Report on the Results of Mental Health and Lifestyle Survey for FY2019

1. Purpose

The Great East Japan Earthquake of March 11, 2011, the subsequent accident at the Fukushima Daiichi Nuclear Power Plant, and life under prolonged evacuation have caused great anxiety and psychological distress among Fukushima residents. Objectives of the Mental Health and Lifestyle Survey are to properly assess our residents' physical, psychological, and lifestyle conditions and to provide them with appropriate care along with social support. Based on the understanding gained from results of the Mental Health and Lifestyle Survey for FY2011-2018, we will continue watching for changes of mental health and lifestyle among residents, and offer care when necessary.

2. Methods

(1) Eligible persons

- Those who were registered as residents in covered areas* from March 11, 2011 to April 1, 2012 (also after moving out from those covered areas)
- Those who were registered as residents of municipalities nationally designated as evacuation zones as of April 1, 2019
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

The total number of eligible persons: 201,499 (as of October 31, 2020)

Ages 0–3 Survey: Those born from April 2, 2016 to April 1, 2019	3,071 people
Ages 4–6 Survey: Those born from April 2, 2013 to April 1, 2016	3,449 people
Elementary School Students Survey: Residents born from April 2, 2007 to April 1, 2013	9,272 people
Junior High School Students Survey: Residents born from April 2, 2004 to April 1, 2007	5,314 people
Adults Survey: Residents born on April 1, 2004 or before	180,393 people

* Covered areas: Municipalities that were nationally 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 (containing specific spots recommended for evacuation)

(2) Methods

A. Survey sheets

Survey sheets developed for each age group were mailed to eligible persons. The Adults Survey sheets were to be answered by the addressees themselves, and other survey sheets (Junior High School Students Survey and surveys for younger age groups) were to be answered by the parents/guardians of the addressees. The Junior High School Students Survey also contains questions to be answered by the addressees themselves.

B. Mailing dates

Survey sheets were mailed out staring January 30, 2020.

C. Method of answering

Responses were returned either by post or online.
(Online responses were accepted from January 30 to March 31, 2020.)

(3) Data tabulation period

Responses received from January 31 to October 31, 2020 were tabulated.

3. Summary of Survey Results

The numbers of respondents (response rate) were as follows: 469 (15.3%) for the Ages 0–3 Survey; 458 (13.3%) for the Ages 4–6 Survey; 1,426 (15.4%) for the Elementary School Students Survey; 768 (14.5%) for Junior High School Students Survey; and 34,572 (19.2%) for the Adults Survey.

The numbers of valid responses (valid response rate) were as follows: 468 (15.2%) for the Ages 0–3 Survey; 457 (13.3%) for the Ages 4–6 Survey; 1,419 (15.3%) for the Elementary School Students Survey; 766 (14.4%) for Junior High School Students Survey; and 34,391 (19.1%) for the Adults Survey.

The results were tabulated for each age group. Due to some unreported items, the total may not match the aforementioned valid responses. Percentages shown in this text and in tabulation results are rounded, and the total summing up those percentages may not be 100%. The details of the tabulation results are as shown in "6. Results of Tabulation of the FY2019 Mental Health and Lifestyle Survey."

(1) Results of the Children's Surveys (Ages 0–3, Ages 4–6, Elementary School Students, and Junior High School Students Surveys)

A. Number of respondents (and rates)

Total responses (and response rates) to the surveys on children (ages 0–3, ages 4–6, elementary school, and junior high school) are as shown in Table 1 and Figure 1

Table 1. Number of responses, valid responses (and corresponding rates)

Age group	Respondents	(Response rate)	Valid responses	(Valid response rate)
0–3	469	(15.3)	468	(15.2)
4–6	458	(13.3)	457	(13.3)
Elementary school students	1,426	(15.4)	1,419	(15.3)
Junior high school students	768	(14.5)	766	(14.4)
Total	3,121	(14.8)	3,110	(14.7)

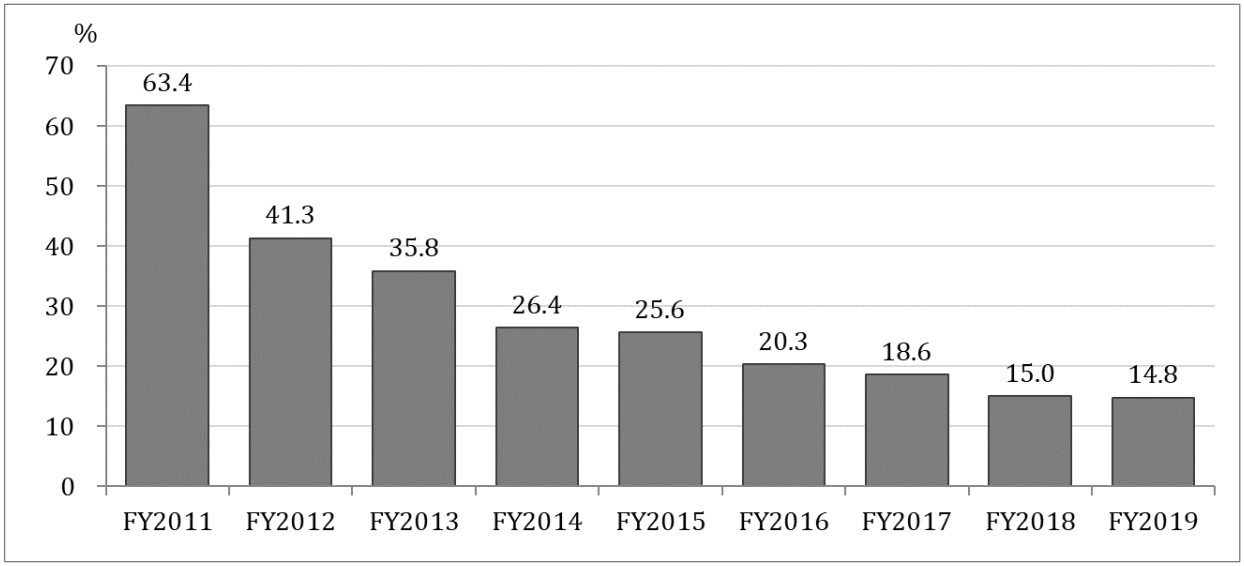


Figure 1. Changes in response rates for the children's surveys

B. Frequency of exercising

In the FY2019 survey, "Rarely" was the response among 3.3% in ages 2–3, 2.0% in ages 4–6, 33.8% in elementary school students, and 33.7% in junior high school students. In the FY2012 Survey, the percentages for preschool age groups, i.e., ages 2–3 and ages 4–6, were 26.7% and 15.0%, respectively, with steady improvement year by year since then (Figures 2 and 3). School age children, too, showed improvement since the FY2011 Survey, when the percentages were 53.0% of elementary school students and 47.0% of junior high school students (Figures 4 and 5).

According to a national survey on school children conducted in FY2019*1, the proportion of those who exercise for less than 60 minutes per week (excluding PE classes at school) were 7.6% in elementary school boys and 13.0% in elementary school girls, 7.5% in junior high school boys and 19.7% in junior high school girls. Although the results cannot be directly compared with the results of our survey because of differences in attributes of children covered, such as school year, it can be said that exercise habits of Fukushima children are still below the national averages.

*1 Sports Agency "FY2019 National Survey on Physical Fitness、Athletic Performance and Exercise Habits" Chapter 1. Summary of the Survey Results, https://www.mext.go.jp/sports/content/20191225-spt_sseisaku02-000003330_4.pdf

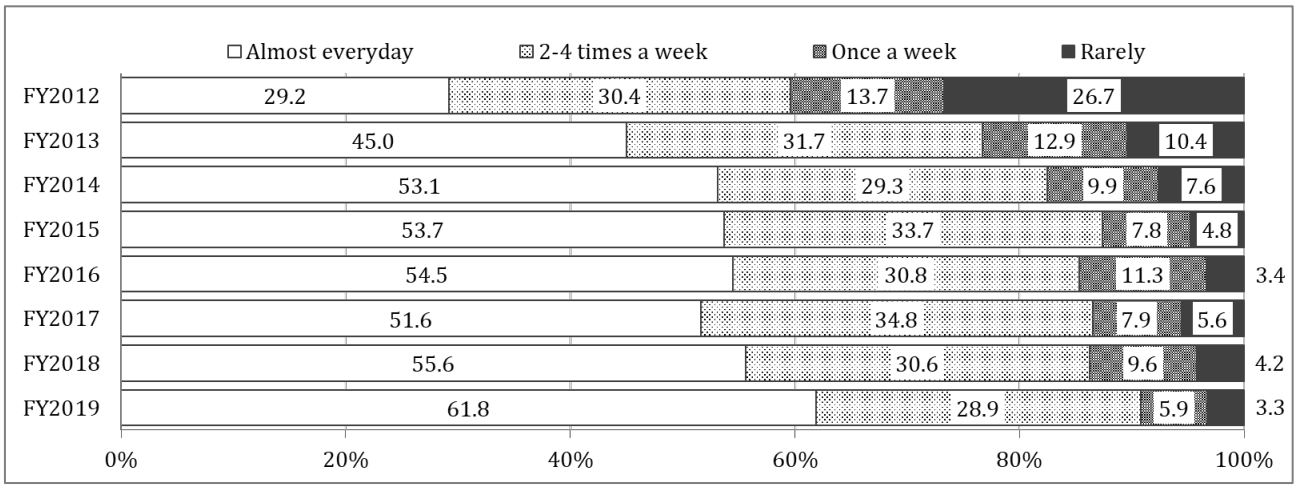


Figure 2. Changes in frequency of exercising: ages 2–3

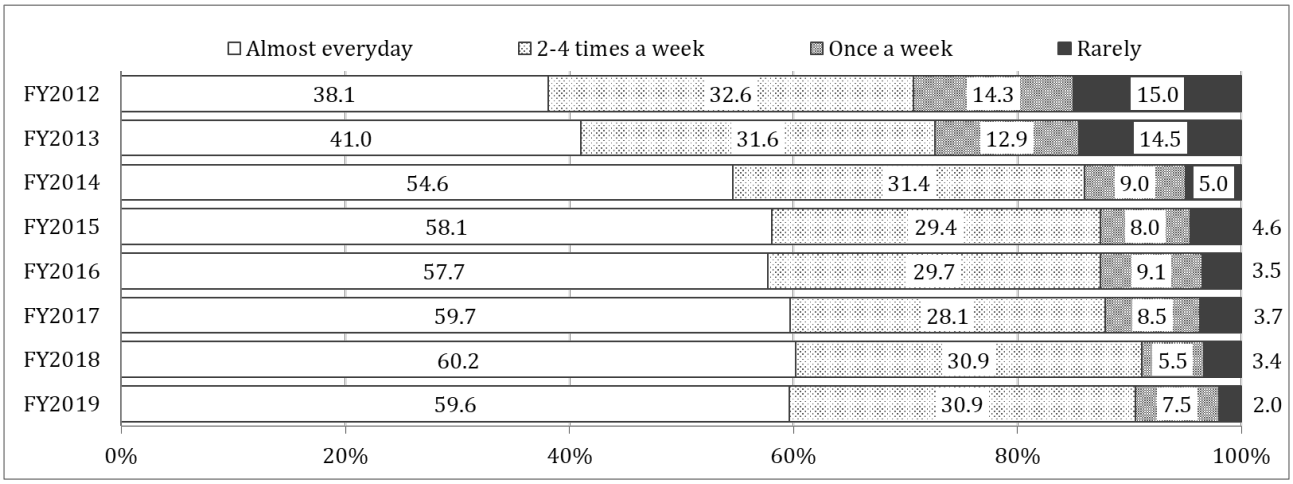


Figure 3. Changes in frequency of exercising: ages 4–6

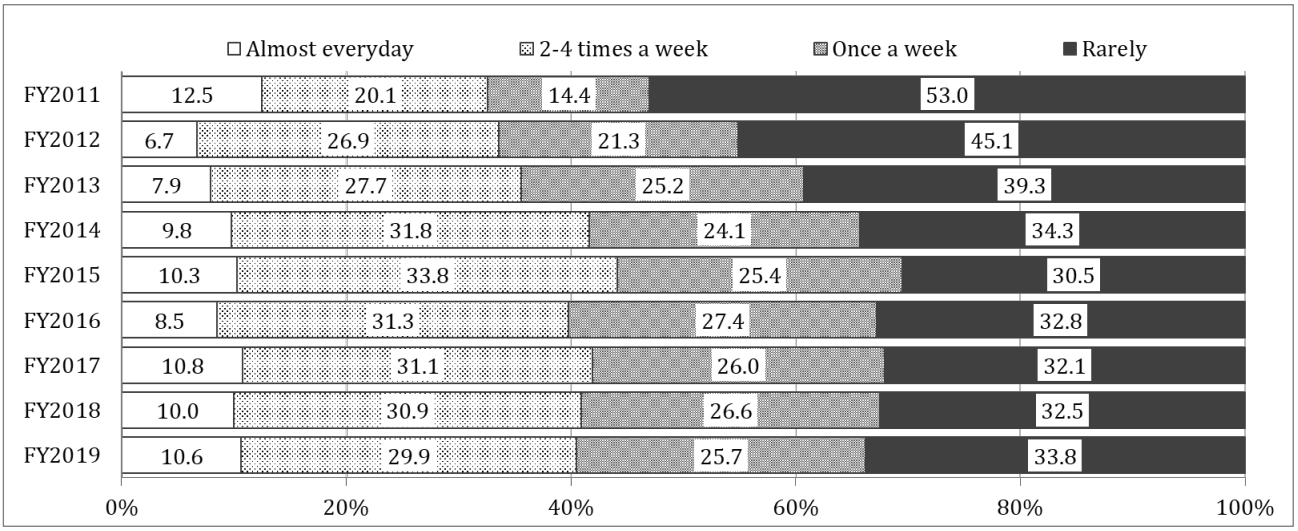


Figure 4. Changes in frequency of exercising: elementary school students

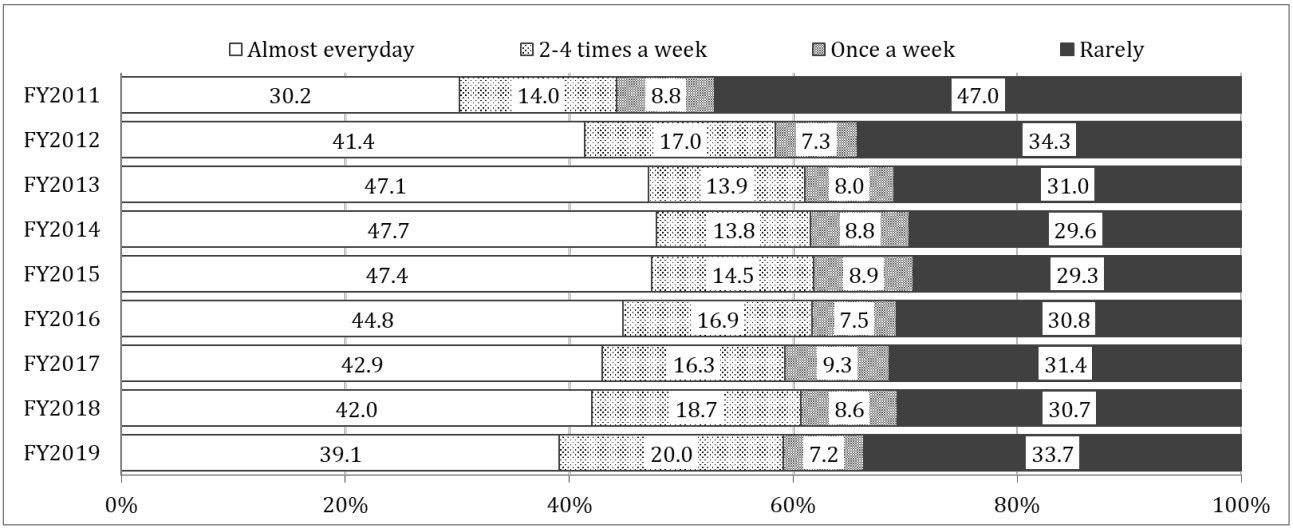


Figure 5. Changes in frequency of exercising: junior high school students

C. Proportion of those scoring 16 points or higher on SDQ (assessment of children's emotions and behavior)

Children's emotions and behaviors were surveyed using the SDQ (Strengths and Difficulties Questionnaire, with a cutoff value of 16 based on previous studies). In FY2019, the proportion of children with high-risk scores (SDQ score of 16 or higher) showing certain problematic behavior was 9.7% for children aged 4 to 6, 10.2% for elementary school children, and 10.0% for junior high school students (Figure 6). Compared with the 9.5% with high-risk scores in a survey covering children who were not affected by the disaster, as reported in 2008[*2], the proportion of Fukushima children with high-risk scores was higher for all age groups in FY2011, especially among children aged 4 to 6 (24.4%). The percentage declined thereafter for all age groups and the FY2019 survey results showed improvements, with the percentage almost the same as that in the prior survey (Figure 6). A comparison of boys and girls showed that high-risk scores were generally higher among boys than girls, consistent with the 2008 study (Figure 7–9).

By residential location at the time of the survey (in or outside the prefecture), the proportion of those with high-risk scores was higher among those living outside the prefecture than those living in the prefecture (Figure 10).

[About SDQ]

The SDQ consists of 25 question related to children's emotions and behaviors, which are to be answered by the child's parent/guardian according to what extent each question applies to the child's behavior over the past six months. Scores of 16 or higher are considered to be indicative of certain problematic behaviors that warrant expert support.

*2 Matsuishi T, et al. (2008) Scale properties of the Japanese version of the Strengths and Difficulties Questionnaire (SDQ): A study of infant and school children in community samples. Brain and Development. 30: 410-415.

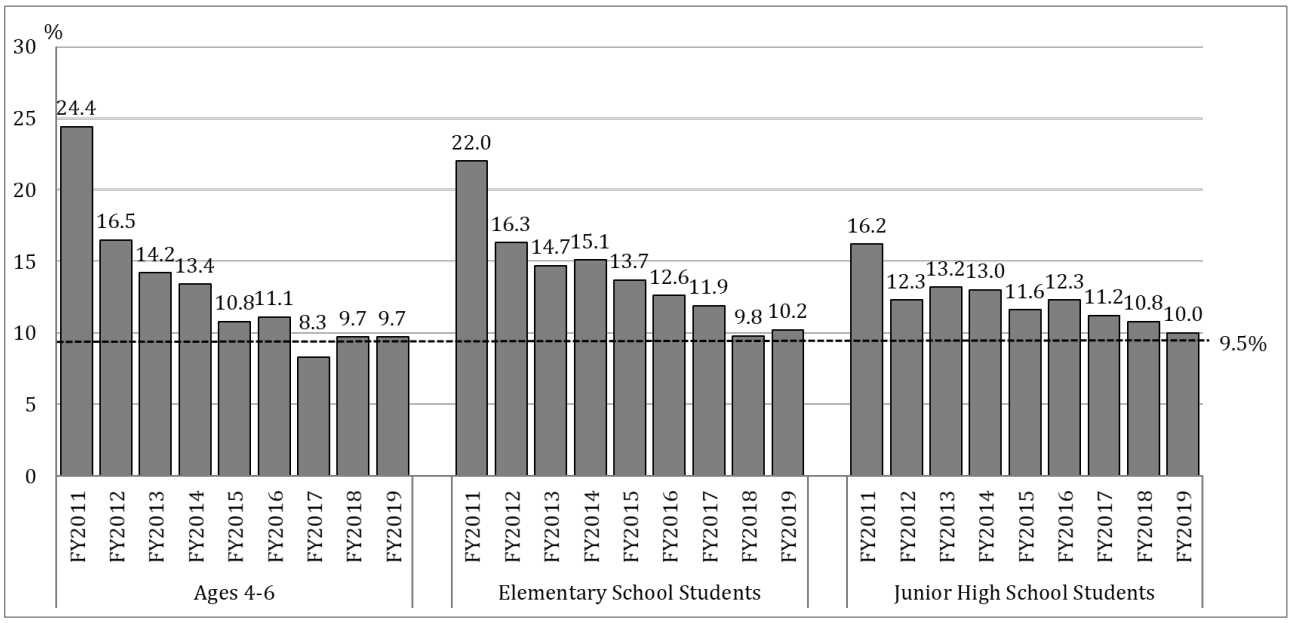


Figure 6. Changes in the proportion of those scoring 16 points or higher in SDQ: all age groups

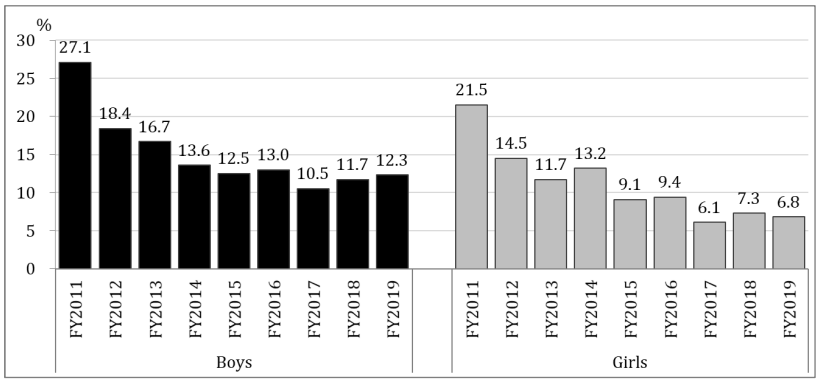


Figure 7. Changes in the proportion of those scoring 16 points or higher in SDQ: ages 4–6

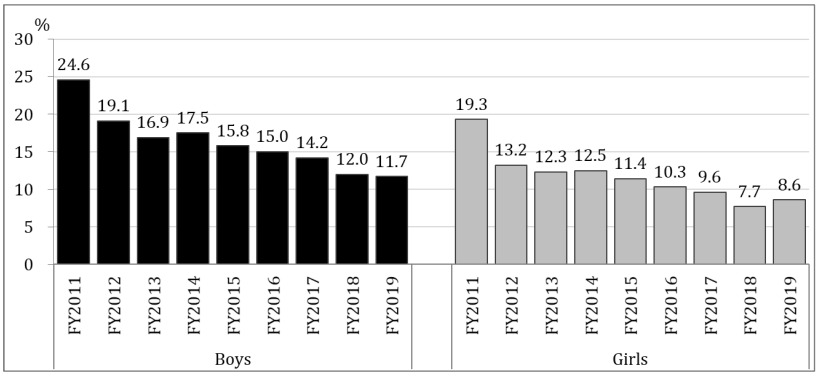


Figure 8. Changes in the proportion of those scoring 16 points or higher in SDQ: elementary school students

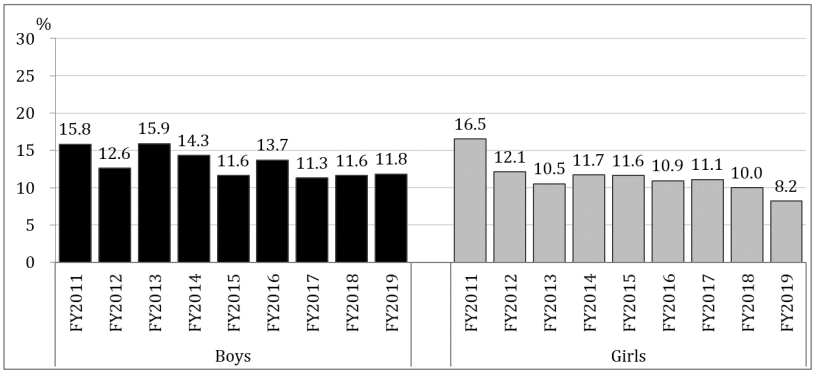


Figure 9. Changes in the proportion of those scoring 16 points or higher in SDQ: junior high school students

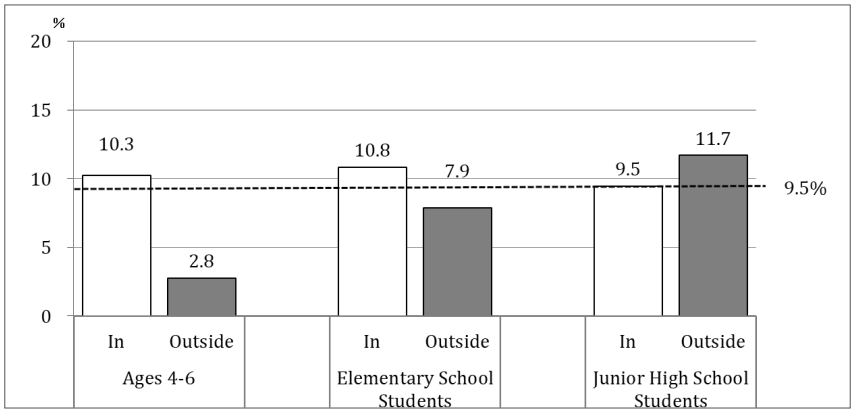


Figure 10. Changes in proportion of those scoring 16 points or higher in SDQ, by the location of residence at the time of the survey

(2) Results of the Adults Survey (Ages 16 or older)

A. Response Rate

Change in response rates in the Adults Survey (age 16 or over) was 19.2%. Yearly changes are as shown in Figure 11, and the response rate by age group is as shown in Figure 12.

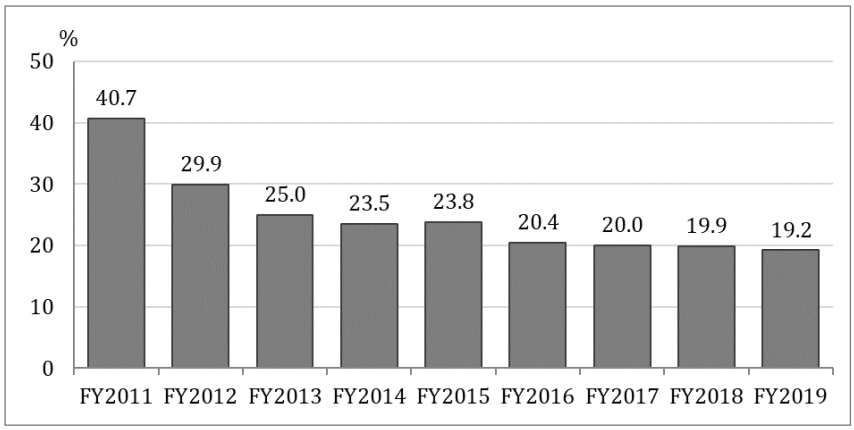


Figure 11. Changes in the response rates in the Adults Survey

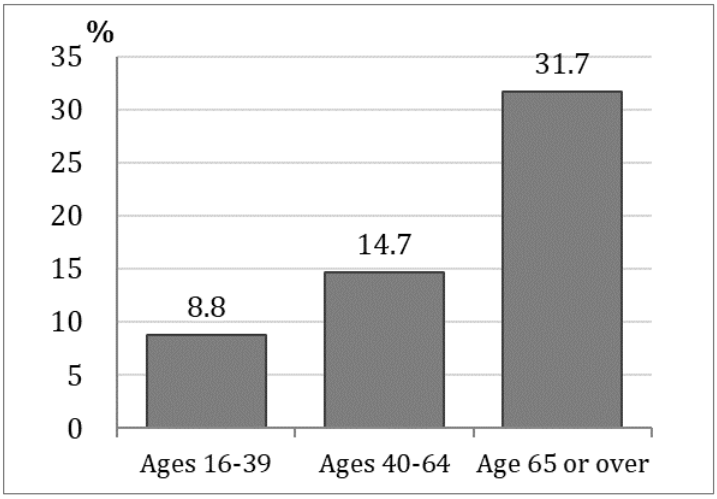


Figure 12. Response rates in the FY2019 Adults Survey, by age group

B. Subjective health condition

Regarding their health condition, 24.4% answered "Very good" or "Good" in the FY2019 survey. Figure 13 shows yearly changes in responses concerning subjective health conditions. In FY2011, those who answered "Very good" or "Good" accounted for 17.8% and the percentage is increasing year by year, although slightly.

Conversely, the proportion of those who responded "Bad" or "Very bad" was 18.5% in FY2011 but declined to 14.0% in FY2019.

When looked at by age group, the proportion of those who answered "Bad" or "Very bad" in the FY2019 Survey increased with age: 16.3% in Age 65 or older, substantially higher than 6.6% in Age 39 or younger (Figure 14).

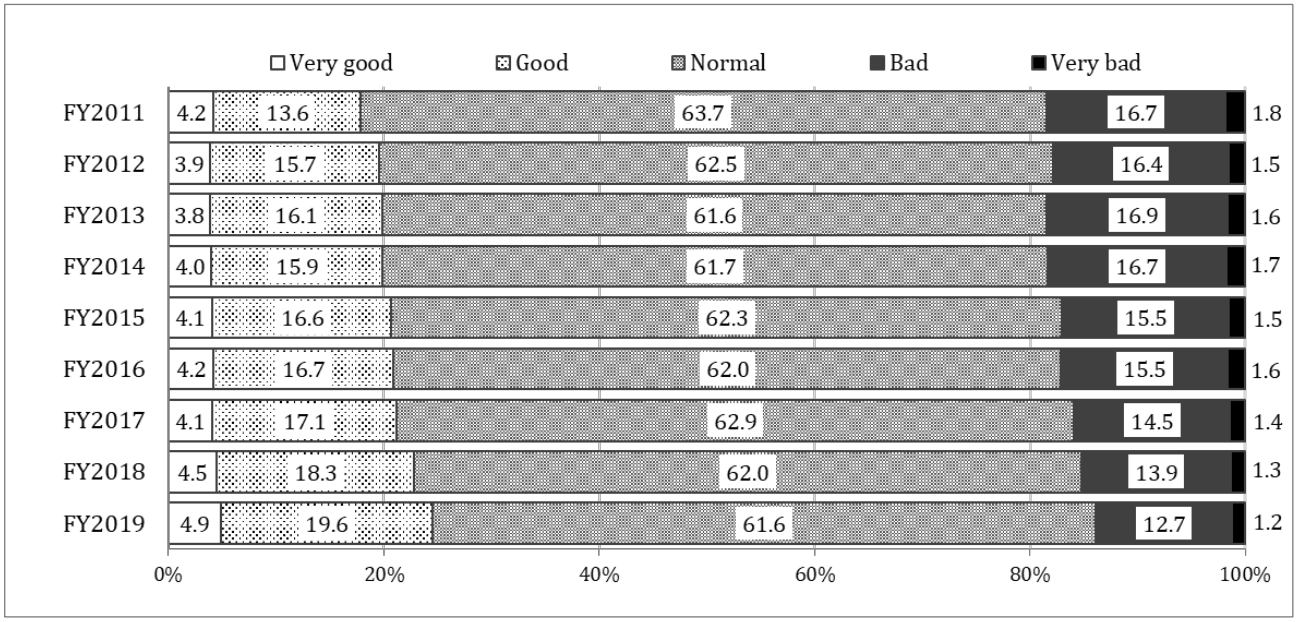


Figure 13. Changes in subjective health condition

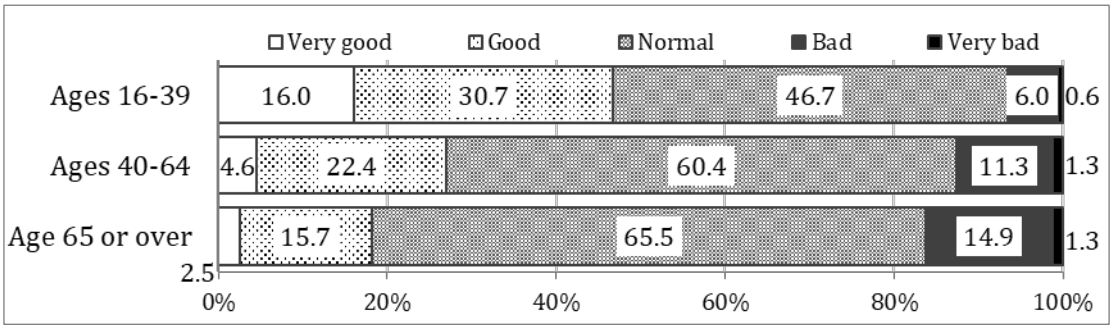


Figure 14. Subjective health condition by age group in the FY2019 Adults Survey

C. Sufficiency of sleep

41.9% of the respondents answered "Sufficient" in the FY2019 survey. Figure 15 shows yearly changes in the proportion of those who are satisfied with their sleep. It was 33.3% in FY2011 and showed a gradual increase year by year.

Conversely, the proportion of those who answered "Very insufficient" or "Greatly insufficient or couldn't get any sleep" decreased from 19.9% in FY2011 to 12.5% in FY2019. However, about 60% were still dissatisfied with their sleep.

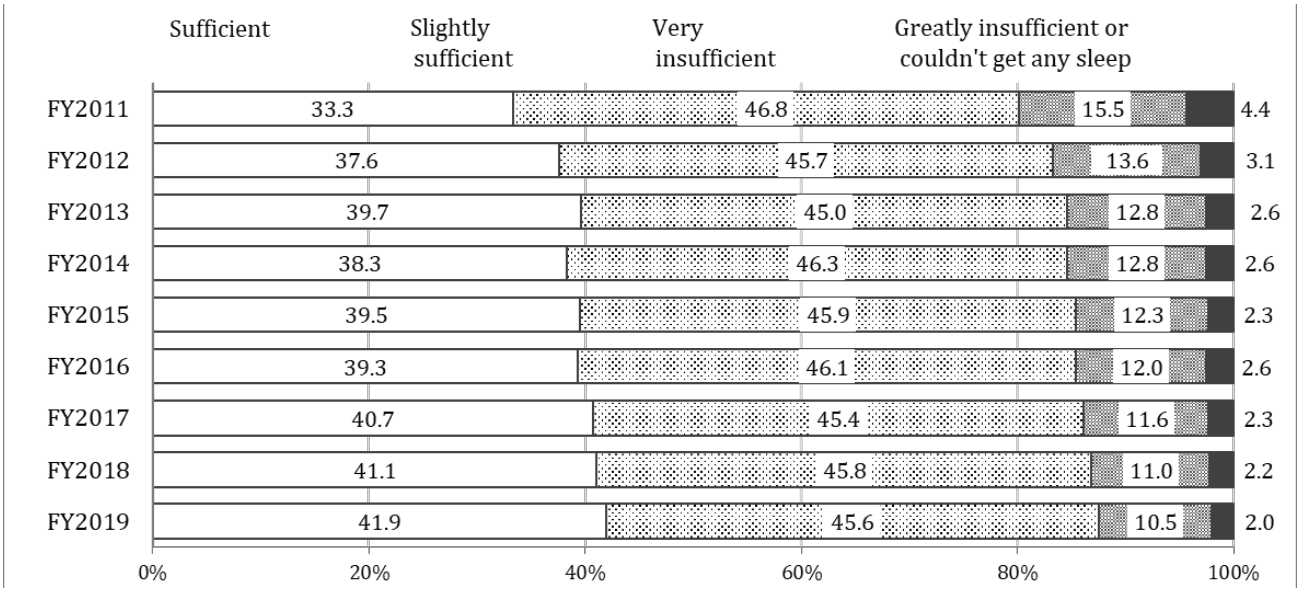


Figure 15. Changes in the degree of sleep sufficiency in adults

D. Frequency of exercising

Regarding the frequency of exercising, 38.8% answered "Rarely" in the FY2019 survey. Figure 16 shows yearly changes in the frequency of exercising. Since FY2011, when about a half of the respondents answered "Rarely," the frequency of exercising has gradually been increasing.

