey sheets sent		No. of responses					
			Total responses (response rate)		Breakdown by response method			
					by post		online	
Kenpoku	1,380	26.8%	713	51.7%	393	55.1%	320	44.9%
Kenchu	1,460	28.3%	579	39.7%	354	61.1%	225	38.9%
Kennan	399	7.7%	154	38.6%	96	62.3%	58	37.7%
Soso	312	6.1%	106	34.0%	68	64.2%	38	35.8%
Iwaki	957	18.6%	352	36.8%	187	53.1%	165	46.9%
Aizu	590	11.5%	248	42.0%	164	66.1%	84	33.9%
Minamiaizu	54	1.0%	26	48.1%	15	57.7%	11	42.3%
Total	5,152	100.0%	2,178	42.3%	1,277	58.6%	901	41.4%
FY2019	6,643	100.0%	2,354	35.4%	1,641	69.7%	713	30.3%

(2) Tabulated results by question item

Responses from 2,178 respondents were tabulated (invalid responses: 0). Individual question items may contain non-responses or invalid responses.

【Table 2】How many children do you have?

Region	Total	Minimum	Maximum	Valid responses
Kenpoku	2.4 ± 0.9	1	7	693
Kenchu	2.4 ± 0.9	1	6	560
Kennan	2.4 ± 0.9	1	5	148
Soso	2.5 ± 0.9	1	5	100
Iwaki	2.3 ± 0.9	1	7	342
Aizu	2.5 ± 0.8	1	6	235
Minamiaizu	2.5 ± 0.8	1	4	26
Total	2.4 ± 0.9	1	7	2,104

【Table 3】How old is your youngest child (in months)?

Region	Total	Minimum	Maximum	Valid responses
Kenpoku	78.0 ± 28.5	0	115	673
Kenchu	77.1 ± 29.4	0	113	550
Kennan	81.1 ± 27.0	3	119	144
Soso	76.3 ± 29.4	1	116	95
Iwaki	78.1 ± 27.9	2	118	338
Aizu	78.5 ± 28.4	3	109	231
Minamiaizu	79.5 ± 30.9	8	104	24
Total	78.0 ± 28.6	0	119	2,055

【Table 4】Do you usually consider yourself healthy? (Q1)
The proportion of mothers who responded that their subjective health was poor ("Not so healthy" or "Not healthy") was 9.4%

Region	Very healthy		Healthy		Not so healthy		Not healthy		Non-response/ invalid responses		Total
Kenpoku	94	13.2%	555	77.8%	57	8.0%	6	0.8%	1	0.1%	713
Kenchu	84	14.5%	435	75.1%	50	8.6%	7	1.2%	3	0.5%	579
Kennan	28	18.2%	113	73.4%	11	7.1%	1	0.6%	1	0.6%	154
Soso	18	17.0%	76	71.7%	10	9.4%	2	1.9%	0	0.0%	106
Iwaki	70	19.9%	248	70.5%	31	8.8%	3	0.9%	0	0.0%	352
Aizu	39	15.7%	181	73.0%	23	9.3%	3	1.2%	2	0.8%	248
Minamiaizu	6	23.1%	19	73.1%	1	3.8%	0	0.0%	0	0.0%	26
Total	339	15.6%	1,627	74.7%	183	8.4%	22	1.0%	7	0.3%	2,178
FY2019	362	15.4%	1,753	74.5%	199	8.5%	32	1.4%	8	0.3%	2,354

【Table 5】Have you often felt down or depressed during the past month? (Q2)

Region	Yes		No		Non-response/ invalid responses		Total
Kenpoku	184	25.8%	524	73.5%	5	0.7%	713
Kenchu	134	23.1%	441	76.2%	4	0.7%	579
Kennan	29	18.8%	124	80.5%	1	0.6%	154
Soso	21	19.8%	83	78.3%	2	1.9%	106
Iwaki	89	25.3%	261	74.1%	2	0.6%	352
Aizu	72	29.0%	176	71.0%	0	0.0%	248
Minamiaizu	4	15.4%	22	84.6%	0	0.0%	26
Total	533	24.5%	1,631	74.9%	14	0.6%	2,178
FY2019	511	21.7%	1,815	77.1%	28	1.2%	2,354

【Table 6】During the past month, have you often felt uninterested in or unable to truly enjoy things? (Q3)

Region	Yes		No		Non-response/ invalid responses		Total
Kenpoku	128	18.0%	580	81.3%	5	0.7%	713
Kenchu	87	15.0%	488	84.3%	4	0.7%	579
Kennan	11	7.1%	142	92.2%	1	0.6%	154
Soso	12	11.3%	92	86.8%	2	1.9%	106
Iwaki	53	15.1%	297	84.4%	2	0.6%	352
Aizu	48	19.4%	200	80.6%	0	0.0%	248
Minamiaizu	6	23.1%	20	76.9%	0	0.0%	26
Total	345	15.8%	1,819	83.5%	14	0.6%	2,178
FY2019	355	15.1%	1,971	83.7%	28	1.2%	2,354

【Table 7】Mothers with depressive symptoms (Those who responded "Yes" to Q2 and/or Q3)

Region	Yes to both questions		Yes to one question		No to both questions		Non-response/ invalid responses		Total
Kenpoku	108	15.1%	96	13.5%	504	70.7%	5	0.7%	713
Kenchu	70	12.1%	81	14.0%	424	73.2%	4	0.7%	579
Kennan	10	6.5%	20	13.0%	123	79.9%	1	0.6%	154
Soso	11	10.4%	11	10.4%	82	77.4%	2	1.9%	106
Iwaki	45	12.8%	52	14.8%	253	71.9%	2	0.6%	352
Aizu	39	15.7%	42	16.9%	167	67.3%	0	0.0%	248
Minamiaizu	4	15.4%	2	7.7%	20	76.9%	0	0.0%	26
Total	287	13.2%	304	14.0%	1,573	72.2%	14	0.6%	2,178
FY2019	295	12.5%	276	11.7%	1,755	74.6%	28	1.2%	2,354

* 27.1% of the respondents had depressive symptoms (591 of 2,178 persons responded "yes" to one or both of the two questions).
* In the FY2019 survey, the percentage was 24.3% (571 of 2,354 persons responded "yes" to one or both of the two questions).

【Table 8】 Do you sometimes feel unconfident about child rearing? (Q4)

Region	Yes		No		Neither yes nor no		Non-response/ invalid responses		Total
Kenpoku	135	18.9%	260	36.5%	312	43.8%	6	0.8%	713
Kenchu	106	18.3%	219	37.8%	247	42.7%	7	1.2%	579
Kennan	22	14.3%	66	42.9%	65	42.2%	1	0.6%	154
Soso	13	12.3%	39	36.8%	51	48.1%	3	2.8%	106
Iwaki	63	17.9%	154	43.8%	131	37.2%	4	1.1%	352
Aizu	68	27.4%	98	39.5%	82	33.1%	0	0.0%	248
Minamiaizu	3	11.5%	9	34.6%	14	53.8%	0	0.0%	26
Total	410	18.8%	845	38.8%	902	41.4%	21	1.0%	2,178
FY2019	449	19.1%	963	40.9%	925	39.3%	17	0.7%	2,354

【Table 9】 Please check all the boxed that describe what you are worried about regarding radiation effects. (Q5)

Region	Child's health		Genetic effects		Prejudice		Food		Water		Outdoor activities		Other		Valid responses
Kenpoku	398	65.1%	237	38.8%	228	37.3%	159	26.0%	115	18.8%	78	12.8%	9	1.5%	611
Kenchu	299	61.1%	203	41.5%	192	39.3%	123	25.2%	122	24.9%	67	13.7%	2	0.4%	489
Kennan	88	63.8%	47	34.1%	53	38.4%	43	31.2%	26	18.8%	19	13.8%	1	0.7%	138
Soso	32	38.6%	32	38.6%	48	57.8%	36	43.4%	21	25.3%	6	7.2%	2	2.4%	83
Iwaki	190	65.7%	123	42.6%	101	34.9%	91	31.5%	90	31.1%	36	12.5%	2	0.7%	289
Aizu	129	64.5%	65	32.5%	73	36.5%	69	34.5%	54	27.0%	29	14.5%	2	1.0%	200
Minami-aizu	13	65.0%	6	30.0%	5	25.0%	6	30.0%	4	20.0%	2	10.0%	0	0.0%	20
Total	1,149	62.8%	713	39.0%	700	38.3%	527	28.8%	432	23.6%	237	13.0%	18	1.0%	1,830
FY2019	1,398	68.1%	735	35.8%	875	42.6%	692	33.7%	605	29.5%	382	18.6%	28	1.4%	2,052

* The denominator of percentages is the number of valid responses (those who checked at least one box). The sum of individual percentages for each question item may not add up to 100% because multiple answers were allowed.
* 84.0% of the respondents checked at least one box (1,830 out of 2,178 respondents).
* In the FY2019 survey, the percentage was 87.2% (2,052 out of 2,354 respondents).

Questions 6 and 7 pertain to children born from August 1, 2011 to April 23, 2013.

【Table 10-1】 Has your child ever had a disease that required hospitalization? (Q6)

Region	Yes		No		Non-response/ invalid responses		Total
Kenpoku	214	30.0%	488	68.4%	11	1.5%	713
Kenchu	143	24.7%	429	74.1%	7	1.2%	579
Kennan	43	27.9%	107	69.5%	4	2.6%	154
Soso	29	27.4%	76	71.7%	1	0.9%	106
Iwaki	65	18.5%	282	80.1%	5	1.4%	352
Aizu	87	35.1%	160	64.5%	1	0.4%	248
Minamiaizu	11	42.3%	14	53.8%	1	3.8%	26
Total	592	27.2%	1,556	71.4%	30	1.4%	2,178
FY2019	623	26.5%	1,700	72.2%	31	1.3%	2,354

【Table 10-2】Diseases that caused hospitalization mentioned in Q6 (Has your child ever had a disease that required hospitalization?) (Multiple answers were allowed.)

pneumonia	112	upper respiratory inflammation	3	human metapneumovirus infection	1	herpes simplex virus (HSV) infecton	1
RSV infection	57	bronchiolitis	3	staphylococcal scalded skin syndrome	1	drug-induced hypersensitivity	1
bronchitis	49	hand, foot and mouth disease	3	Henoch-Schönlein purpura nephritis	1	histiocytic necrotizing lymphadenitis	1
Kawasaki disease	34	strabismus	3	neonatal TSS-like exanthematous disease	1	purulent cervical lymphadenitis	1
febrile seizure	32	supernumerary tooth	3	glucose transporter type 1 deficiency syndrome	1	anomalous origin of a pulmonary artery	1
inguinal hernia	27	hypertrophic pyloric stenosis	2	Kaposi varicelliform eruption	1	congenital bile duct dilatation	1
asthma	25	RSV bronchitis	2	cervical lymph node abscess	1	intestinal malrotation	1
gastroenteritis	19	Wilms tumor	2	cervical lymphadenitis	1	ketogenic hypoglycemia	1
rotavirus infection	17	tetralogy of Fallot	2	cheek tumor	1	laryngitis	1
mycoplasma pneumonia	14	herpangina	2	cholesteatoma otitis media	1	liver dysfunction	1
bronchial pneumonia	13	lymphangioma	2	chronic kidney failure	1	lymphadenitis	1
tonsillar hypertrophy	13	mycoplasma infection	2	colorectal polyp	1	median cervical cyst	1
bronchial asthma	11	hydrocele testis	2	congenital cholesteatoma	1	myositis	1
exanthem subitum	11	bacteremia	2	congenital corneal opacity	1	neonatal infection	1
adenovirus infection	10	cleft palate	2	congenital duodenal atresia	1	nephrotic syndrome	1
influenza	10	appendicitis	2	congenital hip dislocation	1	neutropenia	1
otitis media	10	dehydration	2	congenital pigmented nevus	1	nevus	1
norovirus infection	9	EBV infection	2	congenital pleural effusion	1	nevus sebaceus	1
cryptorchidism	9	hypoglycemia	2	cyclic vomiting syndrome	1	parotitis	1
RSV pneumonia	7	meningitis	2	diaphragmatic hernia	1	patent ductus arteriosus	1
cellulitis	7	naval hernia	2	distal femur osteomyelitis	1	pneumothorax	1
streptococcal infection	6	pertussis	2	drowning	1	polysyndactyly	1
urinary tract infection	6	phimosis	2	eczema	1	pseudocroup	1
anaphylactic shock	5	pulmonary hypertension	2	epidermoid cyst	1	ptosis	1
allergic purpura	5	purpura	2	exotropia	1	pyriform sinus fistula	1
cold syndrome	5	undescended testicle	2	extremely low birth weight	1	restricted growth	1
epilepsy	5	acetonemic vomiting	1	unknown fever	1	rotavirus gastroenteritis	1
pharyngitis	5	acute encephalopathy	1	granuloma	1	sinusitis	1
pyelonephritis	5	acute rhinitis	1	Guillain-Barré syndrome	1	skull fracture	1
seizure	4	acute subdural hematoma	1	heart disease	1	spina bifida	1
ventricular septal defect	4	adenoid hypertrophy	1	heatstroke	1	spinal muscular atrophy	1
hypospadia	4	allergy	1	hematemesis	1	syndactyly	1
intestinal obstruction	4	artrial septal defect	1	hernia	1	thrombocytopenic purpura	1
intussusception	4	aural fistula	1	Hirschsprung disease	1	tics	1
tonsillitis	4	autoimmune hepatitis	1	hives	1	vascular purpura	1
croup	3	burn	1	hydrocephalus	1	very low birth weight	1
migratory testis	3	cardiac hypertrophy	1	hydronephrosis	1	West syndrome	1
hemangioma	3	cerebral palsy	1				

【Table 11】Please check all the boxes that describe what you are anxious about regarding your child. (Q7)

Region	Mental and physical development		School life		Lifestyle habits		Diseases		Other		Valid responses
Kenpoku	271	51.0%	238	44.8%	232	43.7%	134	25.2%	26	4.9%	531
Kenchu	242	55.6%	194	44.6%	183	42.1%	116	26.7%	12	2.8%	435
Kennan	51	48.6%	52	49.5%	52	49.5%	31	29.5%	1	1.0%	105
Soso	35	50.7%	37	53.6%	27	39.1%	20	29.0%	1	1.4%	69
Iwaki	138	54.1%	103	40.4%	127	49.8%	72	28.2%	4	1.6%	255
Aizu	78	47.3%	67	40.6%	74	44.8%	44	26.7%	6	3.6%	165
Minamiaizu	8	44.4%	9	50.0%	4	22.2%	3	16.7%	1	5.6%	18
Total	823	52.2%	700	44.4%	699	44.3%	420	26.6%	51	3.2%	1,578
FY2019	823	50.8%	721	44.5%	672	41.5%	555	34.3%	40	2.5%	1,620

* The denominator for percentage calculations is the number of valid responses (those who checked at least one box). The sum of individual percentages for each question item may not add up to 100% because multiple answers were allowed.
* 72.5% of the respondents checked at least one box (1,578 out of 2,178 respondents).
* In the FY2019 survey, the percentage was 68.8% (1,620 out of 2,354 respondents).

(3) Free comments

【Table 12-1】Proportion of those who wrote in the free comment section

Region	Those who wrote comments		Those who didn't write comments		Total
Kenpoku	76	10.7%	637	89.3%	713
Kenchu	66	11.4%	513	88.6%	579
Kennan	20	13.1%	134	87.0%	154
Soso	8	7.5%	98	92.5%	106
Iwaki	35	9.9%	317	90.1%	352
Aizu	36	14.5%	212	85.5%	248
Minamiaizu	7	26.9%	19	73.1%	26
Total	248	11.4%	1,930	88.6%	2,178
FY2019	304	12.9%	2,050	87.1%	2,354

【Table 12-2】Contents of free comments

Content	Number	Proportion
COVID-19 pandemic	54	21.8%
Positive comments about this survey	47	19.0%
Consultation about child rearing	44	17.7%
Anxiety about radiation effects on fetus and child health	37	14.9%
Mother's own poor mental health	30	12.1%
Opinions/complaints about this survey	19	7.7%
Mother's own poor physical health	18	7.3%
Request for information on radiation and survey results	10	4.0%
Request regarding thyroid examination	7	2.8%
Personal relationship(s)	6	2.4%
Request for improved parenting support services	5	2.0%
Anxiety about radiation effects on baby and/or general foods	3	1.2%
Anxiety related with the outcome of the latest pregnancy	2	0.8%
Anxiety and/or dissatisfaction about reliability or lack of information	2	0.8%
Comments regarding financial anxiety and/or burden	2	0.8%
Request regarding health examination	2	0.8%
Request for internal exposure measurement (whole-body counting, etc.)	2	0.8%
Comments regarding external dose exposure (distribution of personal or environmental dosimeters, etc.)	2	0.8%
Request for improved medical services and physical care	2	0.8%
Anxiety about radiation effects on water	1	0.4%
Anxiety and/or dissatisfaction about insufficient medical services	1	0.4%
Request for financial support	1	0.4%
Request regarding Fukushima Health Management Survey	1	0.4%
Others	45	18.1%

* Multiple answers were allowed. The denominator for percentage calculations is 248, the total number of those who wrote in the free comment section.

(4) Status of post-survey support

Number of respondents requiring support in the Second Follow-up for FY2012 was 386 (17.7% of 2,178 respondents)

Tabulation of data regarding post-survey support is based on 2,178 responses returned between January 15 and August 31, 2021.

【Table 13】Number and proportion of respondents requiring support, by Region

Region	Respondents	Support required respondents	
Kenpoku	713	144	20.2%
Kenchu	579	87	15.0%
Kennan	154	20	13.0%
Soso	106	15	14.2%
Iwaki	352	62	17.6%
Aizu	248	53	21.4%
Minamiaizu	26	5	19.2%
Total	2,178	386	17.7%
FY2019	2,354	421	17.9%

*The denominator for percentage calculations is the number of respondents.

【Table 14】Breakdown of respondents requiring support, by Region

Region	Support based on depression symptoms		Support based on the content of free comments		Total
Kenpoku	108	75.0%	36	25.0%	144
Kenchu	70	80.5%	17	19.5%	87
Kennan	10	50.0%	10	50.0%	20
Soso	11	73.3%	4	26.7%	15
Iwaki	45	72.6%	17	27.4%	62
Aizu	39	73.6%	14	26.4%	53
Minamiaizu	4	80.0%	1	20.0%	5
Total	287	74.4%	99	25.6%	386
FY2019	295	70.1%	126	29.9%	421

*The sum of individual percentages for each question item may not add up to 100% due to rounding.

【Table 15】Topics mentioned during support, by Region

Region	Mother's own physical and/or mental health		Child rearing (daily life)		Child's physical and/or mental health		Questions and anxiety about radiation effects		Family life		Evacuation life		Other		No. of respondents requiring support
Kenpoku	54	37.5%	30	20.8%	20	13.9%	13	9.0%	11	7.6%	0	0.0%	70	48.6%	144
Kenchu	28	32.2%	18	20.7%	9	10.3%	6	6.9%	4	4.6%	0	0.0%	47	54.0%	87
Kennan	8	40.0%	2	10.0%	3	15.0%	2	10.0%	0	0.0%	0	0.0%	9	45.0%	20
Soso	7	46.7%	5	33.3%	1	6.7%	0	0.0%	1	6.7%	0	0.0%	8	53.3%	15
Iwaki	17	27.4%	8	12.9%	9	14.5%	7	11.3%	3	4.8%	0	0.0%	33	53.2%	62
Aizu	13	24.5%	8	15.1%	6	11.3%	4	7.5%	1	1.9%	0	0.0%	35	66.0%	53
Minamiaizu	0	0.0%	2	40.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%	4	80.0%	5
Total	127	32.9%	73	18.9%	50	13.0%	32	8.3%	20	5.2%	0	0.0%	206	53.4%	386
FY2019	117	27.8%	75	17.8%	47	11.2%	28	6.7%	21	5.0%	4	1.0%	254	60.3%	421

* The denominator for percentage calculations is the number of respondents requiring support. The sum of individual percentages may be other than 100% because multiple answers were allowed.

【Table 16】Reasons for ending support

	Listened carefully [1]		Provided information [2]		Confirmed consultation availability [3]		Answered questions [4]		Recommended medical care [5]		Referred to Mental Health Support Team [6]		Referred to municipalities [7]	
Kenpoku	92	63.9%	45	31.3%	8	5.6%	8	5.6%	7	4.9%	3	2.1%	0	0.0%
Kenchu	44	50.6%	21	24.1%	7	8.0%	3	3.4%	2	2.3%	0	0.0%	0	0.0%
Kennan	14	70.0%	5	25.0%	4	20.0%	2	10.0%	1	5.0%	0	0.0%	0	0.0%
Soso	7	46.7%	3	20.0%	1	6.7%	0	0.0%	1	6.7%	0	0.0%	0	0.0%
Iwaki	36	58.1%	17	27.4%	6	9.7%	3	4.8%	2	3.2%	0	0.0%	0	0.0%
Aizu	21	39.6%	15	28.3%	6	11.3%	0	0.0%	2	3.8%	1	1.9%	0	0.0%
Minami-aizu	3	60.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Total	217	56.2%	107	27.7%	32	8.3%	17	4.4%	15	3.9%	4	1.0%	0	0.0%
FY2019	217	51.5%	98	23.3%	37	8.8%	5	1.2%	21	5.0%	7	1.7%	0	0.0%

	Referred to radiation consultation [8]		Referred to medical specialists [9]		Absent		Contact unknown		Refusal of support		Others		No. of respondents requiring support
Kenpoku	0	0.0%	0	0.0%	25	17.4%	20	13.9%	1	0.7%	1	0.7%	144
Kenchu	0	0.0%	0	0.0%	18	20.7%	20	23.0%	2	2.3%	0	0.0%	87
Kennan	0	0.0%	0	0.0%	2	10.0%	4	20.0%	0	0.0%	0	0.0%	20
Soso	0	0.0%	0	0.0%	4	26.7%	4	26.7%	0	0.0%	0	0.0%	15
Iwaki	0	0.0%	1	1.6%	11	17.7%	13	21.0%	0	0.0%	0	0.0%	62
Aizu	0	0.0%	0	0.0%	12	22.6%	17	32.1%	0	0.0%	0	0.0%	53
Minami-aizu	0	0.0%	0	0.0%	1	20.0%	1	20.0%	0	0.0%	0	0.0%	5
Total	0	0.0%	1	0.3%	73	18.9%	79	20.5%	3	0.8%	1	0.3%	386
FY2019	0	0.0%	0	0.0%	98	23.3%	97	23.0%	1	0.2%	4	1.0%	421

* The denominator for percentage calculations is the number of respondents requiring support. The numbers are cumulative totals. The sum of individual percentages may be other than 100% because multiple answers were allowed.

1) Support ended after listening carefully and helping to sort out the mother's problems.
2) Support ended after providing information on relevant municipal service contact points and other useful information.
3) Support ended after confirming that the mother has already consulted doctors or other specialists.
4) Support ended after answering questions from the mother.
5) Support ended after recommending that the mother seek medical consultation.
6) Support ended after forwarding the mother's information to FMU's Mental Health Support Team (with consent).
7) Support ended after forwarding the mother's information to relevant sections of the municipality of residence (with consent).
8) Support ended after forwarding the mother's information to FMU's radiation consultation desk (with consent).
9) Support ended after forwarding the mother's information to medical specialists at FMU.

Summary of the Results of the Pregnancy and Birth Survey, Fukushima Health Management Survey (FY2011-FY2020)

1. Purpose and Outline of the Survey

The Pregnancy and Birth Survey (PBS) was conducted every year from FY2011 to FY2020 with the aim of properly ascertaining physical and mental health conditions of pregnant women intending to give birth and raise children in Fukushima, and alleviating their worries and providing them with necessary care.

The PBS found a high prevalence of depressive symptoms among respondents immediately after the disaster. Accordingly, the first round of Follow-up Survey was also conducted from FY2015 (covering FY2011 Survey respondents) to FY2018 (covering FY2014 Survey respondents), at four years after childbirth, when the number of mothers who lose confidence about rearing their children tends to increase and there are no health checks for their children.

The Follow-up Surveys revealed that FY2011 and FY2012 Survey respondents showed strong concerns about radiation effects and high depressive symptoms and that a certain number of respondents to the FY2013 Survey still considered that their subjective health was poor, had depressive symptoms, or were worried about radiation effects. Therefore, it was decided to conduct the second round of Follow-up Surveys from FY2019 (covering FY2011 Survey respondents) to FY2022 (covering FY2014 Survey respondents), at eight years after childbirth.

2. Outline of the Survey and Support

(1) Main Survey

Covered population

- Women who obtained a maternity handbook from municipalities in Fukushima
- Women who obtained a maternity handbook somewhere else but received prenatal health checks and gave birth in Fukushima

Survey items

- Pregnancy outcomes and health status of the child
- Mental health of pregnant and nursing mothers
- Current living conditions (evacuation, family separation)
- Childbirth status and maternal health status during pregnancy
- Confidence in child rearing
- Expectations for the next pregnancy

Survey methods

Survey sheets were sent by post, asking them to fill in the sheets and send them back by post. The online response system was newly introduced in FY2016.

(2) Follow-up Survey

Covered population

Respondents to the Main Surveys conducted from FY2011 to FY2014 (excluding those having a miscarriage, an abortion, or a stillbirth) who have been confirmed to be alive along with their children through inquiries to their respective municipalities (See [For reference] below.)

Survey items

- Mental health of pregnant and nursing mothers
- Confidence in child rearing
- Worries over radiation effects
- Hospitalization of children
- Worries over children

Survey methods

Survey sheets were sent by post, asking them to fill in the sheets and send them back by post. The online response system was newly introduced in FY2016.

[For reference]

Survey year	Folow-up times	Covered respondents
FY2015	First Follow-up	Follow-up Survey Covering FY2011 Survey Respondents ("First Follow-up for FY2011")
FY2016		Follow-up Survey Covering FY2012 Survey Respondents ("First Follow-up for FY2012")
FY2017		Follow-up Survey Covering FY2013 Survey Respondents ("First Follow-up for FY2013")
FY2018		Follow-up Survey Covering FY2014 Survey Respondents ("First Follow-up for FY2014")
FY2019	Second Follow-up	Second Follow-up Survey Covering FY2011 Survey Respondents ("Second Follow-up for FY2011")
FY2020		Second Follow-up Survey Covering FY2012 Survey Respondents ("Second Follow-up for FY2012")
FY2021		Second Follow-up Survey Covering FY2013 Survey Respondents ("Second Follow-up for FY2013")
FY2022		Second Follow-up Survey Covering FY2014 Survey Respondents ("Second Follow-up for FY2014")

(3) Provision of support

Criteria for providing support

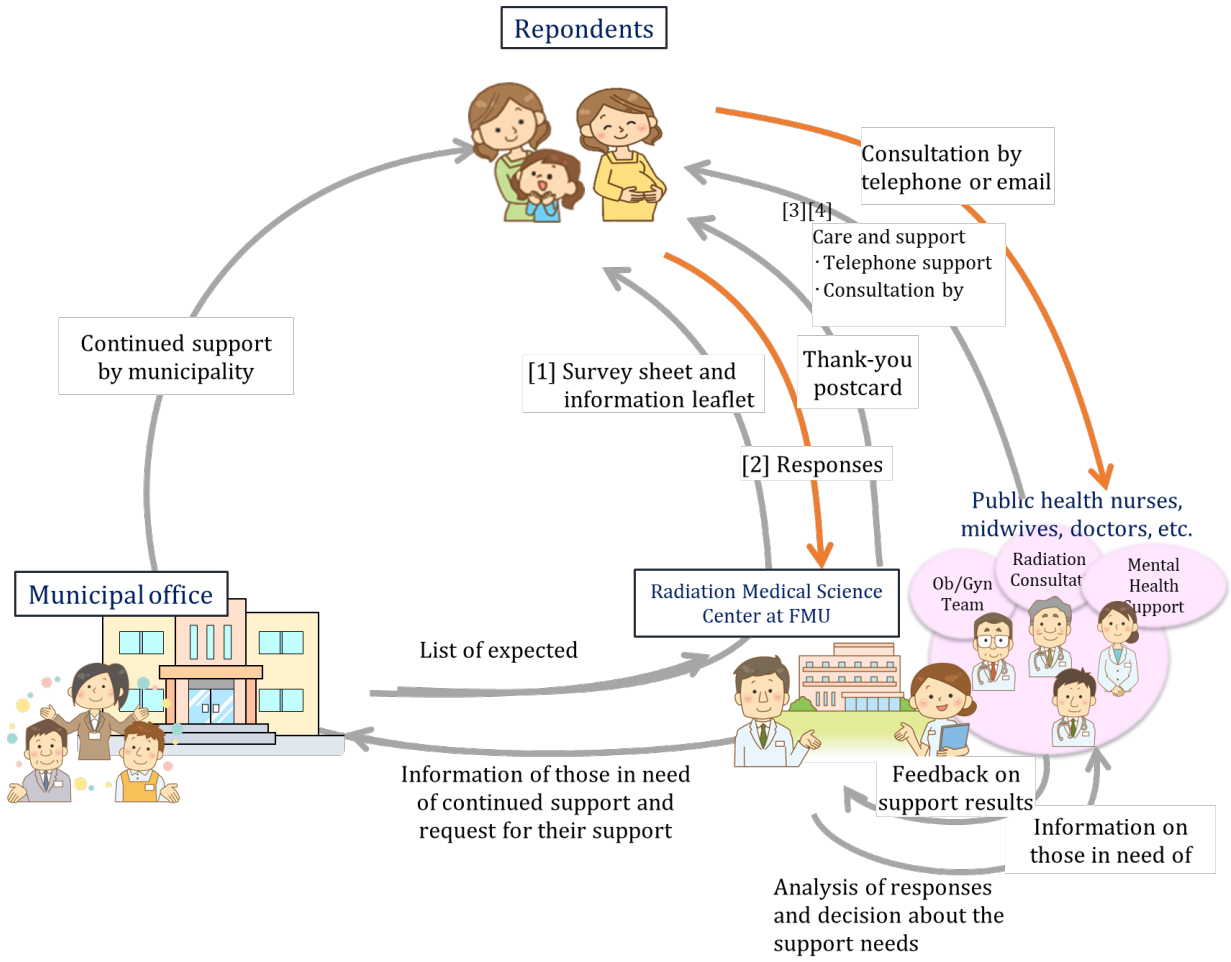
Respondents who fall under either of the following:

A. Those who responded "yes" to questions regarding depressive symptoms
B. Those who wrote comments that suggest the need for support (in the free comment section or other parts of the questionnaire)
   e.g., Those who wrote comments suggesting severe depression, the need for support in child rearing, anxieties about radiation levels, poor health conditions, request for concrete responses, or request for support

Support methods

A. Check the content of survey responses promptly after we receive them and identify respondents who seem to be in need of support.
B. Midwives and public health nurses of the Radiation Medical Science Center for the Fukushima Health Management Survey provide counseling and support by phone sequentially.
C. When any case requiring more specialized responses is found through telephone support, the case is referred to specialized physicians. For women for whom regional support is found to be necessary, requests are made to municipalities where they reside to ask for further responses.

D. Consultations are accepted at the email address and the phone line dedicated for the Pregnancy and Birth Survey and support is provided accordingly.



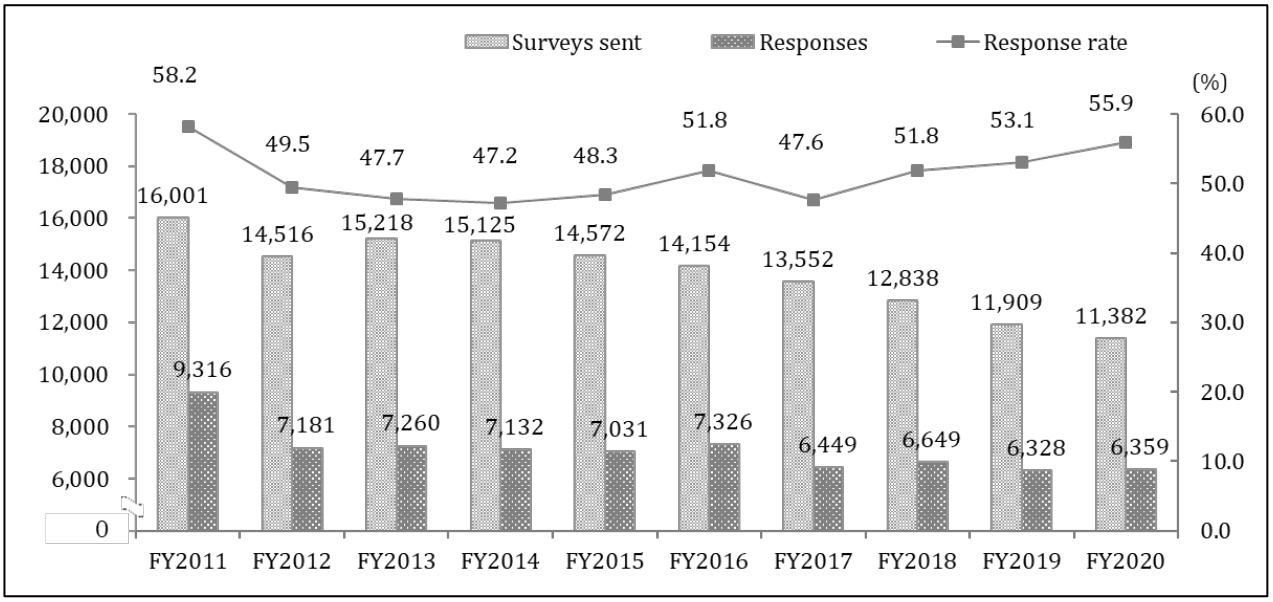
3. Survey Results

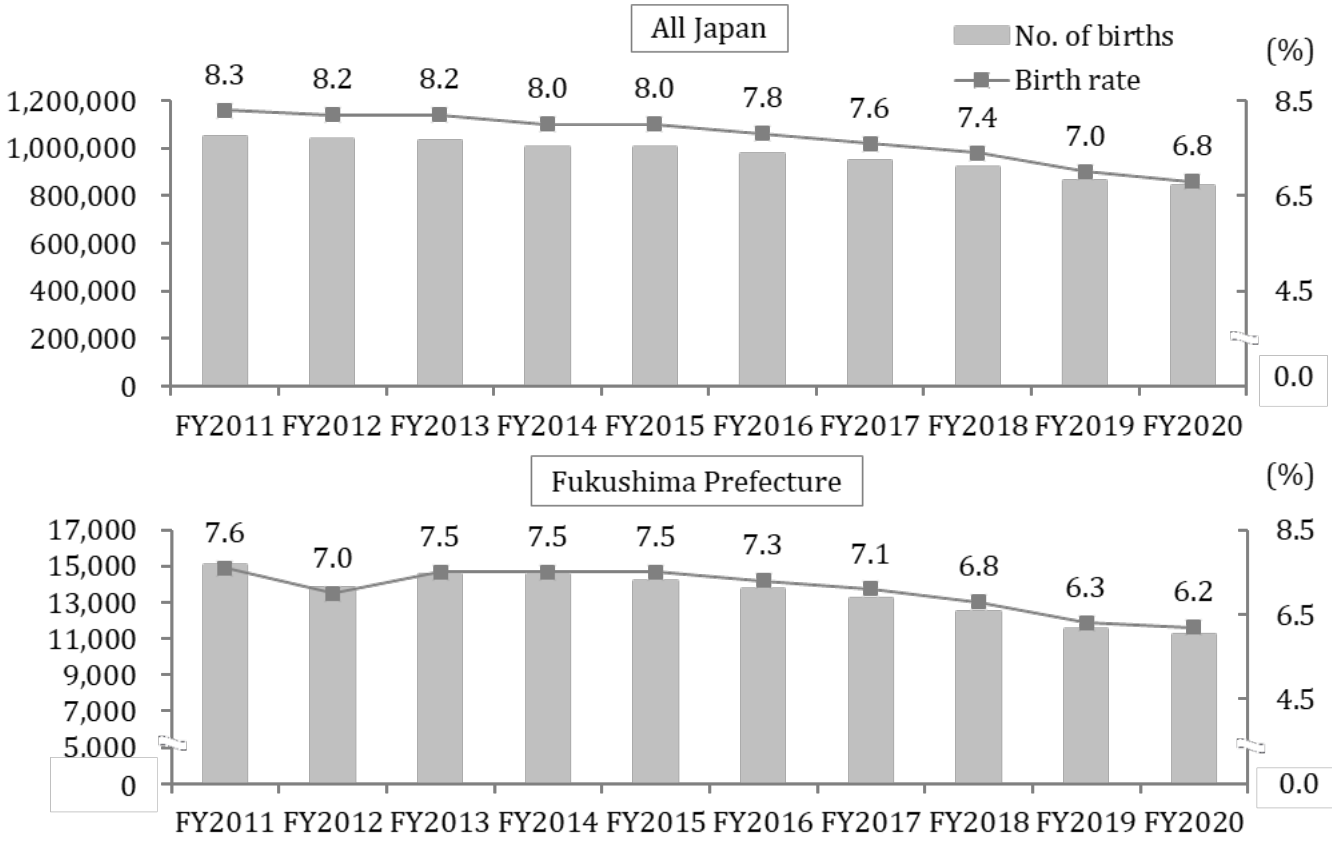
(1) Number of covered populations, number of responses, and response rate

The response rate of the Main Survey has remained at around 50% for ten years, showing a high level of people's interest. By district, the response rate was especially high at over 60% in Kenpoku and Soso immediately after the earthquake, but has shown no notable changes in all districts thereafter. The covered population, which temporarily decreased in FY2012, immediately after the earthquake, recovered in FY2013 but has been on a decline in the same manner as the trend of the number of births nationwide.

The response rate of the Follow-up Survey has been increasing, although being slightly lower than that of the Main Survey. By district as well, the response rates for the last two surveys were higher than before for all districts.

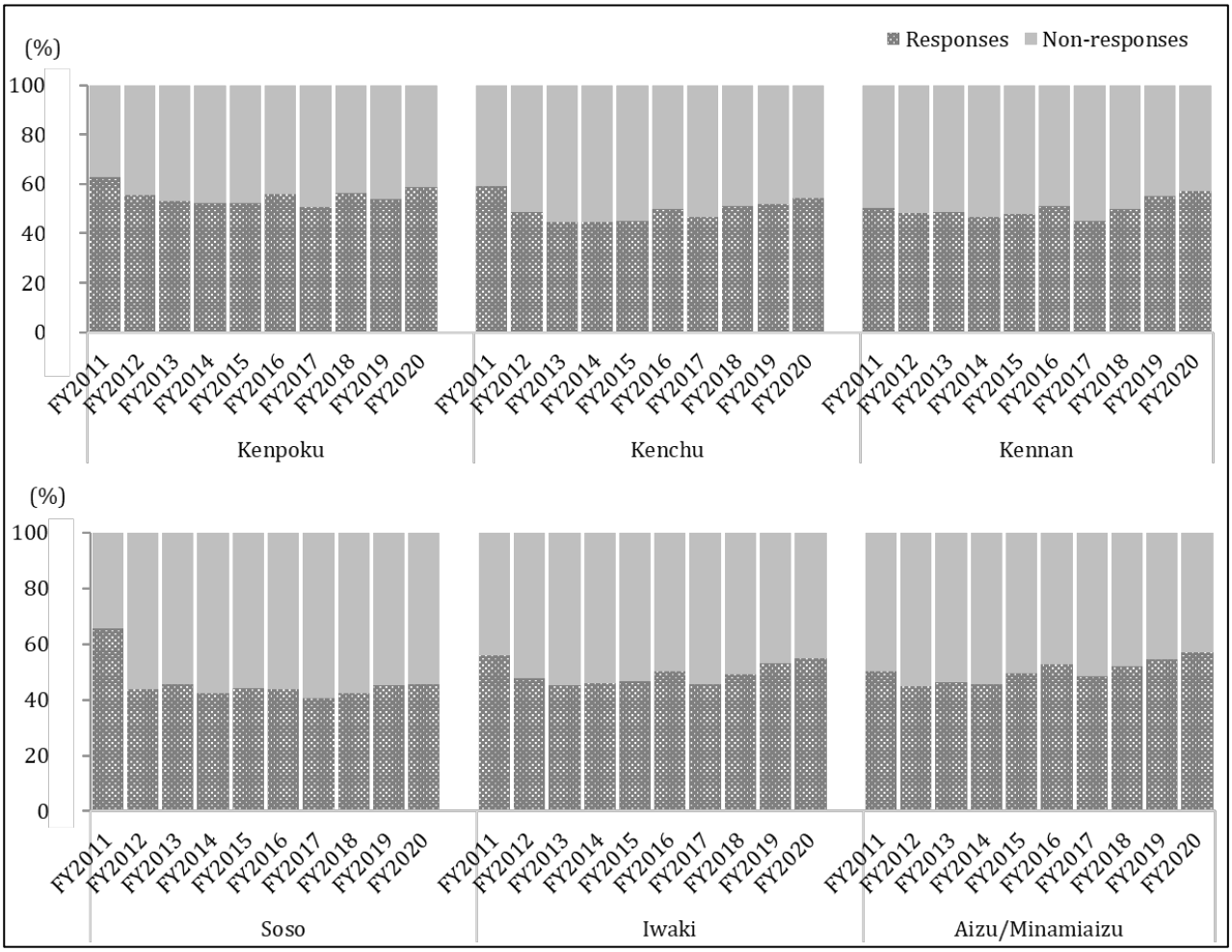
【Number of surveys sent, number of responses, and response rate】(Main Survey)



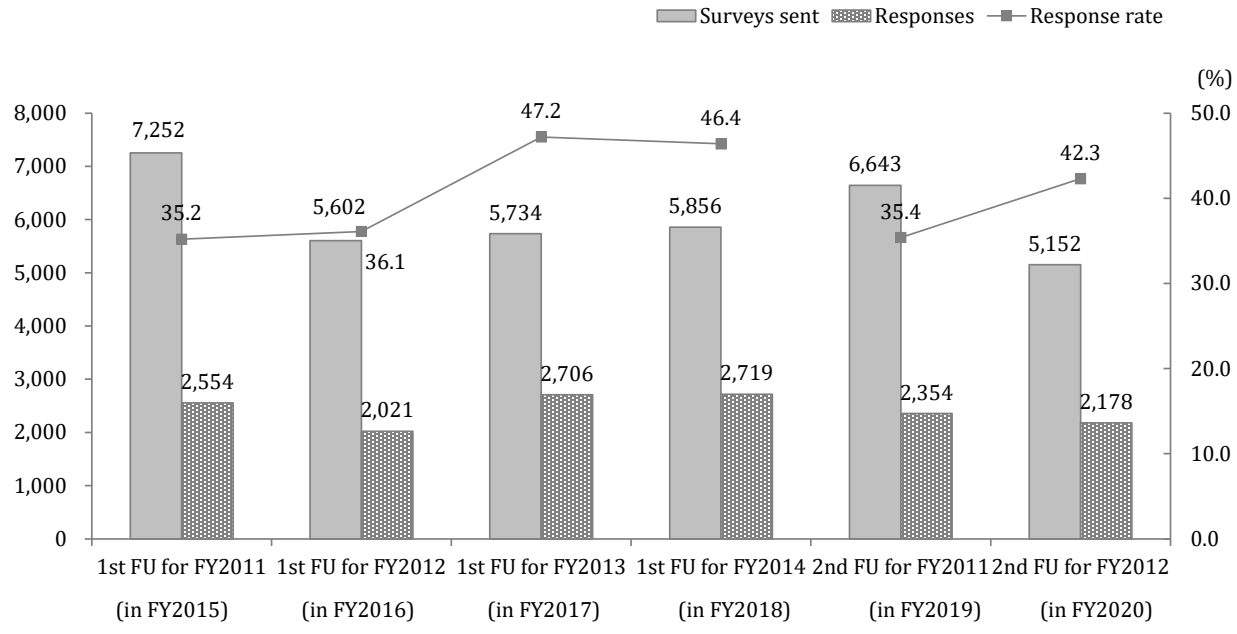


Source: Summary of 2020 Vital Statistics(Final Data), List of Statistical Surveys conducted by Ministry of Health Labour and Welfare.

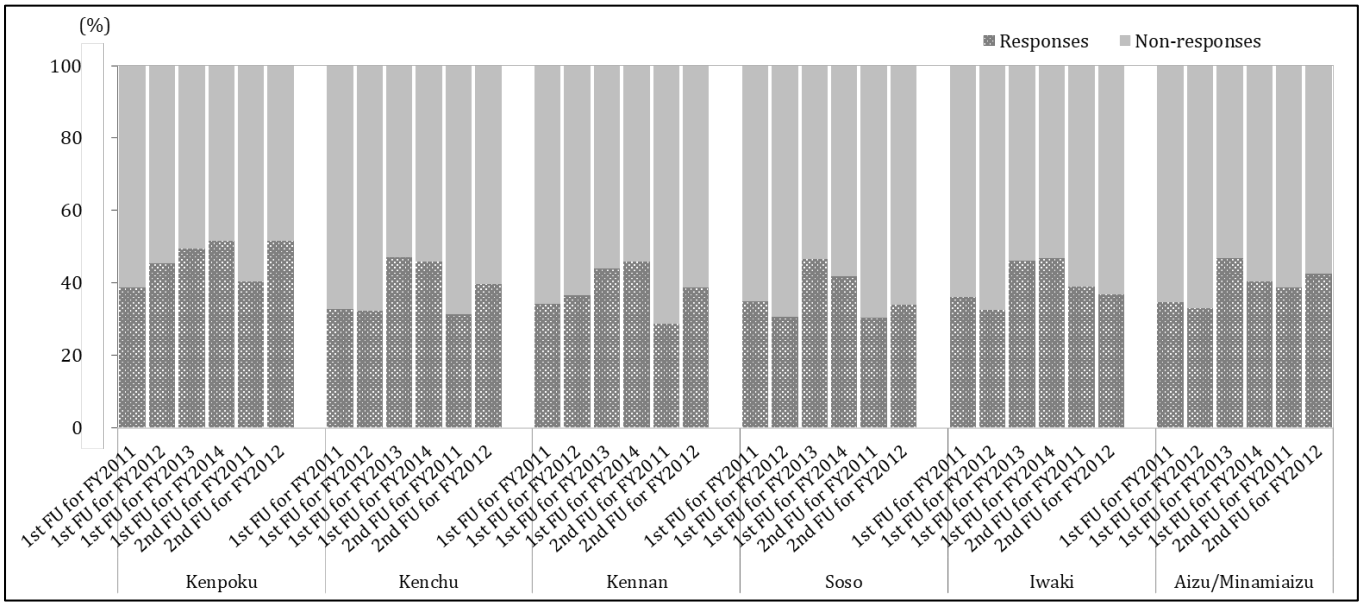
【Response rate by region】(Main Survey)



【Number of surveys sent, number of responses, response rate】(Follow-up Survey)



【Response rate by district】(Follow-up Survey)



(2) Summary of responses

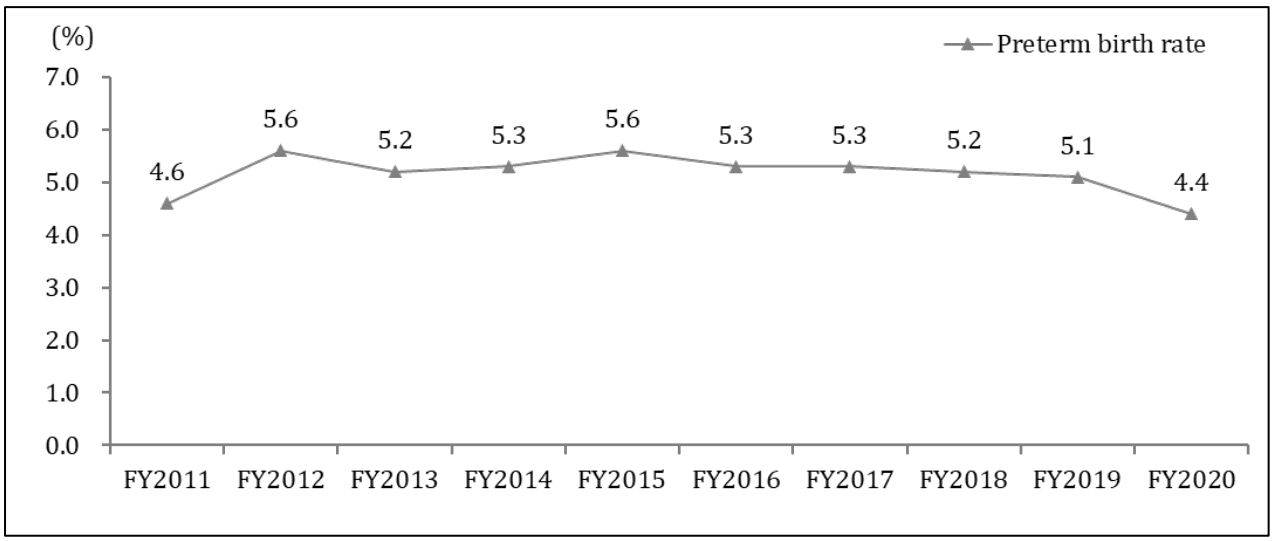
A. Pregnancy outcome (percentages of preterm births and congenital abnormalities or anomalies)

The results of FY2011 survey to FY2020 survey showed almost no differences from data of government statistics and other generally published data for each fiscal year. The percentages of congenital anomalies by district also showed no difference.

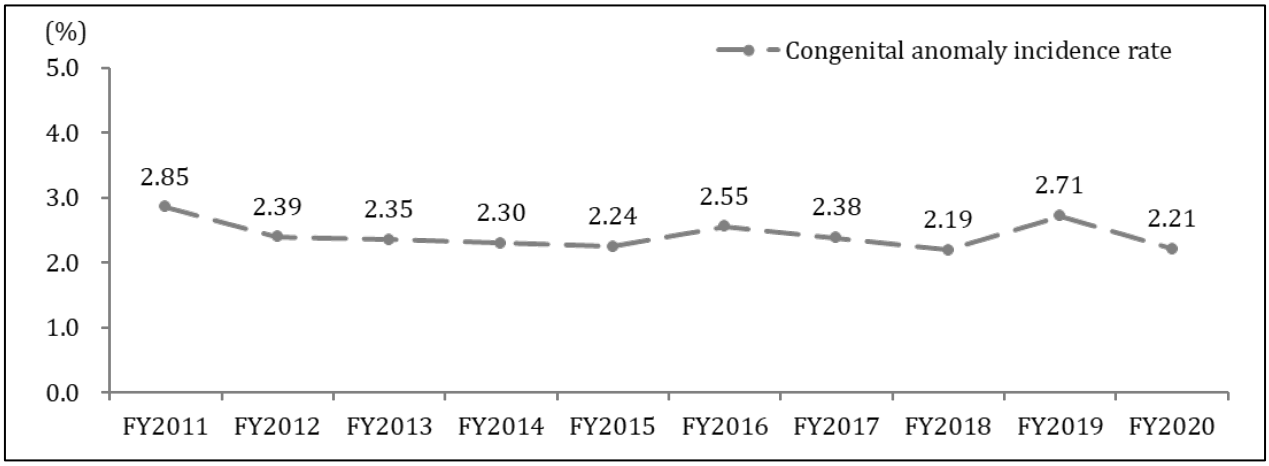
* National average percentage of preterm births for FY2020: 5.5% (preterm births: births at a gestational age from 22 weeks to less than 36 weeks)

* The percentage of morphological abnormalities (fetal anomalies) identifiable at the time of birth is generally 3% to 5% and the causes are diverse ("Guidelines for Obstetrical Practice in Japan: Obstetrics 2020")

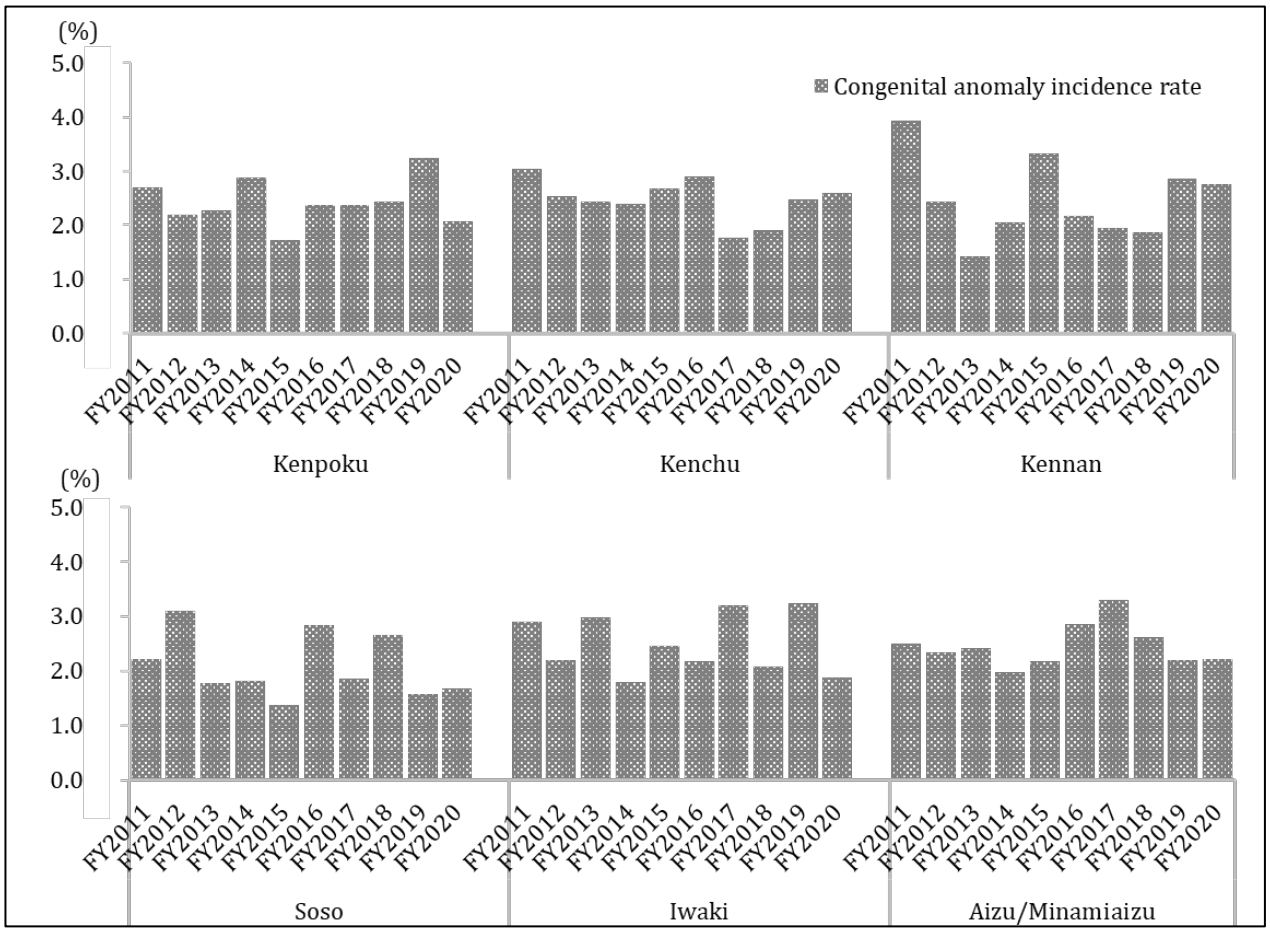
【Preterm birth rate】(Main Survey)