The proportion of those who answered "Almost every day" or "2–4 times a week" was 43.8% in FY2019. In a national survey conducted in the same year[*3], the proportion of those who answered that they exercise twice or more per week was 40.6%. Although the results cannot be directly compared with the results of our survey because of differences in participants' attributes, such as age, it can be said that exercise habits of Fukushima residents were similar to the national average.

When looked at by residential location at the time of the survey, those living outside the prefecture tended to do exercises less frequently than those living in the prefecture in FY2019 survey (Figure 17).

[*3] Ministry of Health, Labour and Welfare, "The National Health and Nutrition Survey in Japan, 2019" https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html

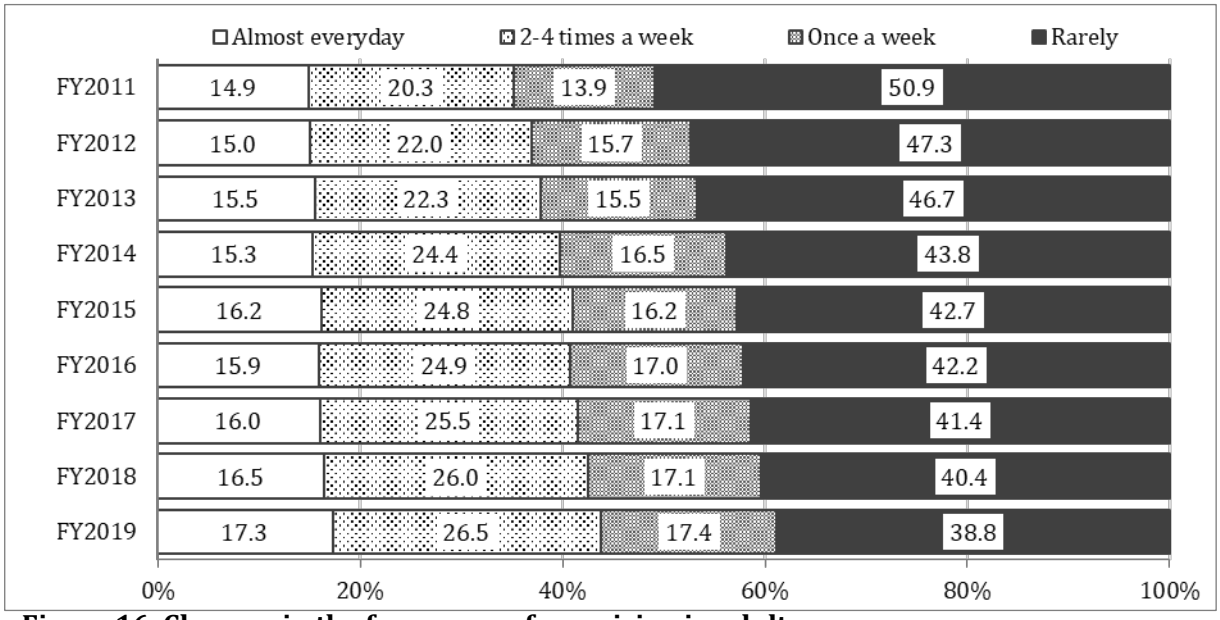


Figure 16. Changes in the frequency of exercising in adults

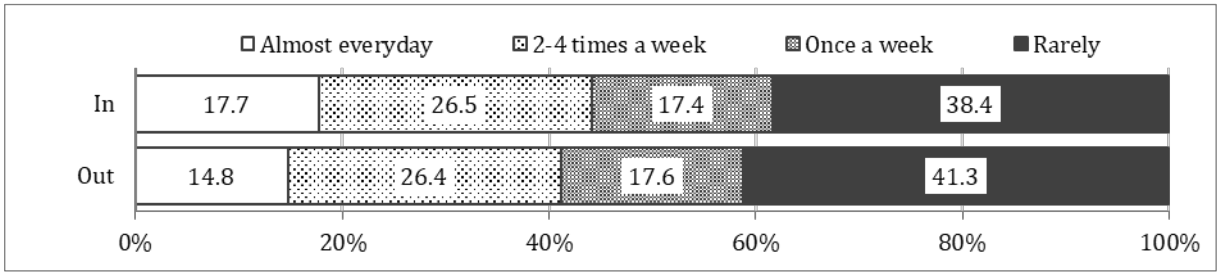


Figure 17. Frequency of exercising by location of residence at the time of the survey (in or outside the prefecture) in the FY2019 Adults Survey

E. Prevalence of smoking

In the FY2019 survey, the proportion of smokers was 21.5% in males and 5.5% in females. Figure 18 shows yearly changes in the proportion of smokers by sex, with a definite downward trend since FY2011, when the percentage was 33.2% in males and 10.5% in female0s.

According to a national survey conducted in FY2019[*3], the proportion of those “habitually smoking” (age 20 and above) was 27.1% among males and 7.6% among females. Although the results cannot be directly compared with the results of our survey because of differences in participants’ attributes, such as age, the proportion of Fukushima residents with smoking habits are estimated to be similar to or below the national average. However, it is still high, compared with the goal of 12% set out in the "Healthy Japan 21 (Phase 2)."

*3 Ministry of Health, Labour and Welfare, "The National Health and Nutrition Survey in Japan, 2019" https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html

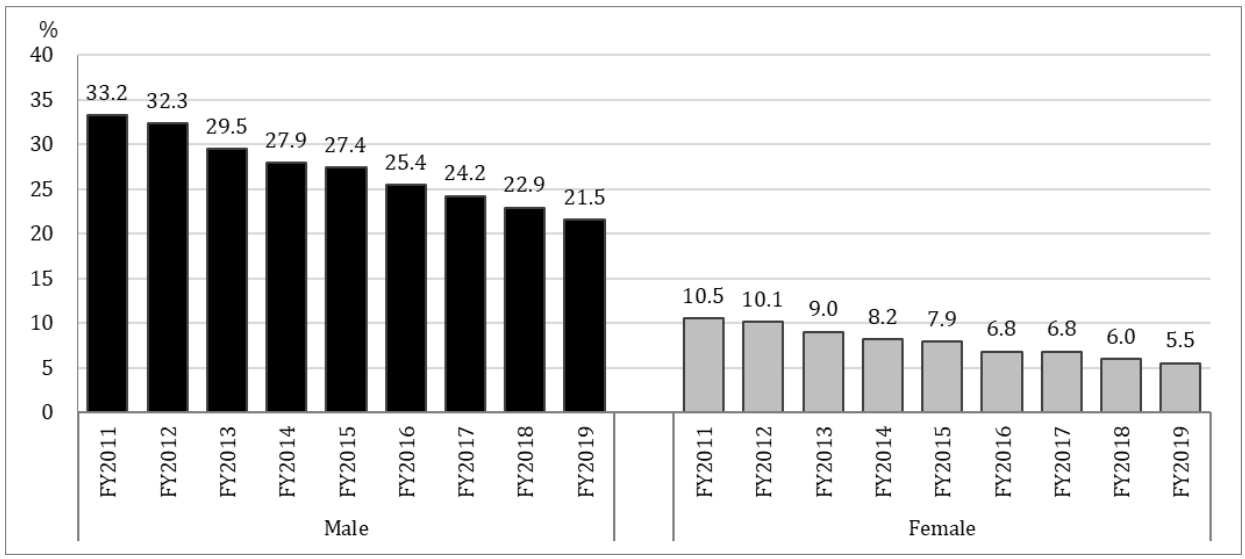


Figure 18. Changes in prevalence of smoking, by sex

F. Proportion of those suspected of problematic drinking (CAGE score 2 points or higher)

Problematic drinking behaviors were examined using the CAGE questionnaire (with a cutoff value of 2 points based on previous studies). In the FY2019 survey, the proportion of those with high-risk scores (CAGE score of 2 points or higher) was 16.7% in males and 8.3% in females. Figure 19 shows yearly changes, indicating a downward trend for both sexes since FY2012, when the proportion was 20.5% in males and 10.5% in females. Among age groups, the percentage was the highest among those aged 40 to 64 (Figure 20). When compared by residential location at the time of the survey (in or outside the prefecture), the percentage was higher among those living in the prefecture for males and among those living outside the prefecture for females (Figure 21).

[About CAGE]

The CAGE questionnaire consists of 4 questions about drinking behaviors over the past 30 days, with "yes" (1) or "no" (0) answers. Those scoring 2 points or higher are considered as likely to have a drinking problem.

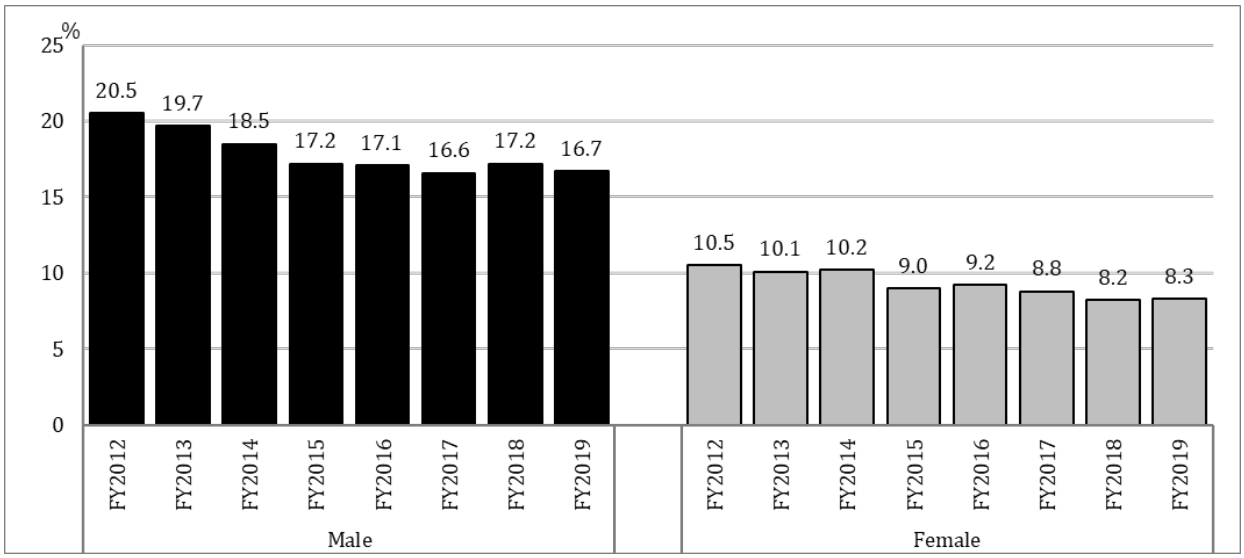


Figure 19. Changes in proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE), by sex

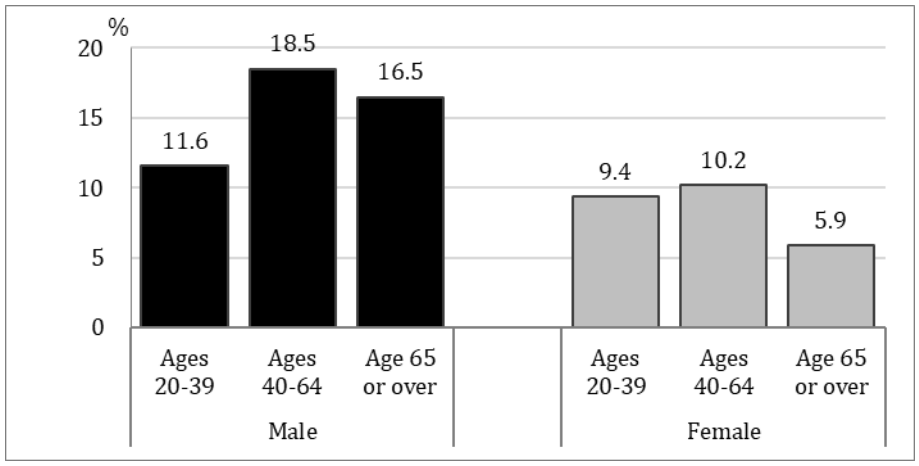


Figure 20. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in FY2019 Survey,f by age group and by sex

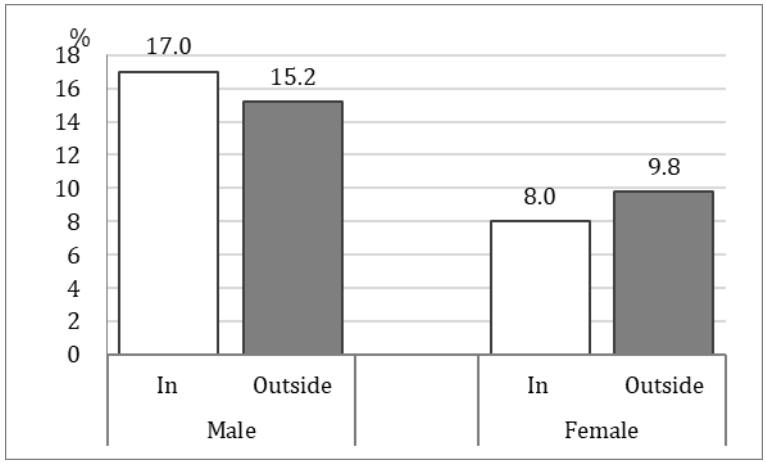


Figure 21. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in FY2019 Survey, by residential location and by sex

G.Proportion of those judged to be in need of support for depression or anxiety

General mental health and the possibility of mood disorder (depression) and anxiety disorder were examined using the K6 Distress Scale (with a cutoff value of 13 based on previous studies). In the FY2019 survey, the proportion of those with high-risk scores (K6 score of 13 points or higher) for mood disorder or anxiety disorder was 5.0% overall. Figure 22 shows yearly changes in K6 results. In FY2011, the proportion of those with high-risk scores was quite high, at 14.6%, but declined substantially until FY2014 and has been declining moderately since then to the present. However, the percentage is still high in Fukushima compared to a result of 3% shown in a previous study covering the general public who were not affected by the disaster[*4].

By sex, the percentage was higher in females (5.4%) than in males (4.5%), consistent with results of the aforementioned previous study (Figure 23). A comparison by age group showed that the percentage was higher among young people than among older people; this does not concur with results of the prior study nor the levels of traumatic reaction, as explained later (Figure 24).

A comparison by residential location at the time of the survey (in or outside the prefecture) showed that 7.2% of those living outside the prefecture were at high risk, versus 4.6% of those living in the prefecture (Figure 25).

[About K6]

The K6 Distress Scale consists of 6 questions about how often feelings and behaviors related to depression and anxiety occurred during the past 30 days. A score of is 13 or more is considered to indicate a– possible mood or anxiety disorder.

*4 Norito Kawakami. Distribution of mental health status and its related factors based on the K6 Distress Scale in a national survey (part of a research project on a system for grasping and analyzing statistical information on health status of Japanese people from the perspective of households) supported by FY2006 Health and Labour Science Research Grant (for research projects on advanced utilization of statistical information).

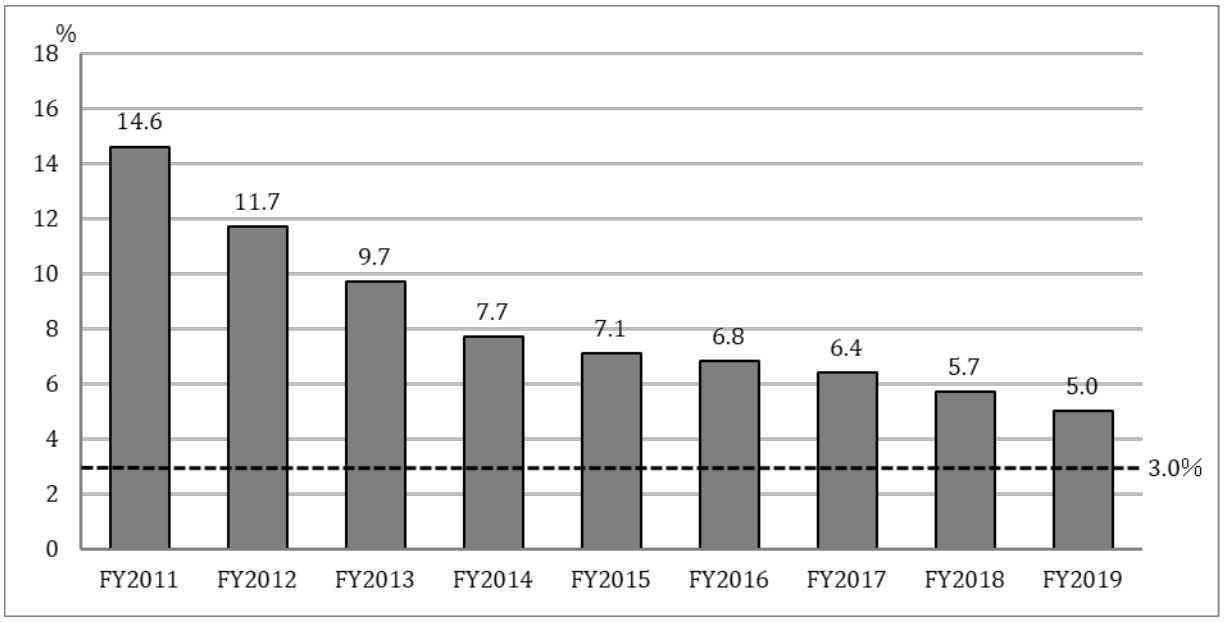


Figure 22. Changes in the proportion of those scoring 13 or higher on K6

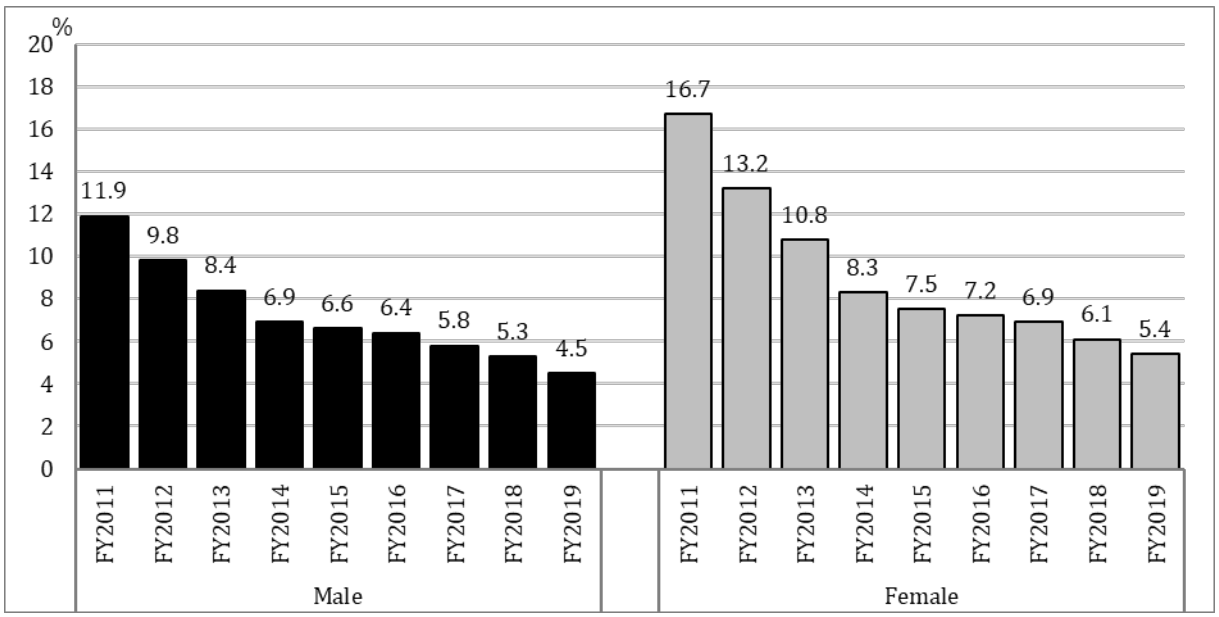


Figure 23. Changes in the proportion of those scoring 13 points or higher on K6, by sex

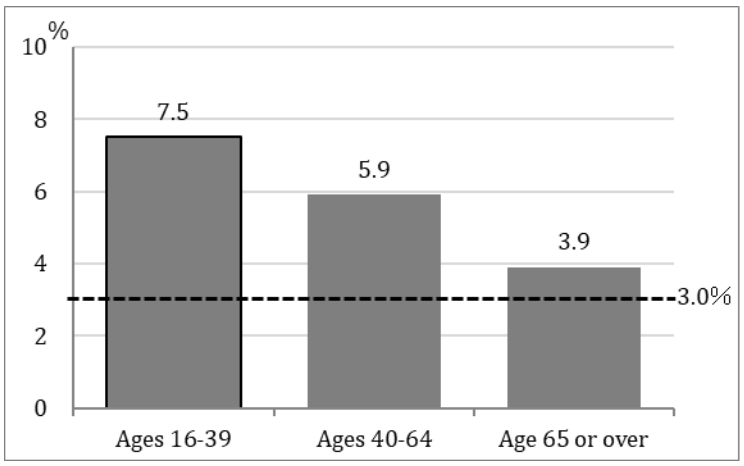


Figure 24. Proportion of those scoring 13 or higher on K6 in the FY2019 Survey, by age group

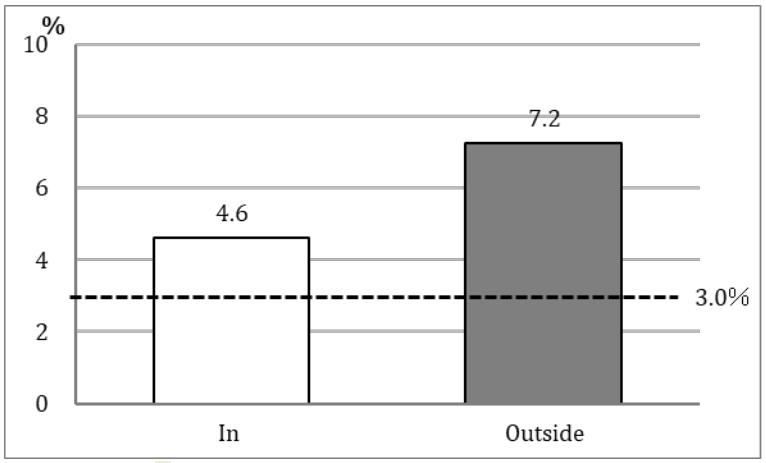


Figure 25. Proportion of those scoring 13 points or higher on K6 in the FY2019 Survey, by location of residence at the time of the survey

H. Proportion of those judged to be in need of support for trauma reactions caused by the disaster

The intensity of various trauma reactions (various symptoms of post-traumatic stress disorder [PTSD]) in the disaster-affected population was measured using PCL.

In the FY2014 and FY2015 surveys, PCL questions were omitted in order to reduce the burden on respondents. Thereafter, a simplified 4-item questionnaire (PCL-4) was developed and its credibility and validity were verified. Accordingly, since FY2016, the survey of levels of traumatic reactions was resumed using this simplified questionnaire. Based on prior studies, the cutoff value for screening those with the possibility of PTSD is 44 for the original PCL and 12 for newly adopted PCL-4. For this reason, results for FY2011 to FY2013 and the results for FY2016 onward cannot be directly compared.

In the FY2019 Survey, the proportion of those with high-risk scores (PCL-4 score of 12 or more) was 8.3%, which was lower than the results from FY2016 to FY2018, the first survey years to use PCL-4 (Figure 26). A comparison by sex shows that the percentage has been higher among females than among males in any given year (Figure 27). This trend is consistent with many prior studies.

Figure 28 shows a comparison by age group. The proportion of those with high-risk scores increased with age. a result consistent with previous studies. Figure 29 shows a comparison by residential location at the time of the survey (in or outside the prefecture). As indicated by the results of many other comparative studies, the proportion of those with high-risk scores is higher among those living outside the prefecture than among those living in the prefecture.

[About PCL-4]

PCL-4 consists of 4 questions asking how frequently the respondent experienced trauma reactions due to disaster experience, such as recalling or trying to avoid unwanted memories or feeling highly nervous, during the past 30 days. A score of12 points or higher is considered to indicate possible PTSD.

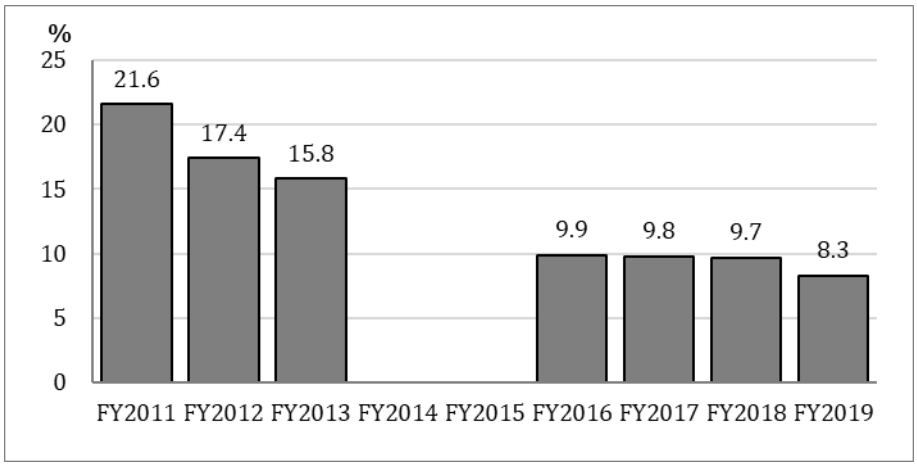


Figure 26. Changes in proportion of those in need of support for traumatic reactions

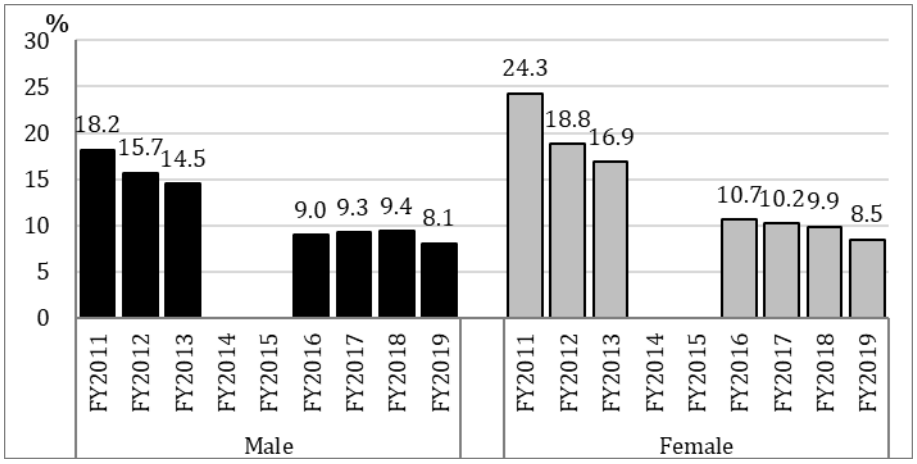


Figure 27. Changes in proportion of adults in need of support for traumatic reactions, by sex

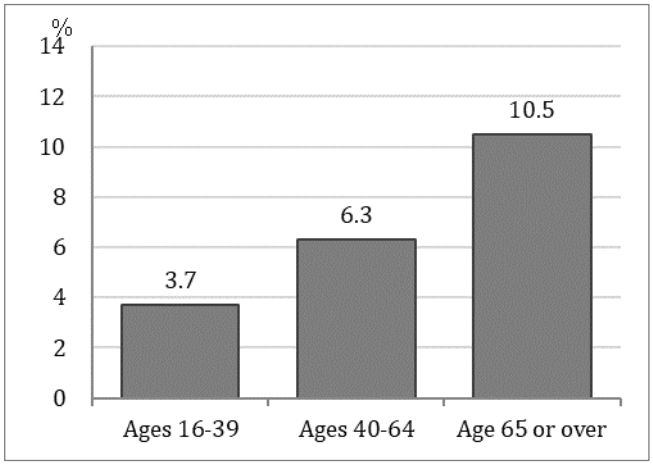


Figure 28. Trauma reactions in adults (based on PCL-4) in the FY2019 Survey: Proportion of those in need of support, by age group

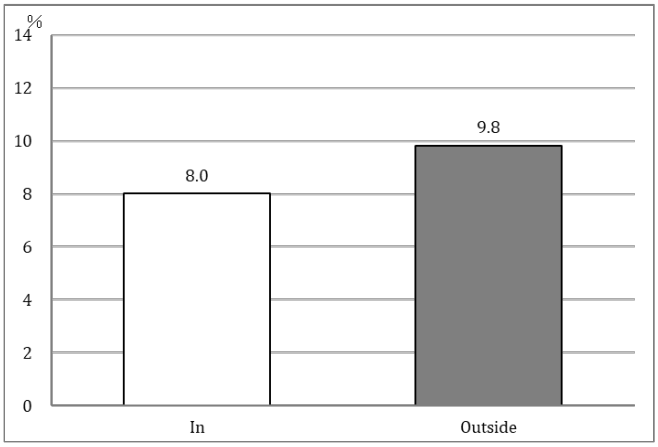


Figure 29. Trauma reactions in adults (based on PCL-4) in the FY2019 Survey: Proportion of those in need of support, by location of residence at the time of the survey

I. Risk perception of health effects of radiation

To assess risk perception, this survey solicited beliefs about possible health effects of radiation.

Regarding long-term effects of radiation (late effects), 28.9% of the respondents to the FY2019 survey responded that they think late effects are likely to occur ("Possibilities are high" and "Possibilities are very high" combined). The proportion gradually decreased from 48.1% in FY2011 to 31.4% in FY2014. It remained almost unchanged for the following five years but decreased in FY2019 (Figure 30).

Regarding effects on the next generation, 30.4% responded that they think effects on the next generation are likely to occur ("Possibilities are high" and "Possibilities are very high" combined) in the FY2019 survey. The proportion gradually decreased from 60.2% in FY2011 to 38.0% in FY2014, in the same manner as the responses concerning long-term radiation effects. It remained almost unchanged for the following five years but decreased in FY2019 (Figure 31).

In a comparison by residential location at the time of the survey (in or outside the prefecture), risk perception was higher among those living outside the prefecture for both late effects and effects on the next generation than those living in the prefecture (Figures 32 and 33).

* The proportion of those who responded "Possibilities are very low" or "Possibilities are very high" decreased substantially in FY2017–FY2019 surveys, compared to the percentages in FY2016 survey. This may be due in whole or part to changes in the questionnaire (see p. 43).