【Congenital anomaly incidence rate (singleton)】(Main Survey)

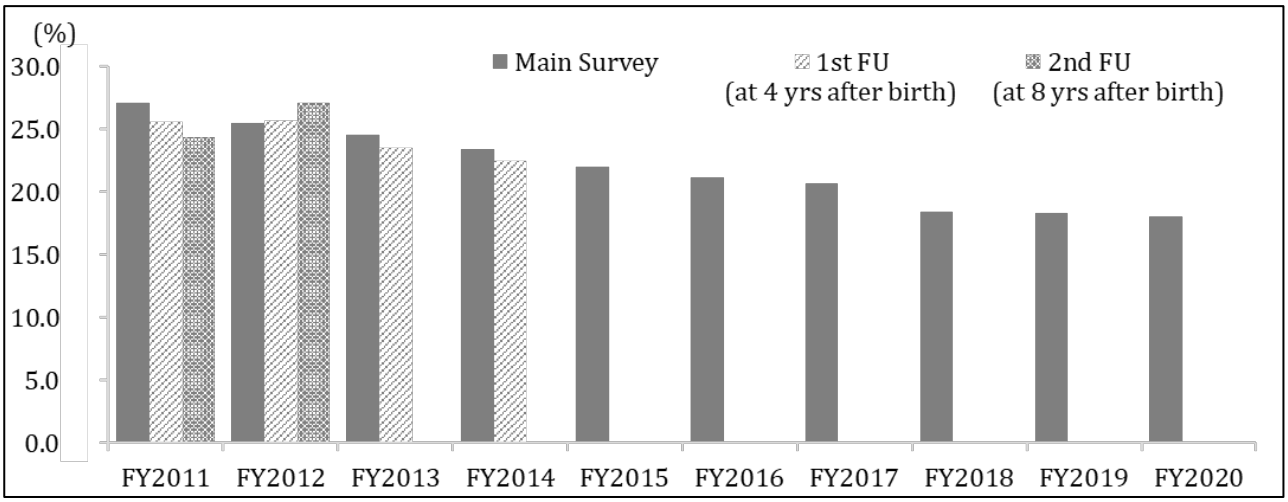


【Congenital anomaly incidence rate (singleton), by district】(Main Survey)



B. Mothers' mental health (percentage of those with depressive symptoms)
The number of mothers who answered “yes” to both or either of the questions "Do you feel depressed?” and “Do you feel uninterested in things?" and "Do you feel uninterested in things?" was rather large in the earlier surveys but has been decreasing thereafter.

【Change in the percentage of those with depressive symptoms】(Main Survey and Follow-up Survey)



C. Care for pregnancy and delivery

The percentage of mothers unsatisfied with the perinatal care they received was decreasing over time after FY2012, but increased in FY2020 survey.

【Percentage of those unsatisfied with perinatal care】(Main Survey)

Survey year	Those who answered "no" or "not at all"
FY2011	No applicable question
FY2012	3.5%
FY2013	2.3%
FY2014	2.7%
FY2015	2.4%
FY2016	2.1%
FY2017	1.7%
FY2018	1.7%
FY2019	1.4%
FY2020	3.9%

D. Status of family life and child rearing (percentages of mothers who are living a refugee life and mothers not confident in child rearing)

- The percentage of mothers who responded that they are living a refugee life is decreasing year by year.
- The percentage of mothers who responded that they sometimes feel unconfident in child rearing has remained slightly less than 20% since immediately after the earthquake up until now.

【Percentages of those living a refugee life】(Main Survey)

Survey year	Those still under evacuation (in temporary and other type of housing)
FY2011	No applicable question
FY2012	7.7%
FY2013	5.5%
FY2014	4.9%
FY2015	3.8%
FY2016	3.4%
FY2017	2.3%
FY2018	1.8%
FY2019	1.6%
FY2020	1.2%

【Percentages of those who sometimes feel unconfident in child rearing】(Main Survey and Follow-up Survey)

Survey year	Main Survey	Follow-up Survey	
FY2011	No applicable question	-	
FY2012	15.4%	-	
FY2013	17.5%	-	
FY2014	16.6%	-	
FY2015	17.7%	15.8%	1)
FY2016	16.6%	18.2%	2)
FY2017	18.1%	16.7%	3)
FY2018	17.7%	17.7%	4)
FY2019	18.8%	19.1%	5)
FY2020	17.5%	18.8%	6)

E. Anticipation for the next pregnancy and delivery

The percentage of mothers wishing to have another child has been constantly over 50% since the earthquake. Mothers who cited worries over radiation effects as a reason for not wishing to have another child accounted for less than 1% in the most recent survey.

【Anticipation for the next pregnancy and delivery】(Main Survey)

Survey year	Those anticipating another pregnancy	Those not anticipating another pregnancy due to worries about radiation effects
FY2011	No applicable question	No applicable question
FY2012	52.9%	14.8%
FY2013	52.8%	5.6%
FY2014	57.1%	3.9%
FY2015	53.3%	1.6%
FY2016	54.6%	1.2%
FY2017	52.4%	0.8%
FY2018	52.2%	0.5%
FY2019	51.3%	0.5%
FY2020	50.0%	0.2%

F. Worries over radiation effects

The percentage of mothers who put a checkmark to at least one question regarding worries over radiation effects has been decreasing year by year, and among such mothers, the percentage of those who responded that they have worries over children's health conditions has also been decreasing year by year.

【Percentage of those who have worries over radiation effects】(Follow-up Survey)

Respondents	Those who checked at least one box for anxiety about radiation effects		Those who checked the box for child's health	
	First Follow-up	Second Follow-up	First Follow-up	Second Follow-up
FY2011 PBS respondents	94.2%	87.2%	79.5%	68.1%
FY2012 PBS respondents	90.9%	84.0%	68.7%	62.8%
FY2013 PBS respondents	87.5%	-	66.3%	-
FY2014 PBS respondents	85.4%	-	63.3%	-

G. Free comments (percentages of mothers who wrote free comments and mothers who mentioned worries over radiation effects on fetuses and children, in particular)

The percentage of mothers who wrote free comments on their worries over radiation effects on fetuses and children in the Main Survey was nearly 30% immediately after the commencement of the survey but has been decreasing year by year to below 1% recently.

【Number of respondents who wrote free comments】(Main Survey and Follow-up Survey)

Survey year	Main Survey	Follow-up Survey	
FY2011	3,722 (42.2%)	-	
FY2012	1,481 (20.7%)	-	
FY2013	867 (12.0%)	-	
FY2014	745 (10.5%)	-	
FY2015	1,101 (15.7%)	383 (15.0%)	1)
FY2016	965 (13.3%)	186 (9.2%)	2)
FY2017	799 (12.4%)	208 (7.7%)	3)
FY2018	881 (13.4%)	198 (7.3%)	4)
FY2019	818 (13.0%)	304 (12.9%)	5)
FY2020	871 (13.8%)	248 (11.4%)	6)

【Percentage of those who mentioned worries over radiation effects on fetuses and children】

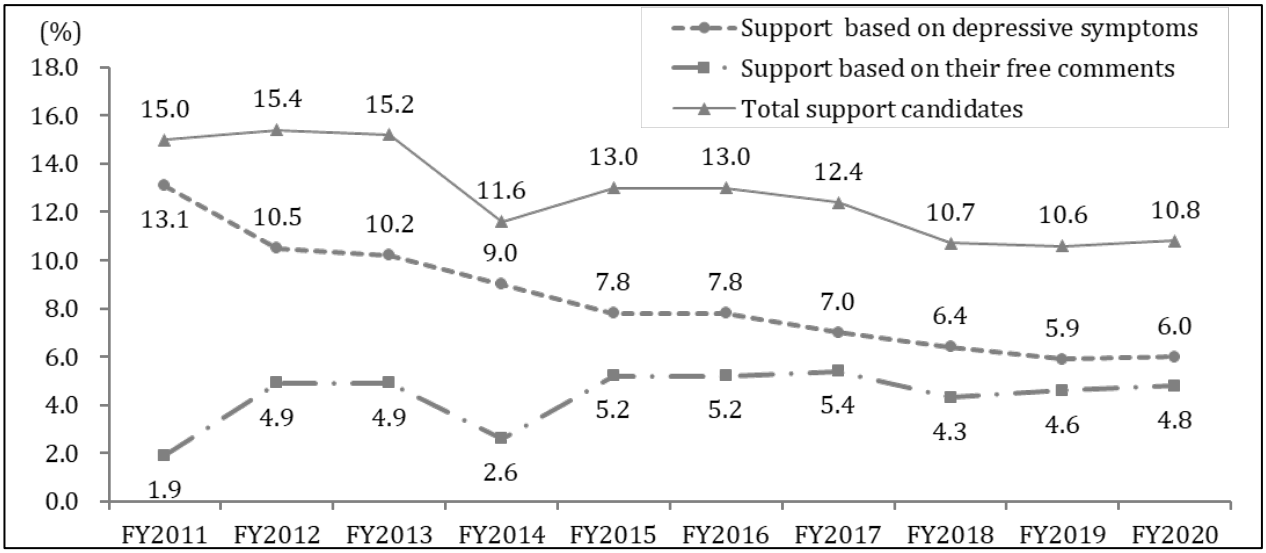
Survey year	Main Survey	Follow-up Survey	
FY2011	29.6%	-	
FY2012	26.4%	-	
FY2013	12.9%	-	
FY2014	9.5%	-	
FY2015	5.2%	13.8%	1)
FY2016	6.1%	12.4%	2)
FY2017	4.8%	11.5%	3)
FY2018	1.8%	7.1%	4)
FY2019	2.1%	17.4%	5)
FY2020	0.5%	14.9%	6)

(3) Results of support

A. Provision of support

For mothers, out of the respondents of the survey, who were judged to be in need of consultations and support based on their responses, midwives and public health nurses provide consultations and support by phone or by email. The percentage of mothers in need of support identified based on their responses to questions regarding depressive symptoms in the Main Survey has decreased by nearly 50% from the level immediately after the earthquake and the percentage identified through the Follow-up Surveys has also been on a decline. Since FY2012, the coverage of support has been expanded to include those suspected to be in need of support from the content of their free comments and the percentage of those in need of support marked 10.8% in FY2020.

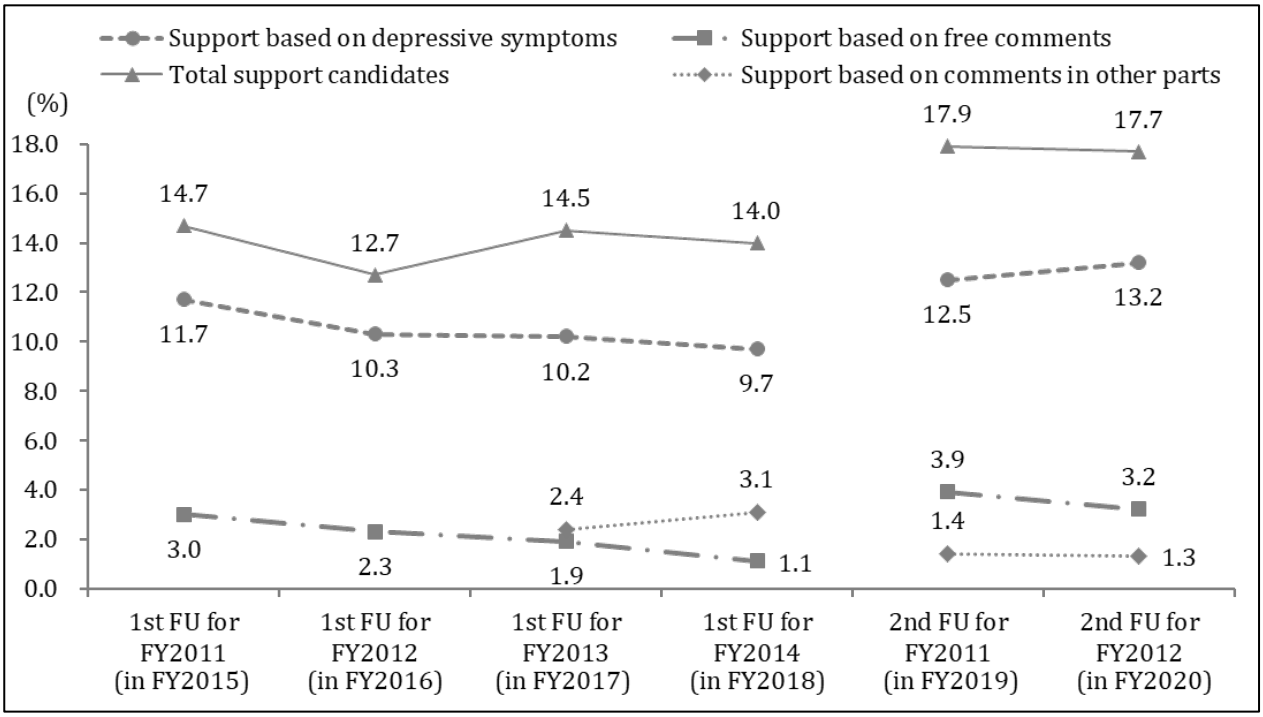
【Change in the number of support candidates】(Main Survey)



		FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Support candidates	based on depressive symtoms	1,224	751	744	645	549	573	449	424	376	380
	based on their free comments	177	353	357	185	364	378	350	287	292	308
Respondents		9,316	7,181	7,260	7,132	7,031	7,326	6,449	6,649	6,328	6,359

* If a respondent falls under both Criteria A and B, the person was counted as a support candidate based on Criteria A.

【Change in the number of support candidates】(Follow-up Survey)



		1st FU for FY2011 (in FY2015)	1st FU for FY2012 (in FY2016)	1st FU for FY2013 (in FY2017)	1st FU for FY2014 (in FY2018)	2nd FU for FY2011 (in FY2019)	2nd FU for FY2012 (in FY2020)
Support candidates	based on depressive symptoms	299	209	277	265	295	287
	based on their free comments	76	47	51	31	92	70
	based on comments in other parts	–	–	65	84	34	29
Respondents		2,554	2,021	2,706	2,719	2,354	2,178

* If a respondent falls under both Criteria A and B, the person was counted as a support candidate based on Criteria A.

B. Topics of consultations

Through the main survey, support by phone has been provided to nearly 1,000 mothers every fiscal year, but the number of targets has been decreasing recently. Details of the consultations have varied by fiscal year. Consultations on worries over radiation and its effects were most common immediately after the earthquake but have decreased over time. Since FY2012, consultations on mothers' mental and physical health and matters concerning child rearing (daily life) have been increasing and have become dominant.

In the follow-up survey, the number of consultations on mothers' mental and physical health has constantly been the largest since the commencement of the survey in FY2015. Consultations on worries over radiation and its effects have been decreasing year by year.

【Topics mentioned during telephone support】(Main Survey)

	No. 1	No. 2	No. 3	No. 4	No. 5
FY2011	Questions and anxiety about radiation effects 29.2%	Mother's own physical and/or mental health 20.2%	Child rearing (daily life) 14.0%	Child's physical and/or mental health 10.5%	Evacuation life 9.3%
FY2012	Mother's own physical and/or mental health 33.4%	Child rearing (daily life) 26.7%	Questions and anxiety about radiation effects 23.7%	Child's physical and/or mental health 13.4%	Family life 10.3%
FY2013	Mother's own physical and/or mental health 42.5%	Child rearing (daily life) 38.7%	Child's physical and/or mental health 20.3%	Family life 19.8%	Questions and anxiety about radiation effects 17.1%
FY2014	Mother's own physical and/or mental health 49.5%	Child rearing (daily life) 36.1%	Family life 20.5%	Child's physical and/or mental health 14.5%	Questions and anxiety about radiation effects 9.5%
FY2015	Mother's own physical and/or mental health 53.1%	Child rearing (daily life) 40.9%	Family life 21.8%	Child's physical and/or mental health 20.6%	Questions and anxiety about radiation effects 5.9%
FY2016	Mother's own physical and/or mental health 59.8%	Child rearing (daily life) 43.4%	Family life 19.5%	Child's physical and/or mental health 18.0%	Questions and anxiety about radiation effects 5.0%
FY2017	Mother's own physical and/or mental health 55.6%	Child rearing (daily life) 51.8%	Family life 16.4%	Child's physical and/or mental health 8.6%	Questions and anxiety about radiation effects 4.1%
FY2018	Mother's own physical and/or mental health 53.2%	Child rearing (daily life) 41.4%	Child's physical and/or mental health 16.0%	Family life 9.3%	Questions and anxiety about radiation effects 3.4%
FY2019	Mother's own physical and/or mental health 48.1%	Child rearing (daily life) 42.5%	Child's physical and/or mental health 12.1%	Family life 10.2%	Questions and anxiety about radiation effects 1.5%
FY2020	Child rearing (daily life) 54.5%	Mother's own physical and/or mental health 52.0%	Family life 11.2%	Child's physical and/or mental health 11.0%	Questions and anxiety about radiation effects 0.6%

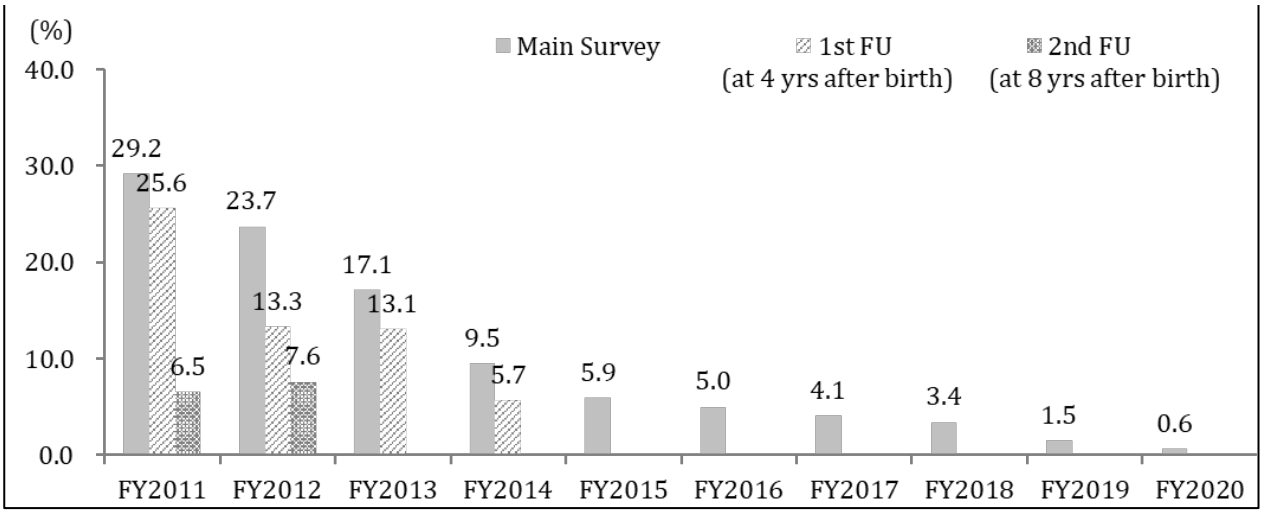
*Topics include multiple consultation for 1 person

【Topics mentioned during telephone support】(Follow-up Survey)

	No. 1	No. 2	No. 3	No. 4	No. 5
First Follow-up for FY2011 (in FY2015)	Mother's own physical and/or mental health 34.4%	Questions and anxiety about radiation effects 25.6%	Child rearing (daily life) 21.6%	Child's physical and/or mental health 18.1%	Family life 13.9%
First Follow-up for FY2012 (in FY2016)	Mother's own physical and/or mental health 44.9%	Child rearing (daily life) 23.0%	Child's physical and/or mental health 22.7%	Questions and anxiety about radiation effects 13.3%	Family life 10.5%
First Follow-up for FY2013 (in FY2017)	Mother's own physical and/or mental health 36.0%	Child rearing (daily life) 27.7%	Family life 14.6%	Questions and anxiety about radiation effects 13.1%	Child's physical and/or mental health 9.8%
First Follow-up for FY2014 (in FY2018)	Mother's own physical and/or mental health 26.4%	Child rearing (daily life) 12.2%	Family life 6.4%	Questions and anxiety about radiation effects 5.7%	Child's physical and/or mental health 5.4%
Second Follow-up for FY2011 (in FY2019)	Mother's own physical and/or mental health 29.2%	Child rearing (daily life) 17.8%	Child's physical and/or mental health 10.1%	Questions and anxiety about radiation effects 6.5%	Family life 5.2%
Second Follow-up for FY2012 (in FY2020)	Mother's own physical and/or mental health 33.9%	Child rearing (daily life) 19.0%	Child's physical and/or mental health 12.9%	Questions and anxiety about radiation effects 7.6%	Family life 5.6%

*Listed topics are the responses of depressive symptoms related questions and free comments. (Exclude "The support needed due to comment section of other topics"form FY2013 First follow-up survey and onwards,

【Questions and anxiety about radiation effects】(Main Survey and Follow-up Survey)



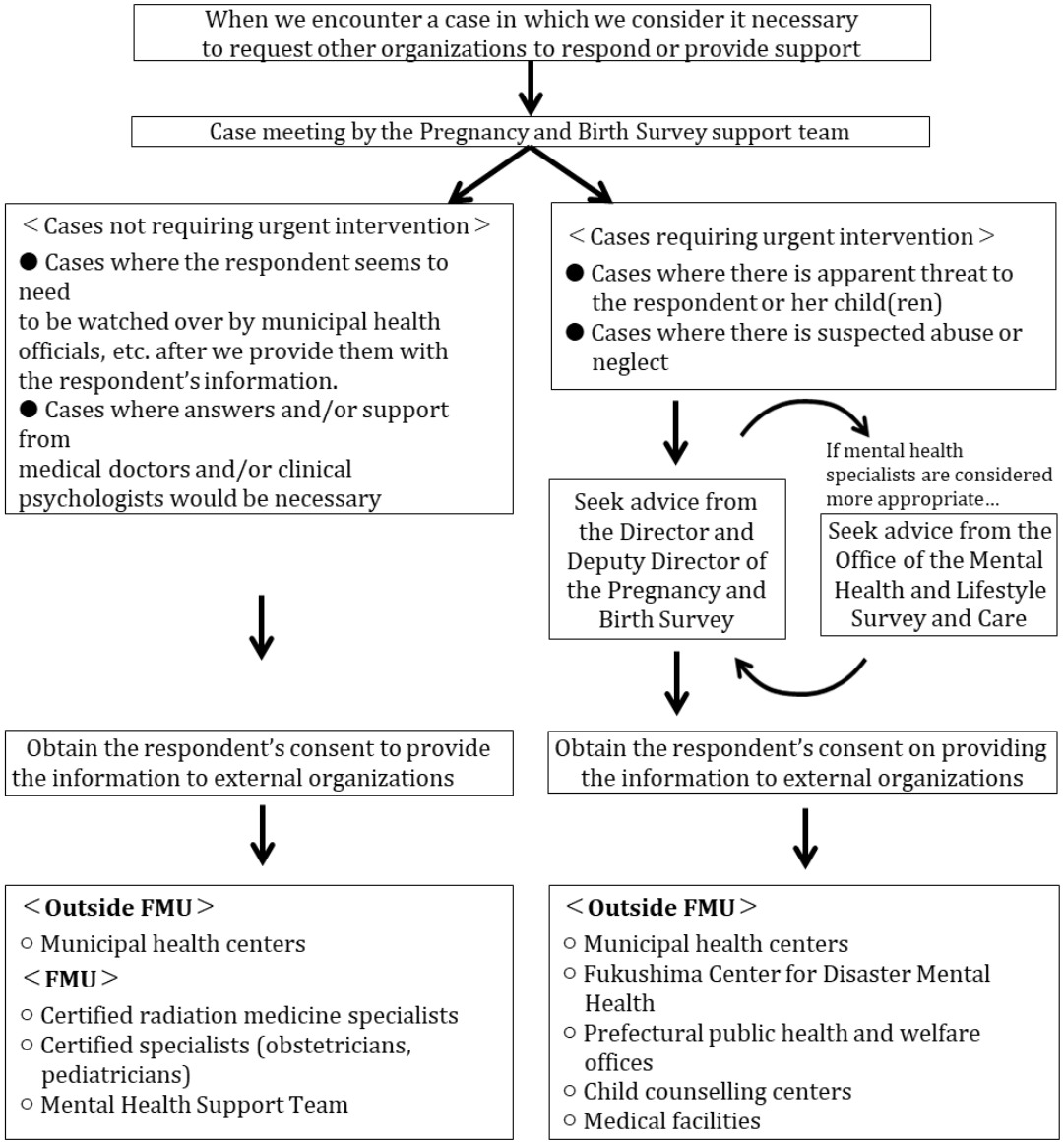
C. Referral to other organizations

When an urgent need for referral to a municipal office is found based on responses to the survey, such as deterioration in psychological symptoms, difficulties in child rearing, child neglect, abuse, or domestic violence, a request for support is made to a service office of the relevant municipality after consulting with a member of the Expert Committee responsible for the Pregnancy and Birth Survey and obtaining consent from the relevant mother concerning the referral to the service office.