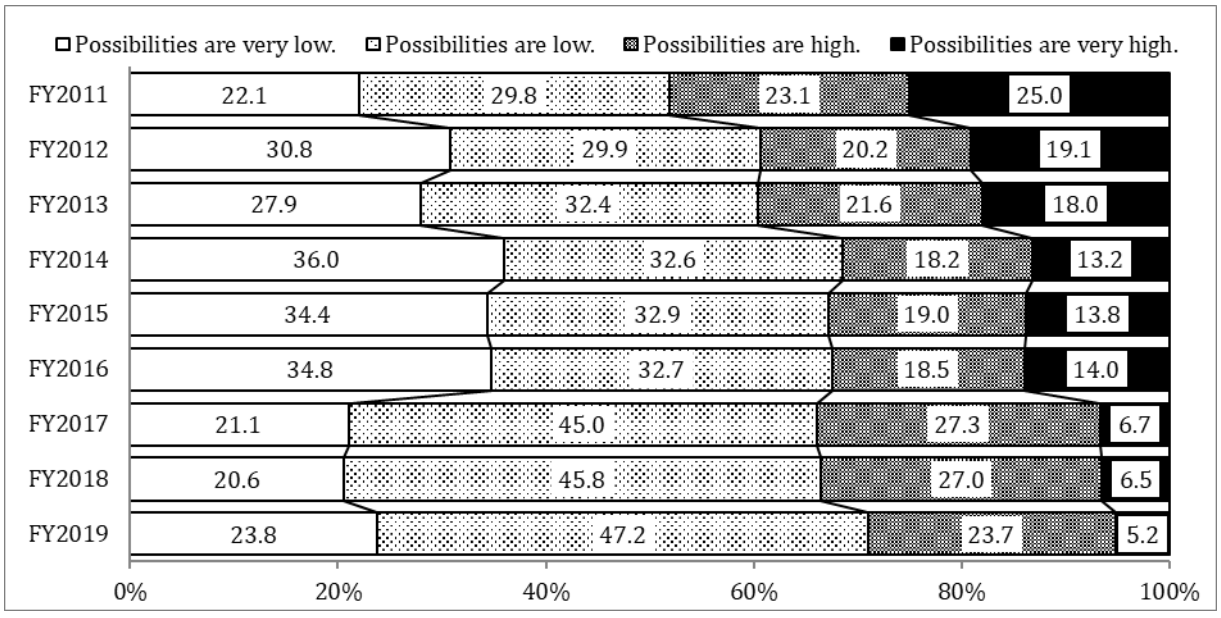


Figure 30. Changes in risk perception of radiation effects (late effects)

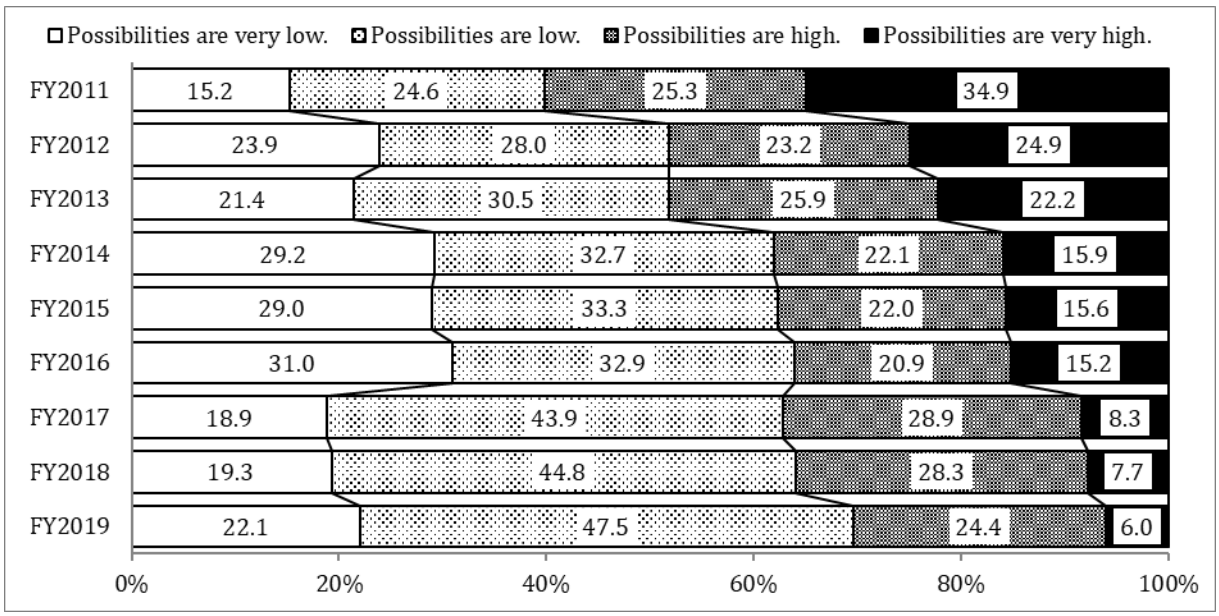


Figure 31. Changes in risk perception of radiation effects (next-generation effects)

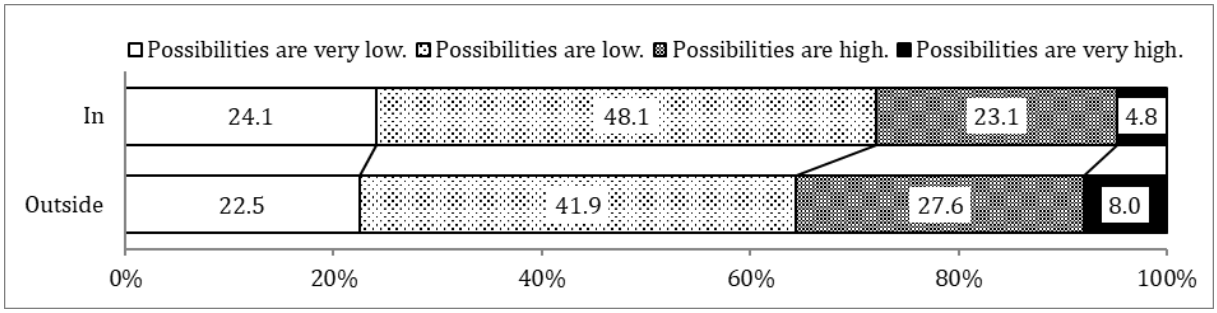


Figure 32. Risk perception of radiation effects (late effects) in the FY2019 Survey, by location of residence at the time of the survey

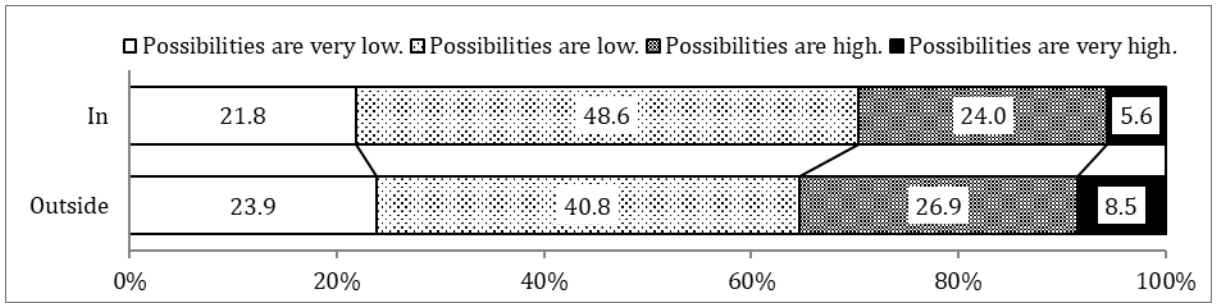


Figure 33. Risk perception of radiation effects (next-generation effects) in the FY2019 Survey, by location of residence at the time of the survey

J. Availability of consultation resources

Figure 34 shows the distribution of responses to the question on availability of consultation resources: "Do you know anyone or any organization you can consult with when you have physical or mental problems?" A total of 29,815 (89.2%) answered "yes," while 3,610 (10.8%) answered "no."

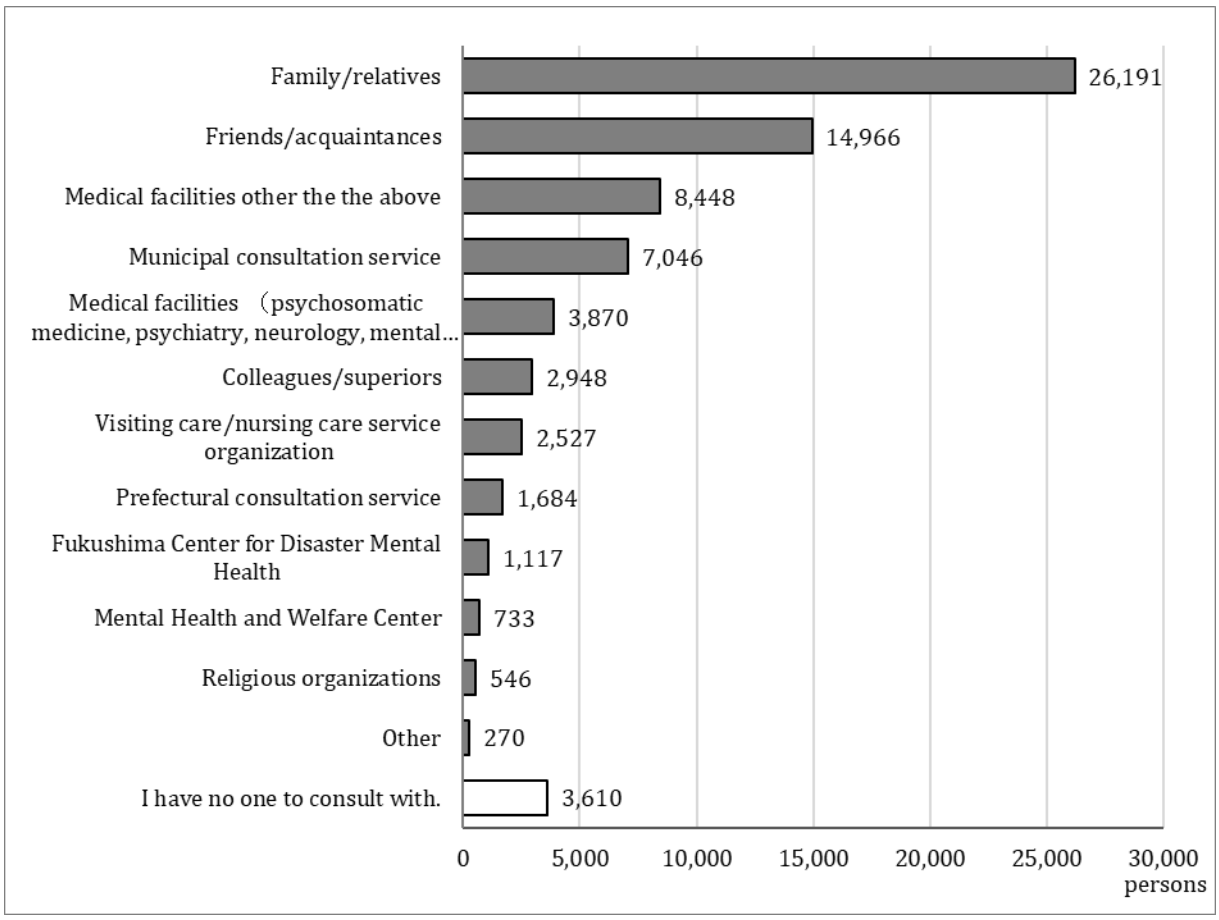


Figure 34. Consultation resources for physical and mental problems of adults (multiple responses)

4. Outline of Post-Survey Support

As part of the Mental Health and Lifestyle Survey, we fed back individual results that can be useful to residents for their better health management and provided support to those who were judged to be in need of counseling or support regarding their mental health or lifestyle habits, with the aim of ascertaining their circumstances, providing advice for improvements, and connecting them to health or medical facilities.

(1) Coverage of support

Out of those who responded to the FY2019 Mental Health and Lifestyle Survey, those who were judged to be in need of counseling or support by telephone or mail were covered as support candidates.

Tabulation in this report covers those who responded by October 31, 2020, and to which we provided support by December 31, 2020.

(2) Individual result report

Individual result reports were sent in September and November 2020 to those who responded by August 31, 2020, to help guide their understanding of mental health and lifestyle issues and better manage their own health.

Table 2 shows the number of individual result reports sent out and the report contents, by age group.

Table 2. Number of individual result reports sent out

Type of survey sheet	Number of notices sent	Contents
For children aged 0 to 3	466	Height, weight, dietary habits (children aged 1 or older), fitness habits (children aged 2 or older), and bedtime
For children aged 4 to 6	454	Height, weight, dietary habits, fitness habits, bedtime, and mental and behavioral stress reaction (SDQ score)*1
For elementary school students	1,411	
For junior high school students	761	
For adults	33,949	Body Mass Index (BMI),*2 dietary habits, fitness habits, sleep, and mental stress reaction (K6 score)*3

*1 Strength and Difficulties Questionnaire; mental health and behavioral screening scale for children
*2 Body Mass Index (calculated based on height and weight written in the survey forms)
*3 Psychological distress scale which screens for general mental illness, such as depression and anxiety
In result reports for children, standard height and weight by age in months as of the day of filling in the survey form were provided for reference.]

(3)Criteria to identify those in need of support and methods of providing support

A. Criteria to assess the need for support for issues regarding children

In accordance with the level of significance and urgency, the following criteria were set to identify those in need of support (Tables 3 and 4).

Table 3. Criteria to assess the need for support for issues regarding children

		Moods and behavior (SDQ)	Whether or not having any person or organization to consult with, problems concerning growth, problems concerning school attendance	Free comment
Selection criteria	Criteria I	1) SDQ: 20 or over	1) Having worries concerning growth, and having no person or organization to consult with	The urgency level should be judged by an expert.
		2) SDQ: 16 or over, and	2) Having PTSD or depression	
		- No person or organization to consult with, and	3) Having been absent from school for 30 days or more, and having no person or organization to consult with; or having been absent from school for 30 days or more and having never consulted with a professional body	
		- Absent from school for 30 days or more	4) Children aged 4 to 6 who have ever been absent from kindergarten or nursery school and have no person or organization to consult with	
	Criteria II	3) SDQ: 16 or over	5) Having worries concerning growth but having never consulted with a professional body	
			6) Having been absent from school for less than 30 days, and having no person or organization to consult with, or having never consulted with a professional body	
			7) Children aged 4 to 6 who have ever been absent from kindergarten or nursery school and have never consulted with a professional body	

Table 4. Criteria to assess the need for support regarding personal issues

		Mental health	Medical control	Sleep disorder	Mental disorder	Smoking and drinking	Free comment
Selection criteria	Criteria I	1) K6: 13 or over	1) With hypertension or diabetes but not seeing a physician, and (i) with BMI of 27.5 or over and (ii) taking at least 66g of alcohol per day on average				The urgency level should be judged by an expert.
			2) Taking at least 66g of alcohol per day on average and with CAGE score of 4				
	Criteria II	2) K6: 10 or over	3) Falling under 1) above, but (i) and (ii) are not applicable	Having no mental disorder, being rather or very unsatisfied with sleep, and having experienced depression or reduced activity during the day	Having mental disorder, but not seeing a physician, or making no reply to the relevant question	1) Taking at least 66g of alcohol per day on average and with a CAGE score of 2 or 3	
		3) PCL-4: 12 or over	4) Other than 1) and 2) above, with a weight increase of 3kg or more per year and BMI of 27.5 or over				
	Criteria III		5) Other than 1) and 2) above, with a weight increase of 3kg or more per year and BMI of 25.0 or over but lower than 27.5			2) Among other criteria, with a CAGE score of 2 or over or the Brinkman Index of 200 or over	

B. Methods of providing support

(i) Support for those meeting Criteria I

For those who met Criteria I, our Mental Health Support Team, consisting of clinical psychologists, public health nurses, clinical nurses, etc., made phone calls and provided counseling. The team asked about support recipients' health conditions, assessed current problems, and advised further examination at health/medical facilities when necessary (hereafter "telephone counseling").

(ii) Support for those meeting Criteria II

For those who met Criteria II, we sent reply-paid postcards to confirm their intention whether or not to receive telephone counseling. Telephone counseling was provided to either those who expressed their intention to receive support or those who were judged to be in need of support based on the content of their replies. For those who have any problems pertaining to medical management, sleep, or drinking habits, we also sent relevant informative pamphlets.

(iii) Support for those meeting Criteria III

For those who met Criteria III, we sent brochures to help them adopt healthier lifestyles.

5. Summary of Results of Post-Survey Support

(1) Telephone counseling

A. Support for issues concerning children

(A) Number of support candidates and recipients

The numbers of support candidates and recipients based on Criteria I or II are shown in Figure 35. The number of support candidates was 457, or 14.6% of all respondents. Of these, 151 were judged to be in need of telephone counseling, of whom 112 actually received telephone counseling.

Basic attributes of children (based on telephone counseling) are shown in Table 5. By sex, there were 84 boys (55.6%) and 67 girls (44.4%). By location of residence, 117 children (77.5%) were living in the prefecture and 34 children (22.5%) were living outside the prefecture.

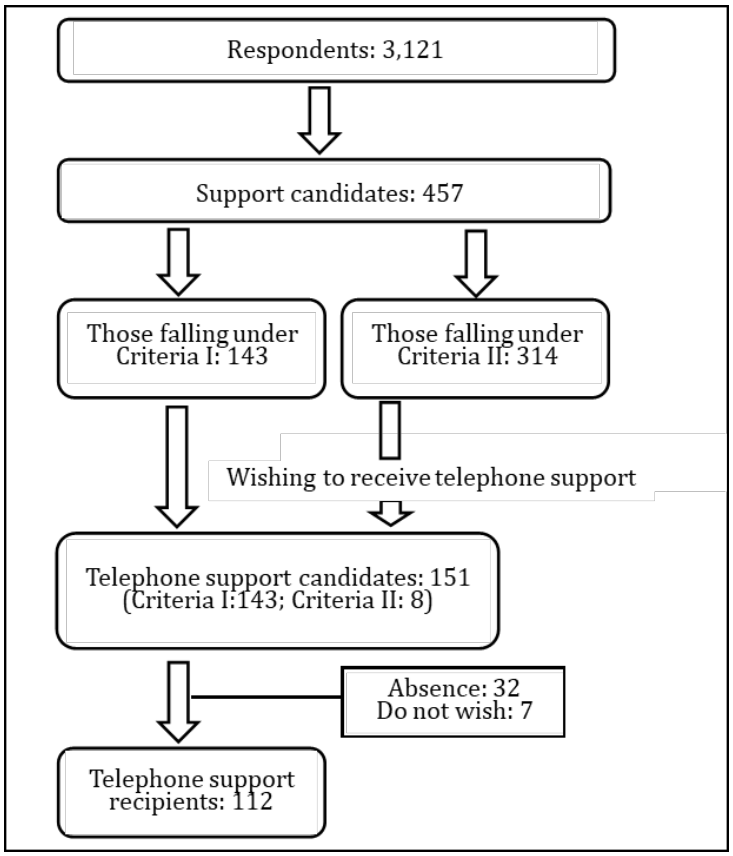


Figure 35. Numbers of support candidates and recipients for issues regarding children

Table 5. Basic attributes of children (based on telephone counseling)

Number of support candidates	Overall	Children aged 0 to 3	Children aged 4 to 6	Elementary school children	Junior high school students
	151	13	20	64	54
Boys	84 (55.6%)	8 (61.5%)	15 (75.0%)	30 (46.9%)	31 (57.4%)
Girls	67 (44.4%)	5 (38.5%)	5 (25.0%)	34 (53.1%)	23 (42.6%)
In the prefecture	117 (77.5%)	12 (92.3%)	19 (95.0%)	49 (76.6%)	37 (68.5%)
Outside the prefecture	34 (22.5%)	1 (7.7%)	1 (5.0%)	15 (23.4%)	17 (31.5%)
Number of support recipients	112	6	12	55	39
In the prefecture	84 (75.0%)	6 (100.0%)	11 (91.7%)	40 (72.7%)	27 (69.2%)
Outside the prefecture	28 (25.0%)	0 (0.0%)	1 (8.3%)	15 (27.3%)	12 (30.8%)

・ Address at the time of sending survey sheets for FY2019

(B) Results of Support

The Mental Health Support Team made phone calls and asked about current issues regarding their children, based on responses in survey forms. Answers were mainly provided by guardians who filled in survey forms. Figure 36 shows the issues identified through telephone counseling from FY2012 to FY2019.

"Anxiety from disaster/radiation" was the most frequent issue in FY2012, but "school life-related issues" were most frequent in subsequent years.

FY2012 No. of telephone support recipients 623	FY2013 No. of telephone support recipients 473	FY2014 No. of telephone support recipients 327	FY2015 No. of telephone support recipients 250	FY2016 No. of telephone support recipients 181	FY2017 No. of telephone support recipients 162	FY2018 No. of telephone support recipients 138	FY2019 No. of telephone support recipients 112
Anxiety due to the disaster, worries over radiation and exposure, etc.	Matters concerning school life	Matters concerning school life	Matters concerning school life	Matters concerning school life	Matters concerning school life	Matters concerning school life	Matters concerning school life
147 (23.6%)	70 (14.8%)	49 (15.0%)	54 (21.6%)	23 (12.7%)	29 (17.9%)	35 (25.4%)	29 (25.9%)
Matters concerning school life	Anger, irritation, violence	Physical health	Physical health	Anger, irritation, violence	Physical health	Physical health	Anger, irritation, violence
136 (21.8%)	52 (11.0%)	29 (8.9%)	15 (6.0%)	10 (5.5%)	13 (8.0%)	15 (10.9%)	14 (12.5%)
Physical health	Physical health	Anger, irritation, violence	Sleep	Physical health	Anger, irritation, violence	Dietary habits	Physical health
102 (16.4%)	32 (6.8%)	27 (8.3%)	9 (3.6%)	9 (5.0%)	11 (6.8%)	12 (8.7%)	9 (8.0%)
Anger, irritation, violence	Anxiety due to the disaster, worries over radiation and exposure, etc.	Anxiety due to the disaster, worries over radiation and exposure, etc.	Anger, irritation, violence	Sleep	Sleep	Sleep	Sleep
90 (14.4%)	25 (5.3%)	19 (5.8%)	8 (3.2%)	4 (2.2%)	9 (5.6%)	11 (8.0%)	9 (8.0%)
Depressive feeling	Depressive feeling	Sleep	Dietary habits	Dietary habits	Dietary habits	Anger, irritation, violence	Dietary habits
83 (13.3%)	23 (4.9%)	11 (3.4%)	4 (1.6%)	4 (2.2%)	6 (3.7%)	10 (7.2%)	7 (6.3%)

Figure 36. Contents of consultations regarding children

* FY2011 is not included because the tabulation method was different from that for other years.

Table 6 shows the results of the first telephone support. Among telephone support recipients, 20 (17.9%) were judged to be in need of continued support, while 83 (74.1%) were judged to need no more support. No details were obtained from 3 (2.7%) and 6 (5.4%) declined support.

Table 6. Results of the first telephone support for issues regarding children

Number (%)

Number of support recipients	Overall	Children aged 0 to 3	Children aged 4 to 6	Elementary school children	Junior high school students
	112	6	12	55	39
Requiring continued support	20 (17.9%)	0 (0.0%)	2 (16.7%)	11 (20.0%)	7 (17.9%)
Needing no more support	83 (74.1%)	6 (100.0%)	10 (83.3%)	39 (70.9%)	28 (71.8%)
Details unknown	3 (2.7%)	0 (0.0%)	0 (0.0%)	1 (1.8%)	2 (5.1%)
Support declined	6 (5.4%)	0 (0.0%)	0 (0.0%)	4 (7.3%)	2 (5.1%)

・Requiring continued support:
Those judged as requiring continued support, including those with poor physical conditions, those gravely affected by the disaster, those who cannot adapt to society or school, those who are isolated, and others about whom some concerns remained. Continued support includes recommending consultation with specialists at healthcare/medical facilities and providing their information to other support organizations.

・Needing no more support:
Those judged as being able to take care of themselves as some improvements were seen in their physical conditions or living environment or they were already in contact with support resources.

・Details unknown:
No details were obtained for some reason.

・Declined support
Those who said that they would not need support.

Table 7 shows the reasons for judging that continued support would be necessary after the first telephone support. The most frequent reason was “mental problems” of children among 10 (50.0%), followed by “school maladaptation” for 5 (25.0%). Reasons for continued support due to the conditions of adult respondents include physical problems among 2 (10.0%) and mental problems among 2 (10.0%).

Table 7. Reasons for continued support for issues regarding children

Number (%)

Number of continued support candidates		Overall	Children aged 0 to 3	Children aged 4 to 6	Elementary school children	Junior high school students
		20	0	2	11	7
Children	Poor (physical) health conditions	1 (5.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (14.3%)
	Poor (mental) health conditions	10 (50.0%)	0 (0.0%)	2 (100.0%)	4 (36.4%)	4 (57.1%)
	Inability to adapt to school life	5 (25.0%)	0 (0.0%)	0 (0.0%)	3 (27.3%)	2 (28.6%)
	Others	4 (20.0%)	0 (0.0%)	0 (0.0%)	4 (36.4%)	0 (0.0%)
Guardians	Poor (physical) health conditions	2 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (28.6%)
	Poor (mental) health conditions	2 (10.0%)	0 (0.0%)	1 (50.0%)	0 (0.0%)	1 (14.3%)
	Others	1 (5.0%)	0 (0.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)

・ Breakdowns are the aggregate numbers.

Table 8 shows the types of telephone support provided: “Attentive listening,” 77 (68.8%); “Recommendation to see a physician,” 2 (1.8%); “Guidance on daily habits,” 1 (0.9%); “Psychoeducation,” 17 (15.2%); and “Information by phone,” 3 (2.7%).

Table 8. Types of telephone support for issues regarding children

Number (%)

Number of support recipients	Overall	Children aged 0 to 3	Children aged 4 to 6	Elementary school children	Junior high school students
	112	6	12	55	39
Attentive listening	77 (68.8%)	4 (66.7%)	7 (58.3%)	38 (69.1%)	28 (71.8%)
Recommendation to see a physician	2 (1.8%)	0 (0.0%)	0 (0.0%)	1 (1.8%)	1 (2.6%)
Guidance on daily habits	1 (0.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.6%)
Psychoeducation	17 (15.2%)	1 (16.7%)	2 (16.7%)	11 (20.0%)	3 (7.7%)
Information by phone	3 (2.7%)	0 (0.0%)	0 (0.0%)	3 (5.5%)	0 (0.0%)
Other (only confirmation of circumstances, etc.)	36 (32.1%)	2 (33.3%)	6 (50.0%)	17 (30.9%)	11 (28.2%)

・Breakdowns are the aggregate numbers

Table 9 shows further measures taken after telephone support. Relevant documents were sent to 6 (5.4%).

Table 9. Measures taken after telephone support for issues regarding children

Number (%)

Number of support recipients	Overall	Children aged 0 to 3	Children aged 4 to 6	Elementary school children	Junior high school students
	112	6	12	55	39
Communication with external organizations	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Sending of relevant documents	6 (5.4%)	0 (0.0%)	0 (0.0%)	5 (9.1%)	1 (2.6%)
Actions by other departments	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Communication with external organizations:
Information was shared with municipalities and the Fukushima Center for Disaster Mental Health, depending on support recipients' circumstances

Sending of relevant documents:
Documents, such as a referral form for seeing a registered physician and a list of physicians, written information on medical facilities and consultation services outside Fukushima, and written personal data to be provided to one's primary care physician, are sent to support recipients

Actions by other departments:
Other departments of the Radiation Science Center for the Fukushima Health Management Survey took actions with regard to questions about the Basic Survey and matters concerning the Thyroid Ultrasound Examination

B. Support for adults

(A) Number of support candidates and recipients

The numbers of support candidates and recipients based on Criteria I, II, or III and support recipients are shown in Figure 37. The number of support candidates was 10,423, or 30.1% of all respondents. Of these, the number of those judged to need telephone counseling was 2,347 in total, including those with mental health issues and those with lifestyle issues.

Distribution of support candidates by sex and by age group is shown in Table 10. Among support candidates for mental health issues, 898 (42.3%) were males and 1,224 (57.7%) were females. Among support candidates for lifestyle issues, 161 (71.6%) were males and 64 (28.4%) were females.

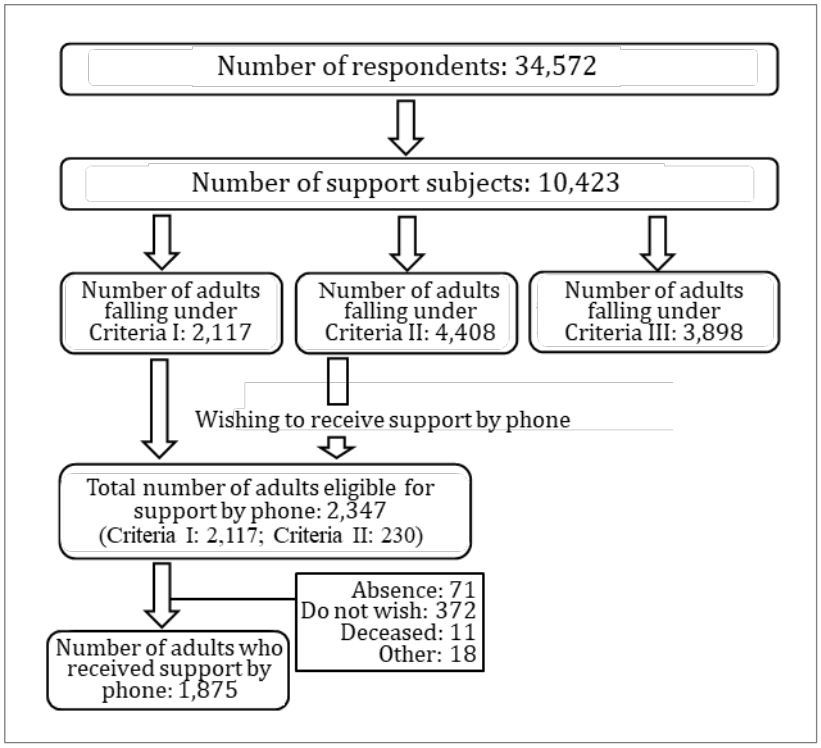


Figure 37. Number of support candidates and recipients for personal issues of adults

Table 10. Distribution of telephone support candidates, by sex and by age group

Number (%)

Age group	Regarding mental health			Regarding lifestyle		
	Overall	Males	Females	Overall	Males	Females
Aged 10 to 19	44	17 (38.6%)	27 (61.4%)	2	2 (100.0%)	0 (0.0%)
Aged 20 to 29	138	47 (34.1%)	91 (65.9%)	12	6 (50.0%)	6 (50.0%)
Aged 30 to 39	144	52 (36.1%)	92 (63.9%)	27	20 (74.1%)	7 (25.9%)
Aged 40 to 49	228	99 (43.4%)	129 (56.6%)	39	28 (71.8%)	11 (28.2%)
Aged 50 to 59	244	116 (47.5%)	128 (52.5%)	39	29 (74.4%)	10 (25.6%)
Aged 60 to 69	339	160 (47.2%)	179 (52.8%)	65	49 (75.4%)	16 (24.6%)
Aged 70 to 79	477	210 (44.0%)	267 (56.0%)	32	20 (62.5%)	12 (37.5%)
Aged 80 or older	508	197 (38.8%)	311 (61.2%)	9	7 (77.8%)	2 (22.2%)
Total	2,122	898 (42.3%)	1,224 (57.7%)	225	161 (71.6%)	64 (28.4%)

- As of April 1, 2019

Table 11 shows residency at the time of the survey. Among support candidates for mental health issues, 1,707 persons (80.4%) were living in the prefecture and 415 persons (19.6%) were living outside the prefecture.

Of all telephone support candidates, telephone counseling was actually provided to 1,875 persons.

Table 11. Telephone support candidates by location of residence at the time of the survey (in or outside the prefecture)

Number (%)

Number of support candidates	Overall	Regarding mental health	Regarding lifestyle
	2,347	2,122	225
In the prefecture	1,904 (81.1%)	1,707 (80.4%)	197 (87.6%)
Outside the prefecture	443 (18.9%)	415 (19.6%)	28 (12.4%)
Number of adults who received support	1,875	1,693	182
In the prefecture	1,544 (82.3%)	1,386 (81.9%)	158 (86.8%)
Outside the prefecture	331 (17.7%)	307 (18.1%)	24 (13.2%)

・Address at the time of sending survey sheets for FY2019

The breakdown of support candidates and recipients with lifestyle issues is shown in Table 12.

Table 12. Breakdown of support candidates regarding lifestyle issues

Number (%)

Number of support candidates	Overall	Only obesity	Only drinking habits	Both obesity and drinking habits	Sleep
	225	153	63	5	4
In the prefecture	197 (87.6%)	133 (86.9%)	55 (87.3%)	5 (100.0%)	4 (100.0%)
Outside the prefecture	28 (12.4%)	20 (13.1%)	8 (12.7%)	0 (0.0%)	0 (0.0%)
Number of support recipients	182	120	55	4	3
In the prefecture	158 (86.8%)	104 (86.7%)	47 (85.5%)	4 (100.0%)	3 (100.0%)
Outside the prefecture	24 (13.2%)	16 (13.3%)	8 (14.5%)	0 (0.0%)	0 (0.0%)

・Address at the time of sending survey sheets for FY2019

(B) Results of Support

The Mental Health Support Team made phone calls and asked about current issues, based on survey form responses. Figure 38 shows the issues identified through telephone counseling from FY2012 to FY2019.

"Physical problems" was the most frequent, followed by "sleep problems" and "depression" from FY2012 to FY2019.

Number (%)

FY2012 No. of telephone support recipients 5,991	FY2013 No. of telephone support recipients 3,913	FY2014 No. of telephone support recipients 3,053	FY2015 No. of telephone support recipients 2,567	FY2016 No. of telephone support recipients 2,382	FY2017 No. of telephone support recipients 2,202	FY2018 No. of telephone support recipients 2,206	FY2019 No. of telephone support recipients 1,875
Physical health	Physical health	Physical health	Physical health	Physical health	Physical health	Physical health	Physical health
2,761 (46.1%)	1,913 (48.9%)	1,279 (41.9%)	1,145 (44.6%)	1,090 (45.8%)	986 (44.8%)	961 (43.6%)	750 (40.0%)
Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep
2,349 (39.2%)	1,593 (40.7%)	865 (28.3%)	798 (31.1%)	699 (29.3%)	613 (27.8%)	603 (27.3%)	467 (24.9%)
Depressive feeling	Depressive feeling	Depressive feeling	Depressive feeling	Depressive feeling	Depressive feeling	Depressive feeling	Depressive feeling
1,417 (23.7%)	765 (19.6%)	485 (15.9%)	342 (13.3%)	231 (9.7%)	240 (10.9%)	312 (14.1%)	235 (12.5%)
Family relationships	Living environment	Worries over the future	Dietary habits	Dietary habits	Worries over the future	Worries over the future	Exercise
1,058 (17.7%)	751 (19.2%)	342 (11.2%)	236 (9.2%)	227 (9.5%)	226 (10.3%)	191 (8.7%)	186 (9.9%)
Living environment	Family relationships	Family relationships	Dietary habits	Family relationships	Family relationships	Exercise	Dietary habits
1,049 (17.5%)	726 (18.6%)	302 (9.9%)	235 (9.2%)	192 (8.1%)	179 (8.1%)	172 (7.8%)	174 (9.3%)

* As tabulation method was different for the FY2011 survey, data for FY2011 are omitted.

Figure 38. Contents of consultations regarding personal issues of adults

Table 13 shows the results of the first telephone support. Among telephone support recipients, 149 (7.9%) were judged to need continued support, while 1,628 (86.8%) were judged to need no more support. No details were obtained from 56 (3.0%) and 42 (2.2%) declined support.

Table 13. Results of the first telephone support for personal issues of adults

Number (%)

Number of support recipients	Overall	Regarding mental health	Regarding lifestyle
	1,875	1,693	182
Continuation of support	149 (7.9%)	138 (8.2%)	11 (6.0%)
Support provided only once	1,628 (86.8%)	1,461 (86.3%)	167 (91.8%)
Details unknown	56 (3.0%)	55 (3.2%)	1 (0.5%)
Do not wish to receive support	42 (2.2%)	39 (2.3%)	3 (1.6%)

・Requiring continued support:
Those judged as requiring continued support, including those with poor physical conditions, those gravely affected by the disaster, those who cannot adapt to society or school, those who are isolated, and others about whom some concerns remained. Continued support includes recommending consultation with specialists at healthcare/medical facilities and providing their information to other support organizations.

・Needing no more support:
Those judged as being able to take care of themselves as some improvements were seen in their physical conditions or living environment or they were already in contact with support resources.

・Details unknown:
No details were obtained for some reason.

・Declined support
Those who said that they would not need support.

Table 14 shows the reasons for judging that continued support would be necessary after the first telephone support. The most frequent reason was “mental problems” among 84 (56.4%), followed by “physical problems” among 66 (44.3%).

Table 14. Reasons for continued support for personal issues of adults

Number (%)

Number of continued support candidates	Overall	Regarding mental health	Regarding lifestyle
	149	138	11
Poor (physical) health conditions	66 (44.3%)	60 (43.5%)	6 (54.5%)
Poor (mental) health conditions	84 (56.4%)	80 (58.0%)	4 (36.4%)
Inability to adapt to social life	5 (3.4%)	5 (3.6%)	0 (0.0%)
Isolation	23 (15.4%)	21 (15.2%)	2 (18.2%)
Others	8 (5.4%)	4 (2.9%)	4 (36.4%)

・Breakdowns are aggregate numbers.

Table 15 shows the types of telephone support provided: “Attentive listening,” 1,472 (78.5%); “Recommendation to see a physician,” 108 (5.8%); “Guidance on daily habits,” 296 (15.8%); “Psychoeducation,” 70 (3.7%); and “Information provision by phone,” 37 (2.0%).

Table 15. Types of telephone support for personal issues of adults

Number (%)

Number of adults who received support	Overall	Regarding mental health	Regarding daily habits
	1,875	1,693	182
Attentive listening	1,472 (78.5%)	1,366 (80.7%)	106 (58.2%)
Recommendation to see a physician	108 (5.8%)	87 (5.1%)	21 (11.5%)
Guidance on daily habits	296 (15.8%)	183 (10.8%)	113 (62.1%)
Psychoeducation	70 (3.7%)	69 (4.1%)	1 (0.5%)
Information provision by phone	37 (2.0%)	37 (2.2%)	0 (0.0%)
Other (only confirmation of circumstances, etc.)	298 (15.9%)	270 (15.9%)	28 (15.4%)

・Breakdowns are the aggregate numbers.

Table 16 shows further measures taken after telephone support. Three (0.2%) were “referred to external organizations,” and “mail support” was provided to 15 (0.8%).

Table 16. Measures taken after telephone support for personal issues of adults

Number of adults (%)

Number of adults who received support	Overall	Regarding mental health	Regarding daily habits
	1,875	1,693	182
Communication with external organizations	3 (0.2%)	3 (0.2%)	0 (0.0%)
Sending of relevant documents	15 (0.8%)	14 (0.8%)	1 (0.5%)
Actions by other departments	0 (0.0%)	0 (0.0%)	0 (0.0%)

Communication with external organizations:
Cases where information was shared with municipalities and the Fukushima Center for Disaster Mental Health, depending on support subjects' circumstances

Sending of relevant documents:
Cases where documents, such as a referral form for seeing a registered physician and a list of physicians, written information on medical institutions and consultation services outside Fukushima, and written personal data to be provided to one's primary care physician, are sent to support subjects

Actions by other departments:
Cases where other departments of the Radiation Science Center for the Fukushima Health Management Survey took actions with regard to questions about the Basic Survey and matters concerning the Thyroid Ultrasound Examination

(2) Support by sending information brochures

For 3,898 persons who met Criteria III, information brochures were sent to help better manage their health conditions. Brochures on such topics as obesity, drinking problems, and smoking were sent to 346 persons, 1,226 persons, and 2,326 persons, respectively.

(3) Conclusions

- In the first telephone support for issues regarding children, 20 (17.9%) were judged to be in need of continued support due to ongoing concerns such as social/school maladaptation or isolation. The most frequent issue was "school life-related issues." The most common type of support provided was “attentive listening,” followed by “psychoeducation.”
- In the first telephone support for personal issues of adults, 138 (8.2%) were judged as in need of continued support due to mental health issues and 11 (6.0%) for lifestyle issues. The most frequent issues were “physical problems” and “sleep problems.” The most common type of support was “attentive listening,” followed by “guidance on daily habits.”
- For support recipients who were judged to need continued support or who wished to continue receiving support either for their own issues or issues related to their children, our Support Team continued providing telephone support to monitor their conditions and provided them with information on support resources. If the Support Team judged that the urgency was very high, they provided information of support recipients to the recipients’ local health/medical facilities. For those the team could not offer telephone support because of absence at the time of the call, etc., we sent a booklet “Mental Health and Lifestyle Support Book,” produced by the Radiation Medical Science Center for the Fukushima Health Management Survey, to encourage them to perform self-checks on their physical and mental health, along with information on various consultation services including our telephone number dedicated to inquiries about the Mental Health and Lifestyle Survey.

6. Tabulated Results of the FY2019 Mental Health and Lifestyle Survey

(1) Survey for Ages 0–3

						Number	Percentage
Response method			(Valid responses:	468)	・Paper	382	81.6%
					・Online	86	18.4%
Sex			(Valid responses:	468)	・Boys	240	51.3%
(Average age: 2.0)					・Girls	228	48.7%
Residential location at the time of survey			(Valid responses:	468)	・In the prefecture	441	94.2%
					・Outside the prefecture	27	5.8%
Q1 Health condition			(Valid responses:	462)	・Very good	229	49.6%
					・Good	179	38.7%
					・Fair	51	11.0%
					・Unsatisfactory	3	0.6%
					・Very unsatisfactory	0	0.0%
Q2 Height	Boys	Age 1	(Valid responses:	66)	Average height	77.8	cm
		Age 2	(Valid responses:	65)	Average height	86.7	cm
		Age 3	(Valid responses:	84)	Average height	93.9	cm
	Girls	Age 1	(Valid responses:	67)	Average height	77.1	cm
		Age 2	(Valid responses:	55)	Average height	86.8	cm
		Age 3	(Valid responses:	81)	Average height	94.7	cm
Weight	Boys	Age 1	(Valid responses:	69)	Average weight	10.4	kg
		Age 2	(Valid responses:	73)	Average weight	12.4	kg
		Age 3	(Valid responses:	88)	Average weight	14.3	kg
	Girls	Age 1	(Valid responses:	74)	Average weight	10.0	kg
		Age 2	(Valid responses:	65)	Average weight	12.0	kg
		Age 3	(Valid responses:	84)	Average weight	14.3	kg
Q3 Sleep time and naps							
1) Sleep time			(Valid responses:	468)	Average sleep hours	9 hr 50 min	
			(Valid responses:	468)	Average bed time	9:09 pm	
			(Valid responses:	468)	Average get-up time	6:59 am	
2) Take naps?			(Valid responses:	465)	・No	46	9.9%
					・Yes	419	90.1%
			(Valid responses:	412)	Average nap hours	1 hr 57 min	
Q4 Frequency of exercising			(Valid responses:	304)	・Almost everyday	188	61.8%
					・2-4 times a week	88	28.9%
					・Once a week	18	5.9%
					・Rarely	10	3.3%
Q5 Your child's diet during the past month							
1) Eats seafood 3 times or more per week?					・Yes	221	50.1%
			(Valid responses:	441)	・No	220	49.9%
2) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?					・Yes	315	71.4%
			(Valid responses:	441)	・No	126	28.6%
3) Eats fruit almost every day?					・Yes	310	70.5%
			(Valid responses:	440)	・No	130	29.5%
4) Eats soy products almost every day?					・Yes	314	71.2%
			(Valid responses:	441)	・No	127	28.8%
5) Has dairy products almost every day?					・Yes	359	81.6%
			(Valid responses:	440)	・No	81	18.4%
Q6 Loss of confidence in child rearing			(Valid responses:	468)	・Yes	76	16.2%
					・No	215	45.9%
					・Neither yes nor no	177	37.8%
Q7 Worries about the child			(Valid responses:	468)	・Yes	60	12.8%
					・No	310	66.2%
					・Neither yes nor no	98	20.9%
Q8 Availability of consultation resource			(Valid responses:	468)	・Yes	459	98.1%
Have someone to consult with about child rearing?					(Family)	443	-
					(Neighbor)	57	-
					(Friend)	319	-
					(Medical facility)	95	-
					(Child guidance center)	8	-
					(Public health nurse/midwife)	99	-
					(Nursery school/kindergarten teacher)	192	-
					(Other)	17	-
					・No	9	1.9%

(2) Survey for Ages 4–6

						Number	Percentage
Response method			(Valid responses:	457)	・Paper	404	88.4%
					・Online	53	11.6%
Sex			(Valid responses:	457)	・Boys	236	51.6%
(Average age: 4.9)					・Girls	221	48.4%
Residential location at the time of survey			(Valid responses:	457)	・In the prefecture	421	92.1%
					・Outside the prefecture	36	7.9%
Q1 Health condition			(Valid responses:	455)	・Very good	180	39.6%
					・Good	192	42.2%
					・Fair	83	18.2%
					・Unsatisfactory	0	0.0%
					・Very unsatisfactory	0	0.0%
Q2 Height	Boys	Age 4	(Valid responses:	73)	Average height	102.9 cm	
		Age 5	(Valid responses:	85)	Average height	110.0 cm	
		Age 6	(Valid responses:	68)	Average height	117.0 cm	
	Girls	Age 4	(Valid responses:	61)	Average height	102.0 cm	
		Age 5	(Valid responses:	82)	Average height	108.8 cm	
		Age 6	(Valid responses:	64)	Average height	115.1 cm	
Weight	Boys	Age 4	(Valid responses:	75)	Average weight	16.7 kg	
		Age 5	(Valid responses:	87)	Average weight	19.1 kg	
		Age 6	(Valid responses:	67)	Average weight	21.5 kg	
	Girls	Age 4	(Valid responses:	66)	Average weight	16.2 kg	
		Age 5	(Valid responses:	83)	Average weight	18.6 kg	
		Age 6	(Valid responses:	65)	Average weight	20.6 kg	
Q3 Sleep time and naps							
1) Sleep time			(Valid responses:	456)	Average sleep hours	9 hr 36 min	
			(Valid responses:	457)	Average bed time	9:10 pm	
			(Valid responses:	456)	Average get-up time	6:46 am	
2) Take naps?			(Valid responses:	457)	・No	261	57.1%
					・Yes	196	42.9%
			(Valid responses:	185)	Average nap hours	1 hr 37 min	
Q4 Frequency of exercising			(Valid responses:	456)	・Almost everyday	272	59.6%
					・2-4 times a week	141	30.9%
					・Once a week	34	7.5%
					・Rarely	9	2.0%
Q5 Your child's diet during the past month							
1) Eats faster/slower than others					・Faster	30	6.6%
			(Valid responses:	456)	・Average/slower	426	93.4%
2) Drinks sugared beverages almost every day?					・Yes	157	34.4%
			(Valid responses:	456)	・No	299	65.6%
3) Eats seafood 3 times or more per week?					・Yes	234	51.3%
			(Valid responses:	456)	・No	222	48.7%
4) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?					・Yes	309	67.8%
			(Valid responses:	456)	・No	147	32.2%
5) Eats fruit almost every day?					・Yes	267	58.7%
			(Valid responses:	455)	・No	188	41.3%
6) Eats soy products almost every day?					・Yes	273	60.0%
			(Valid responses:	455)	・No	182	40.0%
7) Has dairy products almost every day?					・Yes	401	87.9%
			(Valid responses:	456)	・No	55	12.1%
8) Eats pre-cooked food almost every day?					・Yes	42	9.2%
			(Valid responses:	456)	・No	414	90.8%
9) Eats out almost every day?					・Yes	1	0.2%
			(Valid responses:	456)	・No	455	99.8%

				Number	Percentage
Q6 Child's emotion and behavior (SDQ)					
1) SDQ	(Valid responses:	455)	Average score	8.6	points
	(Valid responses:	235)	Average score (Boys)	9.7	points
	(Valid responses:	220)	Average score (Girls)	7.5	points
			・≥ 16 points	44	9.7%
			(Boys)	29	12.3%
			(Girls)	15	6.8%
			・≥ 20 points	12	2.6%
			(Boys)	10	4.3%
			(Girls)	2	0.9%
2) Child's difficulties and their level	(Valid responses:	455)	・No	352	77.4%
			・Yes (minor difficulties)	85	18.7%
			・Yes (definite difficulties)	14	3.1%
			・Yes (severe difficulties)	4	0.9%
3) Degree of the child's upset	(Valid responses:	101)	・Not at all	50	49.5%
			・Only a little	46	45.5%
			・A medium degree	4	4.0%
			・A great deal	1	1.0%
4) Developmental/psychological prob	(Valid responses:	449)	・Yes	90	20.0%
			(Attention deficiency, hyperactivity)	12	-
			(Autistic spectrum disorder)	16	-
			(Intellectual delays)	8	-
			(Tic)	5	-
			(Bedwetting)	18	-
			(Speech or language problems)	32	-
			(Dietary problems)	35	-
			(Sleep problems)	2	-
			(PTSD)	2	-
			(Other)	6	-
			・No	359	80.0%
Q7 Refusal to go to nursery school, etc.	(Valid responses:	453)	・Yes	107	23.6%
Missed nursery school, etc. due to refusal?			(Did not miss mursery school, etc.)	87	81.3%
			(Missed nursery school, etc.)	20	18.7%
			・No	336	74.2%
			・Currently not enrolled	10	2.2%
Q8 Availability of consultation resourc	(Valid responses:	454)	・Yes	448	98.7%
Have someone to consult with about child rearing?			(Family)	421	-
			(Neighbor)	77	-
			(Friend)	324	-
			(Medical facility)	73	-
			(Child guidance center)	14	-
			(Public health nurse/midwife)	49	-
			(Nursery school/kindergarten teacher)	285	-
			(Other)	22	-
			・No	6	1.3%

(3) Survey for Elementary School Students

						Number	Percentage
Response method			(Valid responses:	1,419)	・Paper	1,236	87.1%
					・Online	183	12.9%
Sex			(Valid responses:	1,419)	・Boys	708	49.9%
(Average age: 9.7)					・Girls	711	50.1%
Residential location at the time of survey			(Valid responses:	1,419)	・In the prefecture	1,089	76.7%
					・Outside the prefecture	330	23.3%
Q1 Health condition			(Valid responses:	1,415)	・Very good	486	34.3%
					・Good	596	42.1%
					・Fair	314	22.2%
					・Unsatisfactory	15	1.1%
					・Very unsatisfactory	4	0.3%
Q2 Height	Boys	Grade 1	(Valid responses:	64)	Average height	121.0 cm	
		Grade 2	(Valid responses:	106)	Average height	127.1 cm	
		Grade 3	(Valid responses:	113)	Average height	131.8 cm	
		Grade 4	(Valid responses:	125)	Average height	138.6 cm	
		Grade 5	(Valid responses:	146)	Average height	144.1 cm	
		Grade 6	(Valid responses:	122)	Average height	153.4 cm	
	Girls	Grade 1	(Valid responses:	60)	Average height	121.3 cm	
		Grade 2	(Valid responses:	106)	Average height	126.4 cm	
		Grade 3	(Valid responses:	115)	Average height	133.0 cm	
		Grade 4	(Valid responses:	155)	Average height	139.2 cm	
		Grade 5	(Valid responses:	113)	Average height	144.2 cm	
		Grade 6	(Valid responses:	120)	Average height	150.1 cm	
Weight	Boys	Grade 1	(Valid responses:	66)	Average weight	23.6 kg	
		Grade 2	(Valid responses:	109)	Average weight	27.0 kg	
		Grade 3	(Valid responses:	112)	Average weight	30.4 kg	
		Grade 4	(Valid responses:	128)	Average weight	34.9 kg	
		Grade 5	(Valid responses:	146)	Average weight	39.3 kg	
		Grade 6	(Valid responses:	122)	Average weight	45.4 kg	
	Girls	Grade 1	(Valid responses:	68)	Average weight	24.3 kg	
		Grade 2	(Valid responses:	109)	Average weight	25.9 kg	
		Grade 3	(Valid responses:	116)	Average weight	30.5 kg	
		Grade 4	(Valid responses:	155)	Average weight	33.8 kg	
		Grade 5	(Valid responses:	113)	Average weight	37.5 kg	
		Grade 6	(Valid responses:	115)	Average weight	42.2 kg	
Q3 Sleep time			(Valid responses:	1,418)	Average sleep hours	8 hr 48 min	
			(Valid responses:	1,418)	Average bed time	9:36 pm	
			(Valid responses:	1,419)	Average get-up time	6:24 am	
Q4 Frequency of exercising			(Valid responses:	1,416)	・Almost everyday	150	10.6%
					・2-4 times a week	424	29.9%
					・Once a week	364	25.7%
					・Rarely	478	33.8%
Q5 Your child's diet during the past month							
1) Eats faster/slower than others					・Faster	183	12.9%
			(Valid responses:	1,416)	・Average/slower	1,233	87.1%
2) Often skips breakfast?					・Yes	72	5.1%
			(Valid responses:	1,419)	・No	1,347	94.9%
3) Drinks sugared beverages almost every day?					・Yes	352	24.8%
			(Valid responses:	1,419)	・No	1,067	75.2%
4) Eats seafood 3 times or more per week?					・Yes	611	43.1%
			(Valid responses:	1,418)	・No	807	56.9%
5) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?					・Yes	975	68.7%
			(Valid responses:	1,419)	・No	444	31.3%
6) Eats fruit almost every day?					・Yes	546	38.5%
			(Valid responses:	1,418)	・No	872	61.5%
7) Eats soy products almost every day?					・Yes	838	59.1%
			(Valid responses:	1,419)	・No	581	40.9%
8) Has dairy products almost every day?					・Yes	1,205	85.0%
			(Valid responses:	1,418)	・No	213	15.0%
9) Eats pre-cooked food almost every day?					・Yes	124	8.8%
			(Valid responses:	1,417)	・No	1,293	91.2%
10) Eats out almost every day?					・Yes	12	0.8%
			(Valid responses:	1,419)	・No	1,407	99.2%

				Number	Percentage
Q6 Child's emotion and behavior (SDQ)					
1) SDQ	(Valid responses:	1,418)	Average score	8.2	points
	(Valid responses:	708)	Average score (Boys)	8.8	points
	(Valid responses:	710)	Average score (Girls)	7.7	points
			・≥ 16 points	144	10.2%
			(Boys)	83	11.7%
			(Girls)	61	8.6%
			・≥ 20 points	44	3.1%
			(Boys)	23	3.2%
			(Girls)	21	3.0%
2) Child's difficulties and their level	(Valid responses:	1,417)	・No	1,110	78.3%
			・Yes (minor difficulties)	236	16.7%
			・Yes (definite difficulties)	56	4.0%
			・Yes (severe difficulties)	15	1.1%
3) Degree of the child's upset	(Valid responses:	305)	・Not at all	94	30.8%
			・Only a little	186	61.0%
			・A medium degree	17	5.6%
			・A great deal	8	2.6%
4) Developmental/psychological prob	(Valid responses:	1,374)	・Yes	235	17.1%
			(Attention deficiency, hyperactivity)	45	-
			(Autistic spectrum disorder)	76	-
			(Learning disability)	19	-
			(Intellectual delays)	35	-
			(Speech or language problems)	28	-
			(Tic)	21	-
			(Bedwetting)	34	-
			(Dietary problems)	61	-
			(Sleep problems)	9	-
			(Depression)	2	-
			(PTSD)	4	-
			(Shut-in)	4	-
			(PTSD)	4	-
			(Other)	43	-
			・No	1,139	82.9%
Q7 Refusal to go to school	(Valid responses:	1,413)	・Yes	204	14.4%
Missed school due to refusal?			(Did not miss school)	147	72.1%
			(Missed school < 30 days)	48	23.5%
			(Missed school ≥ 30 days)	9	4.4%
			・No	1,209	85.6%
Q8 Availability of consultation resourc	(Valid responses:	1,408)	・Yes	1,371	97.4%
Have someone to consult with about child rearing?			(Family)	1,257	-
			(Neighbor)	235	-
			(Friend)	952	-
			(Medical facility)	187	-
			(Child guidance center)	35	-
			(School teacher)	685	-
			(School counselor)	122	-
			(Other)	65	-
			・No	37	2.6%

(4) Survey for Junior High School Students

						Number	Percentage
Response method			(Valid responses:	766)	・Paper	675	88.1%
					・Online	91	11.9%
Sex			(Valid responses:	766)	・Boys	378	49.3%
(Average age: 13.9)					・Girls	388	50.7%
Residential location at the time of survey			(Valid responses:	766)	・In the prefecture	587	76.6%
					・Outside the prefecture	179	23.4%
Q1 Health condition			(Valid responses:	496)	・Very good	187	37.7%
					・Good	166	33.5%
					・Fair	135	27.2%
					・Unsatisfactory	8	1.6%
					・Very unsatisfactory	0	0.0%
Q2 Height	Boys	Grade 7	(Valid responses:	78)	Average height	160.7 cm	
		Grade 8	(Valid responses:	80)	Average height	165.5 cm	
		Grade 9	(Valid responses:	69)	Average height	167.3 cm	
	Girls	Grade 7	(Valid responses:	95)	Average height	154.3 cm	
		Grade 8	(Valid responses:	86)	Average height	155.2 cm	
		Grade 9	(Valid responses:	85)	Average height	156.3 cm	
Weight	Boys	Grade 7	(Valid responses:	77)	Average weight	49.4 kg	
		Grade 8	(Valid responses:	80)	Average weight	52.8 kg	
		Grade 9	(Valid responses:	69)	Average weight	56.4 kg	
	Girls	Grade 7	(Valid responses:	94)	Average weight	46.6 kg	
		Grade 8	(Valid responses:	85)	Average weight	48.4 kg	
		Grade 9	(Valid responses:	85)	Average weight	50.1 kg	
Q3 Sleep time							
1) Sleep time			(Valid responses:	498)	Average sleep hours	7 hr 37 min	
			(Valid responses:	498)	Average bed time	10:56 pm	
			(Valid responses:	498)	Average get-up time	6:34 pm	
2) Sleep time is sufficient?			(Valid responses:	497)	・Sufficient	240	48.3%
					・Slightly insufficient	207	41.6%
					・Insufficient	50	10.1%
Q4 Frequency of exercising			(Valid responses:	499)	・Almost everyday	195	39.1%
					・2-4 times a week	100	20.0%
					・Once a week	36	7.2%
					・Rarely	168	33.7%
Q5 Diet during the past month							
1) Eat faster/slower than others					・Faster	103	20.7%
			(Valid responses:	497)	・Average/slower	394	79.3%
2) Often skip breakfast?					・Yes	56	11.2%
			(Valid responses:	499)	・No	443	88.8%
3) Go to bed within 1-2 hrs after dinner?					・Yes	55	11.0%
			(Valid responses:	498)	・No	443	89.0%
4) Drink sugared beverages almost every day?					・Yes	134	26.9%
			(Valid responses:	498)	・No	364	73.1%
5) Eat seafood 3 times or more per week?					・Yes	240	48.2%
			(Valid responses:	498)	・No	258	51.8%
6) Eat vegetables, sea vegetables, and/or mushrooms at almost every meal?					・Yes	369	73.9%
			(Valid responses:	499)	・No	130	26.1%
7) Eat fruit almost every day?					・Yes	156	31.3%
			(Valid responses:	499)	・No	343	68.7%
8) Eat soy products almost every day?					・Yes	278	55.8%
			(Valid responses:	498)	・No	220	44.2%
9) Have dairy products almost every day?					・Yes	402	80.6%
			(Valid responses:	499)	・No	97	19.4%
10) Eat pre-cooked food almost every day?					・Yes	72	14.5%
			(Valid responses:	498)	・No	426	85.5%
11) Eat out almost every day?					・Yes	2	0.4%
			(Valid responses:	498)	・No	496	99.6%

				Number	Percentage
Q6 Child's emotion and behavior (SDQ)					
1) SDQ	(Valid responses:	741)	Average score	7.8	points
	(Valid responses:	364)	Average score (Boys)	8.3	points
	(Valid responses:	377)	Average score (Girls)	7.4	points
			・≥ 16 points	74	10.0%
			(Boys)	43	11.8%
			(Girls)	31	8.2%
			・≥ 20 points	29	3.9%
			(Boys)	21	5.8%
			(Girls)	8	2.1%
2) Child's difficulties and their level	(Valid responses:	739)	・No	566	76.6%
			・Yes (minor difficulties)	118	16.0%
			・Yes (definite difficulties)	37	5.0%
			・Yes (severe difficulties)	18	2.4%
3) Degree of the child's upset	(Valid responses:	169)	・Not at all	24	14.2%
			・Only a little	119	70.4%
			・A medium degree	18	10.7%
			・A great deal	8	4.7%
4) Developmental/psychological prob	(Valid responses:	720)	・Yes	105	14.6%
			(Attention deficiency, hyperactivity)	23	-
			(Autistic spectrum disorder)	36	-
			(Learning disability)	14	-
			(Intellectual delays)	17	-
			(Tic)	5	-
			(Insomnia)	19	-
			(Sleep rhythm problem)	30	-
			(Eating disorders)	1	-
			(PTSD)	9	-
			(Depression)	3	-
			(Shut-in)	9	-
			(Bullying)	6	-
			(Delinquency)	1	-
			(Other)	25	-
			・No	615	85.4%
Q7 Refusal to go to school	(Valid responses:	738)	・Yes	127	17.2%
Missed school due to refusal?			(Did not miss school)	60	47.2%
			(Missed school < 30 days)	43	33.9%
			(Missed school ≥ 30 days)	24	18.9%
			・No	611	82.8%
Q8 Availability of consultation resource	(Valid responses:	734)	・Yes	696	94.8%
Have someone to consult with about child rearing?			(Family)	624	-
			(Neighbor)	82	-
			(Friend)	466	-
			(Medical facility)	87	-
			(Child guidance center)	20	-
			(School teacher)	308	-
			(School counselor)	71	-
			(Other)	27	-
			・No	38	5.2%

(5) Survey for Adults

					Number	Percentage
Response method		(Valid responses:	34,391)	・Paper	32,098	93.3%
				・Online	2,293	6.7%
Sex		(Valid responses:	34,391)	・Male	15,904	46.2%
(Average age: 63.5)				・Female	18,487	53.8%
Residential location at the time of survey		(Valid responses:	34,391)	・In the prefecture	29,672	86.3%
				・Outside the prefecture	4,719	13.7%
Q1 Health condition		(Valid responses:	29,852)	・Very good	1,453	4.9%
				・Good	5,839	19.6%
				・Fair	18,391	61.6%
				・Unsatisfactory	3,798	12.7%
				・Very unsatisfactory	371	1.2%
Q2 Height and weight						
1) Height, weight, BMI						
	Height	Male	(Valid responses: 15,592)	Average height	165.9 cm	
		Female	(Valid responses: 17,872)	Average height	153.2 cm	
	Weight	Male	(Valid responses: 15,611)	Average weight	66.5 kg	
		Female	(Valid responses: 17,856)	Average weight	54.2 kg	
	BMI	Male	(Valid responses: 15,523)	Average BMI	24.1 kg/m^2	
				・< 18.5 kg/m^2	570	3.7%
				・≥ 18.5 kg/m^2 — < 25.0kg/m^2	9,328	60.1%
				・≥ 25.0 kg/m^2 — < 27.5kg/m^2	3,335	21.5%
				・≥ 27.5 kg/m^2 — < 30.0kg/m^2	1,480	9.5%
				・≥ 30.0 kg/m^2	810	5.2%
		Female	(Valid responses: 17,676)	Average BMI	23.1 kg/m^2	
				・< 18.5 kg/m^2	1,340	7.6%
				・≥ 18.5 kg/m^2 — < 25.0kg/m^2	11,580	65.5%
				・≥ 25.0 kg/m^2 — < 27.5kg/m^2	2,689	15.2%
				・≥ 27.5 kg/m^2 — < 30.0kg/m^2	1,173	6.6%
				・≥ 30.0 kg/m^2	894	5.1%
2) Change in weight						
		Male	(Valid responses: 15,311)	・Increased by ≥ 3 kg	1,658	10.8%
				・Almost no change	12,398	81.0%
				・Decreased by ≥ 3 kg	1,255	8.2%
		Female	(Valid responses: 17,672)	・Increased by ≥ 3 kg	2,094	11.8%
				・Almost no change	14,221	80.5%
				・Decreased by ≥ 3 kg	1,357	7.7%
Q3 Medical history						
1) Hypertension (or high blood pressure)			(Valid responses: 33,552)	・No	18,405	54.9%
				・Yes	15,147	45.1%
				(Currently under treatment)	13,821	92.6%
				(Not under treatment)	1,102	7.4%
2) Diabetes (or uncontrolled blood sugar)			(Valid responses: 32,949)	・No	27,536	83.6%
				・Yes	5,413	16.4%
				(Currently under treatment)	4,871	91.7%
				(Not under treatment)	441	8.3%
3) Hyperlipidemia			(Valid responses: 32,934)	・No	20,519	62.3%
				・Yes	12,415	37.7%
				(Currently under treatment)	8,894	73.6%
				(Not under treatment)	3,196	26.4%
4) Mental disorder			(Valid responses: 33,222)	・No	30,168	90.8%
				・Yes	3,054	9.2%
				(Currently under treatment)	2,296	77.4%
				(Currently not under treatment due to improvement)	398	13.4%
				(Not under treatment)	272	9.2%

				Number	Percentage
5) Cancer (incl. leukemia & lymphoma)	(Valid responses:	33,440)	・No	30,888	92.4%
			・Yes	2,552	7.6%
6) Stroke	(Valid responses:	33,512)	・No	31,944	95.3%
			・Yes	1,568	4.7%
			(Occlusive stroke)	1,087	-
			(Cerebral hemorrhage)	173	-
			(Subarachnoid hemorrhage)	158	-
			(Other)	15	-
			(I don't know)	149	-
7) Heart disease	(Valid responses:	33,569)	・No	29,144	86.8%
			・Yes	4,425	13.2%
			(Myocardinal infarction)	528	-
			(Angina)	1,183	-
			(Arrhythmia)	2,211	-
			(Other)	763	-
			(I don't know)	290	-
8) Thyroid disease	(Valid responses:	33,339)	・No	32,013	96.0%
			・Yes	1,326	4.0%
			(Hyperthyroidism [Basedow disease])	266	-
			(Hypothyroidism)	511	-
			(Other)	499	-
Q4 Sleeping habits					
1) Sleep time	(Valid responses:	33,656)	Average sleep time	6 hr 57 min	
2) Satisfaction with sleep	(Valid responses:	30,219)	・Sufficient	12,657	41.9%
			・Slightly insufficient	13,790	45.6%
			・Very insufficient	3,180	10.5%
			・Greatly insufficient or couldn't get any sleep	592	2.0%
3) Sleep experience					
1. Takes time to fall asleep after getting in bed			・Yes	10,999	37.2%
	(Valid responses:	29,586)	・No	18,587	62.8%
2. Wake up at night in the middle of sleep			・Yes	19,155	64.3%
	(Valid responses:	29,779)	・No	10,624	35.7%
3. Wake up before intended time and can't go back to sleep			・Yes	11,177	38.3%
	(Valid responses:	29,168)	・No	17,991	61.7%
4. Total sleep time is insufficient			・Yes	10,170	35.4%
	(Valid responses:	28,758)	・No	18,588	64.6%
5. Feel depressed during the day			・Yes	5,865	20.6%
	(Valid responses:	28,532)	・No	22,667	79.4%
6. Low physical/mental activity level during the day			・Yes	6,947	24.2%
	(Valid responses:	28,699)	・No	21,752	75.8%
7. Feel sleepy during the day			・Yes	13,509	46.3%
	(Valid responses:	29,174)	・No	15,665	53.7%
Q5 Frequency of exercising	(Valid responses:	33,581)	・Almost everyday	5,812	17.3%
			・2-4 times a week	8,884	26.5%
			・Once a week	5,844	17.4%
			・Rarely	13,041	38.8%

				Number	Percentage
Q6 Smoking	(Valid responses:	32,168)	・I have never smoked	18,632	57.9%
			・I quit	9,341	29.0%
			・Yes	4,195	13.0%
	(Valid responses:	4,028)	Average years of smoking	33.7	years
	(Valid responses:	4,121)	Average no. of cigarettes per day	15.2	
Q7 Alcohol					
1) Alcohol consumption	(Valid responses:	32,431)	・No, or rarely	17,532	54.1%
			・I quit	1,579	4.9%
			・Yes (Once a month or more)	13,320	41.1%
2) Frequency of consumption	(Valid responses:	12,761)	・1 day per week	1,993	15.6%
			・2 days per week	1,340	10.5%
			・3 days per week	1,228	9.6%
			・4 days per week	795	6.2%
			・5 days per week	1,412	11.1%
			・6 days per week	1,584	12.4%
			・7 days per week	4,409	34.6%
3) Daily alcohol consumption	(Valid responses:	12,421)	Average amount	1.1	go*
	(Valid responses:	32,431)	No. of those who drink 2 go* or more	2,483	7.7%
			* 1 go = approximately 180 ml		
4) Experiences related to alcohol					
1. Felt the necessity of cutting down on drinking			・No	8,712	70.9%
	(Valid responses:	12,296)	・Yes	3,584	29.1%
2. Annoyed by criticism about drinking			・No	11,117	91.2%
	(Valid responses:	12,184)	・Yes	1,067	8.8%
3. Felt guilty about drinking			・No	10,741	88.0%
	(Valid responses:	12,203)	・Yes	1,462	12.0%
4. Needed a drink as an eye-opener in the morning			・No	11,320	92.8%
	(Valid responses:	12,199)	・Yes	879	7.2%
			≥ 2 points on CAGE	1,708	14.1%
	(Valid responses:	8,275)	(Male)	1,386	16.7%
	(Valid responses:	3,869)	(Female)	322	8.3%
	(Valid responses:	594)	(20s)	44	7.4%
	(Valid responses:	701)	(30s)	91	13.0%
	(Valid responses:	1,259)	(40s)	199	15.8%
	(Valid responses:	1,560)	(50s)	231	14.8%
	(Valid responses:	3,547)	(60s)	527	14.9%
	(Valid responses:	4,483)	(70s or over)	616	13.7%
Q8 Appetite	(Valid responses:	32,969)	・No days	26,791	81.3%
How often did you lose appetite over the past 2 weeks?			・Several days	4,906	14.9%
			・Most days	743	2.3%
			・Almost every day	529	1.6%

				Number	Percentage
Q9 Diet during the past month					
1) Eat faster/slower than others?			・Faster	9,155	27.0%
	(Valid responses:	33,967)	・Average/slower	24,812	73.0%
2) Often skip breakfast?			・Yes	4,642	13.7%
	(Valid responses:	33,963)	・No	29,321	86.3%
3) Go to bed within 1-2 hrs after dinner?			・Yes	9,441	27.9%
	(Valid responses:	33,818)	・No	24,377	72.1%
4) Drink sugared beverages almost every day?			・Yes	7,220	21.4%
	(Valid responses:	33,750)	・No	26,530	78.6%
5) Eat seafood 3 times or more per week?			・Yes	20,355	60.2%
	(Valid responses:	33,828)	・No	13,473	39.8%
6) Eat vegetables, sea vegetables, and/or mushrooms at almost every meal?			・Yes	23,228	68.4%
	(Valid responses:	33,953)	・No	10,725	31.6%
7) Eat fruit almost every day?			・Yes	16,369	48.3%
	(Valid responses:	33,903)	・No	17,534	51.7%
8) Eat soy products almost every day?			・Yes	23,054	67.8%
	(Valid responses:	33,996)	・No	10,942	32.2%
9) Have dairy products almost every day?			・Yes	21,828	64.5%
	(Valid responses:	33,824)	・No	11,996	35.5%
10) Eat pre-cooked food almost every day?			・Yes	7,183	21.3%
	(Valid responses:	33,793)	・No	26,610	78.7%
Q10 General mental health status					
1) Kessler psychological distress scale (K6)	(Valid responses:	29,451)	Average score	3.8	points
	(Valid responses:	13,729)	Average score (Male)	3.5	points
	(Valid responses:	15,722)	Average score (Female)	4.0	points
			・≥ 13 points	1,463	5.0%
	(Valid responses:	13,729)	(Male)	611	4.5%
	(Valid responses:	15,722)	(Female)	852	5.4%
	(Valid responses:	490)	(10s)	34	6.9%
	(Valid responses:	1,446)	(20s)	122	8.4%
	(Valid responses:	1,861)	(30s)	128	6.9%
	(Valid responses:	2,763)	(40s)	198	7.2%
	(Valid responses:	3,066)	(50s)	199	6.5%
	(Valid responses:	7,321)	(60s)	245	3.3%
	(Valid responses:	12,504)	(70s or over)	537	4.3%
2) Hindrance to daily life	(Valid responses:	30,263)	・Not al all	20,984	69.3%
			・Only a little	6,167	20.4%
			・Sometimes	2,133	7.0%
			・Most of the time	503	1.7%
			・Always	476	1.6%
Q11 Life events			・Returned to hometown due to lifting of evacuation orders	2,501	-
Life events experienced over the past year			・Relocated due to a reason other than the above	1,904	-
			・Got married	517	-
			・Child/grandchild was born	3,077	-
			・Deterioration of health status	8,666	-
			・Deterioration of a family member's health status	5,010	-
			・Started nursing care for a family member	3,438	-
			・Got divorced/separated from the partner	374	-
			・Started living apart from the family	1,975	-
			・Death of a family member	2,306	-
			・Death of a loved one other than family members	5,285	-
			・Proceeded to the next level of education	1,010	-
			・Started working or changed jobs	1,604	-
			・Job promotion at work	359	-
			・Lost a job	963	-
			・Retired or quit a job	1,203	-
			・Deterioration of the financial status	3,597	-
			・Damage due to natural disasters	3,426	-
			・Increased interpersonal problems	1,920	-
			・Other significant event	1,085	-
			・None of the above	9,474	-