【Number of referrals to other organizations】(Main Survey and Follow-up Survey)

Referred to:	Municipal maternal and child health section		FMU's radiation consultation desk		FMU's Mental Health Support Team		FMU's specialized physicians	
	Main Survey	Follow-up Survey	Main Survey	Follow-up Survey	Main Survey	Follow-up Survey	Main Survey	Follow-up Survey
FY2011	2	–	7	–	4	–	2	–
FY2012	6	–	1	–	14	–	0	–
FY2013	1	–	0	–	6	–	1	–
FY2014	3	–	0	–	1	–	0	–
FY2015	1	0	1	1	0	0	0	0
FY2016	8	0	0	0	5	0	0	0
FY2017	4	2	0	0	2	1	0	0
FY2018	3	0	0	0	3	3	1	0
FY2019	0	0	0	0	4	7	0	0
FY2020	2	0	0	0	7	4	0	1

【Flow of referrals to other organizations】



4. Publication of Survey Results and Feedback to Communities

- The latest survey results are made available on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University.
- From FY2014 to FY2017, we held briefing sessions to explain survey results in five districts of the prefecture (Kenpoku, Kennan, Soso, Aizu, and Iwaki).
- Since FY2015, we have reported the outline of the survey results to public health nurses, etc. at meetings of personnel in charge of maternal and child health of all municipalities held by the prefectural government.
- Since FY2019, we have directly visited 13 municipalities designated as evacuation zone, and have individually reported the survey results.
- We prepared a leaflet to outline the survey and explain the outcomes and sent copies thereof together with survey sheets to all intended survey respondents and also delivered them to municipalities and obstetrics and gynecology clinics and other medical facilities.
- On the occasions of the public symposium hosted by the Fukushima Medical Association and the "Iki Iki Kenko Zukuri (Live with Vitality) Forum" hosted by the Health Promotion Center, we displayed panels showing the survey results and delivered the leaflet.

5. Efforts for Raising Response Rates

- From the FY2016 Main Survey, the online response system was newly introduced for the convenience of respondents. Combined use of the paper-based response system and the online response system contributed to raising response rates. Both systems have advantages, but it was found that respondents using the paper-based response system generally expressed their feelings and opinions more clearly.
- In collaboration with municipalities, we conducted a questionnaire regarding the volume and the content of survey items of the Main Survey in FY2014 and utilized the results in revising the survey content. We also posted requests for cooperation to the survey on municipal PR magazines.
- As the Main Survey contains questions concerning a health examination for one-month old babies, we started to deliver survey sheets on three occasions considering mothers' due dates from the FY2014 survey so that mothers could respond to those questions on a timely basis.
- We reviewed and decreased the questions to alleviate respondents' burden.
- We sent a reminder or sent survey sheets again to encourage participation from persons not making responses.
- We conducted a survey to check the status of responses among the targets of the FY2014 survey. We selected one municipality each from the Hamadori area, Nakadori area and Aizu area, and conducted a questionnaire with approximately 100 mothers who came to receive a health examination for three to four-month old babies (30 to 40 mothers per municipality) to obtain suggestions concerning survey methods.

6. Roles Having Been Played by the Survey

(1) Demonstrating the safety of pregnancy and childbirth in the prefecture

The survey clarified changes in the percentages of preterm births and congenital anomalies in Fukushima over time and showed that those percentages were the same as figures of nationwide surveys and general standards, thereby presenting the safety of getting pregnant and giving birth in Fukushima. In particular, in support by phone for mothers having high depressive symptoms and strong concerns about the possibility of congenital anomalies, we made a special effort to explain the results of the survey in the prefecture and the safety of getting pregnant and giving birth to reassure them. We also published papers based on the survey data, and compiled the major outcomes of those research papers prepared in four years as an interim report.

(2) Opportunities for watching over the health of pregnant and nursing mothers and providing support through the survey

The survey conducted every year has contributed to continuously observing pregnant women in Fukushima and ascertaining their circumstances individually and has led to the provision of concrete support.

(3) Implementation of interactive support

- For mothers who are judged to be in need of support based on the survey results (including those who cannot seek support by themselves), supporters have made phone calls to ascertain the current situation and provide support on a case-by-case basis. The survey results have been used to identify cases requiring individual visit support and to refer such cases to respective

municipalities.

・We prepared a dedicated phone line and email account to make it easier for anyone to make consultations and also established a contact point to receive consultations from the mothers.

(4) Cooperation with organizations involved in obstetrics, gynecology, and related disciplines, and establishment of support systems

・We requested obstetrics and gynecology physicians and other organizations for the cooperation in delivering survey sheets and referred mothers judged in need of specialized support to them, thereby promoting continued support for those mothers.

・We visited the Fukushima Midwives Association and built a system for collaboration, asking the association for assistance with the main survey and provision of consultations for such mothers as those who experienced a stillbirth.

・We aimed to strengthen collaboration with medical facilities through informing them of mothers' requests entered in survey sheets via the Fukushima Society of Obstetrics and Gynecology and the Fukushima Obstetrics and Gynecology Association.

(5) Close collaboration with municipalities

We have referred mothers in need of urgent measures or continued support identified based on their responses to the survey or the results of support by phone to responsible personnel of the respective municipalities and have provided support to those mothers in collaboration therewith.

(6) Information sharing on the current status of and issues related to maternal and child health (with the prefecture, municipalities, and related organizations)

・Since FY2013, explanations have been provided directly by physicians at briefing sessions to explain survey results to groups of public health nurses or hospital nurses, and other related organizations in Fukushima and meetings of municipal personnel in charge of maternal and child health hosted by the prefectural government. For the FY2017 Main Survey, at meetings with personnel of the 13 municipalities in the Hamadori area, we explained the situation of each municipality and conducted opinion exchanges to share information.

・Upon requests from municipalities, we provided survey results for the respective municipalities separately.

(7) Response to anxieties about radiation

・From the first Main Survey in FY2011 until the FY2013 Main Survey, we prepared a support book to help children and their guardians maintain their good physical and mental health and sent copies thereof to intended survey respondents. From FY2012, we sent the support book together with the survey sheet to each of the intended respondents to ensure that the information would directly reach guardians worrying about radiation effects.

・From the FY2014 Main Survey and the Follow-up Survey, we prepared a leaflet to outline the survey and explain the outcomes and sent copies thereof together with survey sheets. We also sent copies to cooperative medical facilities and relevant organizations in the prefecture to disseminate the survey results.

(8) Support to supporters

In order to further enhance qualities of supporters who provide support by phone so that they would be able to properly respond to mothers' worries and questions, we have encouraged them to acquire specialized knowledge and conduct case studies, and have provided them with training concerning knowledge on radiation and the thyroid gland, thereby promoting their appropriate responses to wide-ranging consultations.

(9) Noteworthy achievements

・We have been able to maintain high response rates. There were criticisms concerning the survey, but there were also words of thanks and encouraging remarks. We have simplified questions and introduced an online response system and have secured enough space for free comments since the first survey. Additionally, we have provided support by phone or by email. All these efforts are considered to have contributed to gaining people's approval for the survey.

・We could announce the fact that the percentages of stillbirths, preterm births, low birth-weight babies, and congenital anomalies in Fukushima have been at the same levels as the national averages.

・We have visited respective areas in Fukushima to directly explain survey results to responsible

municipal personnel and this has raised people's interest in the survey and has enabled us to smoothly provide support to those in need of help in collaboration with municipalities. We received the following comments from municipal personnel in charge of maternal and child health who participated in briefing sessions: "I understand the current status of Fukushima Prefecture. It was very helpful." "Today's explanations will serve as useful information when I respond to consultations concerning child rearing by phone or at the time of a health examination and visit support."

Summary of published papers

1 The percentages of stillbirths (0.25%), preterm births (4.4%), low birth-weight babies (8.7%), and congenital anomalies (2.72%) were almost the same as the national averages of those percentages in Japan.
Pregnancy and Birth Survey after the Great East Japan Earthquake and Fukushima Daiichi Nuclear Power Plant Accident in Fukushima Prefecture
Fujimori K, et al. Fukushima J Med Sci. 2014;60(1):75-81.

2 Mothers found to have depressive symptoms accounted for 28% throughout the prefecture. The percentage was high for mothers in the Soso district and those who changed obstetric care facilities, but was low for mothers in the Iwaki and Aizu districts.
Immediate effects of the Fukushima nuclear power plant disaster on depressive symptoms among mothers with infants: A prefectural-wide cross-sectional study from the Fukushima Health Management Survey
Goto A, et al. BMC Psychiatry. 2015 Mar 26;15:59.

3 In Fukushima, depressive symptoms were observed more frequently among mothers who experienced a miscarriage or stillbirth than among those who had a live birth.
IMMEDIATE MENTAL CONSEQUENCES OF THE GREAT EAST JAPAN EARTHQUAKE AND FUKUSHIMA NUCLEAR POWAR PLANT ACCIDENT ON MOTHERS EXPERIENCING MISCARRIAGE, ABORTION, AND STILLBIRTH: THE FUKUSHIMA HEALTH MANAGEMENT SURVEY
Komiya H, et al. Fukushima J Med Sci. 2015;61(1):66-71.

4 Changes of obstetric care facilities due to medical reasons often result in preterm births. However, no association was observed between preterm births and changes of obstetric care facilities by mothers by themselves.
Effect of medical institution change on gestational duration after the Great East Japan Earthquake: The Fukushima Health Management Survey
Suzuki K, et al. J Obstet Gynaecol Res. 2016 Dec;42(12):1704-1711.

5 No influence of the earthquake was observed in the growth of one-month-old babies. In the Soso area, the percentage of mothers using powdered milk showed an increasing trend over time after the earthquake.
Impact of the Great East Japan Earthquake on feeding methods and newborn growth at 1 month postpartum: results from the Fukushima Health Management Survey. Kyozuka H, et al. Radiat Environ Biophys. 2016 May;55(2):139-46.

6 A significantly larger percentage of mothers who used to live in the evacuation zone and who could not receive prenatal health checks as scheduled used powdered milk due to worries over radioactive contamination.
Factors Associated with Infant Feeding Methods after the Nuclear Power Plant Accident in Fukushima: Data from the Pregnancy and Birth Survey for the Fiscal Year 2011 Fukushima Health Management Survey.
Ishii K, et al. Matern Child Health J. 2016 Aug;20(8):1704-12.

7 Women who became pregnant within six months after the earthquake showed higher percentages of preterm births and low birth-weight babies, and cases of respiratory diseases and mental disorders increased.
Obstetric outcomes in women in Fukushima prefecture during and after the Great East Japan Earthquake and Fukushima nuclear power plant accident: The Fukushima Health Management Survey
Hayashi M, et al. Open Journal of Obstetrics and Gynecology, 2016, 6, 705-713

8 A significantly larger percentage of mothers who were forced to change prenatal health checks and obstetric care facilities, those with high-risk pregnancy, those who had a Caesarean, and those who gave birth to their first babies are receiving support by phone. They use powdered milk more often than those who do not receive support, worrying about radiation effects.
Characteristics of Mothers in Need of Support by Phone after the Accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station and the Details of Consultations – Based on the Pregnancy and Birth Survey, Fukushima Health Management Survey in FY2011 –
Kayoko Ishii, et al., Japan Society of Maternal Health (2016)

9 Mothers whose babies were SGA (small-for-gestational-age) accounted for 5.6%. Areas where they lived at the time of the accident at the NPS and the timing of getting pregnant did not exert any influence on the occurrence of SGA.
Influence of the Great East Japan Earthquake and the Fukushima Daiichi Nuclear Disaster on the Birth Weight of Newborns in Fukushima Prefecture: Fukushima Health Management Survey.
Yasuda S, et al. J Matern Fetal Neonatal Med. 2017 Dec;30(24):2900-2904

10 The use of ART temporarily decreased in Fukushima immediately after the Great East Japan Earthquake but no long-term influence of the earthquake has been observed.
Impact of the Great East Japan Earthquake and Fukushima nuclear power plant accident on assisted

reproductive technology in Fukushima prefecture: The Fukushima Health Management Survey
Hayashi M, et al. J Clin Med Res. 2017 Sep;9(9):776-781.

11 A refugee life and worries over radiation were associated with depressive symptoms, but were not associated with a low confidence in child rearing.
The Fukushima Nuclear Accident Affected Mothers' Depression but Not Maternal Confidence.
Goto A, et al. Asia Pac J Public Health. 2017 Mar;29(2_suppl):139S-150S.

12 The percentages of those aged 30 or older and those with depressive symptoms were higher among mothers who entered free comments in the survey sheet than those who did not. Mothers' concerns shifted from radiation-related problems to their own physical and mental health.
Fukushima mothers' concerns and associated factors after the Fukushima nuclear power plant disaster: analysis of qualitative data from the Fukushima Health Management Survey 2011–2013
Ito S, et al. Asia Pac J Public Health. 2017 Mar;29(2_suppl):151S-160S.

13 Major research papers based on the results of the surveys for four years were compiled.
Pregnancy and Birth Survey of the Fukushima Health Management Survey: Review of four surveys conducted annually after the disaster
Ishii K, et al. Asia Pac J Public Health. 2017 Mar;29(2_suppl):56S-62S. Review.

14 41.2% of the surveyed mothers felt worries due to prejudice and discrimination and their such worries are especially associated with their age, whether they have depressive symptoms, whether they received prenatal health checks as scheduled, and whether they have developed any new diseases or symptoms after the earthquake.
Overview of the Pregnancy and Birth Survey section of the Fukushima Health Management Survey: Focusing on mother's anxieties toward radioactive exposure
Ito S, et al. Journal of the National Institute of Public Health 2018 67 (1) 59-70

15 Mothers who used to live in the evacuation zone and those still living a refugee life are more likely to show depressive tendencies significantly. In particular, mothers who are living a refugee life separately from some of their family members and those who did not respond that they have good communications with their family members showed a higher percentage of having depressive symptoms.
Consideration of Refugee Life and Mental Health of Pregnant Women Caused by the Great East Japan Earthquake
Ota Misao, et al., Journal of the Japan Maternal and Infant Caring Association (2018)

16 Pregnant women who were in later pregnancy at the time of the earthquake showed increased risks of hypertensive disorders of pregnancy.
The effect of the Great East Japan Earthquake on Hypertensive Disorders during pregnancy: A study from the Fukushima Health Mangement Survey
Kyozuka H, et al. J Matern Fetal Neonatal Med. 2019 Apr 1:1-6.

17 In the case of mothers having only one child, worries over radiation are associated with their reluctance to have another child.
Factors associated with intention of future pregnancy among women affected by the Fukushima Nuclear Accident: Analysis of Fukushima Health Management Survey Data from 2012 to 2014
Goto A, et al. J Epidemiol. 2019 Aug 5;29(8):308-314

18 By combining a paper survey and an online survey, the response rate has been raised. Respondents to the paper-based survey generally expressed their feelings and opinions more clearly.
Development and Implementation of an Internet Survey to Assess Community Health in the Face of a Health Crisis: Data from the Pregnancy and Birth Survey of the Fukushima Health Management Survey, 2016
Nakano H, et al. Int J Environ Res Public Health. 2019 Jun 1;16(11). pii: E1946.

Report on the TUE Full-Scale Survey (the fourth-round survey)

As of September 30, 2021

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we continued the Full-Scale Survey (now fourth-round survey), following the Preliminary Baseline Survey for initial assessment of thyroid glands, and two Full-Scale Surveys (the second- and third-round surveys) to continuously monitor the status of thyroid glands.

1.2 Eligible Persons

All Fukushima residents ~18 years old or younger at the time of the Great East Japan Earthquake (those born between April 2, 1992 and April 1, 2012).

1.3 Implementation Period

FY2018 and FY2019, starting in April 2018:

1.3-1 For those 18 years old or younger

The examination will be carried out on a municipality-by-municipality basis in FY2018 and FY2019.

1.3-2 For those 19 – 24 years old

The examination will be carried out on an age group basis (i.e., school grade).

FY2018: those born in FY1996 and FY1998

FY2019: those born in FY1997 and FY1999

1.3-3 For those 25 years old and older

Those who are older than 20 are recommended to receive the examination every 5 years at the ages of 25, 30, and so on.

FY 2018: those born in FY1993

FY 2019: those born in FY1994

Results of the survey for those 25 years old will be reported separately.

1.4 Implementing Organizations (Number of medical facilities and institutions with agreements for conducting of thyroid examinations, as of September 30, 2021)

Fukushima Prefecture commissioned Fukushima Medical University (FMU) to conduct the survey in cooperation with organizations inside and outside Fukushima for the convenience of participants.

1.4-1 Primary examination facilities

Inside Fukushima Prefecture	84 medical facilities
Outside Fukushima Prefecture	127 medical facilities

1.4-2 Confirmatory examination facilities

Inside Fukushima Prefecture	5 medical facilities including FMU
Outside Fukushima Prefecture	37 medical facilities

1.5 Method

1.5-1 Primary examination

Ultrasonography of the thyroid gland

Assessments are made by specialists on the basis of the following criteria:

- Grade A

A1: No nodules/cysts

A2: Nodules ≤ 5.0 mm and/or cysts ≤ 20.0 mm

- Grade B

  Nodules ≥ 5.1 mm and/or cysts ≥ 20.1 mm

  Some A2 results may be re-classified as B results when clinically indicated.

- Grade C

  Prompt confirmatory examination warranted, based on clinical judgment of initial results.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood and urine tests, and fine needle aspiration cytology (FNAC) if needed for those with Grade B or C results.

Priority is given to those in urgent clinical need. A medical follow-up may be recommended based on confirmatory examination results.

1.5-3 Flow chart

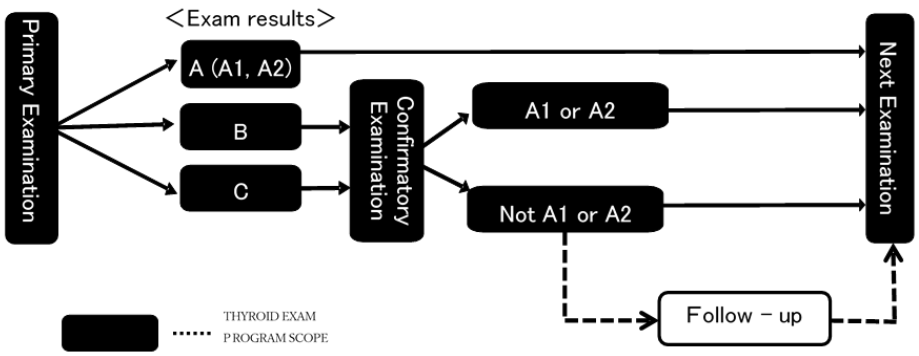


Fig.1 Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2018 and FY2019 are as follows:

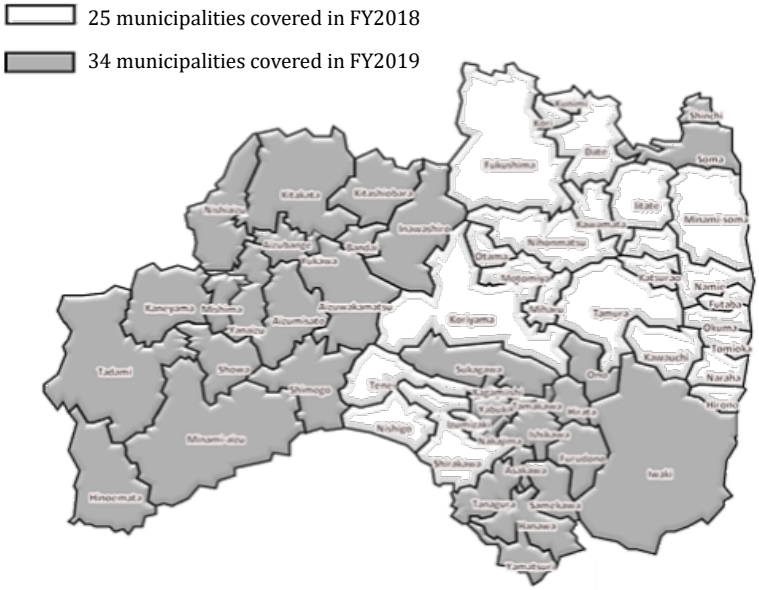


Fig.2 Municipalities surveyed in FY2018 and FY2019

Note: Primary examinations that had been scheduled in March 2020 at elementary and junior high schools in Iwaki City but postponed due to COVID-19 pandemic were conducted in September and October of 2020.

2. Results as of September 30, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

The examination was carried out for 183,383 participants (62.3%) by September 30, 2021 (Implementation status for each municipality and prefectures other than Fukushima are shown in Appendix 1 and Appendix 2).

Results of 183,373 participants (100.0%) have been finalized and individual result report were already sent to them. (The result for each municipality is shown in Appendix 3).

Of these, 61,700 (33.6%) had Grade A1 results, 120,281 (65.6%) had Grade A2, 1,392 (0.8%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)			Participants with finalized results (%)									
				Outside the prefecture			A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	(b/a)		c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
FY2018	168,025	107,988	(64.3)	7,221	107,980	(100.0)	36,888	(34.2)	70,387	(65.2)	705	(0.7)	0	(0.0)
FY2019	126,206	75,395	(59.7)	2,997	75,393	(100.0)	24,812	(32.9)	49,894	(66.2)	687	(0.9)	0	(0.0)
Total	294,231	183,383	(62.3)	10,218	183,373	(100.0)	61,700	(33.6)	120,281	(65.6)	1,392	(0.8)	0	(0.0)

Table 2 Number and percentage of participants with nodules/cysts

	Participants with finalized results	Participants with nodules/cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
FY2018	107,980	701	(0.6)	368	(0.3)	4	(0.0)	70,745	(65.5)
FY2019	75,393	686	(0.9)	300	(0.4)	1	(0.0)	50,237	(66.6)
Total	183,373	1,387	(0.8)	668	(0.4)	5	(0.0)	120,982	(66.0)

・ Percentages are rounded to a lower decimal place. This applies to other tables as well.
・ Those born between FY1992 and FY1995 are excluded as they are eligible for the Age 25 Survey. Results for Age 25 Survey participants will be reported separately.
・ Age 25 Survey for those born in FY1992 (approx. 23,000), FY1993 (approx. 22,000), FY1994 (approx. 22,000), and FY1995 (approx. 21,000) took place in FY2017, FY2018, FY2019, and FY2020, respectively.

2.1-2 Participation rates by age group

The participation rate for each age group as of April 1 of each year is shown in Table 3.

Table 3 Participation rates by age group

			Total	Age group		
FY2018	Age group*			6-11	12-17	18-24
	Survey population	(a)	168,025	56,936	64,826	46,263
	Participants	(b)	107,988	49,639	52,673	5,676
	Participation rate (%)	(b/a)	64.3	87.2	81.3	12.3
FY2019	Age group **			7-11	12-17	18-24
	Survey population	(a)	126,206	34,206	47,274	44,726
	Participants	(b)	75,395	30,187	39,253	5,955
	Participation rate (%)	(b/a)	59.7	88.3	83.0	13.3
Total	Survey population	(a)	294,231	91,142	112,100	90,989
	Participants	(b)	183,383	79,826	91,926	11,631
	Participation rate (%)	(b/a)	62.3	87.6	82.0	12.8

・ Age groups are formed with the age as of April 1 of each fiscal year.

2.1-3 Comparison of the third- and fourth-round survey results

Comparison of results of two Full-Scale Surveys (third- and fourth-round surveys) is shown in Table 4.

Among 163,665 participants with Grade A1 or A2 results in the third-round survey, 162,986 (99.6%) had Grade A1 or A2 results, and 679 (0.4%) had Grade B results in the fourth-round survey.

Among 731 participants with Grade B results in the third-round survey, 148 (20.2%) had Grade A1 or A2 results, and 583 (79.8%) had Grade B results in the fourth-round survey.

Table 4 Comparison of the third- and fourth-round survey results

			Results of the third-round survey*	Results of the fourth-round survey**			
				A		B	C
				A1	A2		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the third-round survey	A	A1	56,475 (100.0)	42,748 (75.7)	13,620 (24.1)	107 (0.2)	0 (0.0)
		A2	107,190 (100.0)	11,281 (10.5)	95,337 (88.9)	572 (0.5)	0 (0.0)
	B		731 (100.0)	12 (1.6)	136 (18.6)	583 (79.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		18,977 (100.0)	7,659 (40.4)	11,188 (59.0)	130 (0.7)	0 (0.0)
Total			183,373 (100.0)	61,700 (33.6)	120,281 (65.6)	1,392 (0.8)	0 (0.0)

* Results of the third-round survey, just from fourth-round survey participants with finalized results, not the breakdown of all third-round survey participants.
** Results of the fourth-round survey participants who were diagnosed for each grade in the third-round survey.

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By September 30, 2021, 1,031 (74.1%) of 1,392 people have received the examination. Of those, 1,004 (97.4%) had completed the entire process of the confirmatory examination. (Progress and results of the confirmatory examination are shown in Table 5.)

Of the aforementioned 1,004 participants, 94 (9.4%) were confirmed to meet Grade A diagnostic criteria by the primary examination standards (A1: 6, A2: 88) (including those with other thyroid conditions).

The remaining 910 (90.6%) were confirmed to be outside of A1/A2 criteria.

Table 5 Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (%)		Those with finalized results (%)									
				Total		A1		A2		Not A1 or A2			
												FNAC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
FY2018	705	523	(74.2)	513	(98.1)	3	(0.6)	46	(9.0)	464	(90.4)	47	(10.1)
FY2019	687	508	(73.9)	491	(96.7)	3	(0.6)	42	(8.6)	446	(90.8)	42	(9.4)
Total	1,392	1,031	(74.1)	1,004	(97.4)	6	(0.6)	88	(8.8)	910	(90.6)	89	(9.8)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 37 had nodules classified as malignant or suspicious for malignancy: 17 of them were male, and 20 were female.

Participants' age at the time of the confirmatory examination ranged from 9 to 24 years (mean age: 16.7 ± 3.0 years). The minimum and maximum tumor diameters were 6.1 mm and 29.4 mm. Mean tumor diameter was 13.4 ± 6.3 mm.

Of these 37 participants, 25 had Grade A results (A1: 6, A2: 19) and 9 had Grade B results in the third-round survey. The remaining 3 people did not participate in the third-round survey.

Table 6. Results of FNAC

A. Municipalities surveyed in FY 2018	
・Malignant or suspicious for malignancy：	21*
・Male to female ratio：	11:10
・Mean age±SD (min – max):	16.5±3.2 (11 – 24), 8.2±2.9 (2 – 14) at the time of disaster
・Mean tumor size:	11.9±5.1 mm (6.9 – 29.4mm)
B. Municipalities surveyed in FY 2019	
・Malignant or suspicious for malignancy：	16*
・Male to female ratio：	6:10
・Mean age±SD (min – max)：	17.0±2.8 (9 – 20), 8.1±2.9 (0 – 12) at the time of disaster
・Mean tumor size±SD (min – max):	15.3±7.4 mm (6.1 – 29.0 mm)
C. Total	
・Malignant or suspicious for malignancy：	37*
・Male to female ratio：	17:20
・Mean age±SD (min – max):	16.7±3.0 (9 – 24), 8.2±2.9 (0 – 14) at the time of disaster
・Mean tumor size±SD (min – max):	13.4±6.3 mm (6.1 – 29.4 mm)

* Surgical cases are as shown in Appendix 6.