				Number	Percentage
Q12 Great East Japan Earthquake and trauma reactions	*Multiple answers allowed				
1) Events experienced during and after the earthquake			・Earthquake	28,490	-
			・Tsunami	5,451	-
			・Nuclear accident	26,667	-
			・None of the above	975	-
2) Trauma reactions (PCL-4)	(Valid responses:	26,454)	Average score	6.5	points
	(Valid responses:	12,360)	Average score (Male)	6.4	points
	(Valid responses:	14,094)	Average score (Female)	6.5	points
			・≥ 12 points	2,189	8.3%
	(Valid responses:	12,360)	(Male)	995	8.1%
	(Valid responses:	14,094)	(Female)	1,194	8.5%
	(Valid responses:	472)	(10s)	14	3.0%
	(Valid responses:	1,384)	(20s)	54	3.9%
	(Valid responses:	1,733)	(30s)	63	3.6%
	(Valid responses:	2,634)	(40s)	150	5.7%
	(Valid responses:	2,907)	(50s)	209	7.2%
	(Valid responses:	6,816)	(60s)	434	6.4%
	(Valid responses:	10,508)	(70s or over)	1,265	12.0%
Q13 Current living conditions					
1) Living condition with family					
Living apart from family members you used to live with due to the earthquake?	(Valid responses:	32,733)	・Yes	8,838	27.0%
			・No	23,895	73.0%
2) People you are living with	*Multiple answers allowed		・No one (living alone)	5,009	-
			・Spouse or life partner	20,504	-
			・Children (incl. in-laws)	12,288	-
			・Grandchildren	3,382	-
			・Parents (incl. in-laws)	6,272	-
			・Grandparents	1,041	-
			・Other	1,347	-
3) Current living conditions					
3-1) Types of residence	*Multiple answers allowed		・Municipally subsidized rental housing	26,038	-
			・Rented house/apartment	3,856	-
			・Temporary housing	865	-
			・Public restoration housing	1,940	-
			・Relative's house	536	-
			・Owned house	48	-
			・Other	400	-
3-2) Evacuation status	(Valid responses:	19,833)	・Living in the house at the original address	9,044	45.6%
			・Living at a different address from the original, but in the same region for which the evacuation order has been lifted	5,254	26.5%
			・Not living in the region for which the evacuation order has been lifted	5,535	27.9%
4) Employment status	(Valid responses:	31,776)	・Full-time/self-employed	9,033	28.4%
			・Part-time	2,870	9.0%
			・Unemployed (incl. students, home-makers, etc.)	19,873	62.5%
5) Financial circumstances	(Valid responses:	33,081)	・Tough	3,008	9.1%
			・Slightly tough	7,741	23.4%
			・Normal	20,093	60.7%
			・Slightly comfortable	1,655	5.0%
			・Comfortable	584	1.8%

			Number	Percentage
Q14 Risk perception of radiation health effects				
1) Risk perception of radiation health effects				
1 Possibility of disorders (cancer, etc.) in later years?		・Very low	6,973	23.8%
	(Valid responses: 29,238)	・Low	13,809	47.2%
		・High	6,932	23.7%
		・Very high	1,524	5.2%
2 Possibility of disorders in future generations?		・Very low	6,338	22.1%
	(Valid responses: 28,690)	・Low	13,621	47.5%
		・High	7,004	24.4%
		・Very high	1,727	6.0%
2) Hindrance to daily life	(Valid responses: 29,159)	・Frequently	780	2.7%
Daily life hindered by fear of radiation during the past month?		・Sometimes	2,791	9.6%
		・Rarely	4,745	16.3%
		・Never	20,843	71.5%
Q15 Availability of consultation resources	(Valid responses: 33,425)	・Yes	29,815	89.2%
Have someone to consult with about mental/physical problems?		(Family/relatives)	26,191	-
		(Friends/acquaintances)	14,966	-
		(Colleagues/superiors)	2,948	-
		(Municipal consultation service, incl. municipal health offices and health centers)	7,046	-
		(Prefectural consultation service, incl. prefectural health offices and health and welfare centers)	1,684	-
		(Fukushima Mental Health and Welfare Centre)	733	-
		(Fukushima Center for Disaster Mental Health)	1,117	-
		(Visiting care/nursing care service organizations)	2,527	-
		(Mental health clinics, etc.)	3,870	-
		(Medical faciliites other than the above)	8,448	-
		(Religious organizations, etc.)	546	-
		(Other)	270	-
		・No	3,610	10.8%

Risk perception of health effects of radiation in FY2017 survey

Q.14 Below are questions regarding radiation.

In a disaster caused by something we cannot sense, such as ionizing radiation, perceptions of health risk are considered to have an impact on one's mental health.

1) Below are questions regarding your awareness or opinion on health effects of radiation Please circle the corresponding number.

		Possibilities are very low.	Possibilities are low.	Possibilities are high.	Possibilities are very high.
1	To what extent do you think radiation exposure at present will cause health hazards (for example, cancer) in later years?	1	2	3	4
2	To what extent do you think radiation exposure at present will exert health effects on future generations (your children and grandchildren not yet born)?	1	2	3	4

Risk perception of health effects of radiation in FY2016 survey

Q.13 Below are questions about how you think about radiation effects.

In a disaster caused by something we cannot sense, such as ionizing radiation, perceptions of health risk are considered to have an impact on one's mental health.

1) Below are questions regarding your awareness on the health effects of radiation. Please circle the corresponding number.

		Possibilities are very low.			Possibilities are very high.
1	To what extent do you think radiation exposure at present will cause any health hazards (for example, cancer) in later years?	1	2	3	4
2	To what extent do you think the radiation exposure at present will exert health effects on future generations (your children and grandchildren not yet born)?	1	2	3	4

Report on the TUE Full-Scale Survey (the second-round survey)

As of March 31, 2021

1. ImplementationPeriod: FY2014 and FY2015

2. Results of the Primary Examination as of March 31, 2021

Table 1 Progress and r esults 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)
FY2014	216,863	159,181 (73.4)	11,427	159,181 (100.0)	66,457 (41.7)	91,416 (57.4)	1,308 (0.8)	0 (0.0)
FY2015	164,374	111,371 (67.8)	4,236	111,371 (100.0)	42,269 (38.0)	68,180 (61.2)	922 (0.8)	0 (0.0)
Total	381,237	270,552 (71.0)	15,663	270,552 (100.0)	108,726 (40.2)	159,596 (59.0)	2,230 (0.8)	0 (0.0)

3. Results of the Confirmatory Examination as of March 31, 2021

Table 2 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)
FY2014	1,308	1,100 (84.1)	1,077 (97.9)	39 (3.6)	244 (22.7)	794 (73.7)	151 (19.0)
FY2015	922	777 (84.3)	757 (97.4)	24 (3.2)	123 (16.2)	610 (80.6)	56 (9.2)
Total	2,230	1,877 (84.2)	1,834 (97.7)	63 (3.4)	367 (20.0)	1,404 (76.6)	207 (14.7)

Results of fine needle aspiration cytology (FNAC)

- Malignant or suspicious for malignancy： 71*)
- Male to female ratio： 32:39
- Mean age (SD, min-max): 16.9 (3.2, 9-23), 12.6 (3.2, 5-18) at the time of disaster
- Mean tumor size (SD, min-max): 11.1 mm (5.6 mm, 5.3-35.6 mm)

4. Grade B, C, suspicious and malignant cases, by area

As of March 31, 2021

Table 3 Grade B, C, suspicious and malignant cases found in the Full-Scale Survey (second-round survey), by area

		Evacuation zone (*3)	Nakadori (*4)	Hamadori (*5)	Aizu (*6)	Total
Eligible persons		49,453	207,156	72,864	51,764	381,237
Primary examination participants	a (*1)	34,565	152,705	51,063	32,219	270,552
Mean age at the time of disaster (SD): Total		8.1(4.9)	7.7(4.9)	7.9(4.8)	7.4(4.4)	-
Mean age at the time of disaster (SD): Female		8.2(4.9)	7.9(4.9)	8.0(4.8)	7.6(4.5)	-
Mean age at the time of disaster (SD): Male		7.9(4.8)	7.6(4.8)	7.7(4.7)	7.3(4.4)	-
Mean age at the time of examination (SD): Total		11.5(5.0)	11.6(4.9)	12.4(4.8)	12.2(4.5)	-
Mean age at the time of examination (SD): Female		11.6(5.1)	11.7(5.0)	12.5(4.9)	12.3(4.6)	-
Mean age at the time of examination (SD): Male		11.3(4.9)	11.5(4.9)	12.2(4.8)	12.0(4.4)	-
% of females among participants		50.1	49.3	49.9	49.7	49.6
Participants with Grade B or C results	b	345	1,201	423	261	2,230
% of participants with Grade B or C results	b/a	1.00	0.79	0.83	0.81	0.82
Participants with finalized confirmatory exam results	c	297	979	360	198	1,834
% of participants with final confirmatory exam results	c/b	86.1	81.5	85.1	75.9	82.2
Participants who underwent cytology	d (*2)	38	128	32	10	208
% of participants who underwent cytology among c	d/c	12.8	13.1	8.9	5.1	11.3
% of participants who underwent cytology among a	d/a	0.11	0.08	0.06	0.03	0.08
Malignant or suspected cases	e	17	39	10	5	71
% of malignant or suspected cases among d	e/d	44.7	30.5	31.3	50.0	34.1
% of malignant or suspected cases per 100,000		49.2	25.5	19.6	15.5	26.2
(% of malignant or suspected cases among a)	e/a	(0.049)	(0.026)	(0.020)	(0.016)	(0.026)

*1 Excluding duplicates
*2 Including those who underwent cytology and diagnosed as equivalent to A1 or A2 (to be followed up at their next primary examination)
*3 13 municipalities nationally designated as the evacuation zone: Tamura City, Minamisoma City, Date City, Kawamata Town, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village
*4 Fukushima City, Koriyama City, Shirakawa City, Sukagawa City, Nihonmatsu City, Motomiya City, Koori Town, Kunimi Town, Otama Village, Kagamiishi Town, Tenei Village, Nishigo Village, Izumizaki Village, Nakajima Village, Yabuki Town, Tanagura Town, Yamatsuri Town, Hanawa Town, Samekawa Village, Ishikawa Town, Tamakawa Village, Hirata Village, Asakawa Town, Furudono Town, Miharu Town, Ono Town
*5 Iwaki City, Soma City, Shinchi Town
*6 Aizuwakamatsu City, Kitakata City, Shimogo Town, Hinoemata Village, Tadami Town, Minamiaizu Town, Kitashiobara Village, Nishiaizu Town, Bandai Town, Inawashiro Town, Aizubange Town, Yugawa Village, Yanaizu Town, Mishima Town, Kaneyama Town, Showa Village, Aizumisato Town

Figures in the orange-colored row were corrected due to wrong calculations.

<Results and discussion about the regional comparison>

- The mean age of primary examination participants at the time of disaster was highest in the evacuation zone, followed by Hamadori, Nakadori, and Aizu.
- The mean age of primary examination participants at the time of the examination was highest in Hamadori, followed by Aizu, Nakadori, and the evacuation zone.
- The percentage of females among primary examination participants was highest in the evacuation zone, followed by Hamadori, Aizu, and Nakadori.

When excluding factors such as age, sex, interval between the first- and second-round surveys, primary examination participation rates by age group, and confirmatory examination participation rates, the regional comparison of primary examination results for 270,552 participants showed:

- The percentage of those having Grade B or C results was highest in the evacuation zone, followed by Hamadori, Aizu, and Nakadori.

・The percentage of those disgnosed as having suspicious or malignant nodules was highest in the evacuation zone, followed by Nakadori, Hamadori, and Aizu.

[Reference] Number of suspicious or malignant cases and number of surgical cases in the Full-Scale Survey (second-round survey) (as of March 31, 2021)

・In the municipalities surveyed in FY2014:
Suspicious or malignant cases: 52 (Male: 21, Female: 31)
Surgical cases: 41 (papillary carcinomas: 40, other type: 1)
・In the municipalities surveyed in FY2015
Suspicious or malignant cases: 19 (Male: 11, Female: 8)
Surgical cases: 13 (Papillary carcinoma 13)
・Total
Suspicious or malignant cases: 71 (Male: 32, Female: 39)
Surgical cases: 55 (Papillary carcinoma: 54, other type: 1)

Final Report on the TUE Full-Scale Survey (the third-round survey)
<FY2020 Supplemented Edition>

As of March 31, 2021

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we conducted the Full-Scale Survey (the third-round survey), following the Preliminary Baseline Survey (the first-round survey) and the Full-Scale Survey (the second-round survey) to continuously confirm thyroid gland status.

1.2 Eligible persons

In addition to those eligible for the Preliminary Baseline Survey (Fukushima residents born between April 2, 1992 and April 1, 2011), the Full-Scale Surveys (from and after the second-round survey) also include those who were born between April 2, 2011 and April 1, 2012.

1.3 Implementation Period

The Full-Scale Survey started on May 1, 2016 and covered residents up to age 20 on a municipality-by-municipality schedule to FY 2017. Residents over age 20, living in any municipality in the prefecture, are invited to take the examination every five years – at ages 25, 30, 35, etc. – to make it easier for them to remember when they are due for examination. However, the interval between the examination at age 25 and the previous one should not be greater than 5 years.

1.4 Responsible Organizations

Fukushima Prefecture commissioned Fukushima Medical University (FMU) to conduct the survey in cooperation with organizations inside and outside Fukushima for the convenience for participants (the number of medical facilities shown below is as of March 31, 2021).

1.4-1 The primary examination

Inside Fukushima Prefecture	82 medical facilities
Outside Fukushima Prefecture	127 medical facilities

1.4-2 The confirmatory examination

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: Those with Grade A1 or A2 results are recommended to receive the primary examination in or after FY2020.
  A1: No nodules/cysts
  A2: Nodules ≤ 5.0 mm and/or cysts ≤ 20.0 mm
- Grade B: Those with Grade B results are referred to receive the confirmatory examination.
  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: Those with Grade C results are referred to receive the confirmatory examination.
  When it is considered necessary to perform the confirmatory examination immediately, judging from the condition of the thyroid gland.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood test, urine test, 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

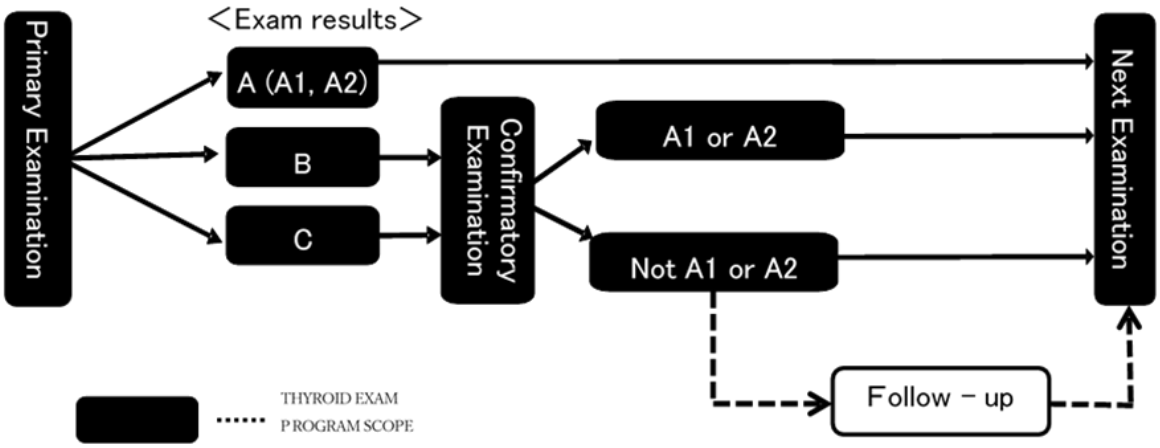


Fig.1 Flow chart

1.6 Covered Municipalities

The municipalities where examinations were carried out in FY2016 and FY2017 are as follows:

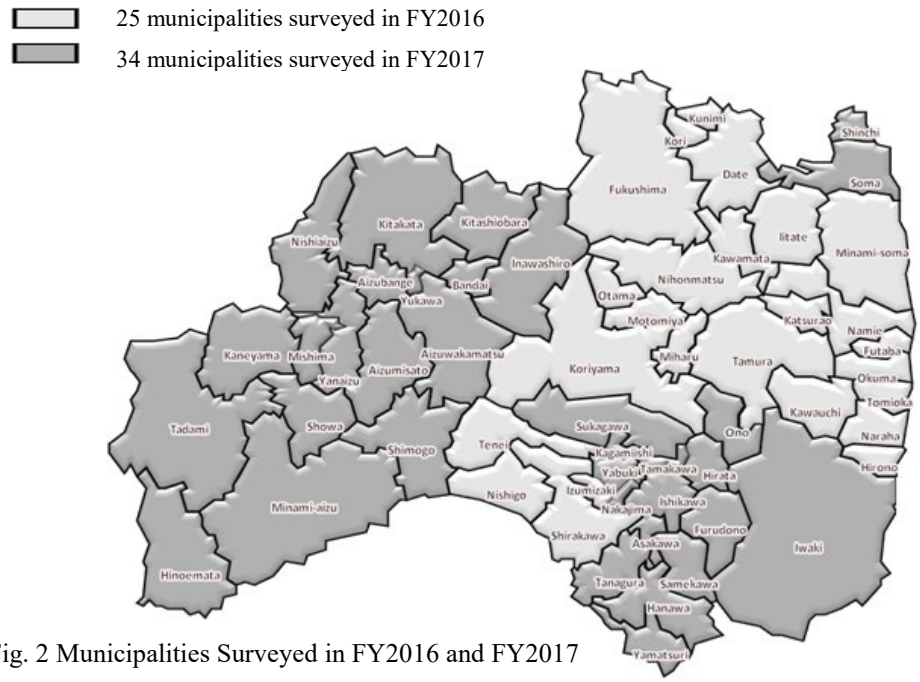


Fig. 2 Municipalities Surveyed in FY2016 and FY2017

1.7 Scope of the Final Report and the Supplemented Edition

The Final Report on the TUE Full-Scale Survey (the third-round survey) covers the primary examination results performed between May 2016 and March 31, 2020 and the confirmatory examination results finalized by March 31, 2020.

This supplemented edition has been compiled to include data from the confirmatory examination results finalized by March 31, 2021.

2. Results as of March 31, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination started on May 1, 2016, covering 336,667 residents in 59 municipalities (25 municipalities in FY2016 and 34 municipalities in FY2017). So far, 217,922 residents (64.7%) have participated in the primary examination. (Implementation status for each municipality and prefectures other than Fukushima are shown in Appendix 1 and Appendix 2).

Results of 217,922 participants (100.0%) have been finalized and individual result reports were already sent to them. (The result for each municipality is shown in Appendix 3).

Of these, 76,431 (35.1%) had Grade A1 results, 139,989 (64.2%) had Grade A2, 1,502 (0.7%) 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)
FY2016	191,875	126,397 (65.9)	8,914	126,397 (100.0)	44,044 (34.8)	81,547 (64.5)	806 (0.6)	0 (0.0)
FY2017	144,792	91,525 (63.2)	3,598	91,525 (100.0)	32,387 (35.4)	58,442 (63.9)	696 (0.8)	0 (0.0)
Total	336,667	217,922 (64.7)	12,512	217,922 (100.0)	76,431 (35.1)	139,989 (64.2)	1,502 (0.7)	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)
FY2016	126,397	806 (0.6)	430 (0.3)	0 (0.0)	81,932 (64.8)
FY2017	91,525	693 (0.8)	399 (0.4)	3 (0.0)	58,743 (64.2)
Total	217,922	1,499 (0.7)	829 (0.4)	3 (0.0)	140,675 (64.6)

- Percentages are rounded to the 1st decimal place. This also applies to other tables.
- The participants in FY2016 and FY 2017 surveys are those who were eligible for and participated in the Full-Scale Survey examinations conducted in their municipalities (those aged up to age 20), and those who were eligible for and participated in the Age 25 Survey (those born in FY1992 and FY1993) are excluded.
- The results of the Age 25 Survey will be reported separately. The examination for those born in FY1992 (approx. 23,000) and FY1993 (approx. 22,000) took place in FY2017 and FY2018, respectively.

2.1-2 Participation rate by age group

The participation rate for the age group of 18 or older (age as of April 1, 2016) in municipalities covered in FY2016 was 17.2%.

The participation rate for the age group of 18 or older (age as of April 1, 2017) in municipalities covered in FY2017 was 16.5%.

Table 3 Participation rates by age group

			Total	Age group			
FY2016	Age group*			4-7	8-12	13-17	18-23
	Eligible persons	(a)	191,875	36,620	51,002	56,839	47,414
	Participants	(b)	126,397	26,425	45,552	46,266	8,154
	Participation rate (%)	(b/a)	65.9	72.2	89.3	81.4	17.2
FY2017	Age group **			5-7	8-12	13-17	18-24
	Eligible persons	(a)	144,792	19,316	37,164	41,995	46,317
	Participants	(b)	91,525	14,957	33,946	34,966	7,656
	Participation rate (%)	(b/a)	63.2	77.4	91.3	83.3	16.5
Total	Eligible persons	(a)	336,667	55,936	88,166	98,834	93,731
	Participants	(b)	217,922	41,382	79,498	81,232	15,810
	Participation rate (%)	(b/a)	64.7	74.0	90.2	82.2	16.9

・Age groups are formed with the age as of April 1 of each fiscal year.

2.1-3 Comparison of the second- and third-round survey results

Comparison of results of two Full-Scale Surveys (second- and third-round surveys) is shown in Table 4.

Among 201,5320 participants with Grade A1 or A2 results in the second-round survey, 200,834 (99.7%) had Grade A1 or A2 results and 696 (0.3%) had Grade B results in the third-round survey.

Among 1,148 participants with Grade B results in the second-round survey, 442 (38.5%) had Grade A1 or A2 results and 706 (61.5%) had Grade B results in the third-round survey.

Table 4 Comparison of the second- and third-round survey results

			Results of the second-round survey*	**Results of the third-round survey****			
				A		**B**	**C**
				A1	**A2**		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the second-round survey	A	A1	79,749 (100.0)	57,634 (72.3)	21,979 (27.6)	136 (0.2)	0 (0.0)
		A2	121,781 (100.0)	12,177 (10.0)	109,044 (89.5)	560 (0.5)	0 (0.0)
	B		1,148 (100.0)	62 (5.4)	380 (33.1)	706 (61.5)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		15,244 (100.0)	6,558 (43.0)	8,586 (56.3)	100 (0.7)	0 (0.0)
Total			217,922 (100.0)	76,431 (35.1)	139,989 (64.2)	1,502 (0.7)	0 (0.0)

* Results of the second-round survey, just from third-round survey participants with finalized results, not the breakdown of all second-round survey participants.

** Results of the third-round survey participants who were diagnosed for each grade in the second-round survey.

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

The confirmatory examination started in October 2016, covering 1,502 residents. Of these, 1,104 residents (73.5%) completed the entire process of the confirmatory examination and 1,068 (96.7%) have completed the entire procedure of the examination (Implementation status of each municipality is shown in Appendix 5).

Of the aforementioned 1,068 people, 109 (10.2%) were confirmed to meet Grade A diagnostic criteria by the primary examination standards (A1: 9, A2: 100)(including those with other thyroid conditions). The remaining 959 (89.8%) 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)
FY2016	806	614 (76.2)	590 (96.1)	5 (0.8)	58 (9.8)	527 (89.3)	40 (7.6)
FY2017	696	490 (70.4)	478 (97.6)	4 (0.8)	42 (8.8)	432 (90.4)	39 (9.0)
Total	1,502	1,104 (73.5)	1,068 (96.7)	9 (0.8)	100 (9.4)	959 (89.8)	79 (8.2)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 31 had nodules classified as malignant or suspicious for malignancy: 13 of them were male, and 18 were female.

Participants' age at the time of the confirmatory examination ranged from 12 to 23 years (mean age: 16.3 ± 2.9 years). The minimum and maximum tumor diameters were 5.6 mm and 33.0 mm. Mean tumor diameter was 12.9 ± 6.4 mm.

Of these 31 participants, 21 had Grade A results (A1: 7, A2: 14) and 7 had Grade B results in the second-round survey. The remaining 3 people did not participate in the second-round survey.

Table 6. Results of FNAC

A. Municipalities surveyed in FY 2016	
・Malignant or suspicious for malignancy：	13*)
・Male to female ratio：	7:6
・Mean age (SD, min-max):	16.0 (3.1, 12-23), 9.9 (3.1, 5-16) at the time of disaster
・Mean tumor size (SD, min-max):	13.5 mm (6.0 mm, 7.6-30.4 mm)
B. Municipalities surveyed in FY 2017	
・Malignant or suspicious for malignancy：	18*)
・Male to female ratio：	6:12
・Mean age (SD, min-max):	16.5 (2.7, 12-22), 9.4 (2.9, 5-16) at the time of disaster
・Mean tumor size (SD, min-max):	12.4 (6.9 mm, 5.6-33.0 mm)
C. Total	
・Malignant or suspicious for malignancy：	31*)
・Male to female ratio：	13:18
・Mean age (SD, min-max):	16.3 (2.9, 12-23), 9.6 (2.9, 5-16) at the time of disaster
・Mean tumor size (SD, min-max):	12.9 mm (6.4 mm, 5.6-33.0 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 distribution of 31 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.

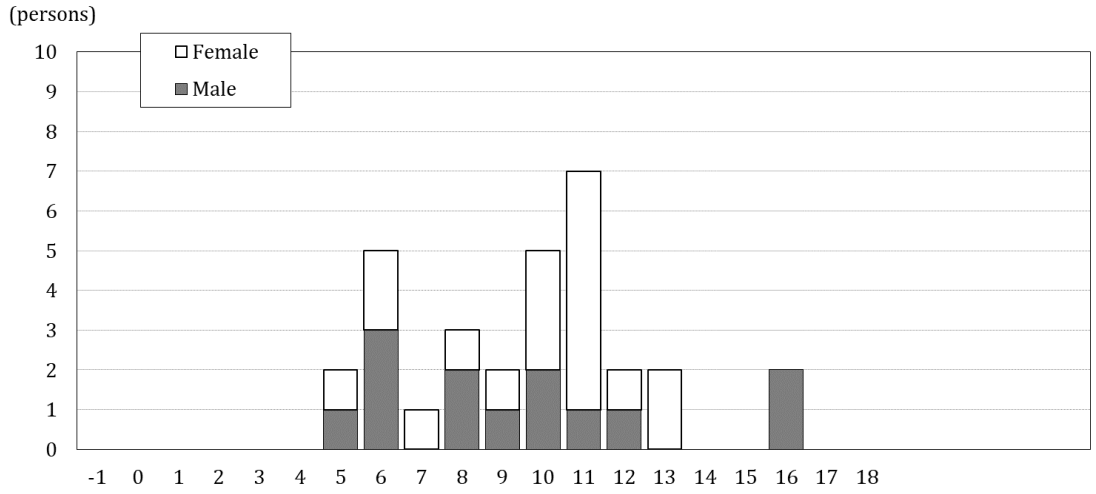


Fig. 3 Age as of March 11, 2011

Note: Those who were 15 and 18 at the time of disaster are not included in the fourth-round survey.

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, 2011 and April 1, 2011 are included in Age 0.

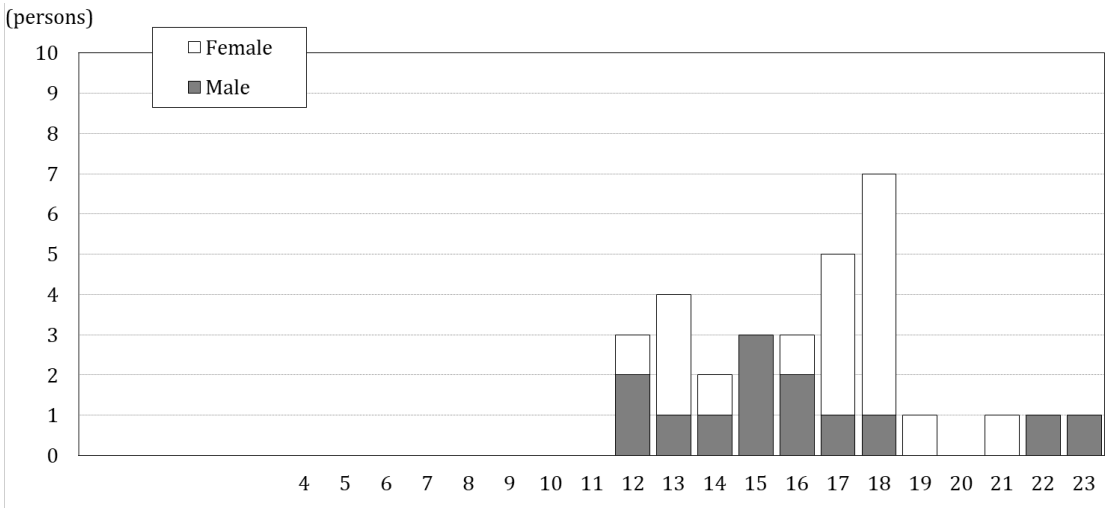


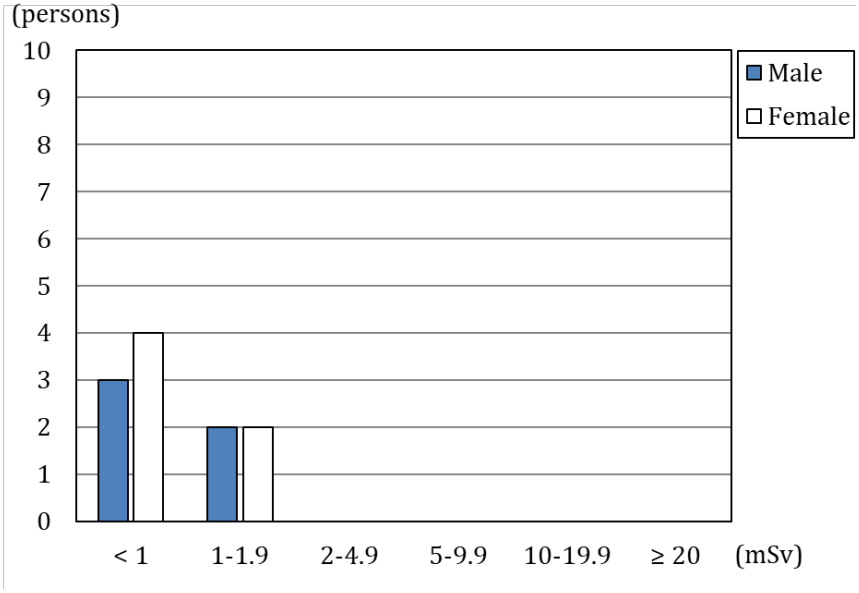
Fig. 4 Age as of the date of confirmatory examination

2.2-4 Basic Survey results of those with malignant or suspicious nodules diagnosed by FNAC

Of the 31 people with malignant or suspicious nodules, 11 people (35.5%) had participated in the Basic Survey (for external radiation dose estimation), and all 11 received their results. The highest effective dose documented was 1.5 mSv.

Table 7 A breakdown of dose estimates for participants of the Basic Survey

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	3	0	0	4	0	0	3	4
1-1.9	0	0	1	1	1	1	0	0	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	4	1	1	5	0	0	5	6



2.2-5 Blood test and urinary iodine test results

Table 8 Blood test results Mean±SD(percentage of values outside reference range)

vf	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: 31 persons	1.2 ± 0.1 (3.2%)	3.6 ± 0.7 (16.1%)	1.8 ± 1.1 (16.1%)	29.2 ± 38.3 (25.8%)	19.4%	16.1%
Other: 1,006 persons	1.2 ± 0.2 (6.2%)	3.5 ± 0.5 (6.5%)	1.3 ± 4.3 (9.1%)	28.9 ± 97.5 (14.2%)	8.1%	12.6%

Table 9 Urinary iodine test results (μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 31 persons	69	145	230	388	3510
Other: 1,008 persons	26	109	176	324	8910

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, 0.02% in 13 municipalities nationally designated as the evacuation zone (hereafter "the 13 municipalities") and Aizu, and 0.01% in Nakadori.

Table 10 Confirmatory examination results by area

	Number of participants a	Those referred to confirmatory exam b	Percentage of b (%) b/a	Confirmatory exam participants	Malignant or suspicious cases c	Percentage of c (%) c/a
13 municipalities[1)]	27,089	213	0.8	163	6	0.02
Nakadori[2)]	121,925	761	0.6	566	8	0.01
Hamadori[3)]	41,297	323	0.8	231	12	0.03
Aizu[4)]	27,611	205	0.7	144	5	0.02
Total	217,922	1,502	0.7	1,104	31	0.01

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

Table 11 Grade B, C, suspicious and malignant cases found in the Full-Scale Survey (the third-round survey), by area

		Evacuation zone (*1)	Nakadori (*2)	Hamadori (*3)	Aizu (*4)	Total
Eligible persons	a	43,446	183,473	64,382	45,366	336,667
Primary examination participants		27,089	121,925	41,297	27,611	217,922
Mean age at the time of disaster (SD): Total		6.7(4.2)	6.4(4.1)	6.2(4.1)	5.9(3.9)	-
Mean age at the time of disaster (SD): Female		6.8(4.2)	6.5(4.2)	6.3(4.2)	6.1(4.0)	-
Mean age at the time of disaster (SD): Male		6.6(4.1)	6.3(4.1)	6.1(4.1)	5.8(3.9)	-
Mean age at the time of examination (SD): Total		12.3(4.3)	12.2(4.2)	12.9(4.2)	12.4(4.1)	-
Mean age at the time of examination (SD): Female		12.4(4.3)	12.3(4.2)	13.0(4.2)	12.5(4.1)	-
Mean age at the time of examination (SD): Male		12.2(4.2)	12.1(4.1)	12.8(4.1)	12.3(4.0)	-
% of females among participants		49.7	49.4	49.8	49.3	49.5
Participants with Grade B or C results	b	213	761	323	205	1,502
% of those with Grade B or C results	b/a	0.79	0.62	0.78	0.74	0.69
Participants with finalized confirmatory exam results	c	157	546	226	139	1,068
Participation rate for conformatory examination	c/b	73.7	71.7	70.0	67.8	71.1
Participants who underwent cytology	d	15	33	21	10	79
% of participants who underwent cytology among c	d/c	9.6	6.0	9.3	7.2	7.4
% of participants who underwent cytology among a	d/a	0.06	0.03	0.05	0.04	0.04
Malignant or suspected cases	e	6	8	12	5	31
% of malignant or suspected cases among d	e/d	40.0	24.2	57.1	50.0	39.2
% of malignant or suspected cases per 100,000		22.1	6.6	29.1	18.1	14.2
(% of malignant or suspected cases among a)	e/a	(0.022)	(0.007)	(0.029)	(0.018)	(0.014)

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

<Results and analysis of the regional comparison in Table 11>

・Among primary examination participants, the highest average age at the time of disaster was found in those from the 13 municipalities, followed by those from Nakadori, Hamadori, and Aizu.

・The highest average age at the time of primary examination was found in those from Hamadori, followed by those from Aizu, the 13 municipalities, and Nakadori.
・The percentage of females among primary examination participants was highest in those from Hamadori, followed by those from the 13 municipalities, Nakadori, and Aizu.

A regional analysis of 217,921 primary examination participants, after excluding such factors as age, sex, examination intervals, primary examination participation rates by age group, and confirmatory examination participation rates, showed that:

・ The number of participants with Grade B or C nodules was the largest in the 13 municipalities and Hamadori, followed by Aizu and Nakadori.

・ The number of participants with malignant or suspicious nodules was the largest in Hamadori, followed by the 13 municipalities, Aizu, and Nakadori.

2.3 Mental Health Care

2.3-1 Support for primary examination participants

Since July 2015, we offer person-to-person explanations to participants at public venues where primary examinations take place. After the examination, medical doctors explain the results showing the ultrasound image in private consultation booths set up at the venue. As of March 31, 2021, 27,853 (84.9%) of 32,806 participants visited the consultation booths. In case the booths cannot be set up at school, alternatives such as briefing sessions at schools and telephonic supports are offered.

※ The number of those who used the consultation booths includes participants receiving the second-round survey.

2.3-2 Support for confirmatory examination participants

We have set up a support team for participants of the confirmatory examination within Fukushima Medical University to address their anxiety and concerns, as well as online support for Q&A and counseling.

Since the start of the Full-Scale Survey, 1,176 participants (414 males and 762 females) have received support as of March 31, 2021. The number of support sessions provided was 2,437 in total. Of these, 1,348 sessions (55.3%) were held at the first examinations and 1,021 sessions (41.9%) at subsequent examinations (including 140 (5.8%) at FNAC) – and 66 sessions (2.7%) at informed consent.

For those who have proceeded to the health insurance medical care, we continue to provide support in cooperation with the teams of medical staff at hospitals.

※ The number of those who used the consultation booths at the confirmatory examination includes participants receiving the examination second time.

Appendix 1

Implementation status of the primary examination by municipality As of March 31, 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	4–9	10–14	15–19	20–	c[3)]	c/b
Municipalities surveyed in FY2016										
Kawamata	2,142	1,409	34	65.8	408 29.0	544 38.6	409 29.0	48 3.4	96	6.8
Namie	3,315	1,955	508	59.0	581 29.7	664 34.0	576 29.5	134 6.9	604	30.9
Iitate	987	604	23	61.2	174 28.8	261 43.2	151 25.0	18 3.0	46	7.6
Minamisoma	11,540	7,077	1,236	61.3	2,208 31.2	2,726 38.5	1,839 26.0	304 4.3	1,445	20.4
Date	10,210	7,087	244	69.4	2,028 28.6	2,674 37.7	2,095 29.6	290 4.1	323	4.6
Tamura	6,344	4,055	99	63.9	1,269 31.3	1,594 39.3	1,105 27.3	87 2.1	254	6.3
Hirono	976	547	67	56.0	163 29.8	185 33.8	154 28.2	45 8.2	66	12.1
Naraha	1,281	771	99	60.2	214 27.8	270 35.0	222 28.8	65 8.4	108	14.0
Tomioka	2,751	1,477	299	53.7	393 26.6	509 34.5	450 30.5	125 8.5	352	23.8
Kawauchi	297	171	15	57.6	47 27.5	72 42.1	49 28.7	3 1.8	17	9.9
Okuma	2,259	1,343	270	59.5	418 31.1	496 36.9	349 26.0	80 6.0	318	23.7
Futaba	1,133	464	117	41.0	139 30.0	184 39.7	117 25.2	24 5.2	130	28.0
Katsurao	211	129	4	61.1	36 27.9	50 38.8	32 24.8	11 8.5	9	7.0
Fukushima	49,339	34,106	2,099	69.1	10,281 30.1	12,201 35.8	10,176 29.8	1,448 4.2	2,652	7.8
Nihonmatsu	9,308	6,347	230	68.2	1,955 30.8	2,456 38.7	1,747 27.5	189 3.0	281	4.4
Motomiya	5,615	3,898	124	69.4	1,316 33.8	1,445 37.1	1,030 26.4	107 2.7	157	4.0
Otama	1,468	1,051	34	71.6	358 34.1	405 38.5	256 24.4	32 3.0	38	3.6
Koriyama	59,468	38,118	2,854	64.1	11,583 30.4	14,398 37.8	10,609 27.8	1,528 4.0	3,350	8.8
Koori	1,854	1,355	40	73.1	424 31.3	501 37.0	370 27.3	60 4.4	53	3.9
Kunimi	1,405	1,021	31	72.7	275 26.9	385 37.7	304 29.8	57 5.6	35	3.4
Tenei	966	634	24	65.6	191 30.1	258 40.7	164 25.9	21 3.3	28	4.4
Shirakawa	11,352	7,648	295	67.4	2,261 29.6	2,853 37.3	2,251 29.4	283 3.7	445	5.8
Nishigo	3,722	2,562	110	68.8	787 30.7	951 37.1	705 27.5	119 4.6	166	6.5
Izumizaki	1,163	800	12	68.8	239 29.9	310 38.8	222 27.8	29 3.6	21	2.6
Miharu	2,769	1,768	46	63.8	454 25.7	628 35.5	595 33.7	91 5.1	60	3.4
Subtotal	191,875	126,397	8,914	65.9	38,202 30.2	47,020 37.2	35,977 28.5	5,198 4.1	11,054	8.7

*1) The number of participants who received the examination at facilities outside Fukushima or by teams dispatched from FMU (as of February 28, 2021)

*2) The upper layer shows the number of participants, and the lower layer shows the percentage of participants from each municipality.

*3) The number of participants who have resident registration outside of Fukushima.

・ Age groups were formed based on the age at the Full-Scale Thyroid Survey (the third-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	4–9	10–14	15–19	20–	c[3]	c/b
Municipalities surveyed in FY2017										
Iwaki	56,810	36,625	2,007	64.5	8,793 24.0	13,724 37.5	11,600 31.7	2,508 6.8	2,389	6.5
Sukagawa	14,113	9,247	275	65.5	2,570 27.8	3,476 37.6	2,699 29.2	502 5.4	353	3.8
Soma	6,252	3,822	256	61.1	1,137 29.7	1,410 36.9	1,110 29.0	165 4.3	319	8.3
Kagamiishi	2,417	1,590	44	65.8	436 27.4	614 38.6	470 29.6	70 4.4	51	3.2
Shinchi	1,320	850	34	64.4	212 24.9	333 39.2	263 30.9	42 4.9	58	6.8
Nakajima	972	645	6	66.4	177 27.4	240 37.2	202 31.3	26 4.0	13	2.0
Yabuki	3,041	1,962	43	64.5	632 32.2	736 37.5	519 26.5	75 3.8	60	3.1
Ishikawa	2,530	1,609	36	63.6	485 30.1	591 36.7	470 29.2	63 3.9	64	4.0
Yamatsuri	930	578	16	62.2	187 32.4	219 37.9	148 25.6	24 4.2	16	2.8
Asakawa	1,210	820	27	67.8	214 26.1	316 38.5	251 30.6	39 4.8	46	5.6
Hirata	1,101	691	8	62.8	208 30.1	268 38.8	196 28.4	19 2.7	12	1.7
Tanagura	2,749	1,752	42	63.7	536 30.6	677 38.6	479 27.3	60 3.4	65	3.7
Hanawa	1,492	889	27	59.6	260 29.2	348 39.1	242 27.2	39 4.4	40	4.5
Samegawa	617	382	12	61.9	120 31.4	154 40.3	96 25.1	12 3.1	18	4.7
Ono	1,716	1,031	21	60.1	318 30.8	423 41.0	254 24.6	36 3.5	24	2.3
Tamakawa	1,210	798	10	66.0	222 27.8	333 41.7	220 27.6	23 2.9	14	1.8
Furudono	946	623	16	65.9	197 31.6	232 37.2	158 25.4	36 5.8	21	3.4
Hinoemata	94	47	5	50.0	14 29.8	13 27.7	17 36.2	3 6.4	5	10.6
Minamiaizu	2,512	1,472	25	58.6	437 29.7	559 38.0	428 29.1	48 3.3	47	3.2
Kaneyama	177	89	1	50.3	19 21.3	42 47.2	25 28.1	3 3.4	2	2.2
Showa	127	74	3	58.3	26 35.1	26 35.1	20 27.0	2 2.7	4	5.4
Mishima	174	107	1	61.5	24 22.4	44 41.1	37 34.6	2 1.9	0	0.0
Shimogo	873	528	9	60.5	160 30.3	200 37.9	148 28.0	20 3.8	13	2.5
Kitakata	8,079	4,925	101	61.0	1,336 27.1	1,903 38.6	1,518 30.8	168 3.4	159	3.2
Nishiaizu	885	476	9	53.8	135 28.4	175 36.8	145 30.5	21 4.4	26	5.5
Tadami	642	391	7	60.9	119 30.4	147 37.6	112 28.6	13 3.3	11	2.8
Inawashiro	2,382	1,503	40	63.1	456 30.3	559 37.2	420 27.9	68 4.5	59	3.9
Bandai	555	355	9	64.0	105 29.6	143 40.3	98 27.6	9 2.5	17	4.8
Kitashiobara	502	318	7	63.3	98 30.8	129 40.6	79 24.8	12 3.8	12	3.8
Aizumisato	3,311	2,065	43	62.4	568 27.5	832 40.3	563 27.3	102 4.9	60	2.9
Aizubange	2,790	1,737	48	62.3	489 28.2	679 39.1	490 28.2	79 4.5	53	3.1
Yanaizu	538	342	4	63.6	103 30.1	129 37.7	96 28.1	14 4.1	5	1.5
Aizuwakamatsu	21,119	12,768	401	60.5	3,585 28.1	4,811 37.7	3,915 30.7	457 3.6	623	4.9
Yugawa	606	414	5	68.3	121 29.2	159 38.4	115 27.8	19 4.6	13	3.1
Subtotal	144,792	91,525	3,598	63.2	24,499 26.8	34,644 37.9	27,603 30.2	4,779 5.2	4,672	5.1
Total	336,667	217,922	12,512	64.7	62,701 28.8	81,664 37.5	63,580 29.2	9,977 4.6	15,726	7.2

Appendix 2

Implementation status of the primary examination by prefecture — As of February 28, 2021

Prefecture	No. of medical facilities	Participants
Hokkaido	7	**355**
Aomori	2	**143**
Iwate	3	**306**
Miyagi	2	**2,547**
Akita	1	**184**
Yamagata	3	**594**
Ibaraki	4	**770**
Tochigi	8	**752**
Gunma	2	**234**
Saitama	3	**589**
Chiba	5	**547**
Tokyo	18	**2,145**
Kanagawa	6	**1,035**
Niigata	3	**591**
Toyama	2	**23**
Ishikawa	1	**43**

Prefecture	No. of medical facilities	Participants
Fukui	1	**23**
Yamanashi	2	**105**
Nagano	3	**139**
Gifu	1	**43**
Shizuoka	3	**112**
Aichi	5	**224**
Mie	1	**25**
Shiga	1	**22**
Kyoto	3	**99**
Osaka	8	**232**
Hyogo	2	**138**
Nara	2	**30**
Wakayama	1	**6**
Tottori	1	**10**
Shimane	1	**15**
Okayama	3	**60**

Prefecture	No. of medical facilities	Participants
Hiroshima	2	**33**
Yamaguchi	1	**22**
Tokushima	1	**9**
Kagawa	1	**17**
Ehime	1	**12**
Kochi	1	**14**
Fukuoka	3	**85**
Saga	1	**5**
Nagasaki	3	**27**
Kumamoto	1	**31**
Oita	1	**14**
Miyazaki	1	**29**
Kagoshima	1	**19**
Okinawa	1	**54**
Total	127	**12,512**

- The number of participants who received the examination at facilities outside Fukushima or the examinations conducted by teams dispatched by Fukushima Medical University.
- The number of dispatches of FMU teams for examinations outside Fukushima was 1, to Kanagawa.

Appendix 3

TUE primary examinatioin results by municipality — As of March 31, 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	%		%	
	a	% b/a	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
Municipalities surveyed in FY2016										
Kawamata	1,409	1,409	490	910	9	0	9	7	0	915
		100.0	34.8	64.6	0.6	0.0	0.6	0.5	0.0	64.9
Namie	1,955	1,955	652	1,287	16	0	16	9	0	1,290
		100.0	33.4	65.8	0.8	0.0	0.8	0.5	0.0	66.0
Iitate	604	604	203	397	4	0	4	2	0	397
		100.0	33.6	65.7	0.7	0.0	0.7	0.3	0.0	65.7
Minamisoma	7,077	7,077	2,568	4,455	54	0	54	32	0	4,477
		100.0	36.3	63.0	0.8	0.0	0.8	0.5	0.0	63.3
Date	7,087	7,087	2,461	4,576	50	0	50	23	0	4,600
		100.0	34.7	64.6	0.7	0.0	0.7	0.3	0.0	64.9
Tamura	4,055	4,055	1,490	2,519	46	0	46	22	0	2,544
		100.0	36.7	62.1	1.1	0.0	1.1	0.5	0.0	62.7
Hirono	547	547	196	347	4	0	4	3	0	346
		100.0	35.8	63.4	0.7	0.0	0.7	0.5	0.0	63.3
Naraha	771	771	293	475	3	0	3	2	0	476
		100.0	38.0	61.6	0.4	0.0	0.4	0.3	0.0	61.7
Tomioka	1,477	1,477	511	953	13	0	13	3	0	960
		100.0	34.6	64.5	0.9	0.0	0.9	0.2	0.0	65.0
Kawauchi	171	171	41	129	1	0	1	0	0	130
		100.0	24.0	75.4	0.6	0.0	0.6	0.0	0.0	76.0
Okuma	1,343	1,343	461	871	11	0	11	6	0	873
		100.0	34.3	64.9	0.8	0.0	0.8	0.4	0.0	65.0
Futaba	464	464	173	289	2	0	2	0	0	290
		100.0	37.3	62.3	0.4	0.0	0.4	0.0	0.0	62.5
Katsurao	129	129	50	79	0	0	0	1	0	79
		100.0	38.8	61.2	0.0	0.0	0.0	0.8	0.0	61.2
Fukushima	34,106	34,106	11,992	21,921	193	0	193	106	0	22,019
		100.0	35.2	64.3	0.6	0.0	0.6	0.3	0.0	64.6
Nihonmatsu	6,347	6,347	2,266	4,036	45	0	45	22	0	4,060
		100.0	35.7	63.6	0.7	0.0	0.7	0.3	0.0	64.0
Motomiya	3,898	3,898	1,357	2,524	17	0	17	8	0	2,535
		100.0	34.8	64.8	0.4	0.0	0.4	0.2	0.0	65.0
Otama	1,051	1,051	374	671	6	0	6	3	0	675
		100.0	35.6	63.8	0.6	0.0	0.6	0.3	0.0	64.2
Koriyama	38,118	38,118	13,087	24,792	239	0	239	130	0	24,902
		100.0	34.3	65.0	0.6	0.0	0.6	0.3	0.0	65.3
Koori	1,355	1,355	494	851	10	0	10	4	0	858
		100.0	36.5	62.8	0.7	0.0	0.7	0.3	0.0	63.3
Kunimi	1,021	1,021	340	673	8	0	8	2	0	678
		100.0	33.3	65.9	0.8	0.0	0.8	0.2	0.0	66.4
Tenei	634	634	213	414	7	0	7	1	0	419
		100.0	33.6	65.3	1.1	0.0	1.1	0.2	0.0	66.1
Shirakawa	7,648	7,648	2,666	4,941	41	0	41	23	0	4,965
		100.0	34.9	64.6	0.5	0.0	0.5	0.3	0.0	64.9
Nishigo	2,562	2,562	829	1,719	14	0	14	8	0	1,725
		100.0	32.4	67.1	0.5	0.0	0.5	0.3	0.0	67.3
Izumizaki	800	800	273	525	2	0	2	5	0	525
		100.0	34.1	65.6	0.3	0.0	0.3	0.6	0.0	65.6
Miharu	1,768	1,768	564	1,193	11	0	11	8	0	1,194
		100.0	31.9	67.5	0.6	0.0	0.6	0.5	0.0	67.5
Subtotal	126,397	126,397	44,044	81,547	806	0	806	430	0	81,932
		100.0	34.8	64.5	0.6	0.0	0.6	0.3	0.0	64.8

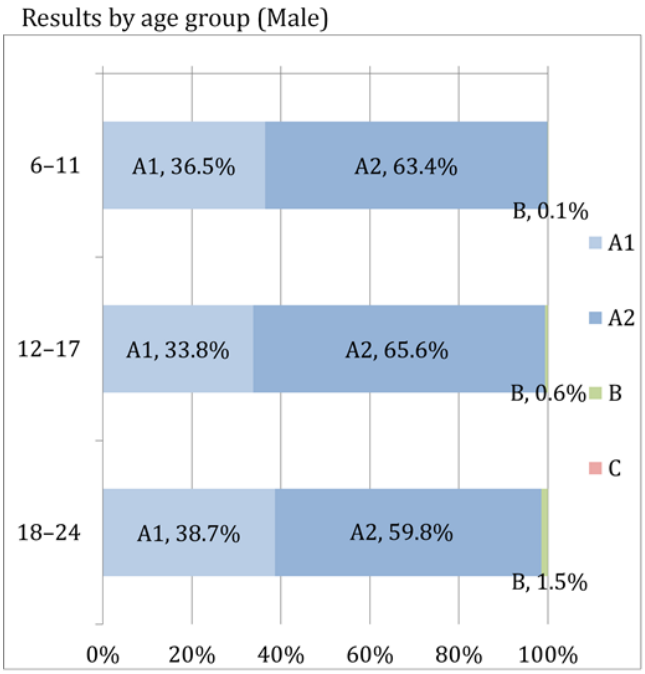
	No. of partici-pants	Those with finalized results	No. of participants by grade				No. of partipants with nodules		No. of participants with cysts	
			%							
		b	A		B	C	%		%	
	a	% b/a	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
Municipalities surveyed in FY2017										
Iwaki	36,625	36,625	12,659	23,683	283	0	281	145	2	23,800
		100.0	34.6	64.7	0.8	0.0	0.8	0.4	0.0	65.0
Sukagawa	9,247	9,247	3,236	5,928	83	0	83	46	0	5,969
		100.0	35.0	64.1	0.9	0.0	0.9	0.5	0.0	64.6
Soma	3,822	3,822	1,536	2,253	33	0	33	21	0	2,270
		100.0	40.2	58.9	0.9	0.0	0.9	0.5	0.0	59.4
Kagamiishi	1,590	1,590	528	1,050	12	0	12	7	0	1,056
		100.0	33.2	66.0	0.8	0.0	0.8	0.4	0.0	66.4
Shinchi	850	850	307	536	7	0	7	4	0	538
		100.0	36.1	63.1	0.8	0.0	0.8	0.5	0.0	63.3
Nakajima	645	645	226	416	3	0	3	4	0	415
		100.0	35.0	64.5	0.5	0.0	0.5	0.6	0.0	64.3
Yabuki	1,962	1,962	683	1,271	8	0	8	4	0	1,274
		100.0	34.8	64.8	0.4	0.0	0.4	0.2	0.0	64.9
Ishikawa	1,609	1,609	639	962	8	0	8	4	0	965
		100.0	39.7	59.8	0.5	0.0	0.5	0.2	0.0	60.0
Yamatsuri	578	578	196	379	3	0	3	1	0	381
		100.0	33.9	65.6	0.5	0.0	0.5	0.2	0.0	65.9
Asakawa	820	820	292	519	9	0	9	3	0	525
		100.0	35.6	63.3	1.1	0.0	1.1	0.4	0.0	64.0
Hirata	691	691	271	415	5	0	5	2	0	416
		100.0	39.2	60.1	0.7	0.0	0.7	0.3	0.0	60.2
Tanagura	1,752	1,752	635	1,107	10	0	10	8	0	1,114
		100.0	36.2	63.2	0.6	0.0	0.6	0.5	0.0	63.6
Hanawa	889	889	322	558	9	0	9	5	0	561
		100.0	36.2	62.8	1.0	0.0	1.0	0.6	0.0	63.1
Samegawa	382	382	139	239	4	0	4	3	0	241
		100.0	36.4	62.6	1.0	0.0	1.0	0.8	0.0	63.1
Ono	1,031	1,031	309	714	8	0	8	3	0	718
		100.0	30.0	69.3	0.8	0.0	0.8	0.3	0.0	69.6
Tamakawa	798	798	283	512	3	0	3	6	0	513
		100.0	35.5	64.2	0.4	0.0	0.4	0.8	0.0	64.3
Furudono	623	623	238	382	3	0	3	2	0	383
		100.0	38.2	61.3	0.5	0.0	0.5	0.3	0.0	61.5
Hinoemata	47	47	21	26	0	0	0	0	0	26
		100.0	44.7	55.3	0.0	0.0	0.0	0.0	0.0	55.3
Minamiaizu	1,472	1,472	552	909	11	0	11	3	0	913
		100.0	37.5	61.8	0.7	0.0	0.7	0.2	0.0	62.0
Kaneyama	89	89	31	57	1	0	1	1	0	57
		100.0	34.8	64.0	1.1	0.0	1.1	1.1	0.0	64.0
Showa	74	74	34	38	2	0	2	0	0	39
		100.0	45.9	51.4	2.7	0.0	2.7	0.0	0.0	52.7
Mishima	107	107	28	78	1	0	1	1	0	79
		100.0	26.2	72.9	0.9	0.0	0.9	0.9	0.0	73.8
Shimogo	528	528	220	303	5	0	5	1	0	307
		100.0	41.7	57.4	0.9	0.0	0.9	0.2	0.0	58.1
Kitakata	4,925	4,925	1,761	3,128	36	0	36	27	0	3,139
		100.0	35.8	63.5	0.7	0.0	0.7	0.5	0.0	63.7
Nishiaizu	476	476	178	294	4	0	4	2	0	293
		100.0	37.4	61.8	0.8	0.0	0.8	0.4	0.0	61.6
Tadami	391	391	144	245	2	0	2	1	0	247
		100.0	36.8	62.7	0.5	0.0	0.5	0.3	0.0	63.2
Inawashiro	1,503	1,503	525	963	15	0	15	7	0	974
		100.0	34.9	64.1	1.0	0.0	1.0	0.5	0.0	64.8
Bandai	355	355	131	222	2	0	2	2	0	223
		100.0	36.9	62.5	0.6	0.0	0.6	0.6	0.0	62.8
Kitashiobara	318	318	107	209	2	0	2	1	0	209
		100.0	33.6	65.7	0.6	0.0	0.6	0.3	0.0	65.7
Aizumisato	2,065	2,065	770	1,280	15	0	15	12	0	1,286
		100.0	37.3	62.0	0.7	0.0	0.7	0.6	0.0	62.3
Aizubange	1,737	1,737	586	1,137	14	0	14	17	0	1,140
		100.0	33.7	65.5	0.8	0.0	0.8	1.0	0.0	65.6
Yanaizu	342	342	123	219	0	0	0	0	0	219
		100.0	36.0	64.0	0.0	0.0	0.0	0.0	0.0	64.0
Aizuwakamatsu	12,768	12,768	4,526	8,150	92	0	91	54	1	8,191
		100.0	35.4	63.8	0.7	0.0	0.7	0.4	0.0	64.2
Yugawa	414	414	151	260	3	0	3	2	0	262
		100.0	36.5	62.8	0.7	0.0	0.7	0.5	0.0	63.3
Subtotal	91,525	91,525	32,387	58,442	696	0	693	399	3	58,743
		100.0	35.4	63.9	0.8	0.0	0.8	0.4	0.0	64.2
Total	217,922	217,922	76,431	139,989	1,502	0	1,499	829	3	140,675
		100.0	35.1	64.2	0.7	0.0	0.7	0.4	0.0	64.6

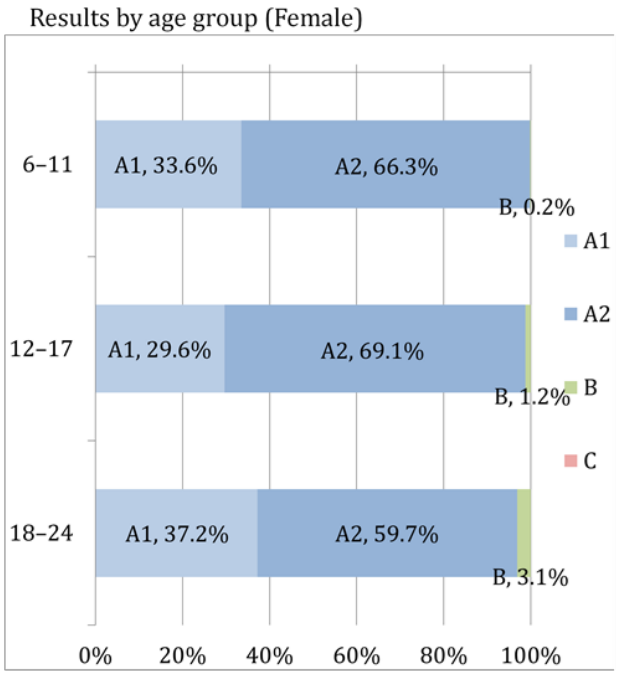
Appendix 4

1 TUE primary examination results by age and sex

As of March 31, 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
4–9	13,887	12,064	25,951	18,338	18,383	36,721	17	12	29	0	0	0	32,242	30,459	62,701
10–14	13,268	11,053	24,321	28,284	28,707	56,991	110	242	352	0	0	0	41,662	40,002	81,664
15–19	11,697	10,532	22,229	19,837	20,687	40,524	286	541	827	0	0	0	31,820	31,760	63,580
20–	1,777	2,153	3,930	2,473	3,280	5,753	83	211	294	0	0	0	4,333	5,644	9,977
Total	40,629	35,802	76,431	68,932	71,057	139,989	496	1,006	1,502	0	0	0	110,057	107,865	217,922

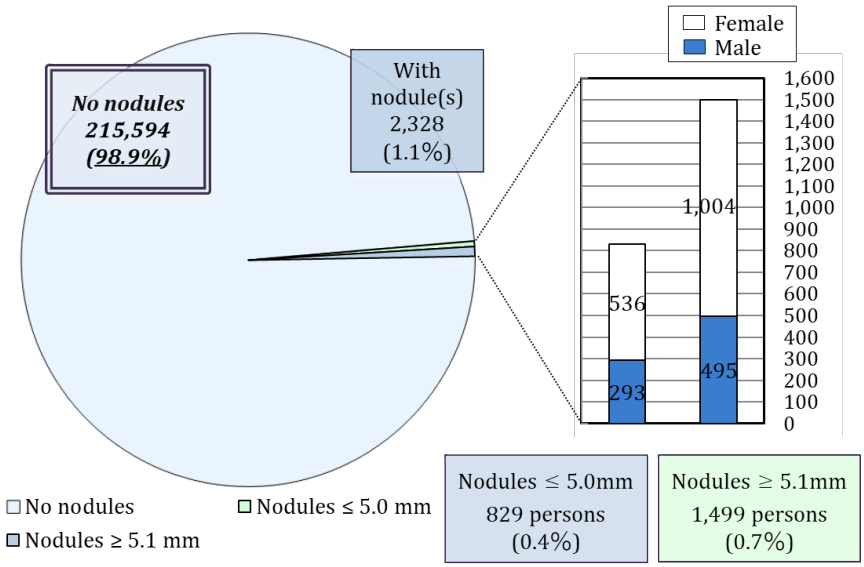


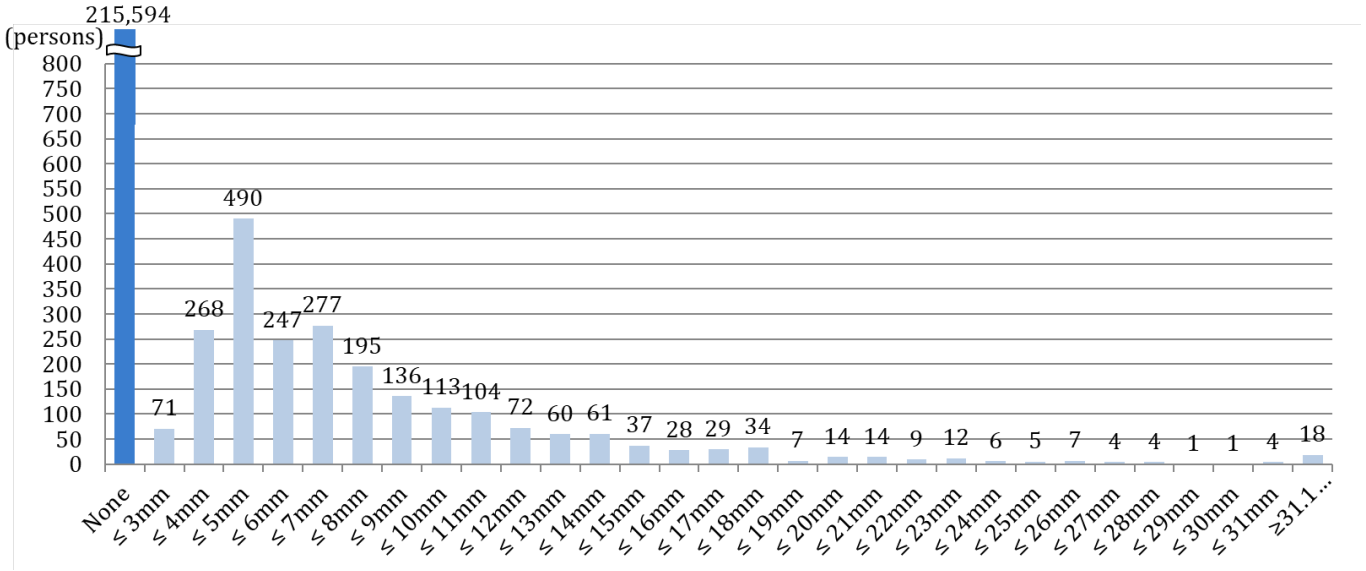


2 Nodule characteristics

As of March 31, 2021

Nodule size	Total	Male	Female	Grade	
None	215,594	109,269	106,325	A1	98.9%
≤ 3.0mm	71	34	37	A2	0.4%
3.1–5.0mm	758	259	499		
5.1–10.0mm	968	329	639	B	0.7%
10.1–15.0mm	334	111	223		
15.1–20.0mm	112	27	85		
20.1–25.0mm	46	17	29		
≥ 25.1mm	39	11	28		
Total	217,922	110,057	107,865		

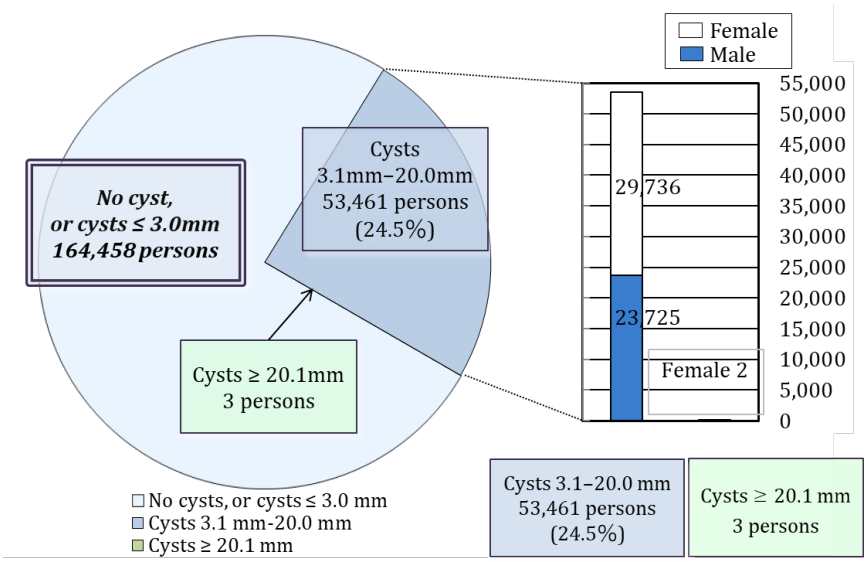


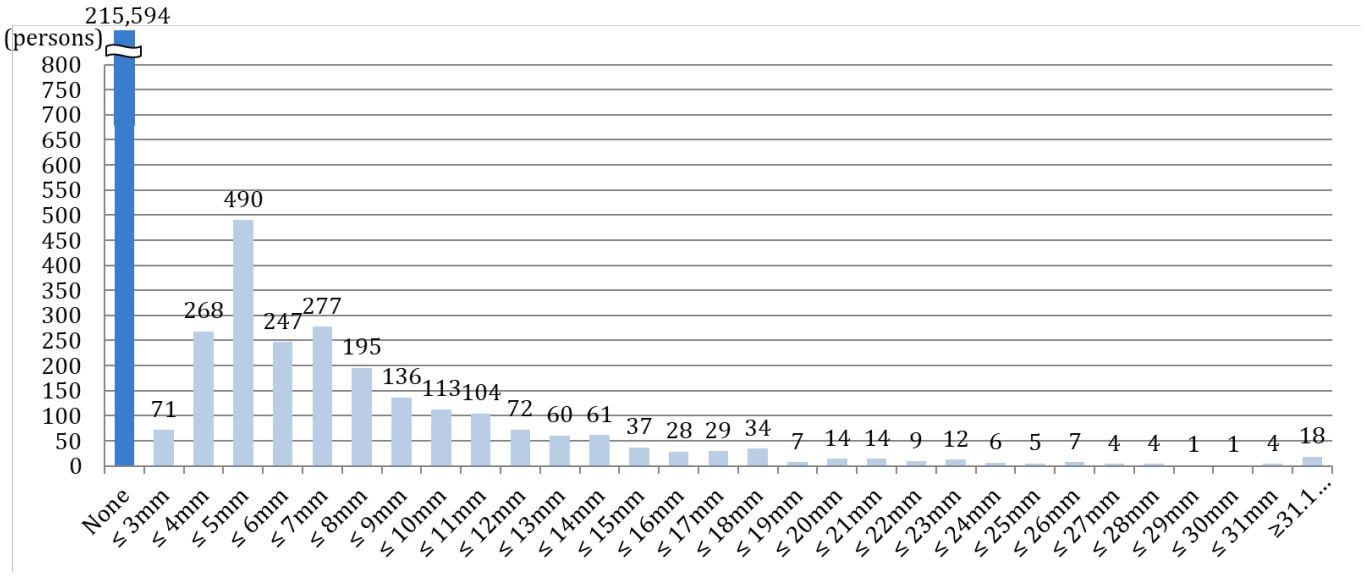


3 Cyst characteristics

As of March 31, 2021

Cyst size	Total	Male	Female	Grade	
None	77,244	40,917	36,327	A1	75.5%
≤ 3.0mm	87,214	45,414	41,800	A2	24.5%
3.1–5.0mm	47,368	21,604	25,764		
5.1–10.0mm	5,985	2,091	3,894		
10.1–15.0mm	96	25	71		
15.1–20.0mm	12	5	7		
20.1–25.0mm	2	0	2	B	0.001%
≥ 25.1mm	1	1	0		
Total	217,922	110,057	107,865		





Appendix 5 Implementation status of the TUE confirmatory examination by area

Implementation status of the TUE confirmatory examination by area

	Primary exam participants	Those referred to confirmatory exam	Confirmatory exam participants					Those with finalized results				
			Total	Age 4-9	Age 10-14	Age 15-19	≥ Age 20	Total	A1	A2	Not A1 or A2	
												FNAC
	a	b	c	d	e	f	g	h	i	j	k	l
		b/a (%)	c/b (%)	d/c (%)	e/c (%)	f/c (%)	g/c (%)	h/g (%)	i/g (%)	j/g (%)	k/j (%)	l/j (%)
13 municipalities[1)]	27,089	213	163	1	36	95	31	157	0	19	138	15
		0.8	76.5	0.6	22.1	58.3	19.0	96.3	0.0	12.1	87.9	10.9
Nakadori[2)]	121,925	761	566	14	111	317	124	546	5	45	496	33
		0.6	74.4	2.5	19.6	56.0	21.9	96.5	0.9	8.2	90.8	6.7
Hamadori[3)]	41,297	323	231	2	53	115	61	226	2	24	200	21
		0.8	71.5	0.9	22.9	49.8	26.4	97.8	0.9	10.6	88.5	10.5
Aizu[4)]	27,611	205	144	4	25	74	41	139	2	12	125	10
		0.7	70.2	2.8	17.4	51.4	28.5	96.5	1.4	8.6	89.9	8.0
Total	217,922	1,502	1,104	21	225	601	257	1,068	9	100	959	79
		0.7	73.5	1.9	20.4	54.4	23.3	96.7	0.8	9.4	89.8	8.2

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 FY 2016
   - Malignant or suspicious for malignancy: 13 (12 surgical cases: 12 papillary thyroid carcinomas)
2. Municipalities surveyed in FY 2017
   - Malignant or suspicious for malignancy: 18 (17 surgical case: 17 papillary thyroid carcinomas)
3. Total
   - Malignant or suspicious for malignancy: 31 (29 surgical cases: 29 papillary thyroid carcinomas)

Report on the TUE Full-Scale Survey (the fourth-round survey)

As of March 31, 2021

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we are now engaged in the Full-Scale Survey (the fourth-round survey), following the Preliminary Baseline Survey for background assessment of thyroid glands, and two Full-Scale Surveys (the second- and third-round surveys) to continuously confirm thyroid gland status.