2.2-3 Age distribution of malignant or suspicious-for-malignancy cases diagnosed by FNAC

Age distributions of 37 people with malignant or suspicious nodules based on their age as of March 11, 2011 is per Fig. 3, and age distribution based on their age at the time of confirmatory examination is per Fig. 4.

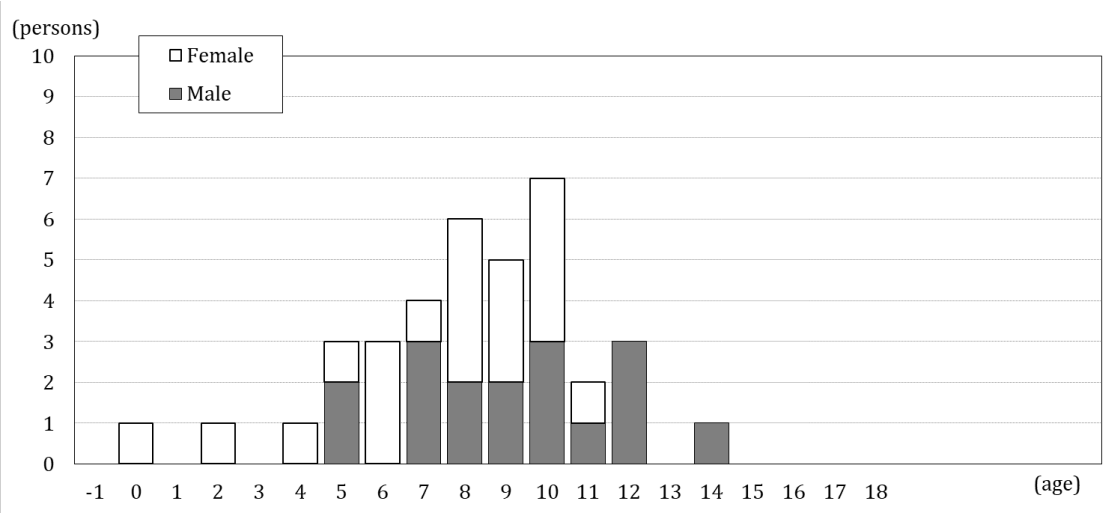


Fig.3 Age as of March 11, 2011

Note: Those aged between 15 and 18 at the time of disaster are not included in the fourth-round survey participants.
The horizontal axis begins at -1 to include Fukushima Prefecture residents born between April 2, 2011 and April 1, 2012.
*Those born between March 12 and April 1, 2011 are included in age 0.

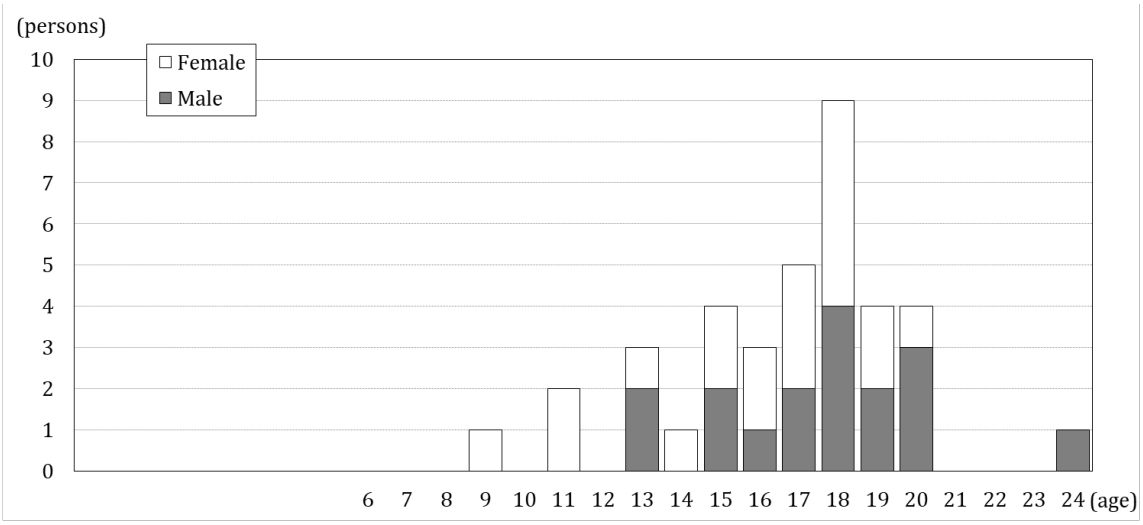


Fig.4 Age as of the date of confirmatory examination

2.2-4 Basic Survey results of those with malignant or suspicious nodules by FNAC

Of the 37 people with malignant or suspicious nodules, 19 people (51.4%) had participated in the Basic Survey (for external radiation dose estimation), and all 19 received their results. The highest effective dose documented was 2.4 mSv.

Table 7 A breakdown of dose estimates for Basic Survey participants

Effective dose (mSv)	Age at the time of the disaster									
	0–5		6–10		11–15		16–18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	0	2	3	4	0	0	0	0	3	6
1-1.9	0	0	2	1	2	0	0	0	4	1
2-4.9	2	0	0	2	1	0	0	0	3	2
5-9.9	0	0	0	0	0	0	0	0	0	0
10-19.9	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	2	2	5	7	3	0	0	0	10	9

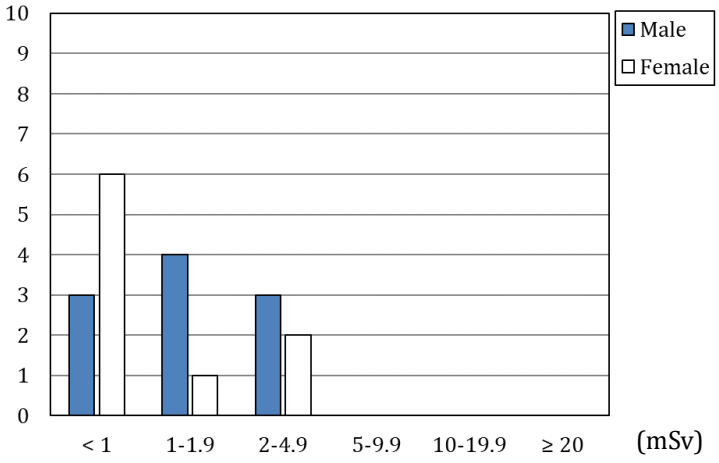


Fig. 5 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 8 Blood test results

	FT4[1] (ng/dL)	FT3[2] (pg/mL)	TSH[3] (μIU/mL)	Tg[4] (ng/mL)	TgAb[5] (IU/mL)	TPOAb[6] (IU/mL)
Reference Range	0.95–1.74[7]	2.13–4.07[7]	0.340–3.880[7]	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 37	1.3±0.1 (2.7%)	3.6±0.5 (0.0%)	1.3±0.7 (2.7%)	32.4±53.1 (24.3%)	37.8%	24.3%
Other: 925	1.2±0.2 (5.1%)	3.5±0.7 (6.8%)	1.2±0.8 (7.8%)	32.9±113.8 (16.8%)	6.8%	6.9%

Table 9 Urinary iodine test results (μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 37	35	94	200	432	1,783
Other: 915	32	119	193	346	31,920

1) FT4: free thyroxine; thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
2) FT3: free triiodothyronine; thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference interval varies according to age.

2.2-6 Confirmatory examination results by area

The percentages of those with malignant or suspicious nodules were 0.03% in Hamadori and 0.02% in Nakadori and Aizu, versus 0.01% in the 13 municipalities of the nationally-designated evacuation zone.

Table 10 Confirmatory examination results by area

	Number of participants	Those referred to confirmatory exam	Percentage of b (%)	Confirmatory exam participants	Malignant or suspicious cases	Percentage of c (%)
	a	b	b/a		c	c/a
13 municipalities[1]	22,565	151	0.7	123	2	0.01
Nakadori[2]	104,131	711	0.7	513	22	0.02
Hamadori[3]	33,756	323	1.0	245	9	0.03
Aizu[4]	22,931	207	0.9	150	4	0.02
Total	183,383	1,392	0.8	1,031	37	0.02

1) Tamura, Minami-soma, Date, Kawamata, Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao, Iitate
2) Fukushima, Koriyama, Shirakawa, Sukagawa, Nihonmatsu, Motomiya, Kori, Kunimi, Otama, Kagamiishi, Tenei, Nishigo, Izumizaki, Nakajima, Yabuki, Tanagura, Yamatsuri, Hanawa, Samegawa, Ishikawa, Tamakawa, Hirata, Asakawa, Furudono, Miharu, Ono
3) Iwaki, Soma, Shinchi
4) Aizuwakamatsu, Kitakata, Shimogo, Hinoemata, Tadami, Minami-aizu, Kitashiobara, Nishiaizu, Bandai, Inawashiro, Aizubange, Yugawa, Yanaizu, Mishima, Kaneyama, Showa, Aizumisato

3. Mental Health Care

We provide the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

After the examination, medical doctors offer person-to-person explanation of examination results, showing the ultrasound images in private consultation booths at examination venues set up in public facilities.

Consultation booths were set up at all venues for examinations conducted in and after April 2018; as of September 30, 2021, 2,648 of 2,649 participants (100%) have visited these consultation booths.

3.2 On-location Lectures and Information Sessions

To help participants or their parents/guardians improve their understanding of the thyroid examination, we have conducted on-location lectures and information sessions since April 2018.

By March 31, 2020, a total of 1,063 people had participated in these sessions, offered at 32 locations.

3.3 Support for Confirmatory Examination Participants

A support team has been set up within Fukushima Medical University to offer psychological support to address anxieties and concerns of confirmatory examination participants during examination. The team also answers questions and offers counseling via our website.

Since the start of the fourth-round survey, 483 participants (163 males and 320 females) have received support as of September 30, 2021. The number of support sessions provided was 957 in total. Of these, 480 (50.2%) received support at the participants' first examination and 477 (49.8%) at subsequent examinations.

For those who proceeded to regular insured medical care, the support team continues to provide support in cooperation with teams of medical staff at hospitals.

Appendix 1

Implementation status of the TUE primary examination by municipality

As of September 30, 2021

	Number of eligible persons	Participants		%	Number of participants and participation rate by age group[2)]			Participants living outside Fukushima	%
	a	b	Participation outside Fukushima[1)]	b/a	6–11	12–17	18–24	c[3)]	c/b
Municipalities surveyed in FY2018									
Kawamata	1,832	1,135	26	62.0	472 41.6	576 50.7	87 7.7	58	5.1
Namie	2,858	1,520	311	53.2	587 38.6	718 47.2	215 14.1	368	24.2
Iitate	852	544	19	63.8	220 40.4	279 51.3	45 8.3	29	5.3
Minamisoma	10,201	6,008	845	58.9	2,495 41.5	2,980 49.6	533 8.9	944	15.7
Date	8,781	5,929	194	67.5	2,333 39.3	3,042 51.3	554 9.3	225	3.8
Tamura	5,435	3,425	71	63.0	1,515 44.2	1,640 47.9	270 7.9	110	3.2
Hirono	801	448	35	55.9	183 40.8	215 48.0	50 11.2	38	8.5
Naraha	1,094	598	50	54.7	220 36.8	296 49.5	82 13.7	61	10.2
Tomioka	2,340	1,194	198	51.0	445 37.3	571 47.8	178 14.9	217	18.2
Kawauchi	267	152	10	56.9	55 36.2	85 55.9	12 7.9	14	9.2
Okuma	2,020	1,139	211	56.4	442 38.8	551 48.4	146 12.8	228	20.0
Futaba	978	364	63	37.2	146 40.1	179 49.2	39 10.7	66	18.1
Katsurao	174	109	3	62.6	39 35.8	57 52.3	13 11.9	5	4.6
Fukushima	43,241	29,060	1,848	67.2	11,774 40.5	14,384 49.5	2,902 10.0	1,976	6.8
Nihonmatsu	8,104	5,474	204	67.5	2,275 41.6	2,780 50.8	419 7.7	199	3.6
Motomiya	4,910	3,202	101	65.2	1,401 43.8	1,564 48.8	237 7.4	124	3.9
Otama	1,285	918	26	71.4	416 45.3	440 47.9	62 6.8	19	2.1
Koriyama	52,559	33,387	2,535	63.5	13,496 40.4	16,706 50.0	3,185 9.5	2,661	8.0
Koori	1,609	1,130	32	70.2	465 41.2	545 48.2	120 10.6	41	3.6
Kunimi	1,204	810	18	67.3	296 36.5	432 53.3	82 10.1	25	3.1
Tenei	839	525	8	62.6	224 42.7	262 49.9	39 7.4	12	2.3
Shirakawa	9,970	6,520	276	65.4	2,624 40.2	3,294 50.5	602 9.2	334	5.1
Nishigo	3,263	2,214	96	67.9	920 41.6	1,083 48.9	211 9.5	109	4.9
Izumizaki	1,025	667	4	65.1	277 41.5	336 50.4	54 8.1	7	1.0
Miharu	2,383	1,516	37	63.6	562 37.1	780 51.5	174 11.5	40	2.6
Subtotal	**168,025**	**107,988**	**7,221**	**64.3**	**43,882** **40.6**	**53,795** **49.8**	**10,311** **9.5**	**7,910**	**7.3**

*1) The number of participants who received the examination at facilities outside Fukushima (as of August 31, 2021)
*2) Split cells show the number of participants above the corresponding percentage.
*3) The number of participants who have resident registration outside of Fukushima.
Age groups are based on participants' age at the Full-Scale Survey (the fourth-round survey). This applies to other tables hereafter.

	Number of eligible persons	Participants		%	Participants and Participation rate[2] by age group			Participants living outside Fukushima	%
	a	b	Participation outside Fukushima[1]	b/a	6–11	12–17	18–24	c[3]	c/b
Municipalities surveyed in FY2019									
Iwaki	49,643	29,884	1,672	60.2	9,471 31.7	16,105 53.9	4,308 14.4	1,796	6.0
Sukagawa	12,378	7,554	222	61.0	2,764 36.6	3,935 52.1	855 11.3	250	3.3
Soma	5,507	3,193	215	58.0	1,263 39.6	1,647 51.6	283 8.9	251	7.9
Kagamiishi	2,133	1,323	33	62.0	491 37.1	702 53.1	130 9.8	34	2.6
Shinchi	1,162	679	33	58.4	233 34.3	375 55.2	71 10.5	35	5.2
Nakajima	849	505	8	59.5	192 38.0	265 52.5	48 9.5	8	1.6
Yabuki	2,671	1,687	28	63.2	727 43.1	837 49.6	123 7.3	38	2.3
Ishikawa	2,182	1,349	26	61.8	543 40.3	677 50.2	129 9.6	40	3.0
Yamatsuri	816	480	15	58.8	213 44.4	238 49.6	29 6.0	15	3.1
Asakawa	1,064	661	22	62.1	238 36.0	360 54.5	63 9.5	27	4.1
Hirata	969	608	8	62.7	245 40.3	308 50.7	55 9.0	6	1.0
Tanagura	2,399	1,468	31	61.2	589 40.1	782 53.3	97 6.6	34	2.3
Hanawa	1,299	707	16	54.4	289 40.9	371 52.5	47 6.6	22	3.1
Samegawa	519	307	7	59.2	137 44.6	156 50.8	14 4.6	6	2.0
Ono	1,487	879	9	59.1	354 40.3	448 51.0	77 8.8	12	1.4
Tamakawa	1,052	658	4	62.5	253 38.4	357 54.3	48 7.3	7	1.1
Furudono	817	522	20	63.9	208 39.8	251 48.1	63 12.1	15	2.9
Hinoemata	87	36	1	41.4	16 44.4	16 44.4	4 11.1	1	2.8
Minamiaizu	2,128	1,170	19	55.0	482 41.2	605 51.7	83 7.1	33	2.8
Kaneyama	147	72	1	49.0	21 29.2	41 56.9	10 13.9	2	2.8
Showa	115	68	3	59.1	31 45.6	33 48.5	4 5.9	3	4.4
Mishima	148	84	0	56.8	29 34.5	50 59.5	5 6.0	0	0.0
Shimogo	747	427	5	57.2	179 41.9	222 52.0	26 6.1	11	2.6
Kitakata	6,948	4,100	82	59.0	1,489 36.3	2,224 54.2	387 9.4	113	2.8
Nishiaizu	761	408	10	53.6	169 41.4	190 46.6	49 12.0	14	3.4
Tadami	555	335	6	60.4	138 41.2	170 50.7	27 8.1	7	2.1
Inawashiro	2,069	1,204	28	58.2	507 42.1	593 49.3	104 8.6	34	2.8
Bandai	477	289	8	60.6	109 37.7	157 54.3	23 8.0	9	3.1
Kitashiobara	445	280	3	62.9	115 41.1	145 51.8	20 7.1	6	2.1
Aizumisato	2,823	1,725	33	61.1	634 36.8	896 51.9	195 11.3	46	2.7
Aizubange	2,402	1,421	38	59.2	540 38.0	724 51.0	157 11.0	41	2.9
Yanaizu	464	284	2	61.2	115 40.5	143 50.4	26 9.2	3	1.1
Aizuwakamatsu	18,424	10,677	383	58.0	3,889 36.4	5,589 52.3	1,199 11.2	475	4.4
Yugawa	519	351	6	67.6	123 35.0	178 50.7	50 14.2	14	4.0
Subtotal	**126,206**	**75,395**	**2,997**	**59.7**	**26,796** **35.5**	**39,790** **52.8**	**8,809** **11.7**	**3,408**	**4.5**

Appendix 2

Implementation status of the TUE primary examination by prefecture

As of August 31, 2021

Prefecture	No. of medical facilities	Participants
Hokkaido	7	**279**
Aomori	2	**124**
Iwate	3	**250**
Miyagi	2	**2,255**
Akita	1	**156**
Yamagata	3	**472**
Ibaraki	4	**570**
Tochigi	8	**631**
Gunma	2	**173**
Saitama	3	**530**
Chiba	5	**471**
Tokyo	18	**1,718**
Kanagawa	6	**751**
Niigata	3	**448**
Toyama	2	**27**
Ishikawa	1	**35**

Prefecture	No. of medical facilities	Participants
Fukui	1	**18**
Yamanashi	2	**87**
Nagano	3	**123**
Gifu	1	**29**
Shizuoka	3	**83**
Aichi	5	**178**
Mie	1	**17**
Shiga	1	**14**
Kyoto	3	**80**
Osaka	8	**174**
Hyogo	2	**124**
Nara	2	**24**
Wakayama	1	**9**
Tottori	1	**7**
Shimane	1	**11**
Okayama	3	**47**

Prefecture	No. of medical facilities	Participants
Hiroshima	2	**27**
Yamaguchi	1	**21**
Tokushima	1	**5**
Kagawa	1	**25**
Ehime	1	**15**
Kochi	1	**11**
Fukuoka	3	**73**
Saga	1	**1**
Nagasaki	3	**25**
Kumamoto	1	**28**
Oita	1	**13**
Miyazaki	1	**20**
Kagoshima	1	**5**
Okinawa	1	**34**

Total	127	**10,218**

・The number of participants who received examination at medical facilities outside Fukushima.

Appendix 3

TUE primary examination results by municipality

As of September 30, 2021

	No. of partici-pants	Those with finalized results	No. of participants by grade				No. of partipants with nodules		No. of participants with cysts	
			%							
		b	A		B	C	%		%	
		%	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	a	b/a								
Municipalities surveyed in FY2018										
Kawamata	1,135	1,134	408	721	5	0	4	3	1	725
		99.9	36.0	63.6	0.4	0.0	0.4	0.3	0.1	63.9
Namie	1,520	1,520	499	1,007	14	0	14	6	0	1,012
		100.0	32.8	66.3	0.9	0.0	0.9	0.4	0.0	66.6
Iitate	544	544	203	337	4	0	4	2	0	340
		100.0	37.3	61.9	0.7	0.0	0.7	0.4	0.0	62.5
Minamisoma	6,008	6,007	2,116	3,847	44	0	44	29	0	3,863
		100.0	35.2	64.0	0.7	0.0	0.7	0.5	0.0	64.3
Date	5,929	5,929	2,043	3,851	35	0	35	19	0	3,872
		100.0	34.5	65.0	0.6	0.0	0.6	0.3	0.0	65.3
Tamura	3,425	3,425	1,271	2,132	22	0	22	10	0	2,142
		100.0	37.1	62.2	0.6	0.0	0.6	0.3	0.0	62.5
Hirono	448	448	169	273	6	0	6	3	0	273
		100.0	37.7	60.9	1.3	0.0	1.3	0.7	0.0	60.9
Naraha	598	598	208	388	2	0	2	1	0	388
		100.0	34.8	64.9	0.3	0.0	0.3	0.2	0.0	64.9
Tomioka	1,194	1,194	423	764	7	0	7	4	0	766
		100.0	35.4	64.0	0.6	0.0	0.6	0.3	0.0	64.2
Kawauchi	152	152	45	105	2	0	2	0	0	107
		100.0	29.6	69.1	1.3	0.0	1.3	0.0	0.0	70.4
Okuma	1,139	1,139	392	739	8	0	8	5	0	746
		100.0	34.4	64.9	0.7	0.0	0.7	0.4	0.0	65.5
Futaba	364	363	109	253	1	0	1	0	0	254
		99.7	30.0	69.7	0.3	0.0	0.3	0.0	0.0	70.0
Katsurao	109	109	34	74	1	0	1	0	0	74
		100.0	31.2	67.9	0.9	0.0	0.9	0.0	0.0	67.9
Fukushima	29,060	29,057	10,018	18,865	174	0	173	94	1	18,952
		100.0	34.5	64.9	0.6	0.0	0.6	0.3	0.0	65.2
Nihonmatsu	5,474	5,474	1,912	3,509	53	0	52	20	1	3,539
		100.0	34.9	64.1	1.0	0.0	0.9	0.4	0.0	64.7
Motomiya	3,202	3,202	1,124	2,064	14	0	14	8	0	2,066
		100.0	35.1	64.5	0.4	0.0	0.4	0.2	0.0	64.5
Otama	918	918	305	606	7	0	7	2	0	609
		100.0	33.2	66.0	0.8	0.0	0.8	0.2	0.0	66.3
Koriyama	33,387	33,386	10,984	22,186	216	0	215	116	1	22,300
		100.0	32.9	66.5	0.6	0.0	0.6	0.3	0.0	66.8
Koori	1,130	1,130	400	723	7	0	7	2	0	726
		100.0	35.4	64.0	0.6	0.0	0.6	0.2	0.0	64.2
Kunimi	810	810	261	540	9	0	9	1	0	547
		100.0	32.2	66.7	1.1	0.0	1.1	0.1	0.0	67.5
Tenei	525	525	192	329	4	0	4	2	0	333
		100.0	36.6	62.7	0.8	0.0	0.8	0.4	0.0	63.4
Shirakawa	6,520	6,519	2,276	4,201	42	0	42	25	0	4,222
		100.0	34.9	64.4	0.6	0.0	0.6	0.4	0.0	64.8
Nishigo	2,214	2,214	740	1,460	14	0	14	9	0	1,467
		100.0	33.4	65.9	0.6	0.0	0.6	0.4	0.0	66.3
Izumizaki	667	667	243	422	2	0	2	2	0	424
		100.0	36.4	63.3	0.3	0.0	0.3	0.3	0.0	63.6
Miharu	1,516	1,516	513	991	12	0	12	5	0	998
		100.0	33.8	65.4	0.8	0.0	0.8	0.3	0.0	65.8
Subtotal	107,988	107,980	36,888	70,387	705	0	701	368	4	70,745
		100.0	34.2	65.2	0.7	0.0	0.6	0.3	0.0	65.5

	No. of partici-pants	Those with finalized results	No. of participants by grade				No. of partipants with nodules		No. of participants with cysts	
			%							
		b	A		B	C	%		%	
		%	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	a	b/a								
Municipalities surveyed in FY2019										
Iwaki	29,884	29,882	9,432	20,172	278	0	277	118	1	20,302
		100.0	31.6	67.5	0.9	0.0	0.9	0.4	0.0	67.9
Sukagawa	7,554	7,554	2,376	5,108	70	0	70	45	0	5,141
		100.0	31.5	67.6	0.9	0.0	0.9	0.6	0.0	68.1
Soma	3,193	3,193	1,058	2,095	40	0	40	11	0	2,122
		100.0	33.1	65.6	1.3	0.0	1.3	0.3	0.0	66.5
Kagamiishi	1,323	1,323	410	900	13	0	13	6	0	905
		100.0	31.0	68.0	1.0	0.0	1.0	0.5	0.0	68.4
Shinchi	679	679	229	445	5	0	5	3	0	448
		100.0	33.7	65.5	0.7	0.0	0.7	0.4	0.0	66.0
Nakajima	505	505	175	327	3	0	3	1	0	330
		100.0	34.7	64.8	0.6	0.0	0.6	0.2	0.0	65.3
Yabuki	1,687	1,687	613	1,066	8	0	8	7	0	1,070
		100.0	36.3	63.2	0.5	0.0	0.5	0.4	0.0	63.4
Ishikawa	1,349	1,349	460	875	14	0	14	4	0	883
		100.0	34.1	64.9	1.0	0.0	1.0	0.3	0.0	65.5
Yamatsuri	480	480	151	329	0	0	0	2	0	329
		100.0	31.5	68.5	0.0	0.0	0.0	0.4	0.0	68.5
Asakawa	661	661	211	443	7	0	7	3	0	444
		100.0	31.9	67.0	1.1	0.0	1.1	0.5	0.0	67.2
Hirata	608	608	235	371	2	0	2	2	0	372
		100.0	38.7	61.0	0.3	0.0	0.3	0.3	0.0	61.2
Tanagura	1,468	1,468	541	917	10	0	10	7	0	925
		100.0	36.9	62.5	0.7	0.0	0.7	0.5	0.0	63.0
Hanawa	707	707	267	435	5	0	5	2	0	436
		100.0	37.8	61.5	0.7	0.0	0.7	0.3	0.0	61.7
Samegawa	307	307	130	174	3	0	3	0	0	175
		100.0	42.3	56.7	1.0	0.0	1.0	0.0	0.0	57.0
Ono	879	879	273	597	9	0	9	1	0	604
		100.0	31.1	67.9	1.0	0.0	1.0	0.1	0.0	68.7
Tamakawa	658	658	243	404	11	0	11	2	0	410
		100.0	36.9	61.4	1.7	0.0	1.7	0.3	0.0	62.3
Furudono	522	522	202	318	2	0	2	2	0	317
		100.0	38.7	60.9	0.4	0.0	0.4	0.4	0.0	60.7
Hinoemata	36	36	12	24	0	0	0	0	0	24
		100.0	33.3	66.7	0.0	0.0	0.0	0.0	0.0	66.7
Minamiaizu	1,170	1,170	436	722	12	0	12	3	0	728
		100.0	37.3	61.7	1.0	0.0	1.0	0.3	0.0	62.2
Kaneyama	72	72	22	49	1	0	1	0	0	50
		100.0	30.6	68.1	1.4	0.0	1.4	0.0	0.0	69.4
Showa	68	68	23	45	0	0	0	0	0	45
		100.0	33.8	66.2	0.0	0.0	0.0	0.0	0.0	66.2
Mishima	84	84	21	62	1	0	1	0	0	63
		100.0	25.0	73.8	1.2	0.0	1.2	0.0	0.0	75.0
Shimogo	427	427	162	261	4	0	4	0	0	263
		100.0	37.9	61.1	0.9	0.0	0.9	0.0	0.0	61.6
Kitakata	4,100	4,100	1,409	2,659	32	0	32	22	0	2,667
		100.0	34.4	64.9	0.8	0.0	0.8	0.5	0.0	65.0
Nishiaizu	408	408	149	256	3	0	3	1	0	258
		100.0	36.5	62.7	0.7	0.0	0.7	0.2	0.0	63.2
Tadami	335	335	117	217	1	0	1	0	0	218
		100.0	34.9	64.8	0.3	0.0	0.3	0.0	0.0	65.1
Inawashiro	1,204	1,204	418	770	16	0	16	4	0	783
		100.0	34.7	64.0	1.3	0.0	1.3	0.3	0.0	65.0
Bandai	289	289	83	202	4	0	4	1	0	204
		100.0	28.7	69.9	1.4	0.0	1.4	0.3	0.0	70.6
Kitashiobara	280	280	96	182	2	0	2	0	0	184
		100.0	34.3	65.0	0.7	0.0	0.7	0.0	0.0	65.7
Aizumisato	1,725	1,725	553	1,156	16	0	16	8	0	1,160
		100.0	32.1	67.0	0.9	0.0	0.9	0.5	0.0	67.2
Aizubange	1,421	1,421	445	965	11	0	11	6	0	973
		100.0	31.3	67.9	0.8	0.0	0.8	0.4	0.0	68.5
Yanaizu	284	284	103	181	0	0	0	0	0	181
		100.0	36.3	63.7	0.0	0.0	0.0	0.0	0.0	63.7
Aizuwakamatsu	10,677	10,677	3,615	6,962	100	0	100	36	0	7,015
		100.0	33.9	65.2	0.9	0.0	0.9	0.3	0.0	65.7
Yugawa	351	351	142	205	4	0	4	3	0	208
		100.0	40.5	58.4	1.1	0.0	1.1	0.9	0.0	59.3
Subtotal	75,395	75,393	24,812	49,894	687	0	686	300	1	50,237
		100.0	32.9	66.2	0.9	0.0	0.9	0.4	0.0	66.6
Total	183,383	183,373	61,700	120,281	1,392	0	1,387	668	5	120,982
		100.0	33.6	65.6	0.8	0.0	0.8	0.4	0.0	66.0