1.2 Eligible Persons

All Fukushima residents approximately 18 years old or younger at the time of 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 years old or older

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 Responsible Organizations

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	82 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 Methods

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
  - Immediate need for confirmatory examination, judging from the condition of the thyroid gland.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood test, urine test, 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.

1.5-2 The confirmatory examination

We conduct ultrasonography, blood test, urine test, 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.

We recommend medical follow-up for those requiring it due to confirmatory exam results.

1.5-3 Flow chart

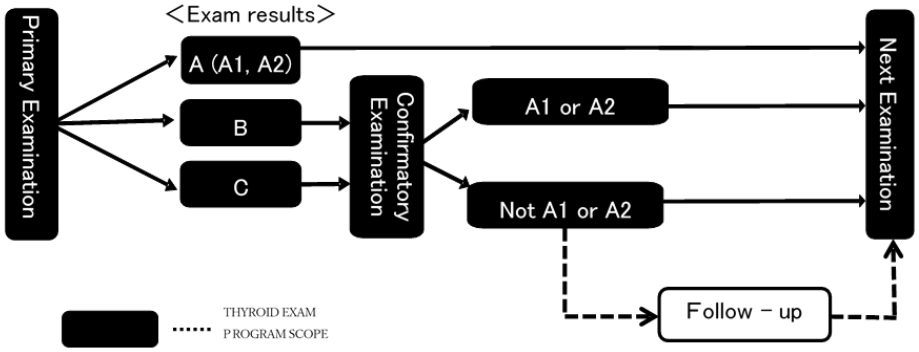


Fig.1 Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2018 and FY2019 are as follows:

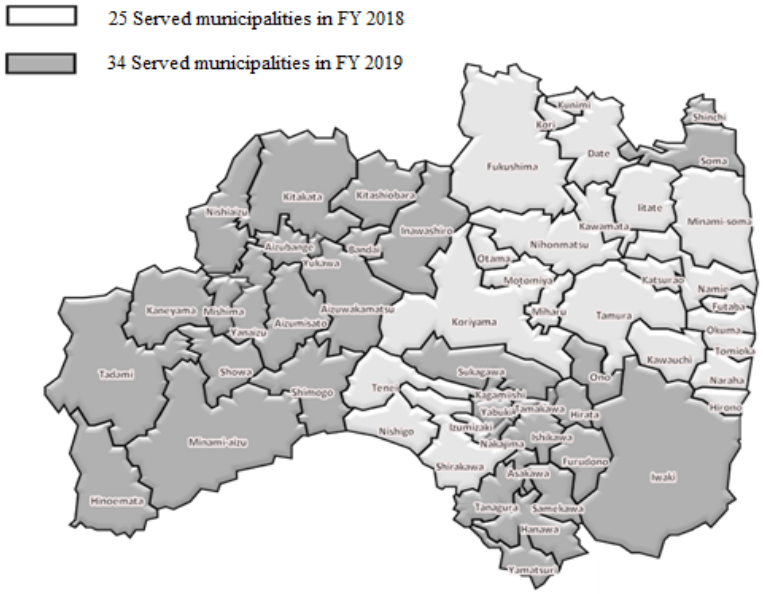


Fig.2 Municipalities surveyed in FY2018 and FY2019

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 March 31, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

The examination was carried out for 183,298 (62.3%) participants by March 31, 2021 (Implementation status for each municipality and prefectures other than Fukushima are shown in Appendix 1 and Appendix 2).

Results of 183,239 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, 61,656 (33.6%) had Grade A1 results, 120,200 (65.6%) had Grade A2, as A2, 1,383 (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	168,031	107,947 (64.2)	7,194	107,911 (100.0)	36,865 (34.2)	70,346 (65.2)	700 (0.6)	0 (0.0)
FY2019	126,208	75,351 (59.7)	2,972	75,328 (100.0)	24,791 (32.9)	49,854 (66.2)	683 (0.9)	0 (0.0)
Total	294,239	183,298 (62.3)	10,166	183,239 (100.0)	61,656 (33.6)	120,200 (65.6)	1,383 (0.8)	0 (0.0)

- 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.
- Examinations 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.

Table 2 Number and percentage of participants with nodules/cysts

	Participants with finalized results a	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm b (b/a)	≤ 5.0mm c (c/a)	≥ 20.1mm d (d/a)	≤ 20.0mm e (e/a)
FY2018	107,911	696 (0.6)	367 (0.3)	4 (0.0)	70,699 (65.5)
FY2019	75,328	682 (0.9)	298 (0.4)	1 (0.0)	50,197 (66.6)
Total	183,239	1,378 (0.8)	665 (0.4)	5 (0.0)	120,896 (66.0)

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)	168,031	56,939	64,827	46,265
	Participants	(b)	107,947	49,641	52,672	5,634
	Participation rate (%)	(b/a)	64.2	87.2	81.3	12.2
FY2019	Age group **			7-11	12-17	18-24
	Survey population	(a)	126,208	34,206	47,275	44,727
	Participants	(b)	75,351	30,186	39,252	5,913
	Participation rate (%)	(b/a)	59.7	88.2	83.0	13.2
Total	Survey population	(a)	294,239	91,145	112,102	90,992
	Participants	(b)	183,298	79,827	91,924	11,547
	Participation rate (%)	(b/a)	62.3	87.6	82.0	12.7

・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 Survey (third- and fourth-round surveys) is shown in Table 4.

Among 163,591 participants with Grade A1 or A2 results in the third-round survey, 162,915 (99.6%) had Grade A1 or A2 results, and 676 (0.4%) had Grade B results in the fourth-round survey.

Among 728 participants Grade B results in the third-round survey, 147 (20.2%) had Grade A1 or A2 results, and 581 (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	56,453 (100.0)	42,731 (75.7)	13,616 (24.1)	106 (0.2)	0 (0.0)
		A2	107,138 (100.0)	11,274 (10.5)	95,294 (88.9)	570 (0.5)	0 (0.0)
	B		728 (100.0)	12 (1.6)	135 (18.5)	581 (79.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		18,920 (100.0)	7,639 (40.4)	11,155 (59.0)	126 (0.7)	0 (0.0)
Total			183,239 (100.0)	61,656 (33.6)	120,200 (65.6)	1,383 (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 March 31, 2021, 1,014 of 1,383 people (73.3%) have received the examination. Of those, 972 (95.9%) completed the entire process of the confirmatory examination. (Progress and results of the confirmatory examination are shown in Table 5.)

Of the aforementioned 972 participants, 91 (9.4%) were confirmed to meet Grade A diagnostic criteria by the primary examination standards (A1: 6, A2: 85) (including those with other thyroid conditions). The remaining 881 (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 (%)	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)
FY2018	700	514 (73.4)	501 (97.5)	3 (0.6)	45 (9.0)	453 (90.4)	44 (9.7)
FY2019	683	500 (73.2)	471 (94.2)	3 (0.6)	40 (8.5)	428 (90.9)	38 (8.9)
Total	1,383	1,014 (73.3)	972 (95.9)	6 (0.6)	85 (8.7)	881 (90.6)	82 (9.3)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 30 had nodules classified as malignant or suspicious for malignancy: 12 of them were male, and 18 were female.

Participants' age at the time of the confirmatory examination ranged from 9 to 20 years (mean age: 16.3 ± 2.8 years). The minimum and maximum tumor diameters were 6.1 mm and 29.4 mm. Mean tumor diameter was 13.2 ± 6.6 mm.

Of these 33 participants, 24 had Grade A results (A1: 6, A2: 18), 6 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： 18*)
- Male to female ratio： 8:10
- Mean age (SD, min-max): 15.8 (2.7, 11-20), 7.8 (2.7, 2-12) at the time of disaster
- Mean tumor size: 11.7 mm (5.5 mm, 6.9-29.4 mm)

B. Municipalities surveyed in FY 2019
- Malignant or suspicious for malignancy： 15*)
- Male to female ratio： 6:9
- Mean age (SD, min-max): 16.9 (2.8, 9-20), 8.0 (3.0, 0-12) at the time of disaster
- Mean tumor size: 15.0 mm (7.5 mm, 6.1-29.0 mm)

C. Total
- Malignant or suspicious for malignancy： 33*)
- Male to female ratio： 14:19
- Mean age (SD, min-max): 16.3 (2.8, 9-20), 7.9 (2.8, 0-12) at the time of disaster
- Mean tumor size: 13.2 mm (6.6 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 33 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.

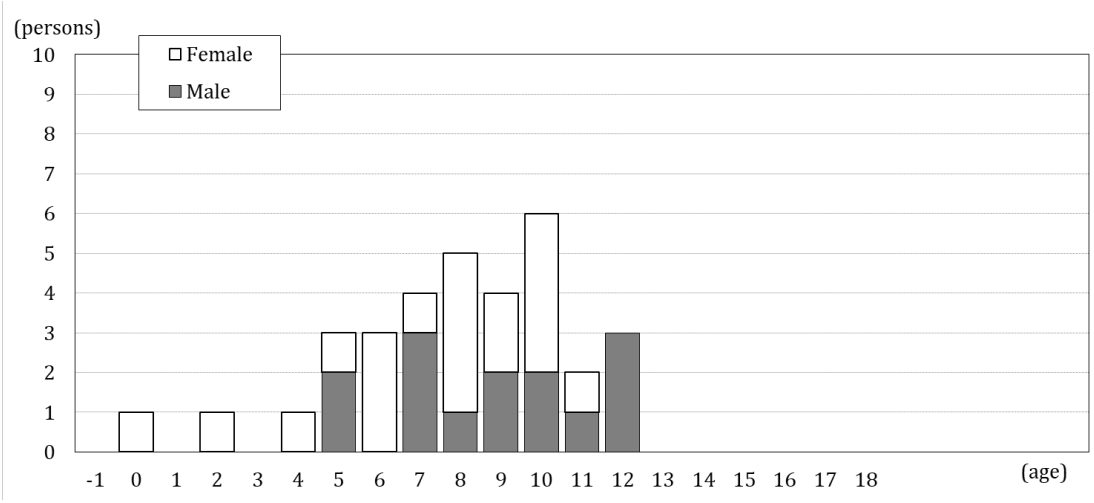


Fig.3 Age as of 11 March 2011

Note: Those aged between 15 and 18 at the time of disaster are not included in the fourth-round survey

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.

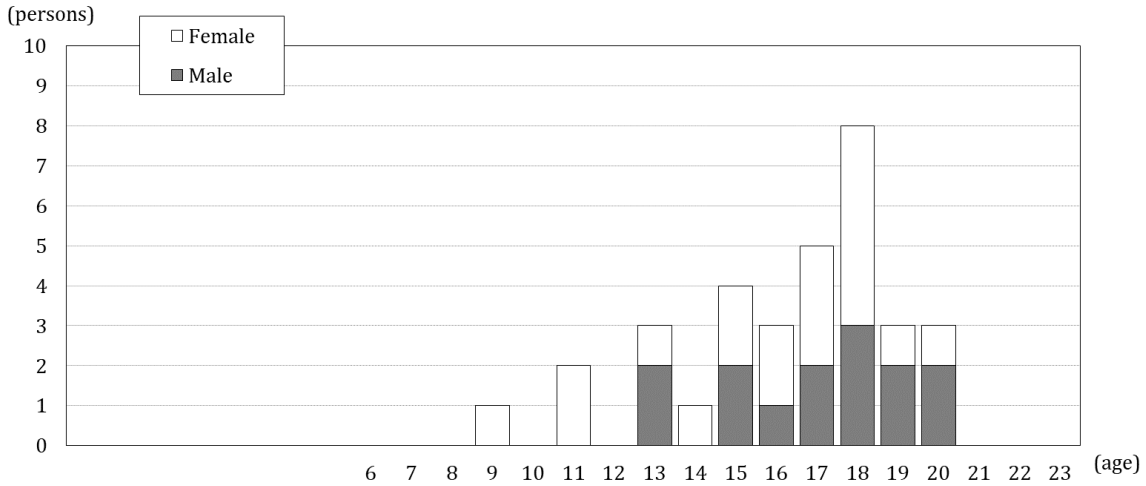


Fig. 4 Age as of the date of confirmatory examination

2.2-4 Basic Survey results of those with malignant or suspicious nodules by FNAC

Of the 33 people with malignant or suspicious nodules, 11 people (33.3%) had participated in the Basic Survey (for external radiation dose estimation), and all 11 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	0	1	1	0	0	0	0	1	1
1-1.9	0	0	2	1	1	0	0	0	3	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	0	3	4	2	0	0	0	7	4

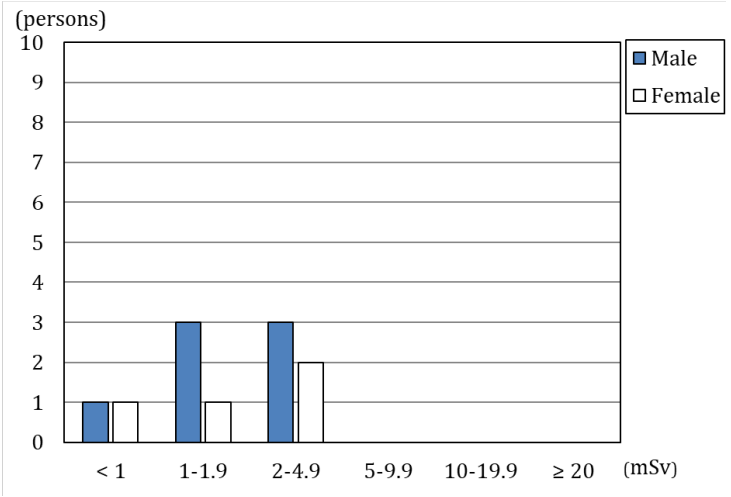


Fig. 5 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 8 Blood test results Mean±SD (percentage of values outside reference range)

	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: 33 persons	1.3 ± 0.1 (0.0%)	3.6 ± 0.5 (0.0%)	1.3 ± 0.7 (3.0%)	31.0 ± 55.7 (18.2%)	42.4%	27.3%
Other: 897 persons	1.2 ± 0.2 (5.1%)	3.5 ± 0.8 (6.7%)	1.2 ± 0.8 (7.8%)	32.2 ±114.2 (15.9%)	6.8%	6.9%

Table 9 Urinary iodine test results (μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 33 persons	35	94	209	474	1783
Other: 889 persons	32	118	193	345	31920

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 0.02% in Nakadori, Hamadori, 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 a	Those referred to confirmatory exam b	Percentage of b (%) b/a	Confirmatory exam participants	Malignant or suspicious cases c	Percentage of c (%) c/a
13 municipalities[1)]	22,558	150	0.7	118	2	0.01
Nakadori[2)]	104,088	706	0.7	507	19	0.02
Hamadori[3)]	33,729	321	1.0	240	8	0.02
Aizu[4)]	22,923	206	0.9	149	4	0.02
Total	183,298	1,383	0.8	1,014	33	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 March 31, 2021, 2,646 (100%) of 2,647 participants 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, 2021, a total of 1,063 people had participated in these session, 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 the anxiety 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, 477 participants (159 males and 318 females) have received support as of March 31, 2021. The number of support sessions provided was 940 in total. Of these, 474 (50.4%) received support at the participants' first examination and 466 (49.6%) 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 March 31, 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	1,134	26	61.9	472 41.6	576 50.8	86 7.6	54	4.8
Namie	2,858	1,519	311	53.1	587 38.6	718 47.3	214 14.1	364	24.0
Iitate	852	544	19	63.8	220 40.4	279 51.3	45 8.3	26	4.8
Minamisoma	10,202	6,007	845	58.9	2,495 41.5	2,980 49.6	532 8.9	932	15.5
Date	8,781	5,929	194	67.5	2,333 39.3	3,042 51.3	554 9.3	208	3.5
Tamura	5,435	3,424	70	63.0	1,515 44.2	1,640 47.9	269 7.9	106	3.1
Hirono	801	447	34	55.8	183 40.9	215 48.1	49 11.0	31	6.9
Naraha	1,094	598	50	54.7	220 36.8	296 49.5	82 13.7	59	9.9
Tomioka	2,341	1,194	198	51.0	445 37.3	571 47.8	178 14.9	215	18.0
Kawauchi	267	152	10	56.9	55 36.2	85 55.9	12 7.9	13	8.6
Okuma	2,020	1,138	210	56.3	442 38.8	551 48.4	145 12.7	227	19.9
Futaba	978	363	62	37.1	146 40.2	179 49.3	38 10.5	65	17.9
Katsurao	174	109	3	62.6	39 35.8	57 52.3	13 11.9	4	3.7
Fukushima	43,241	29,047	1,837	67.2	11,774 40.5	14,384 49.5	2,889 9.9	1,905	6.6
Nihonmatsu	8,104	5,472	204	67.5	2,275 41.6	2,780 50.8	417 7.6	192	3.5
Motomiya	4,910	3,201	101	65.2	1,401 43.8	1,564 48.9	236 7.4	112	3.5
Otama	1,287	918	26	71.3	416 45.3	440 47.9	62 6.8	17	1.9
Koriyama	52,559	33,373	2,525	63.5	13,496 40.4	16,706 50.1	3,171 9.5	2,568	7.7
Koori	1,609	1,129	31	70.2	465 41.2	545 48.3	119 10.5	36	3.2
Kunimi	1,204	809	17	67.2	296 36.6	431 53.3	82 10.1	20	2.5
Tenei	839	525	8	62.6	224 42.7	262 49.9	39 7.4	10	1.9
Shirakawa	9,972	6,521	276	65.4	2,626 40.3	3,294 50.5	601 9.2	311	4.8
Nishigo	3,263	2,213	96	67.8	920 41.6	1,083 48.9	210 9.5	108	4.9
Izumizaki	1,025	667	4	65.1	277 41.5	336 50.4	54 8.1	6	0.9
Miharu	2,383	1,514	37	63.5	562 37.1	780 51.5	172 11.4	39	2.6
Subtotal	168,031	107,947	7,194	64.2	43,884 40.7	53,794 49.8	10,269 9.5	7,628	7.1

*1) The number of participants who received the examination at facilities outside Fukushima (as of February 28, 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	29,858	1,658	60.1	9,471 31.7	16,104 53.9	4,283 14.3	1,581	5.3
Sukagawa	12,378	7,550	219	61.0	2,763 36.6	3,935 52.1	852 11.3	214	2.8
Soma	5,507	3,192	215	58.0	1,263 39.6	1,647 51.6	282 8.8	235	7.4
Kagamiishi	2,133	1,322	33	62.0	491 37.1	702 53.1	129 9.8	30	2.3
Shinchi	1,162	679	33	58.4	233 34.3	375 55.2	71 10.5	33	4.9
Nakajima	849	505	8	59.5	192 38.0	265 52.5	48 9.5	6	1.2
Yabuki	2,672	1,686	28	63.1	727 43.1	837 49.6	122 7.2	31	1.8
Ishikawa	2,182	1,349	26	61.8	543 40.3	677 50.2	129 9.6	30	2.2
Yamatsuri	816	479	14	58.7	213 44.5	238 49.7	28 5.8	12	2.5
Asakawa	1,064	661	22	62.1	238 36.0	360 54.5	63 9.5	25	3.8
Hirata	969	608	8	62.7	245 40.3	308 50.7	55 9.0	5	0.8
Tanagura	2,399	1,467	30	61.2	589 40.1	782 53.3	96 6.5	30	2.0
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	5	1.6
Ono	1,488	878	9	59.0	354 40.3	448 51.0	76 8.7	11	1.3
Tamakawa	1,052	658	4	62.5	253 38.4	357 54.3	48 7.3	5	0.8
Furudono	817	522	20	63.9	208 39.8	251 48.1	63 12.1	14	2.7
Hinoemata	87	36	1	41.4	16 44.4	16 44.4	4 11.1	1	2.8
Minamiaizu	2,128	1,169	18	54.9	482 41.2	605 51.8	82 7.0	26	2.2
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	426	4	57.0	179 42.0	222 52.1	25 5.9	6	1.4
Kitakata	6,948	4,098	81	59.0	1,489 36.3	2,224 54.3	385 9.4	90	2.2
Nishiaizu	761	407	9	53.5	169 41.5	190 46.7	48 11.8	13	3.2
Tadami	555	335	6	60.4	138 41.2	170 50.7	27 8.1	6	1.8
Inawashiro	2,069	1,204	28	58.2	507 42.1	593 49.3	104 8.6	25	2.1
Bandai	477	289	8	60.6	109 37.7	157 54.3	23 8.0	8	2.8
Kitashiobara	445	280	3	62.9	115 41.1	145 51.8	20 7.1	3	1.1
Aizumisato	2,823	1,725	33	61.1	634 36.8	896 51.9	195 11.3	34	2.0
Aizubange	2,402	1,421	38	59.2	540 38.0	724 51.0	157 11.0	37	2.6
Yanaizu	464	284	2	61.2	115 40.5	143 50.4	26 9.2	3	1.1
Aizuwakamatsu	18,424	10,674	381	57.9	3,889 36.4	5,589 52.4	1,196 11.2	411	3.9
Yugawa	519	351	6	67.6	123 35.0	178 50.7	50 14.2	11	3.1
Subtotal	126,208	75,351	2,972	59.7	26,795 35.6	39,789 52.8	8,767 11.6	2,968	3.9
Total	294,239	183,298	10,166	62.3	70,679 38.6	93,583 51.1	19,036 10.4	10,596	5.8

Appendix 2

Implementation status of the TUE primary examination by prefecture

As of February 28, 2021

Prefecture	No. of medical facilities	Participants
Hokkaido	7	**277**
Aomori	2	**124**
Iwate	3	**250**
Miyagi	2	**2,251**
Akita	1	**156**
Yamagata	3	**472**
Ibaraki	4	**568**
Tochigi	8	**629**
Gunma	2	**173**
Saitama	3	**529**
Chiba	5	**470**
Tokyo	18	**1,687**
Kanagawa	6	**746**
Niigata	3	**447**
Toyama	2	**27**
Ishikawa	1	**35**

Prefecture	No. of medical facilities	Participants
Fukui	1	**18**
Yamanashi	2	**86**
Nagano	3	**123**
Gifu	1	**29**
Shizuoka	3	**83**
Aichi	5	**178**
Mie	1	**17**
Shiga	1	**14**
Kyoto	3	**80**
Osaka	8	**173**
Hyogo	2	**123**
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	**10,166**

・The number of participants who received examination at medical facilities outside Fukushima.

Appendix 3

TUE primary examination results by municipality — As of March 31, 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	%		%	
	a	% b/a	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
Municipalities surveyed in FY2018										
Kawamata	1,134	1,134	408	721	5	0	4	3	1	725
		100.0	36.0	63.6	0.4	0.0	0.4	0.3	0.1	63.9
Namie	1,519	1,518	499	1,005	14	0	14	6	0	1,010
		99.9	32.9	66.2	0.9	0.0	0.9	0.4	0.0	66.5
Iitate	544	542	201	337	4	0	4	2	0	340
		99.6	37.1	62.2	0.7	0.0	0.7	0.4	0.0	62.7
Minamisoma	6,007	6,003	2,116	3,844	43	0	43	28	0	3,859
		99.9	35.2	64.0	0.7	0.0	0.7	0.5	0.0	64.3
Date	5,929	5,928	2,043	3,850	35	0	35	19	0	3,871
		100.0	34.5	64.9	0.6	0.0	0.6	0.3	0.0	65.3
Tamura	3,424	3,424	1,271	2,131	22	0	22	10	0	2,141
		100.0	37.1	62.2	0.6	0.0	0.6	0.3	0.0	62.5
Hirono	447	447	169	272	6	0	6	3	0	272
		100.0	37.8	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	151	45	104	2	0	2	0	0	106
		99.3	29.8	68.9	1.3	0.0	1.3	0.0	0.0	70.2
Okuma	1,138	1,136	392	736	8	0	8	5	0	743
		99.8	34.5	64.8	0.7	0.0	0.7	0.4	0.0	65.4
Futaba	363	363	109	253	1	0	1	0	0	254
		100.0	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	29,047	29,041	10,013	18,857	171	0	170	94	1	18,941
		100.0	34.5	64.9	0.6	0.0	0.6	0.3	0.0	65.2
Nihonmatsu	5,472	5,470	1,912	3,505	53	0	52	20	1	3,535
		100.0	35.0	64.1	1.0	0.0	1.0	0.4	0.0	64.6
Motomiya	3,201	3,200	1,123	2,063	14	0	14	8	0	2,065
		100.0	35.1	64.5	0.4	0.0	0.4	0.3	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	33,373	33,360	10,973	22,172	215	0	214	116	1	22,285
		100.0	32.9	66.5	0.6	0.0	0.6	0.3	0.0	66.8
Koori	1,129	1,129	399	723	7	0	7	2	0	726
		100.0	35.3	64.0	0.6	0.0	0.6	0.2	0.0	64.3
Kunimi	809	808	261	538	9	0	9	1	0	545
		99.9	32.3	66.6	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	6,521	6,520	2,275	4,203	42	0	42	25	0	4,224
		100.0	34.9	64.5	0.6	0.0	0.6	0.4	0.0	64.8
Nishigo	2,213	2,212	740	1,458	14	0	14	9	0	1,465
		100.0	33.5	65.9	0.6	0.0	0.6	0.4	0.0	66.2
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	1,514	1,514	511	991	12	0	12	5	0	998
		100.0	33.8	65.5	0.8	0.0	0.8	0.3	0.0	65.9
Subtotal	107,947	107,911	36,865	70,346	700	0	696	367	4	70,699
		100.0	34.2	65.2	0.6	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	%		%	
	a	% b/a	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
Municipalities surveyed in FY2019										
Iwaki	29,858	29,845	9,419	20,150	276	0	275	117	1	20,281
		100.0	31.6	67.5	0.9	0.0	0.9	0.4	0.0	68.0
Sukagawa	7,550	7,548	2,374	5,105	69	0	69	45	0	5,137
		100.0	31.5	67.6	0.9	0.0	0.9	0.6	0.0	68.1
Soma	3,192	3,192	1,058	2,094	40	0	40	11	0	2,121
		100.0	33.1	65.6	1.3	0.0	1.3	0.3	0.0	66.4
Kagamiishi	1,322	1,320	409	898	13	0	13	5	0	903
		99.8	31.0	68.0	1.0	0.0	1.0	0.4	0.0	68.4
Shinchi	679	678	228	445	5	0	5	3	0	448
		99.9	33.6	65.6	0.7	0.0	0.7	0.4	0.0	66.1
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	1,686	1,686	612	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	63.5
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	479	479	151	328	0	0	0	2	0	328
		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	1,467	1,467	541	916	10	0	10	7	0	924
		100.0	36.9	62.4	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	878	878	273	596	9	0	9	1	0	603
		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	1,169	1,169	435	722	12	0	12	3	0	728
		100.0	37.2	61.8	1.0	0.0	1.0	0.3	0.0	62.3
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	426	426	162	260	4	0	4	0	0	262
		100.0	38.0	61.0	0.9	0.0	0.9	0.0	0.0	61.5
Kitakata	4,098	4,097	1,409	2,656	32	0	32	22	0	2,664
		100.0	34.4	64.8	0.8	0.0	0.8	0.5	0.0	65.0
Nishiaizu	407	407	149	255	3	0	3	1	0	257
		100.0	36.6	62.7	0.7	0.0	0.7	0.2	0.0	63.1
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	288	83	202	3	0	3	1	0	204
		99.7	28.8	70.1	1.0	0.0	1.0	0.3	0.0	70.8
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	10,674	10,671	3,613	6,958	100	0	100	36	0	7,011
		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	75,351	75,328	24,791	49,854	683	0	682	298	1	50,197
		100.0	32.9	66.2	0.9	0.0	0.9	0.4	0.0	66.6
Total	183,298	183,239	61,656	120,200	1,383	0	1,378	665	5	120,896
		100.0	33.6	65.6	0.8	0.0	0.8	0.4	0.0	66.0

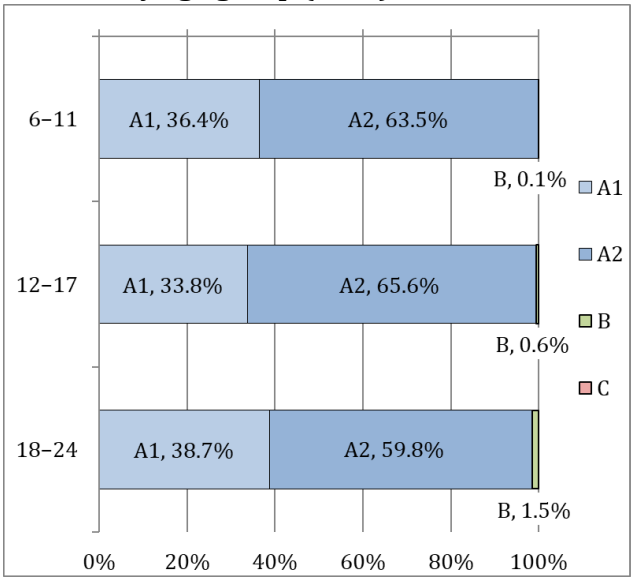
Appendix 4

1 TUE primary examination results by age and sex

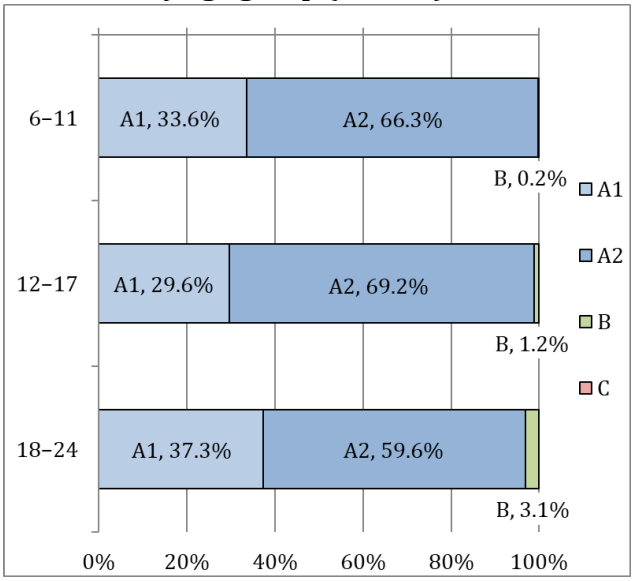
As of March 31, 2021

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	23,007	22,833	45,840	39	57	96	0	0	0	36,225	34,453	70,678
12–17	16,059	13,652	29,711	31,180	31,853	63,033	284	555	839	0	0	0	47,523	46,060	93,583
18–24	3,405	3,798	7,203	5,255	6,072	11,327	132	316	448	0	0	0	8,792	10,186	18,978
Total	32,643	29,013	61,656	59,442	60,758	120,200	455	928	1,383	0	0	0	92,540	90,699	183,239