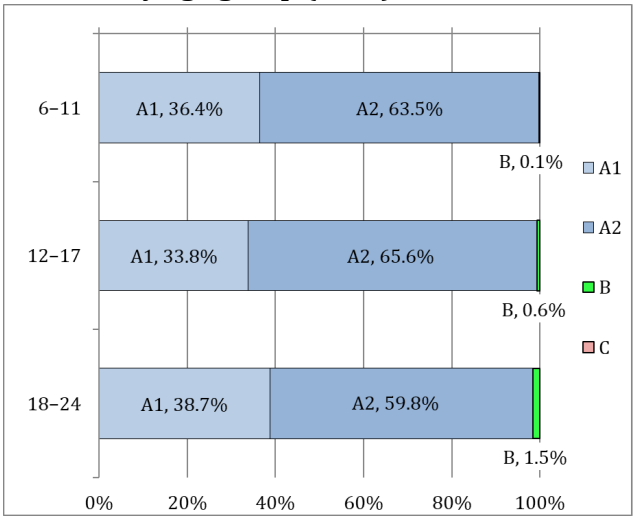
Appendix 4

1 TUE primary examination results by age and sex

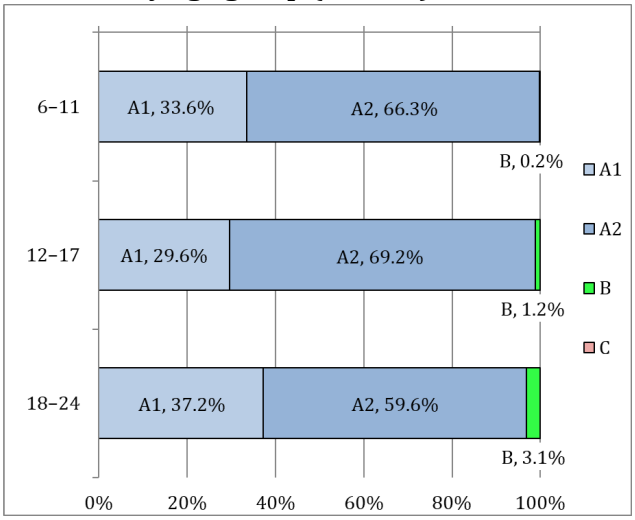
As of September 30, 2021

Grade / Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
6–11	13,179	11,563	24,742	23,008	22,832	45,840	39	57	96	0	0	0	36,226	34,452	70,678
12–17	16,059	13,652	29,711	31,182	31,853	63,035	284	555	839	0	0	0	47,525	46,060	93,585
18–24	3,424	3,823	7,247	5,285	6,121	11,406	136	321	457	0	0	0	8,845	10,265	19,110
Total	32,662	29,038	61,700	59,475	60,806	120,281	459	933	1,392	0	0	0	92,596	90,777	183,373

Results by age group (Male)



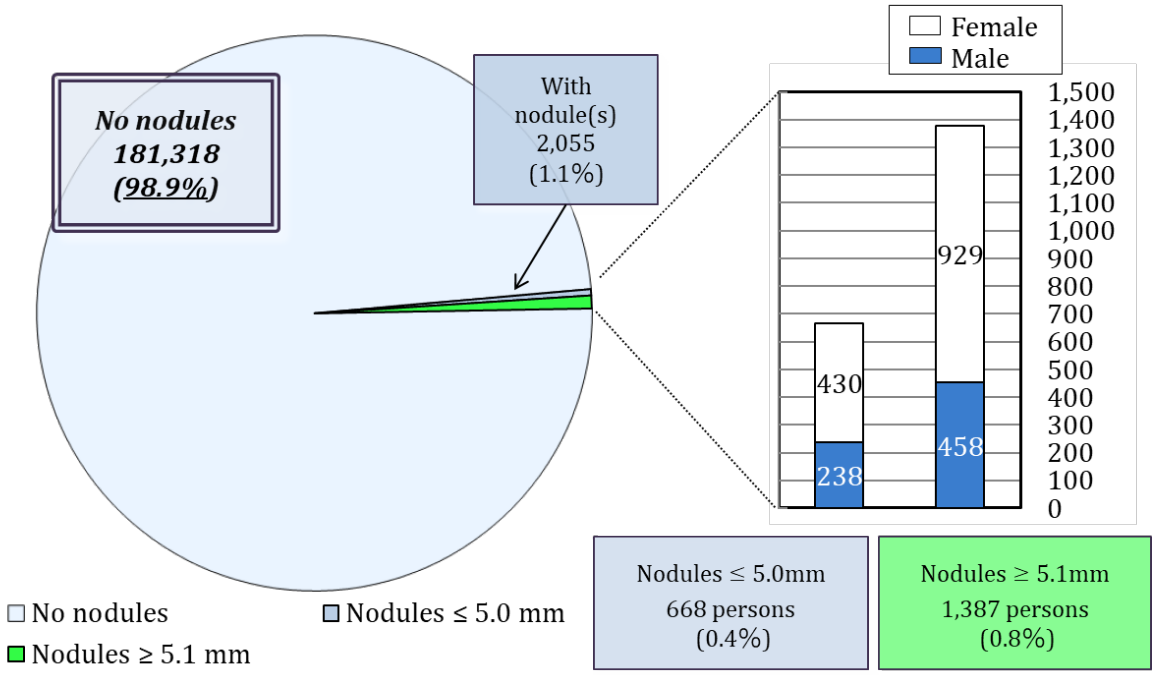
Results by age group (Female)

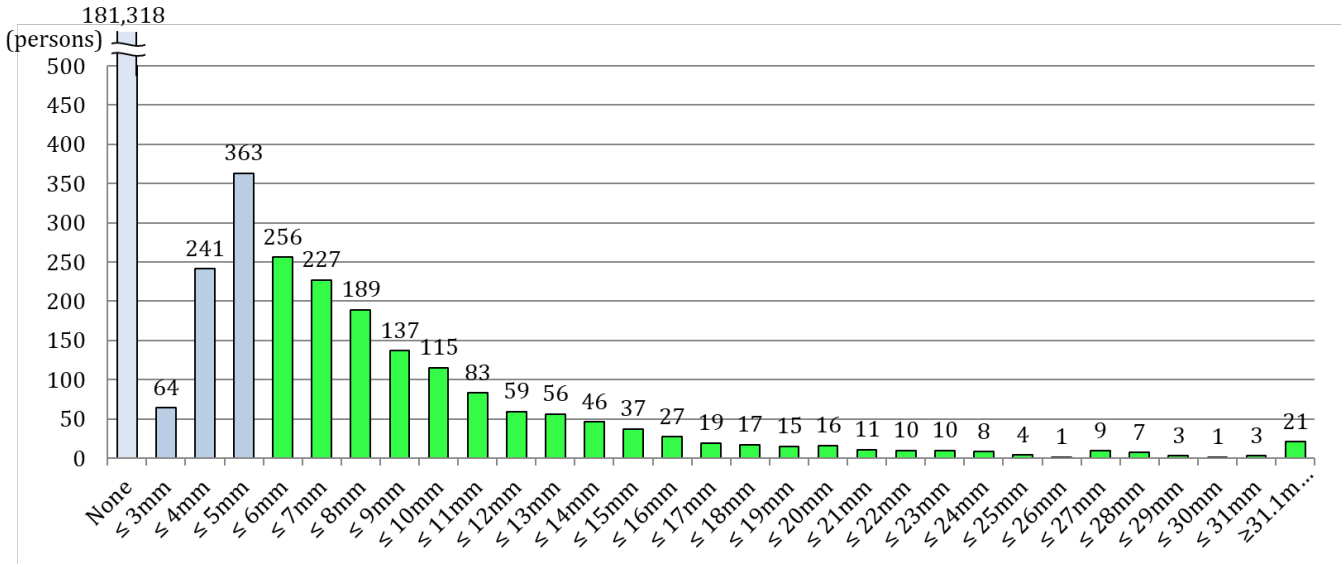


2 Nodule characteristics

(persons)
As of September 30, 2021

Nodule size	Total	Male	Female	Grade	
None	181,318	91,900	89,418	A1	98.9%
≤ 3.0mm	64	31	33	A2	0.0%
3.1–5.0mm	604	207	397		
5.1–10.0mm	924	313	611	B	0.0%
10.1–15.0mm	281	94	187		
15.1–20.0mm	94	27	67		
20.1–25.0mm	43	13	30		
≥ 25.1mm	45	11	34		
Total	183,373	92,596	90,777		

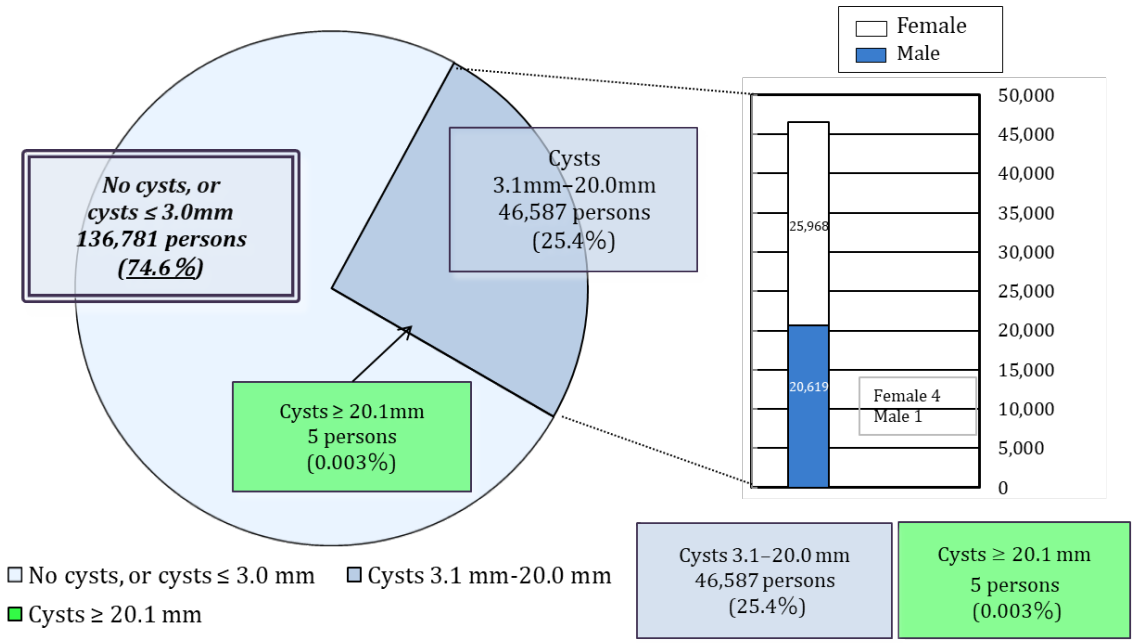


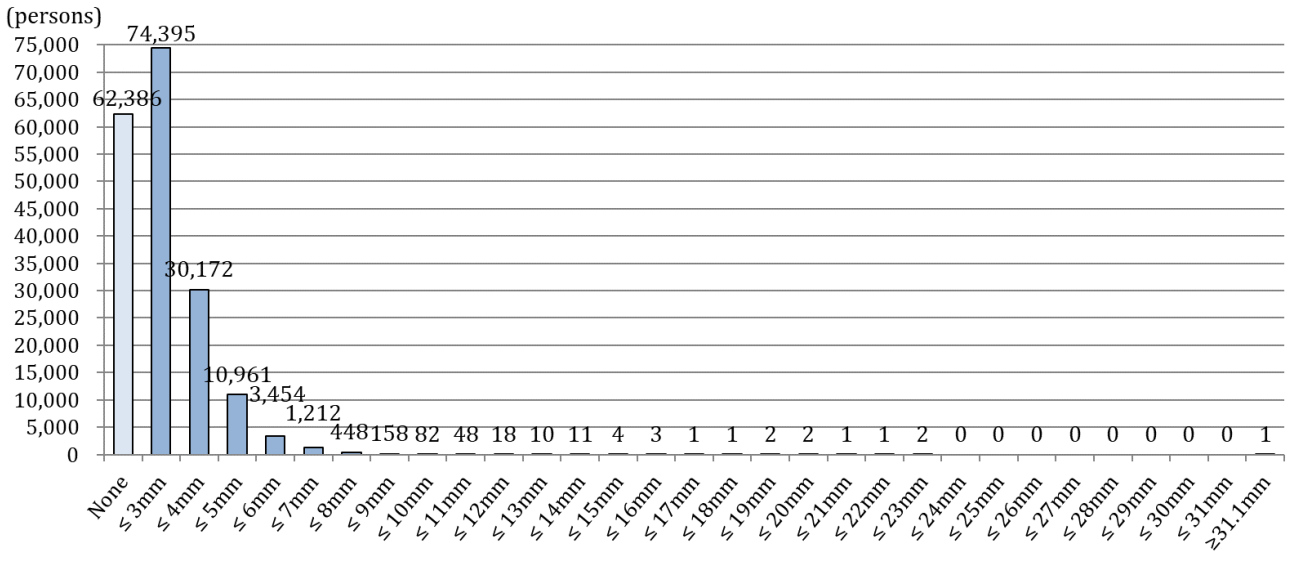


3 Cyst characteristics

(persons)
As of September 30, 2021

Cyst size	Total	Male	Female	Grade	
None	62,386	32,914	29,472	A1	74.6%
≤ 3.0mm	74,395	39,062	35,333	A2	25.4%
3.1–5.0mm	41,133	18,682	22,451		
5.1–10.0mm	5,354	1,903	3,451		
10.1–15.0mm	91	33	58		
15.1–20.0mm	9	1	8		
20.1–25.0mm	4	0	4	B	0.003%
≥ 25.1mm	1	1	0		
Total	183,373	92,596	90,777		





Appendix 5

Implementation status of the TUE confirmatory examination by area

As of September 30, 2021

	Primary exam participants	Those referred to confirmatory exam	Confirmatory exam participants				Those with finalized results				
			Total	Age 6-11	Age 12-17	≥ Age 18	Total	A1	A2	Not A1 or A2	
											FNAC
	a	b	c	d	e	f	g	h	i	j	k
		b/a (%)	c/b (%)	d/c (%)	e/c (%)	f/c (%)	g/c (%)	h/g (%)	i/g (%)	j/g (%)	k/j (%)
13 municipalities[1)]	22,565	151	123	7	71	45	119	1	8	110	7
		0.7	81.5	5.7	57.7	36.6	96.7	0.8	6.7	92.4	6.4
Nakadori[2)]	104,131	711	513	45	277	191	502	3	52	447	48
		0.7	72.2	8.8	54.0	37.2	97.9	0.6	10.4	89.0	10.7
Hamadori[3)]	33,756	323	245	10	143	92	240	1	17	222	23
		1.0	75.9	4.1	58.4	37.6	98.0	0.4	7.1	92.5	10.4
Aizu[4)]	22,931	207	150	7	82	61	143	1	11	131	11
		0.9	72.5	4.7	54.7	40.7	95.3	0.7	7.7	91.6	8.4
Total	183,383	1,392	1,031	69	573	389	1,004	6	88	910	89
		0.8	74.1	6.7	55.6	37.7	97.4	0.6	8.8	90.6	9.8

1) Tamura, Minami-soma, Date, Kawamata, Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao, Iitate
2) Fukushima, Koriyama, Shirakawa, Sukagawa, Nihonmatsu, Motomiya, Kori, Kunimi, Otama, Kagamiishi, Tenei, Nishigo, Izumizaki, Nakajima, Yabuki, Tanagura, Yamatsuri, Hanawa, Samegawa, Ishikawa, Tamakawa, Hirata, Asakawa, Furudono, Miharu, Ono
3) Iwaki, Soma, Shinchi
4) Aizuwakamatsu, Kitakata, Shimogo, Hinoemata, Tadami, Minami-aizu, Kitashiobara, Nishiaizu, Bandai, Inawashiro, Aizubange, Yugawa, Yanaizu, Mishima, Kaneyama, Showa, Aizumisato

Appendix 6

Surgical cases for malignancy or suspicion of malignancy

1. Municipalities surveyed in FY2018
   Malignant or suspicious for malignancy: 21 (17 surgical cases: 17 papillary thyroid carcinomas)
2. Municipalities surveyed in FY2019
   Malignant or suspicious for malignancy: 16 (15 surgical case: 15 papillary thyroid carcinomas)
3. Total
   Maalignant or suspicious for malignancy: 37 (32 surgical cases: 32 papillary thyroid carcinomas)

Report on the TUE Full-Scale Survey (the fifth-round survey)

As of September 30, 2021

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we continue the Full-Scale Survey (now fifth-round survey), following the Preliminary Baseline Survey for initial assessment of thyroid glands, and three Full-Scale Surveys (second-, third-, and fourth-round surveys) to continuously monitor the status of thyroid glands.

1.2 Eligible persons

All Fukushima residents ~18 years old or younger at the time of earthquake (those born between April 2, 1992 and April 1, 2012).

1.3 Implementation Period

FY2020 and FY2022, starting in April 2020:

1.3-1 For those 18 years old or younger

The examination implementation period covers 3 years, from FY2020 through FY2022.

1.3-2 For those 19 years old or older

The examination will be carried out on an age group basis (i.e., school grade).

FY2020: those born in FY1998 and FY2000
FY2021: those born in FY1999 and FY2001
FY2022: N/A

1.3-3 For those 25 years old or older

Those who are older than 20 are recommended to receive the examination every 5 years.

FY2020: those born in FY1995
FY2021: those born in FY1996
FY2022: those born in FY1997

Results of the survey for those 25 years old will be reported separately.

1.4 Implementing Organizations (Number of medical facilities with agreements for conducting thyroid examinations as of September 30, 2021)

Fukushima Prefecture commissioned Fukushima Medical University (FMU) to conduct the survey in cooperation with organizations inside and outside Fukushima for the convenience of participants (the number of medical facilities shown below is as of March 31, 2021).

1.4-1 Primary examination facilities

Inside Fukushima Prefecture	84
Outside Fukushima Prefecture	127

1.4-2 Confirmatory examination facilities

Inside Fukushima Prefecture	5 including FMU
Outside Fukushima Prefecture	37

1.5 Methods

1.5-1 Primary examination

Ultrasonography of the thyroid gland

Multiple specialists assess examination results based on the following criteria:

- Grade A
  A1: No nodules/cysts
  A2: Nodules ≤ 5.0 mm or cysts ≤ 20.0 mm
- Grade B

B: Nodules ≥ 5.1 mm or cysts ≥ 20.1 mm
Some A2 results may be re-classified as B results when clinically indicated.

-Grade C
C: Prompt confirmatory examination warranted, based on clinical judgment of initial results.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood and urine tests, and fine needle aspiration cytology (FNAC, if needed) for those with B or C test results.

Priority is given to those in urgent clinical need. A medical follow-up may be recommended based on confirmatory exam results.

1.5-3 Flow chart

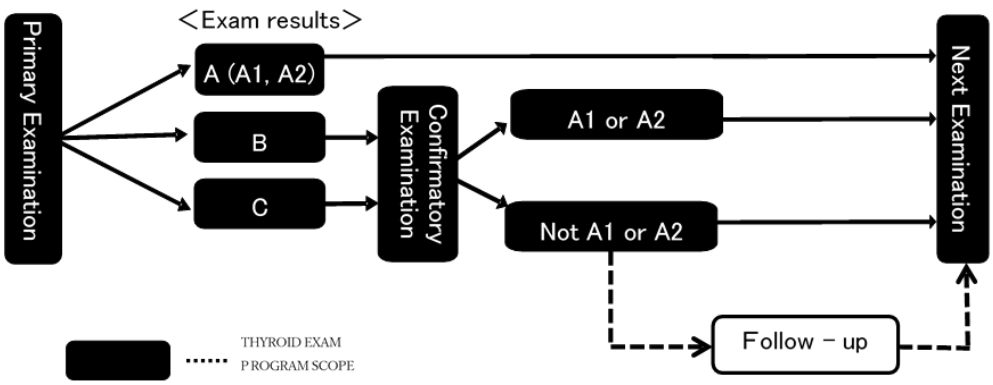


Fig. 1 Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2020 and FY2021 are as follows:

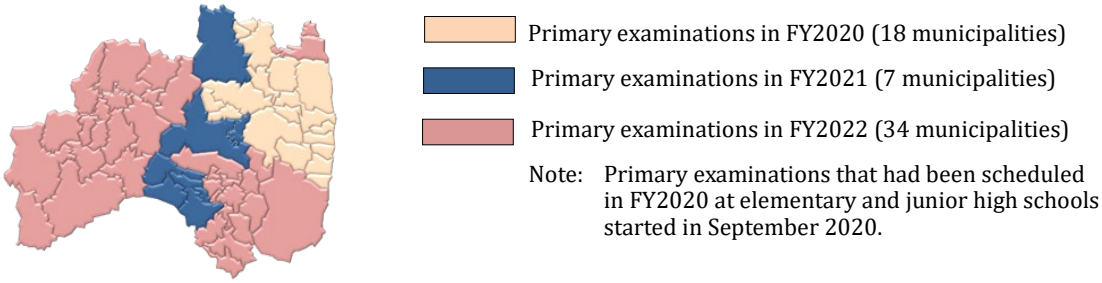


Fig. 2 Municipalities covered for primary examinations at elementary and junior high schools

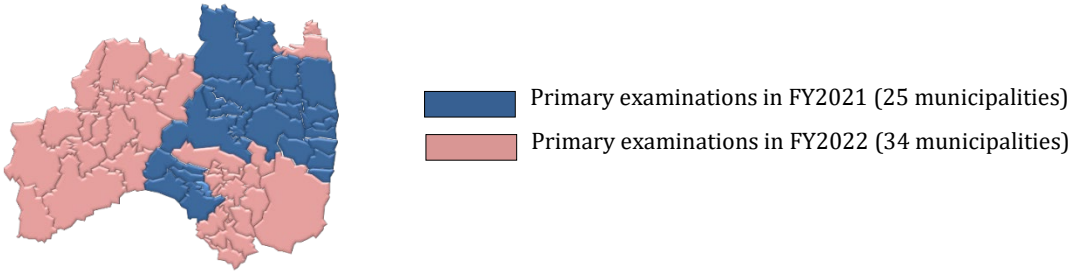


Fig. 3 Municipalities covered for primary examinations at high schools and other facilities

Results of these surveys were aggregated based on the year when examinations were originally scheduled, which may differ from the year in which some examinations were actually conducted.

2. Results as of September 30, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was carried out for 45,860 participants (18.1%) by September 30, 2021.

Results of 38,136 participants (83.2%) have been finalized and individual result reports were already sent to them.

Of these, 11,689 (30.7%) had Grade A1 results, 25,989 (68.1%) had Grade A2, 458 (1.2%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)		Participants with finalized results (%)				
			Outside the prefecture		A		Those referred to confirmatory exam	
					A1	A2	B	C
	a	b (b/a)		c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/c)
FY2020	144,868	39,686 (27.4)	4,516	33,142 (83.5)	10,116 (30.5)	22,690 (68.5)	336 (1.0)	0 (0.0)
FY2021	107,987	6,174 (5.7)	1,512	4,994 (80.9)	1,573 (31.5)	3,299 (66.1)	122 (2.4)	0 (0.0)
Total	252,855	45,860 (18.1)	6,028	38,136 (83.2)	11,689 (30.7)	25,989 (68.1)	458 (1.2)	0 (0.0)

Table 2 Number and proportion of participants with nodules/cysts
（See Appendix 1 for more details）

	Participants with finalized results	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	a	b (b/a)	c (c/a)	d (d/a)	e (e/a)
FY2020	33,142	336 (1.0)	159 (0.5)	1 (0.0)	22,868 (69.0)
FY2021	4,994	122 (2.4)	50 (1.0)	0 (0.0)	3,368 (67.4)
Total	38,136	458 (1.2)	209 (0.5)	1 (0.0)	26,236 (68.8)

- Proportions are rounded to a lower decimal place. This applies to other tables as well.
- Those who receive the examination at 5-year intervals (born between FY1992 and FY1997) are excluded. The results of examinations with 5-year intervals will be shown separately.
- Examinations for those born in FY1992 (approx. 23,000), FY1993 (approx. 22,000), FY1994 (approx. 22,000), FY1995 (approx. 21,000) took place in FY2017, FY2018, FY2019, and FY2020, respectively. Examinations for those born in FY1996 (approx. 21,000) and FY1997 (approx. 20,000) will be carried out in FY2021 and FY2022, respectively.

2.1-2 Participation rate by age group

The participation rate for each age group as of April 1 of each year is shown in Table 3.

Table 3 Participation rates by age group

			Total	Age group		
FY2020	Age group*			8-11	12-17	18-24
	Eligible persons	(a)	144,868	37,072	61,908	45,888
	Participants	(b)	39,686	16,983	19,218	3,485
	Participation rate (%)	(b/a)	27.4	45.8	31.0	7.6
FY2021	Age group **			9-11	12-17	18-24
	Eligible persons	(a)	107,987	19,724	45,057	43,206
	Participants	(b)	6,174	770	2,286	3,118
	Participation rate (%)	(b/a)	5.7	3.9	5.1	7.2
Total	Eligible persons	(a)	252,855	56,796	106,965	89,094
	Participants	(b)	45,860	17,753	21,504	6,603
	Participation rate (%)	(b/a)	18.1	31.3	20.1	7.4

・Age groups are formed with the age as of April 1 of each fiscal year.

2.1-3 Comparison of the fourth- and fifth-round survey results

Comparison of results of two Full-Scale Surveys (fourth- and fifth-round surveys) is shown in Table 4.

Among 35,175 participants with Grade A1 or A2 results in the fourth-round survey, 34,941 (99.3%) had Grade A1 or A2 results and 234 (0.7%) had Grade B results in the fifth-round survey.

Among 200 participants with Grade B results in the fourth-round survey, 30 (15.0%) had Grade A1 or A2 results and 170 (85.0%) had Grade B results in the fifth-round survey.

Table 4 Comparison of the fourth- and fifth-round surveys

			Results of the fourth-round survey*	**Results of the fifth-round survey****			
				A		**B**	**C**
				A1	**A2**		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the fourth-round survey	A	A1	12,162 (100.0)	8,687 (71.4)	3,430 (28.2)	45 (0.4)	0 (0.0)
		A2	23,013 (100.0)	2,043 (8.9)	20,781 (90.3)	189 (0.8)	0 (0.0)
	B		200 (100.0)	4 (2.0)	26 (13.0)	170 (85.0)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		2,761 (100.0)	955 (34.6)	1,752 (63.5)	54 (2.0)	0 (0.0)
Total			38,136 (100.0)	11,689 (30.7)	25,989 (68.1)	458 (1.2)	0 (0.0)

* Results of the fourth-round survey are from fifth-round survey participants with finalized results, not the breakdown of all fourth-round survey participants.

** Results of the fifth-round survey participants who were diagnosed for each grade in the fourth-round survey.

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By September 30, 2021, 238 (52.0%) of 458 eligible persons had participated in the confirmatory examination, and 210 (88.2%) of them had completed the entire procedure of the examination.

Of the aforementioned 210 participants, 22 (10.5%) were confirmed to meet A1 (2)or A2 (20) diagnostic criteria by the primary examination standards (including those with other thyroid conditions) after detailed examination; 188 (89.5%) were confirmed to be outside of A1/A2 criteria.

Table 5 Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (%)	Total	Those with finalized results (%)			
				A1	A2	Not A1 or A2	
							FNAC
	a	b (b/a)	c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/f)
FY2020	336	195 (58.0)	172 (88.2)	2 (1.2)	18 (10.5)	152 (88.4)	14 (9.2)
FY2021	122	43 (35.2)	38 (88.4)	0 (0.0)	2 (5.3)	36 (94.7)	3 (8.3)
Total	458	238 (52.0)	210 (88.2)	2 (1.0)	20 (9.5)	188 (89.5)	17 (9.0)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 6 people (1 male, 5 females) had nodules classified as malignant or suspicious for malignancy.

Participants' age at the time of the confirmatory examination ranged from 13 to 22 (mean age: 16.8±3.4 years). The minimum and maximum tumor diameters were 8.1 mm and 14.7 mm. Mean tumor diameter was 11.4±2.5 mm.

Of these 6 participants, 3 had Grade A (A1:1, A2:2), 2 had Grade B at the fourth-round survey, and remaining one person did not participate the Survey.

Table 6 Results of FNAC.

A. Municipality surveyed in FY2020	
・Malignant or suspicious for malignancy:	5*
・Male to female ratio:	1:4
B. Municipalities surveyed in FY2021	
・Malignant or suspicious for malignancy:	1*
・Male to female ratio:	0:1
C. Total	
・Malignant or suspicious for malignancy:	6*
・Male to female ratio:	1:5
・Mean age±SD (min – max)	16.8±3.4 (13 – 22), 6.7±3.8 (2 – 12) at the time of the earthquake
・Mean tumor size±SD (min – max)	11.4±2.5 mm (8.1 – 14.7 mm)

* Appendix 2 shows surgical cases.

2.2-3 Blood and urinary iodine test results

Table 7 Blood test results

	FT4[1] (ng/dL)	FT3[2] (pg/mL)	TSH[3] (μIU/mL)	Tg[4] (ng/mL)	TgAb[5] (IU/mL)	TPOAb[6] (IU/mL)
Reference Range	0.95–1.74[7]	2.13–4.07[7]	0.340–3.880[7]	≦ 33.7	< 28.0	< 16.0
Malignant or suspicious: 6	1.0±0.1 (33.3%)	3.3±0.5 (0.0%)	1.3±0.7 (16.7%)	31.7±26.1 (33.3%)	0.0%	16.7%
Others: 199	1.2±0.2 (7.5%)	3.6±0.5 (6.5%)	1.3±0.8 (7.5%)	33.9±93.0 (18.1%)	7.5%	9.5%

(person)

Table 8 Urinary iodine test results （μg/day）

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious 6 persons	61	102	464	1179	1311
Others 198 persons	24	115	194	289	12670

1) FT4: free thyroxine; thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
2) FT3: free triiodothyronine; thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference interval varies according to age.

3. Mental Health Care

We provide the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

After the examination, medical doctors offer person-to-person explanation on examination results, showing ultrasound images in private consultation booths at examination venues set up in public facilities.

Consultation booths were set up at all venues for examinations conducted in and after April 2020, and as of September 30, 2021, all 1,397 participants (100%) have visited these consultation booths.

3.2 On-location Lectures and Information Sessions

To help participants and their parents/guardians improve their understanding of the thyroid examination, we have conducted on-location lectures and information sessions since April 2018.

By September 30, 2021, a total of 392 people participated in these sessions offered at 6 locations.

Since the start of these sessions, 15,478 people have participated.

3.3 Support for Confirmatory Examination Participants

A support team has been set up within Fukushima Medical University to offer psychological support to address the anxieties and concerns of confirmatory examination participants during examination. The team also answers questions and offers counseling via our website.

Since the start of the fifth-round survey, 141 participants (49 males and 92 females) have received support as of September 30, 2021. The number of support sessions provided was 236 in total. Of these, 141 (59.7%) received support at the participants' first examination and 95 (40.3%) at subsequent examinations.

For those who proceeded to regular insured medical care, the support team continues to provide support in cooperation with teams of medical staff at hospitals.

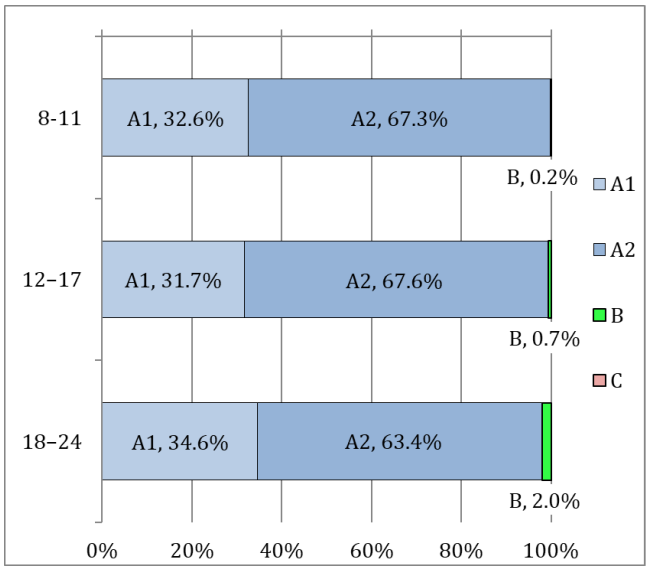
Appendix 1

1. Implementation status of the TUE primary examination by municipality

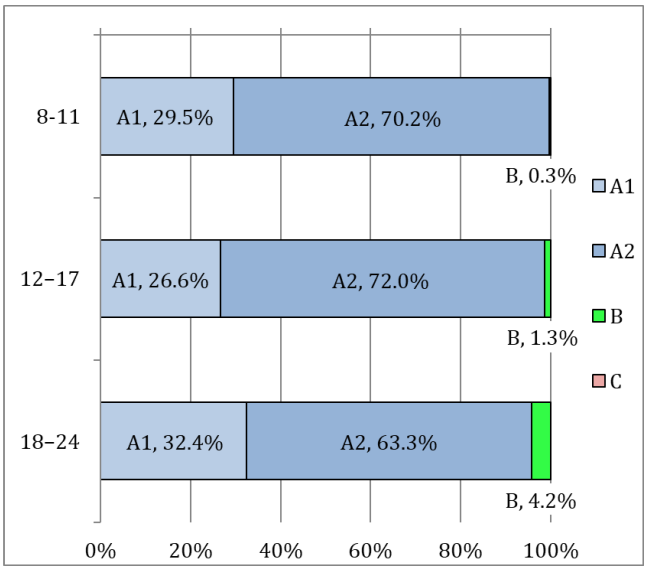
As of September 30, 2021

Grade / Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
8–11	2,052	1,769	3,821	4,239	4,201	8,440	11	17	28	0	0	0	6,302	5,987	12,289
12–17	2,888	2,413	5,301	6,154	6,527	12,681	61	120	181	0	0	0	9,103	9,060	18,163
18–24	1,173	1,394	2,567	2,146	2,722	4,868	67	182	249	0	0	0	3,386	4,298	7,684
Total	6,113	5,576	11,689	12,539	13,450	25,989	139	319	458	0	0	0	18,791	19,345	38,136

Results by age group (Male)



Results by age group (Female)

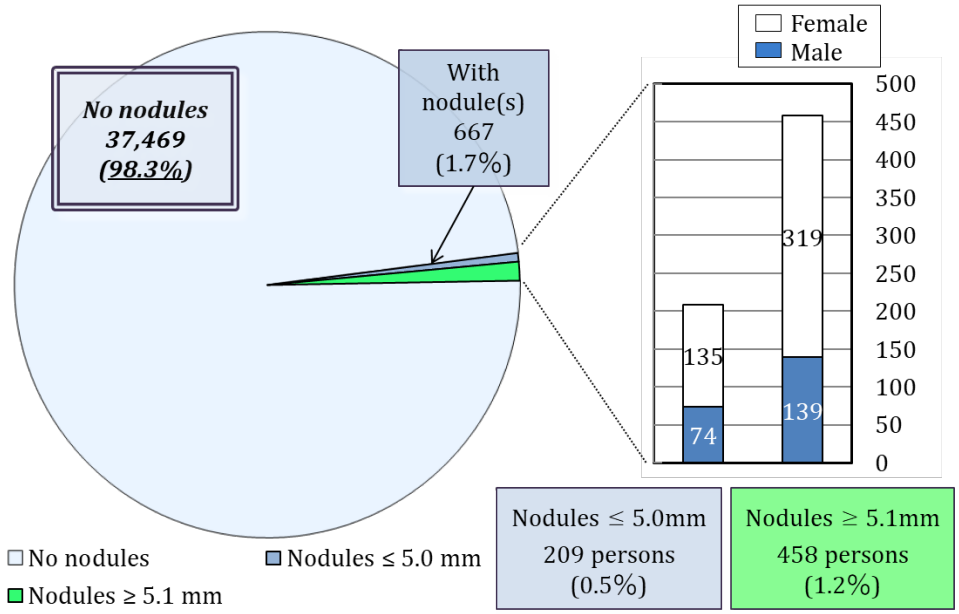


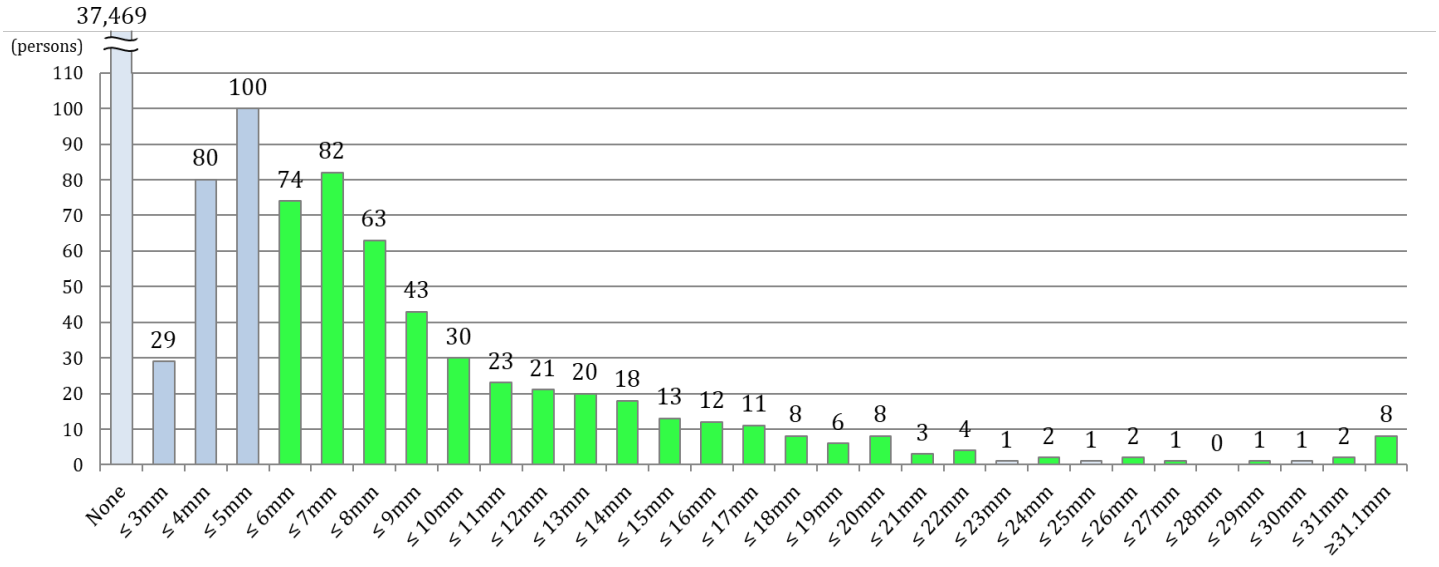
2. Nodule characteristics

(persons)

As of September 30, 2021

Nodule size	Total	Male	Female	Grade	
None	37,469	18,578	18,891	A1	98.3%
≤ 3.0mm	29	10	19	A2	0.5%
3.1–5.0mm	180	64	116		
5.1–10.0mm	292	87	205	B	1.2%
10.1–15.0mm	95	25	70		
15.1–20.0mm	45	17	28		
20.1–25.0mm	11	4	7		
≥ 25.1mm	15	6	9		
Total	38,136	18,791	19,345		

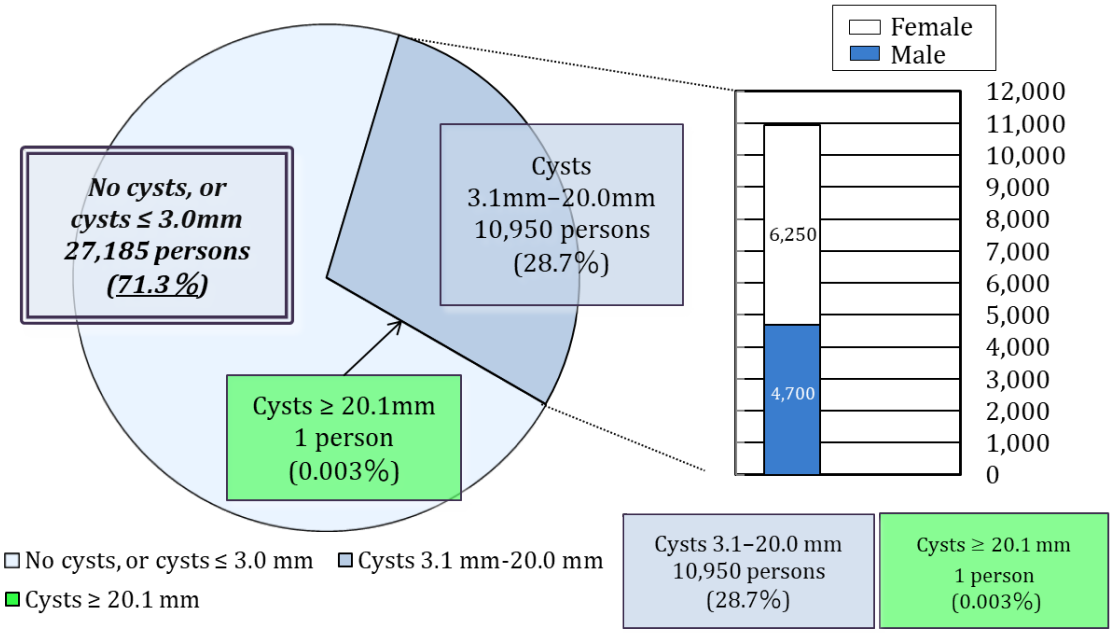


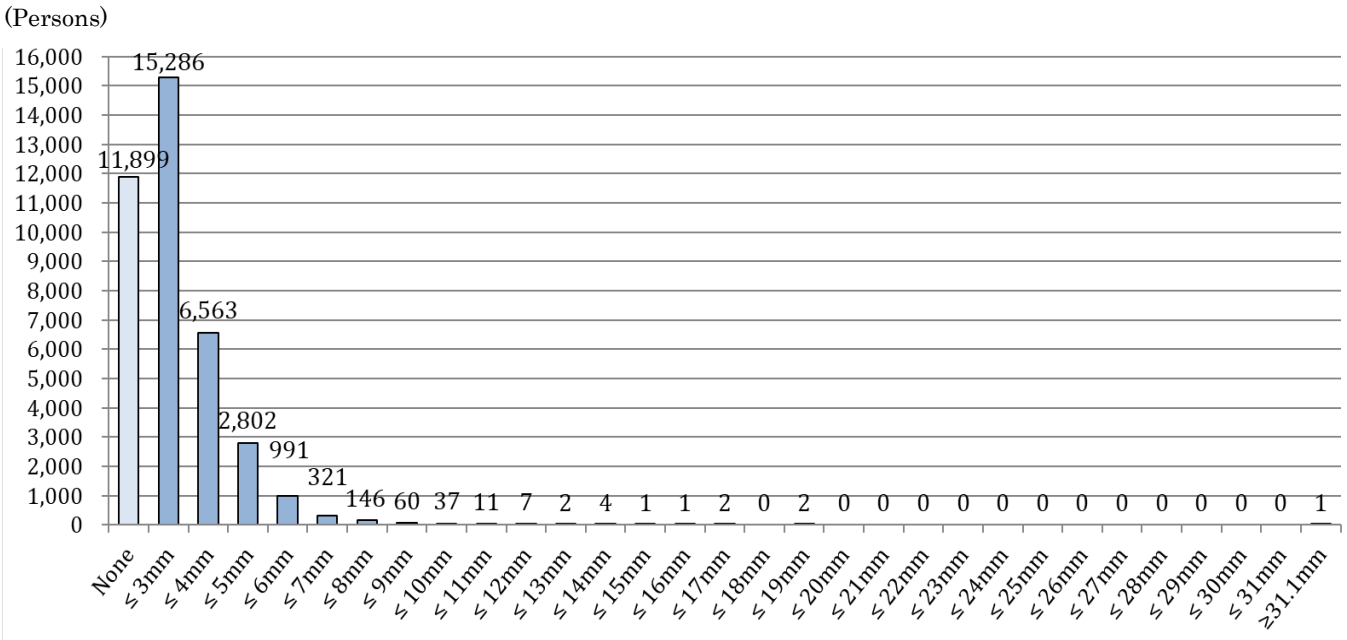


3. Cyst characteristics

As of September 30, 2021
(persons)

Cyst size	Total	Male	Female	Grade	
None	11,899	6,189	5,710	A1	71.3%
≤ 3.0mm	15,286	7,902	7,384	A2	28.7%
3.1–5.0mm	9,365	4,163	5,202		
5.1–10.0mm	1,555	532	1,023		
10.1–15.0mm	25	5	20		
15.1–20.0mm	5	0	5		
20.1–25.0mm	0	0	0	B	0.003%
≥ 25.1mm	1	0	1		
Total	38,136	18,791	19,345		





Appendix 2

Surgical cases for malignancy or suspicion of malignancy

1. Municipalities surveyed in FY2020	
Malignant or suspicious for malignancy:	5 (Surgery cases: 2, Papillary thyroid carcinoma: 2)
2. Municipalities surveyed in FY2021	
Malignant or suspicious for malignancy:	1 (Surgery cases: 1, Papillary thyroid carcinoma: 1)
3. Total	
Malignant or suspicious for malignancy:	6 (Surgery cases: 3, Papillary thyroid carcinoma: 3)

Report on the TUE Full-Scale Survey (Survey for Age 25+)

As of September 30, 2021

1. Summary

1.1 Eligible Persons

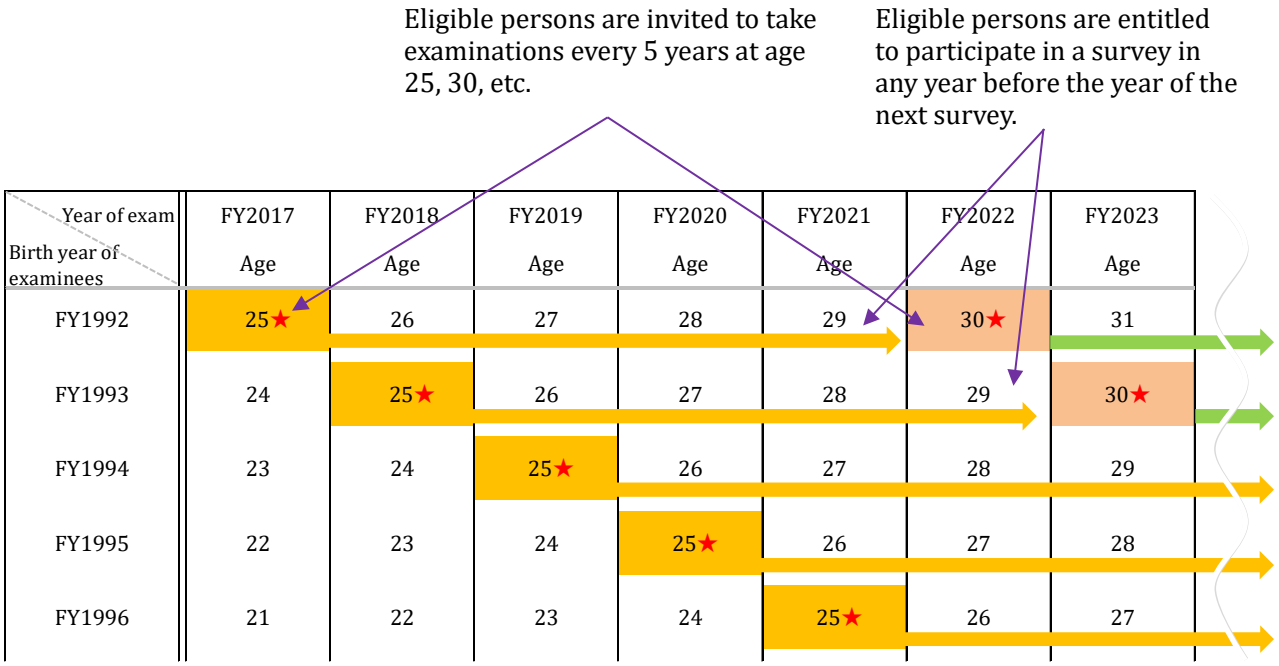
Among Fukushima residents 18 years old or younger at the time of disaster (born between April 2, 1992 and April 1, 2012), those who turn 25 years old during each fiscal year, including those who moved out of the prefecture, are invited to receive a thyroid ultrasound examination (TUE).

Persons born in FY1996 are among those eligible for the Survey for Age 25, but participation rate was low. Therefore, this report includes the status of the following participants groups:

- Those born in FY1992 (between April 2, 1992 and April 1, 1993)
- Those born in FY1993 (between April 2, 1993 and April 1, 1994)
- Those born in FY1994 (between April 2, 1994 and April 1, 1995)
- Those born in FY1995 (between April 2, 1995 and April 1, 1996)

1.2 Implementation Period

The Survey for Age 25+ (hereinafter "Age 25+ Survey") started in FY2017 for those who turn 25 years old during each fiscal year. If residents cannot receive the examination in the year they turn 25, they are entitled to one any time through the fiscal year prior to the year they turn 30 (see Fig. 1 for the implementation schedule of Age 25+ Survey).



- Beginning in FY2017, examinations are offered to those who turn age 25 in each fiscal year.
- Invitations for the examination will be sent to those who turn age 25 in the fiscal year marked with ★.

Fig. 1 Implementation schedule for Age 25+ Survey

2. Results as of September 30, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

Primary examinations for the Age 25 Survey started in May 2017 for those who turned 25 years old in FY2017 (those born between FY1992 and FY1995), of whom 8,163 (9.3%) participated.

Results of 8,114 participants (99.4% of 8,163) have been finalized and individual results reports have been sent to them.

Of these, 3,464 (42.7%) had Grade A1 results, 4,236 (52.2%) had Grade A2, 414 (5.1%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)		Participants with finalized results (%)				
					A		Those referred to confirmatory exam	
					A1	A2	B	C
	a	b (b/a)	Outside the prefecture	c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/c)
Born in FY1992	22,653	2,327 (10.3)	761	2,324 (99.9)	973 (41.9)	1,248 (53.7)	103 (4.4)	0 (0.0)
Born in FY1993	21,890	2,229 (10.2)	813	2,224 (99.8)	1,008 (45.3)	1,106 (49.7)	110 (4.9)	0 (0.0)
Born in FY1994	22,094	1,768 (8.0)	652	1,754 (99.2)	733 (41.8)	930 (53.0)	91 (5.2)	0 (0.0)
Born in FY1995	21,056	1,839 (8.7)	659	1,812 (98.5)	750 (41.4)	952 (52.5)	110 (6.1)	0 (0.0)
Total	87,693	8,163 (9.3)	2,885	8,114 (99.4)	3,464 (42.7)	4,236 (52.2)	414 (5.1)	0 (0.0)

Table 2 Number and percentage of participants with nodules/cysts
(Detailed results are shown in Appendix 1)

	Participants with finalized results	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	a	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Those born in FY1992	2,324	102 (4.4)	51 (2.2)	1 (0.0)	1,294 (55.7)
Those born in FY1993	2,224	110 (4.9)	38 (1.7)	0 (0.0)	1,152 (51.8)
Those born in FY1994	1,754	91 (5.2)	35 (2.0)	0 (0.0)	981 (55.9)
Those born in FY1995	1,812	108 (6.0)	32 (1.8)	2 (0.1)	1,003 (55.4)
Total	8,114	411 (5.1)	156 (1.9)	3 (0.0)	4,430 (54.6)

* Percentages are rounded to one decimal place. This applies to other tables.
**The number of persons eligible for and receiving examination of Age 25 Survey will be added for each fiscal year from now on.

2.1-2 Comparison with previous examination results

Comparison of results of the Age 25 Survey and previous surveys is shown in Table 3.

Among 4,973 participants with Grade A1 or A2 results in the previous survey, 4,837 (97.3%) had Grade A1 or A2 results and 136 (2.7%) had Grade B results in the Age 25 Survey.

Among 164 participants with Grade B results in the previous survey, 44 (26.8%) had Grade A (A1 or A2) results and 120 (73.2%) had Grade B results in the Age 25 Survey.

Table 3 Comparison with the previous survey results

			Results of the previous survey*	Results of the Age 25 survey**			
				A		B	C
				A1	A2		
			a	b	c	d	e
			(%)	(b/a)	(c/a)	(d/a)	(e/a)
Results of the previous survey	A	A1	1,986 (100.0)	1,616 (81.4)	349 (17.6)	21 (1.1)	0 (0.0)
		A2	2,987 (100.0)	487 (16.3)	2,385 (79.8)	115 (3.9)	0 (0.0)
	B		164 (100.0)	4 (2.4)	40 (24.4)	120 (73.2)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		2,977 (100.0)	1,357 (45.6)	1,462 (49.1)	158 (5.3)	0 (0.0)
Total			8,114 (100.0)	3,464 (42.7)	4,236 (52.2)	414 (5.1)	0 (0.0)

* Previous survey results of participants with finalized Age 25 Survey results(person)
** Results of the Age 25 Survey participants who were diagnosed with each grade in the previous survey. Lower figures in parentheses are their proportion (%).

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 414 eligible persons, 328 (79.2%) participated, of whom 304 (92.7%) completed the entire process of the confirmatory examination.

Of the aforementioned 304 participants, 23 (7.6%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (2 A1 and 21 A2, including those with other thyroid conditions). The remaining 281 (92.4%) were confirmed to be outside of A1/A2 criteria.

Table 4 Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (%)	Total	Those with finalized results (%)			
				A1	A2	Not A1 or A2	
							FNAC
	a	b (b/a)	c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/f)
Those born in FY1992	103	86 (83.5)	82 (95.3)	0 (0.0)	4 (4.9)	78 (95.1)	8 (10.3)
Those born in FY1993	110	90 (81.8)	89 (98.9)	1 (1.1)	8 (9.0)	80 (89.9)	7 (8.8)
Those born in FY1994	91	71 (78.0)	69 (97.2)	1 (1.4)	6 (8.7)	62 (89.9)	6 (9.7)
Those born in FY1995	110	81 (73.6)	64 (79.0)	0 (0.0)	3 (4.7)	61 (95.3)	4 (6.6)
Total	414	328 (79.2)	304 (92.7)	2 (0.7)	21 (6.9)	281 (92.4)	25 (8.9)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 13 had nodules classified as malignant or suspicious for malignancy: 4 of them were male and 9 were female.

Participants' age at the time of the confirmatory examination ranged from 24 to 27 years (mean age: 25.3 ± 0.8 years). The minimum and maximum tumor diameters were 6.2 mm and 49.9 mm. Mean tumor diameter was 16.9 ± 12.9 mm.

Of these 13 participants, 2 had Grade A2 results and 3 had Grade B results in the previous survey. The remaining 8 people did not participate in the previous survey.

Table 5. Results of FNAC

Among those who underwent the Age 25 Survey:	
・Malignant or suspicious for malignancy:	13*
・Male to female ratio:	4:9
・Mean age±SD (min – max):	25.3±0.8 (24 – 27), 16.5±1.0 (15 – 18) at the time of disaster
・Mean tumor size±SD (min – max):	16.9±12.9 mm (6.2-49.9 mm)

* Surgical cases are as shown in Appendix 2.

2.2-3 Age distribution of malignant or suspicious-for-malignancy cases diagnosed by FNAC

Age distribution of 13 people with malignant or suspicious nodules based on their age as of March 11, 2011 is per Fig. 2, and age distribution based on their age at the time of confirmatory examination is per Fig. 3.

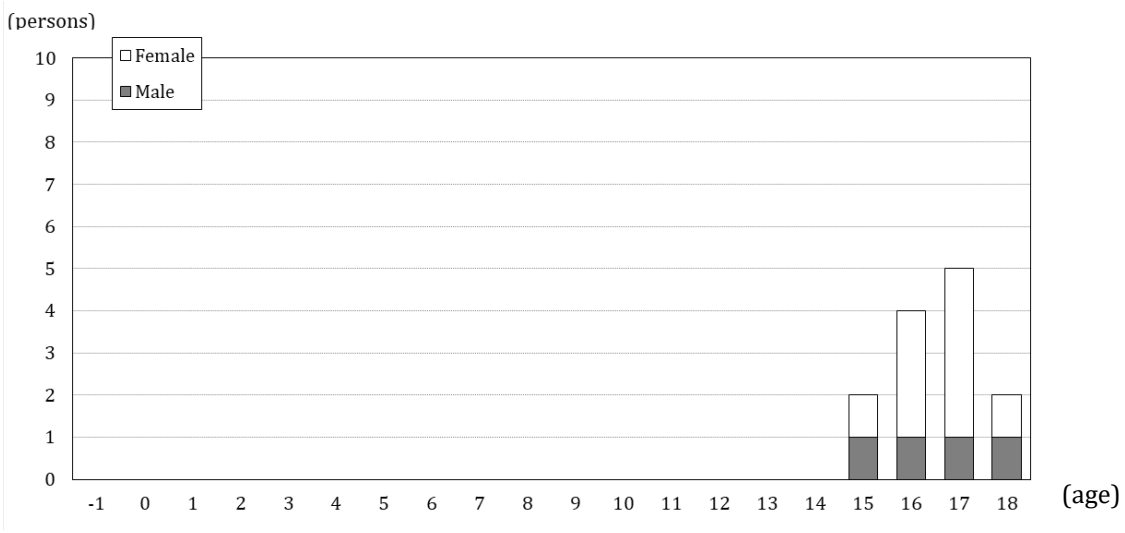


Fig.2 Age as of March 11, 2011

Note: Those aged -1 through 13 at the time of disaster are not included among participants of the Age 25 survey that covers those born in FY1992 through FY1995.
The horizontal axis begins at -1 to include Fukushima Prefecture residents born between April 2, 2011 and April 1, 2012.
*Those born between March 12 and April 1, 2011 are categorized as age 0.

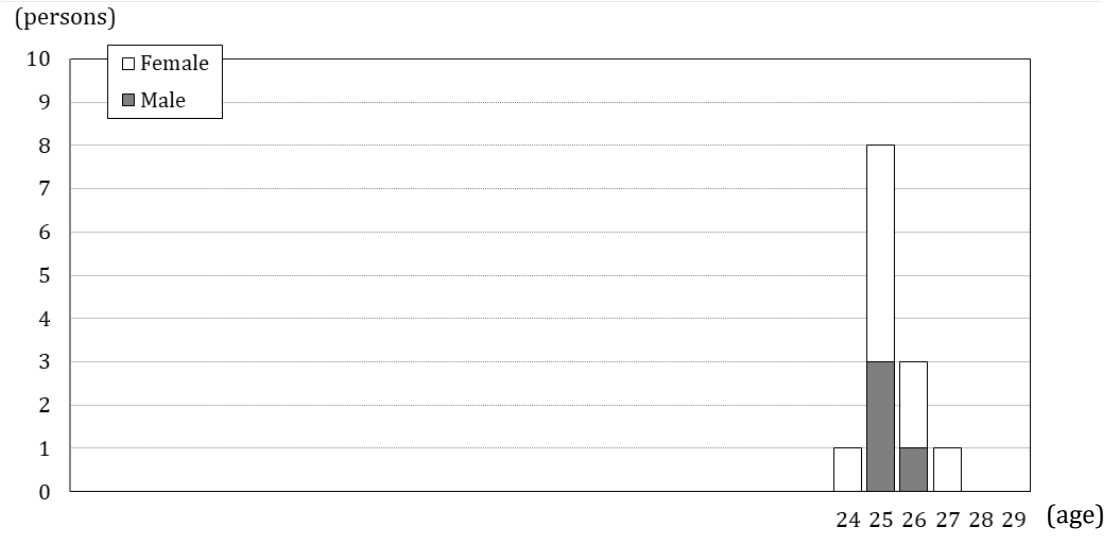


Fig.3 Age at the time of confirmatory examination

2.2-4 Basic Survey results of those with malignant or suspicious nodules by FNAC

Of the 13 people with malignant or suspicious nodules, 7 people (53.8%) had participated in the Basic Survey (for external radiation dose estimation), and all 7 received their results. The highest effective dose documented was 1.8 mSv.

Table 6 A breakdown of dose estimates for Basic Survey participants

Effective dose (mSv)	Age at the time of the disaster									
	0-5		6-10		11-15		16-18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	0	0	0	0	0	0	1	2	1	2
1-1.9	0	0	0	0	1	1	1	1	2	2
2-4.9	0	0	0	0	0	0	0	0	0	0
5-9.9	0	0	0	0	0	0	0	0	0	0
10-19.9	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	2	3	3	4

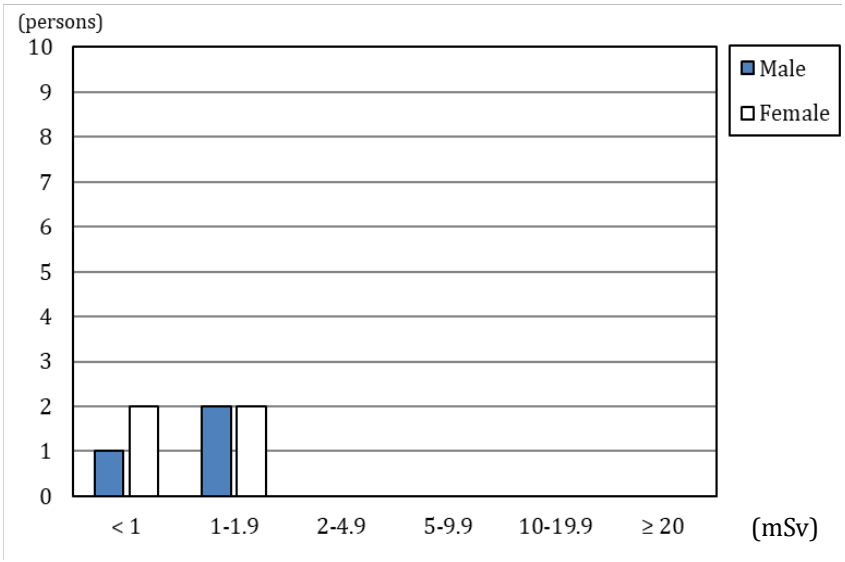


Fig. 4 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test result

Table 7 Blood test results

	FT4[1] (ng/dL)	FT3[2] (pg/mL)	TSH[3] (μIU/mL)	Tg[4] (ng/mL)	TgAb[5] (IU/mL)	TPOAb[6] (IU/mL)
Reference Range	0.95–1.74[7]	2.13–4.07[7]	0.340–3.880[7]	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 13	1.2±0.2 (7.7%)	3.4±0.5 (15.4%)	1.6±1.4 (15.4%)	45.0±43.6 (53.8%)	7.7%	0.0%
Other: 281	1.2±0.2 (5.7%)	3.2±0.5 (7.1%)	1.1±0.7 (7.5%)	47.1±180.7 (24.2%)	9.6%	10.7%

Table 8 Urinary iodine test results

(μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 13	73	111	156	276	953
Other: 278	29	117	182	323	11,060

1) FT4: free thyroxine; thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
2) FT3: free triiodothyronine; thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference interval varies according to age.

3 Mental Health Care

3.1 Support for Primary Examination Participants

Since April 2017, medical doctors offer person-to-person explanations on examination results, showing ultrasound images in private consultation booths at examination venues set up in public facilities. As of September 30, 2021, 611 of 612 participants (99.8%) visited these consultation booths.

3.2 Support for Confirmatory Examination Participants

A support team has been set up within Fukushima Medical University to offer psychological support to address the anxieties and concerns of confirmatory examination participants during examination. The team also answers questions and offers counseling via our website.

Since the start of the Age 25 survey, 100 participants (24 males and 76 females) have received support as of September 30, 2021. The number of support sessions provided was 187 in total. Of these, 100 sessions (53.5%) were offered at the participants' first examination and 87 (46.5%) at subsequent examinations.

For those who proceeded to regular health insurance medical care, the support team continues to provide support in cooperation with teams of medical staff at hospitals.

Appendix 1

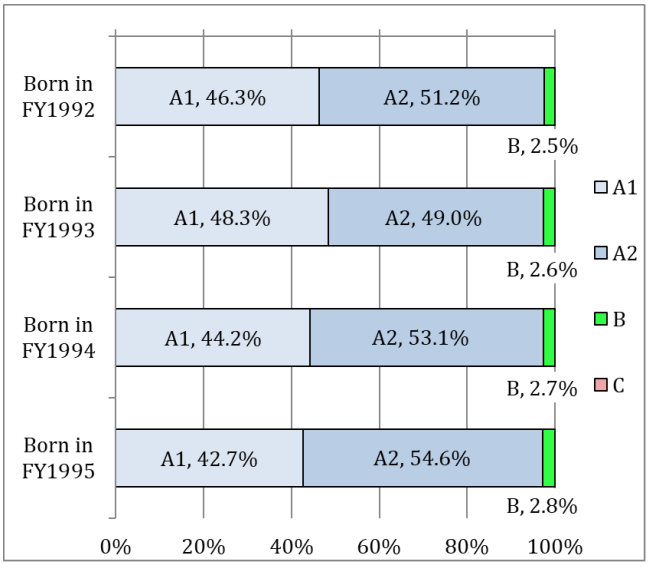
(persons)

1 Age 25 Survey results, by age and sex

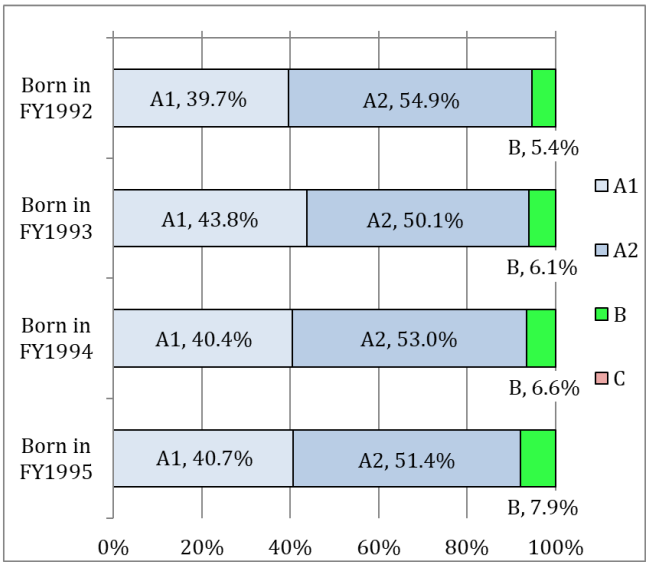
As of September 30, 2021

Grade / Participants	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Those born in FY1992	358	615	973	396	852	1,248	19	84	103	0	0	0	773	1,551	2,324
Those born in FY1993	365	643	1,008	370	736	1,106	20	90	110	0	0	0	755	1,469	2,224
Those born in FY1994	282	451	733	339	591	930	17	74	91	0	0	0	638	1,116	1,754
Those born in FY1995	279	471	750	357	595	952	18	92	110	0	0	0	654	1,158	1,812
Total	1,284	2,180	3,464	1,462	2,774	4,236	74	340	414	0	0	0	2,820	5,294	8,114

Primary examination results by age group (Male)



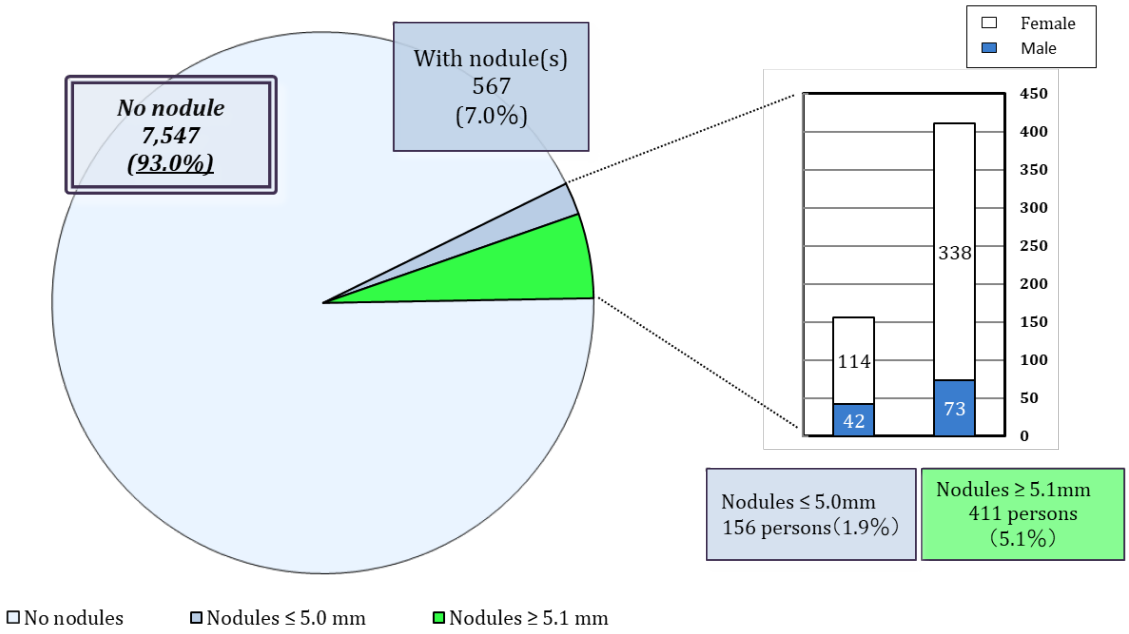
Primary examination results by age group (Female)

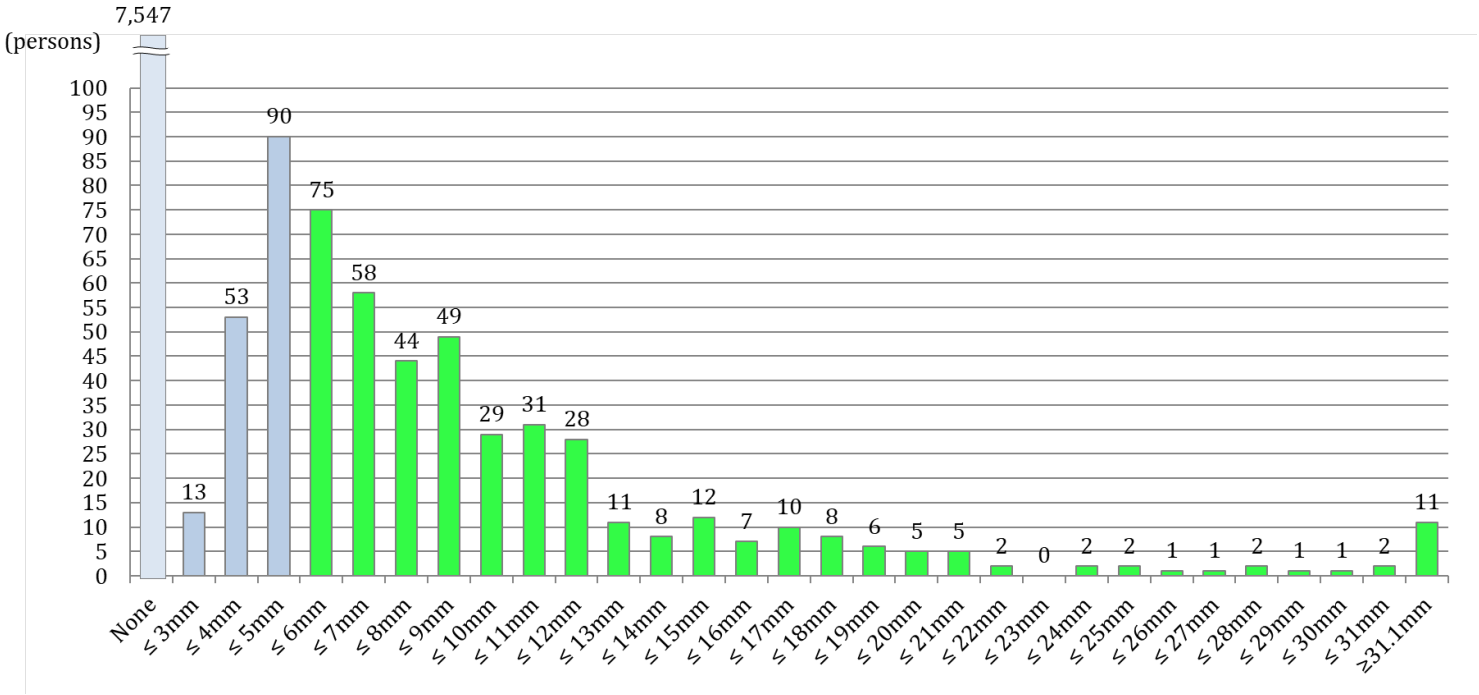


2 Nodule characteristics

(persons)
As of September 30, 2021

Nodule size	Total	Male	Female	Grade	
None	7,547	2,705	4,842	A1	93.0%
≤ 3.0mm	13	4	9	A2	1.9%
3.1–5.0mm	143	38	105		
5.1–10.0mm	255	44	211	B	5.1%
10.1–15.0mm	90	20	70		
15.1–20.0mm	36	4	32		
20.1–25.0mm	11	3	8		
≥ 25.1mm	19	2	17		
Total	8,114	2,820	5,294		

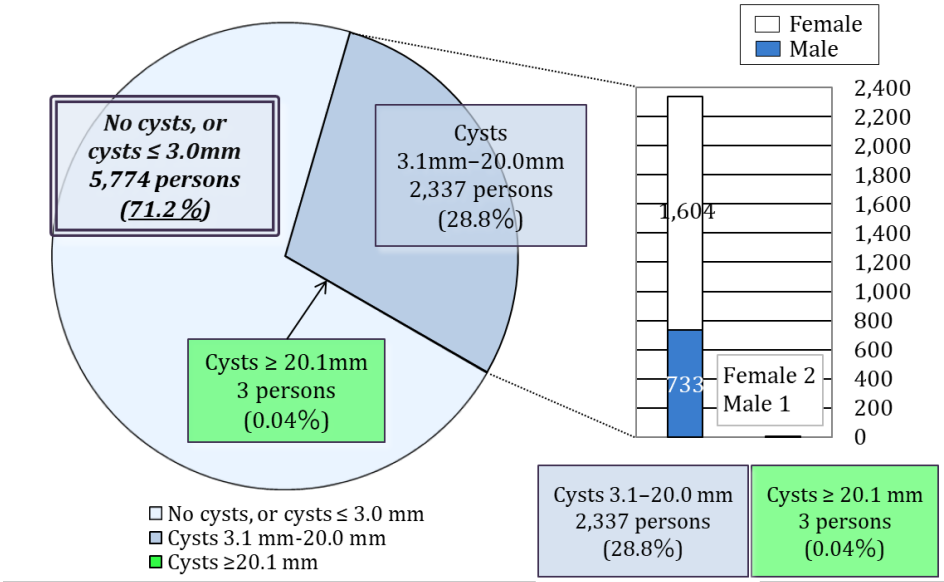


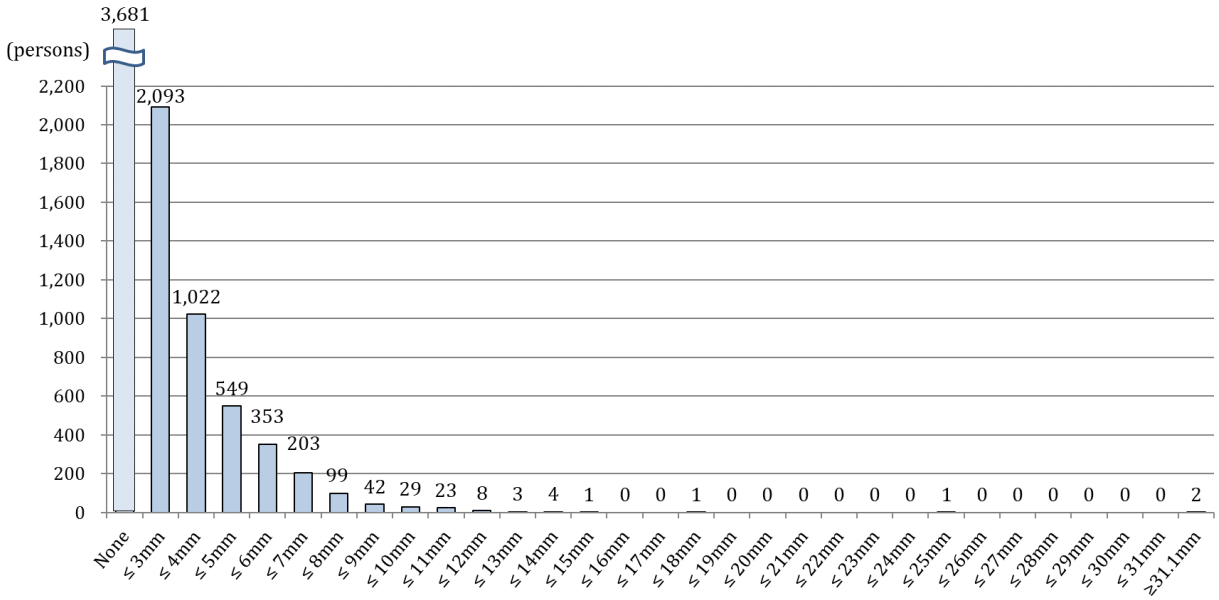


3 Cyst characteristics

(persons)
As of September 30, 2021

Cyst size	Total	Male	Female	Grade	
None	3,681	1,337	2,344	A1	71.2%
≤ 3.0mm	2,093	749	1,344	A2	28.8%
3.1–5.0mm	1,571	529	1,042		
5.1–10.0mm	726	197	529		
10.1–15.0mm	39	6	33		
15.1–20.0mm	1	1	0		
20.1–25.0mm	1	0	1	B	0.04%
≥ 25.1mm	2	1	1		
Total	8,114	2,820	5,294		





Appendix 2

Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 25 Survey:

- Malignant or suspicious for malignancy: 13 (6 surgical cases: 5 papillary thyroid carcinomas, 1 follicular thyroid carcinoma)