Results by age group (Male)



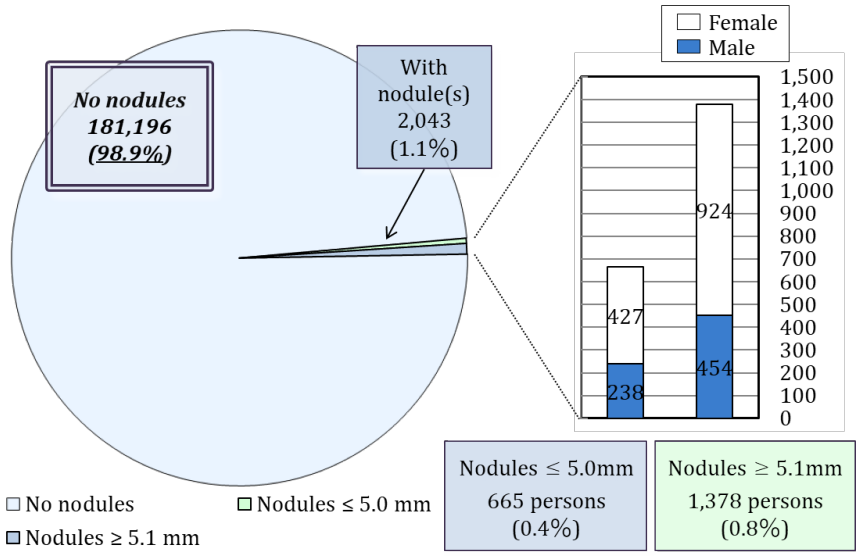
Results by age group (Female)

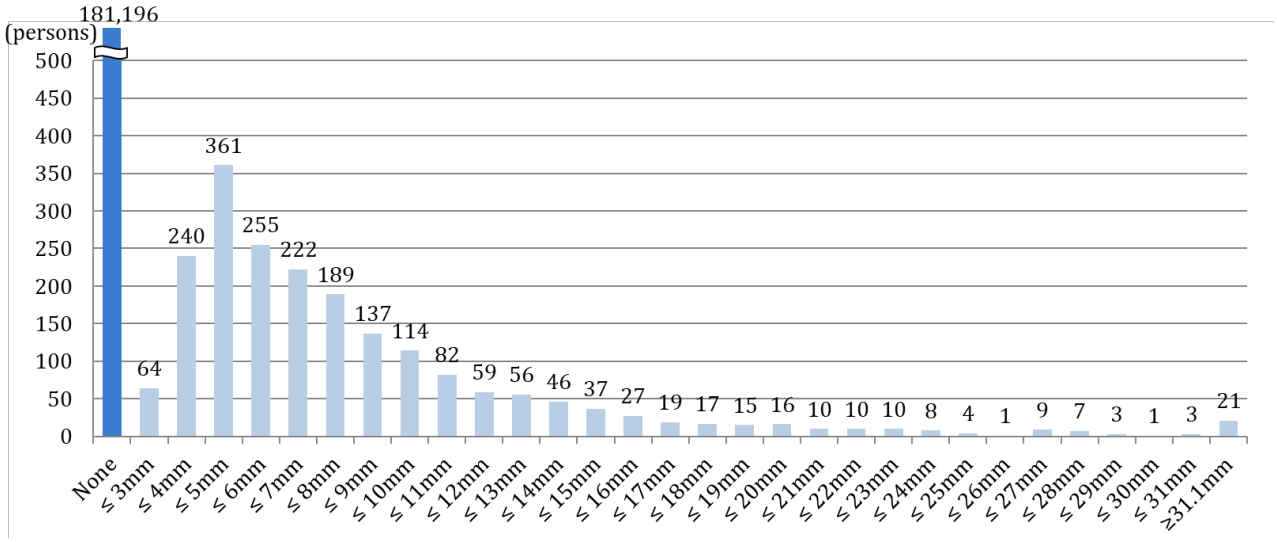


2 Nodule characteristics

(persons)
As of March 31, 2021

Nodule size	Total	Male	Female	Grade	
None	181,196	91,848	89,348	A1	98.9%
≤ 3.0mm	64	31	33	A2	0.4%
3.1–5.0mm	601	207	394		
5.1–10.0mm	917	309	608	B	0.8%
10.1–15.0mm	280	94	186		
15.1–20.0mm	94	27	67		
20.1–25.0mm	42	13	29		
≥ 25.1mm	45	11	34		
Total	183,239	92,540	90,699		

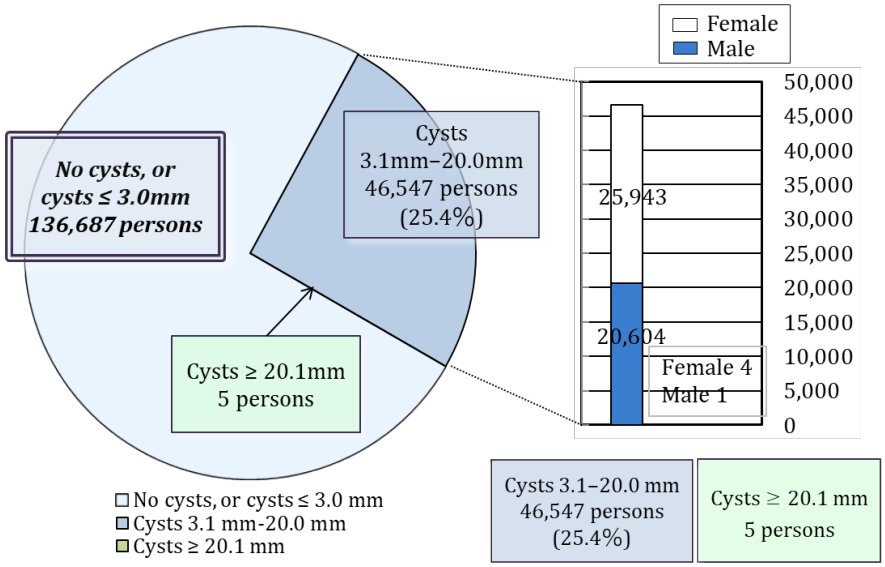


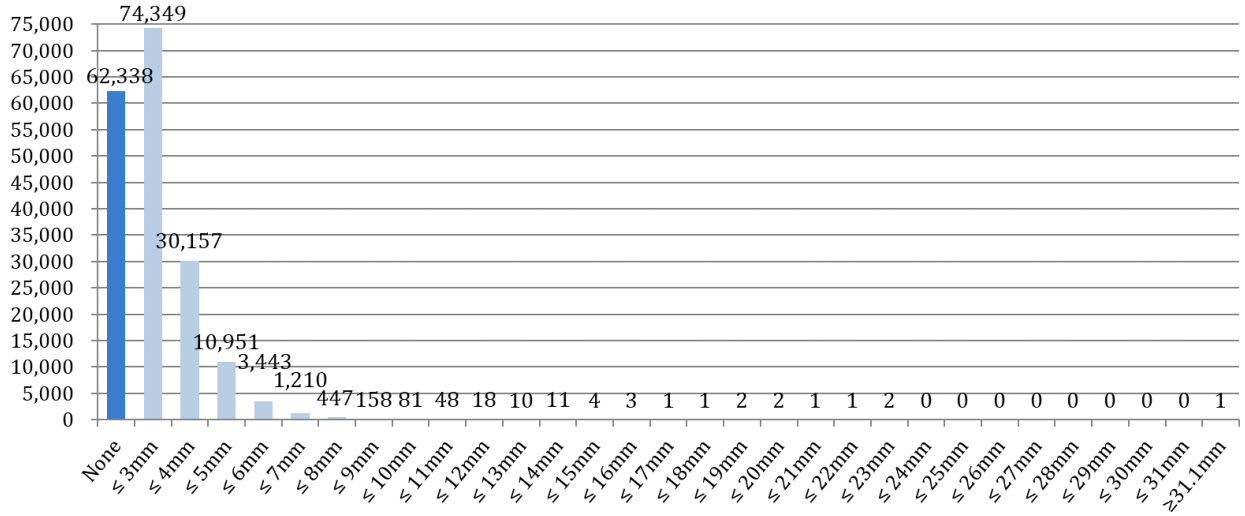


3 Cyst characteristics

(persons)
As of March 31, 2021

Cyst size	Total	Male	Female	Grade	
None	62,338	32,893	29,445	A1	74.6%
≤ 3.0mm	74,349	39,042	35,307	A2	25.4%
3.1–5.0mm	41,108	18,674	22,434		
5.1–10.0mm	5,339	1,896	3,443		
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	183,239	92,540	90,699		





Appendix 5

Implementation status of the TUE confirmatory examination by area **As of March 31, 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)]	22,558	150	118	7	71	40	114	1	7	106	7
		0.7	78.7	5.9	60.2	33.9	96.6	0.9	6.1	93.0	6.6
Nakadori[2)]	104,088	706	507	45	276	186	492	3	51	438	44
		0.7	71.8	8.9	54.4	36.7	97.0	0.6	10.4	89.0	10.0
Hamadori[3)]	33,729	321	240	10	140	90	226	1	16	209	20
		1.0	74.8	4.2	58.3	37.5	94.2	0.4	7.1	92.5	9.6
Aizu[4)]	22,923	206	149	7	82	60	140	1	11	128	11
		0.9	72.3	4.7	55.0	40.3	94.0	0.7	7.9	91.4	8.6
Total	183,298	1,383	1,014	69	569	376	972	6	85	881	82
		0.8	73.3	6.8	56.1	37.1	95.9	0.6	8.7	90.6	9.3

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: 18 (15 surgical cases: 15 papillary thyroid carcinomas)
2. Municipalities surveyed in FY2019
   Malignant or suspicious for malignancy: 15 (12 surgical case: 12 papillary thyroid carcinomas)
3. Total
   Maalignant or suspicious for malignancy: 33 (27 surgical cases: 27 papillary thyroid carcinomas)

Report on the TUE Full-Scale Survey (Survey for Age 25+)

As of March 31, 2021

1. Summary

1.1 Survey Population

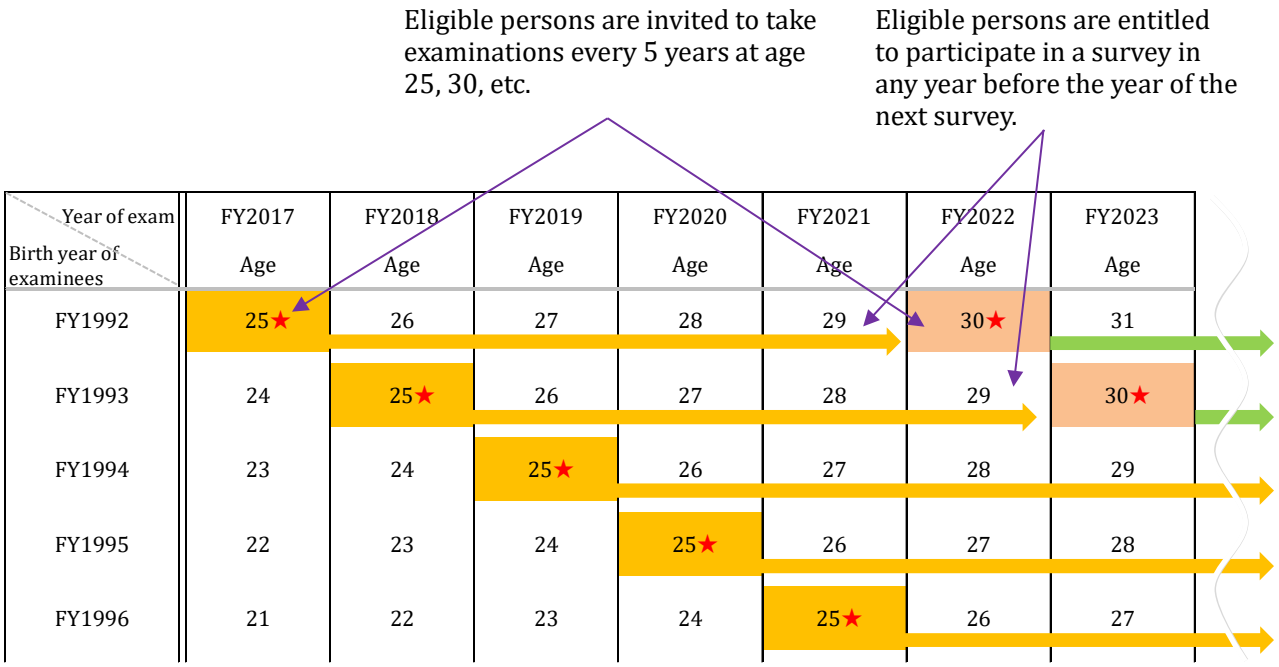
Among Fukushima residents 18 years old or younger at the time of disaster (born between April 2, 1992 and April 1, 2012), those who turn 25 years old during each fiscal year, including those who moved out of the prefecture, are invited to receive a thyroid ultrasound examination (TUE).

This report includes the status of the following 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 March 31, 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) and 7,621 (8.7%) people participated.

Results of 7,260 (95.3%) participants have been finalized and individual results reports have already been sent to them.

Of these, 3,102 (42.7%) had Grade A1 results, 3,799 (52.3%) had Grade A2, 359 (4.9%) 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)
Born in FY1992	22,653	2,293 (10.1)	737	2,281 (99.5)	955 (41.9)	1,225 (53.7)	101 (4.4)	0 (0.0)
Born in FY1993	21,890	2,198 (10.0)	792	2,193 (99.8)	990 (45.1)	1,096 (50.0)	107 (4.9)	0 (0.0)
Born in FY1994	22,095	1,636 (7.4)	596	1,595 (97.5)	667 (41.8)	841 (52.7)	87 (5.5)	0 (0.0)
Born in FY1995	21,056	1,494 (7.1)	382	1,191 (79.7)	490 (41.1)	637 (53.5)	64 (5.4)	0 (0.0)
Total	87,694	7,621 (8.7)	2,507	7,260 (95.3)	3,102 (42.7)	3,799 (52.3)	359 (4.9)	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	2,281	100 (4.4)	48 (2.1)	1 (0.0)	1,271 (55.7)
Those born in FY1993	2,193	107 (4.9)	38 (1.7)	0 (0.0)	1,142 (52.1)
Those born in FY1994	1,595	87 (5.5)	33 (2.1)	0 (0.0)	890 (55.8)
Those born in FY1995	1,191	63 (5.3)	20 (1.7)	1 (0.1)	669 (56.2)
Total	7,260	357 (4.9)	139 (1.9)	2 (0.0)	3,972 (54.7)

* Results of the previous survey results of the Age 25 Survey participants with finalized results.
** Results of the Age 25 Survey participants who were diagnosed for each grade in the previous survey.

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 4,507 participants with Grade A1 or A2 results in the previous survey, 4,395 (97.5%) had Grade A1 or A2 results and 112 (2.5%) had Grade B results in the Age 25 Survey.

Among 151 participants with Grade B results in the previous survey, 41 (27.2%) had Grade A (A1 or A2) results and 110 (72.8%) 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 (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the previous survey	A	A1	1,803 (100.0)	1,471 (81.6)	316 (17.5)	16 (0.9)	0 (0.0)
		A2	2,704 (100.0)	440 (16.3)	2,168 (80.2)	96 (3.6)	0 (0.0)
	B		151 (100.0)	4 (2.6)	37 (24.5)	110 (72.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		2,602 (100.0)	1,187 (45.6)	1,278 (49.1)	137 (5.3)	0 (0.0)
Total			7,260 (100.0)	3,102 (42.7)	3,799 (52.3)	359 (4.9)	0 (0.0)

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 359 eligible persons, 239 (66.6%) participated, of whom 227 (95.0%) completed the entire process of the confirmatory examination.

Of the aforementioned 227 participants, 17 (7.5%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1:1, A2: 16) (including those with other thyroid conditions). The remaining 210 (92.5%) 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	101	82 (81.2)	79 (96.3)	0 (0.0)	3 (3.8)	76 (96.2)	8 (10.5)
Those born in FY1993	107	88 (82.2)	86 (97.7)	0 (0.0)	7 (8.1)	79 (91.9)	6 (7.6)
Those born in FY1994	87	65 (74.7)	62 (95.4)	1 (1.6)	6 (9.7)	55 (88.7)	3 (5.5)
Those born in FY1995	64	4 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	359	239 (66.6)	227 (95.0)	1 (0.4)	16 (7.0)	210 (92.5)	17 (8.1)

2.2-2 Results of fine needle aspiration cytology (FNAC)

Among those who underwent FNAC, 9 had nodules classified as malignant or suspicious for malignancy: 2 of them were male and 7 were female.

Participants' age at the time of the confirmatory examination ranged from 24 to 27 years (mean age: 25.2 ± 0.8 years). The minimum and maximum tumor diameters were 9.4 mm and 49.9 mm. Mean tumor diameter was 20.2 ± 14.7 mm.

Of these 9 participants, 1 had Grade A2 results and 2 had Grade B results in the previous survey. The remaining 6 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:	9*
・Male to female ratio:	2:7
・Mean age (SD, min-max):	25.2 (0.8, 24-27), 17.0 (0.7, 16-18) at the time of disaster
・Mean tumor size:	20.2 mm (14.4 mm, 9.4-49.9 mm)

* Surgical cases are as shown in Appendix 2.

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 March 31, 2021, 600 (99.8%) of 601 participants 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, 80 participants (19 males and 61 females) have received support as of March 31, 2021. The number of support sessions provided was 155 in total. Of these, 80 sessions (51.6%) were offered at the participants' first examination and 75 (48.4%) 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.

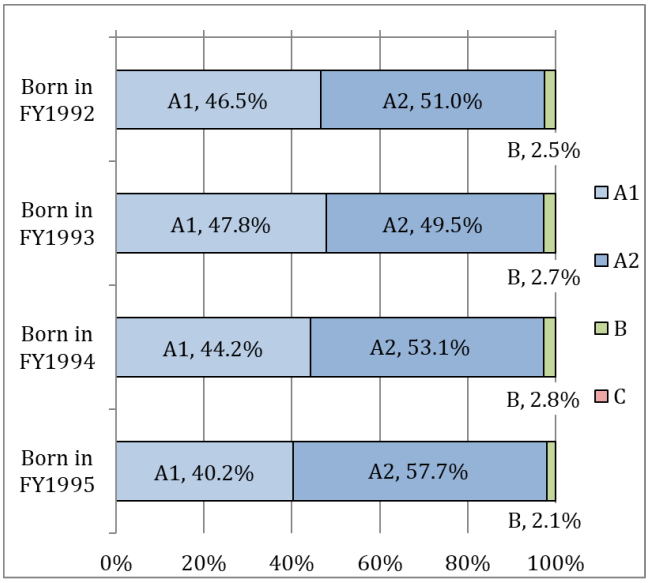
Appendix 1

1 Age 25 Survey results, by age and sex

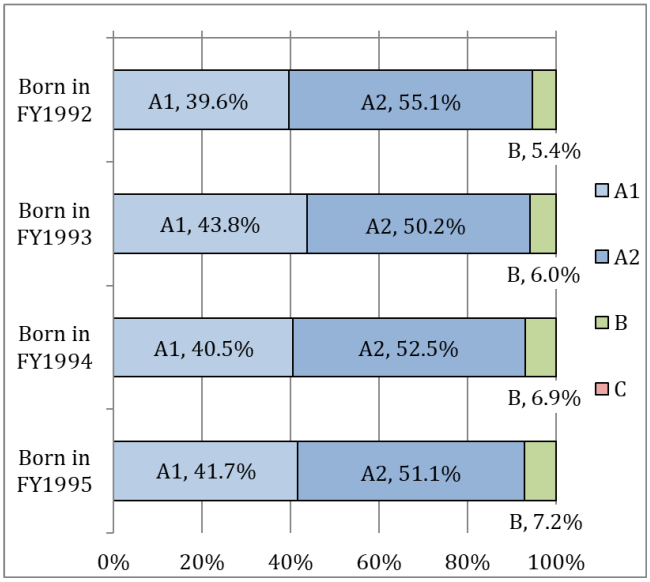
(persons)
As of March 31, 2021

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	353	602	955	387	838	1,225	19	82	101	0	0	0	759	1,522	2,281
Those born in FY1993	356	634	990	368	728	1,096	20	87	107	0	0	0	744	1,449	2,193
Those born in FY1994	253	414	667	304	537	841	16	71	87	0	0	0	573	1,022	1,595
Those born in FY1995	173	317	490	248	389	637	9	55	64	0	0	0	430	761	1,191
Total	1,135	1,967	3,102	1,307	2,492	3,799	64	295	359	0	0	0	2,506	4,754	7,260

Primary examination results by age group (Male)



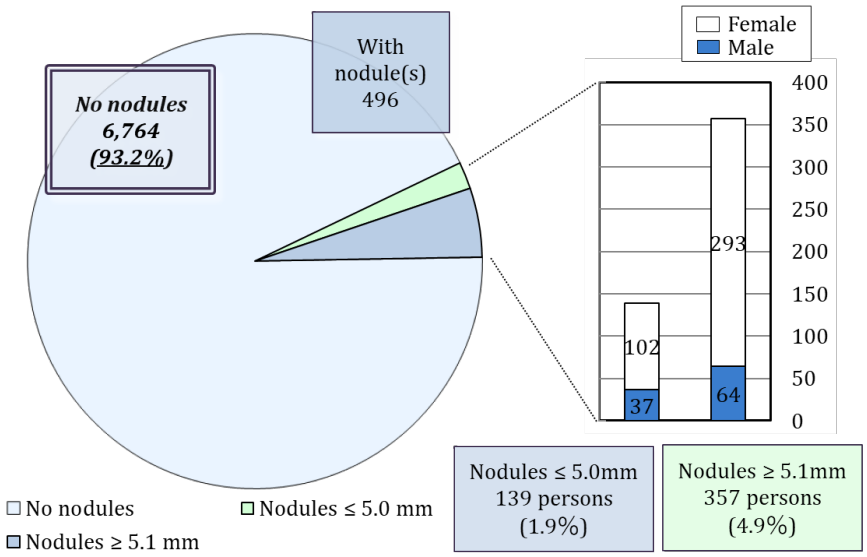
Primary examination results by age group (Female)

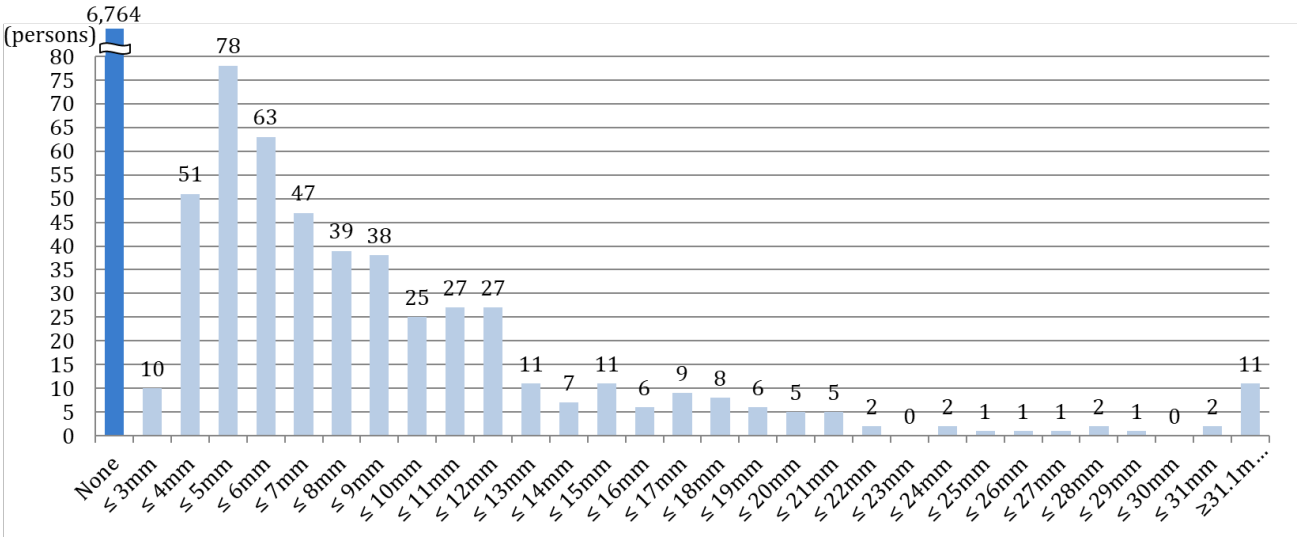


2 Nodule characteristics

(persons)
As of March 31, 2021

Nodule size	Total	Male	Female	Grade	
None	6,764	2,405	4,359	A1	93.2%
≤ 3.0mm	10	2	8	A2	1.9%
3.1–5.0mm	129	35	94		
5.1–10.0mm	212	38	174	B	4.9%
10.1–15.0mm	83	18	65		
15.1–20.0mm	34	4	30		
20.1–25.0mm	10	3	7		
≥ 25.1mm	18	1	17		
Total	7,260	2,506	4,754		

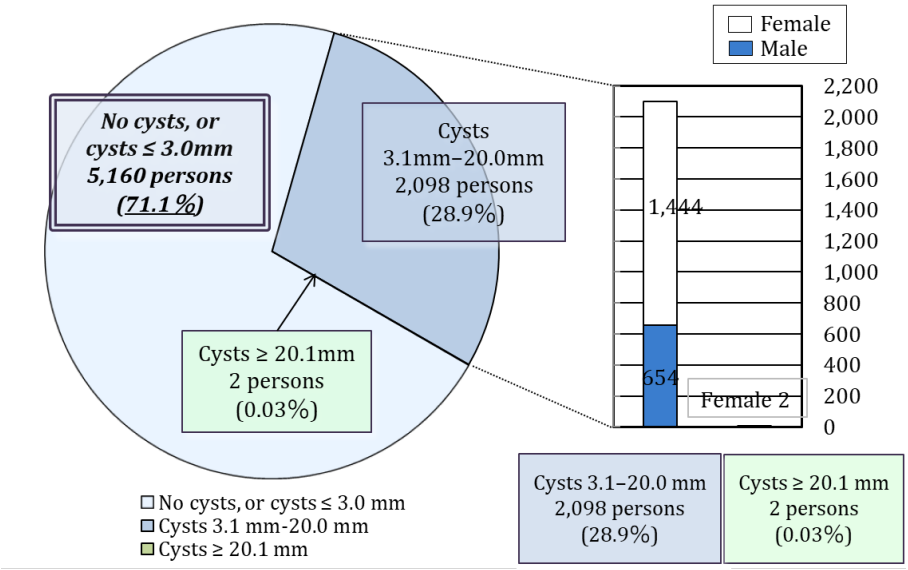


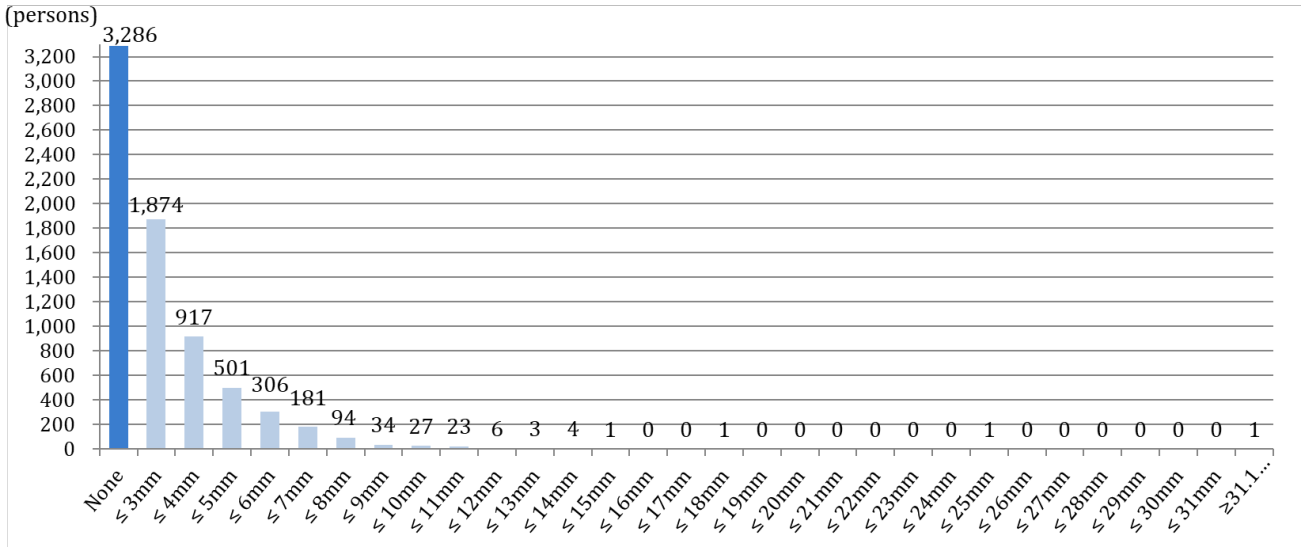


3 Cyst characteristics

(persons)
As of March 31, 2021

Cyst size	Total	Male	Female	Grade	
None	3,286	1,183	2,103	A1	71.1%
≤ 3.0mm	1,874	669	1,205	A2	28.9%
3.1–5.0mm	1,418	472	946		
5.1–10.0mm	642	175	467		
10.1–15.0mm	37	6	31		
15.1–20.0mm	1	1	0		
20.1–25.0mm	1	0	1	B	0.03%
≥ 25.1mm	1	0	1		
Total	7,260	2,506	4,754		





Appendix 2

Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 25 Survey:

- Malignant or suspicious for malignancy: 9 (6 surgical cases: 5 papillary thyroid carcinomas, 1 follicular thyroid carcinoma)

Report on the TUE Full-Scale Survey (fifth-round survey)

As of March 31, 2021

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we are now engaged in the Full-Scale Survey (fifth-round survey), following the Preliminary Baseline Survey for background assessment of thyroid glands, and three Full-Scale Surveys (second-, third-, and fourth-round surveys) to continuously confirm the status of thyroid glands.

1.2 Eligible persons

All Fukushima residents approximately 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 FY2021, starting in April 2020:

1.3-1 For those 18 years old or younger

The examination will be carried out over 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

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 at the ages of 25, 30, and so on.

FY2020: those born in FY1995

FY2021: those born in FY1996

Results of the survey for those 25 years old will be reported separately.

1.4 Responsible Organizations

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	82 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 Methods

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 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: Immediate need for confirmatory examination, judging from the condition of the thyroid gland.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood test, urine test, 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

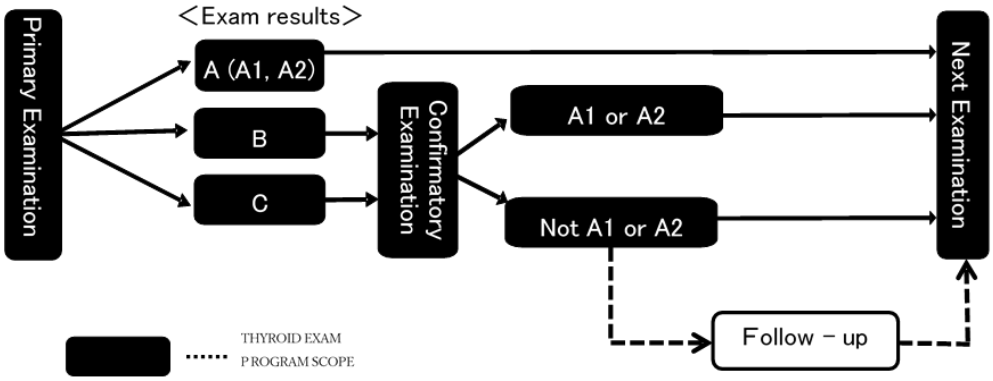


Fig. 1 Flow chart

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:

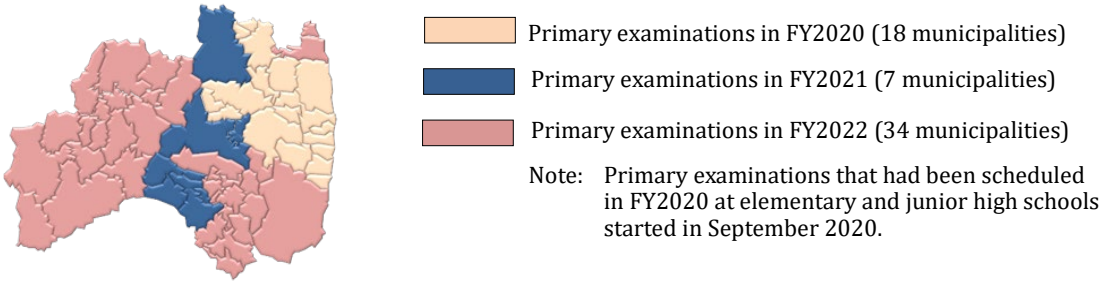


Fig. 2 Municipalities covered for primary examinations at elementary and junior high schools

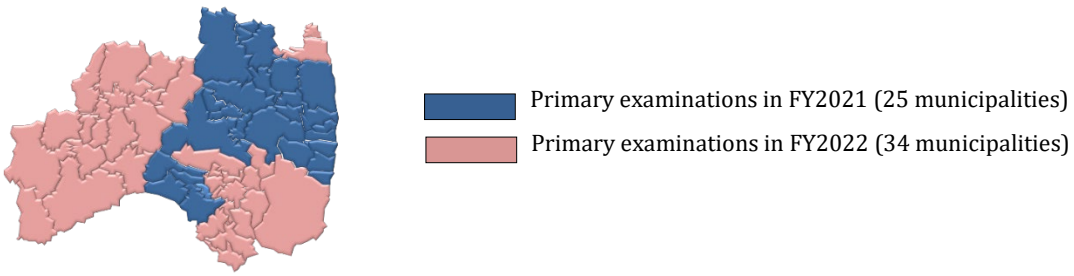


Fig. 3 Municipalities covered for primary examinations at high schools and other facilities

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 March 31, 2021

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was carried out for 23,412 participants (9.3%) by March 31, 2021.

Results of 21,624 participants (92.4%) have been finalized and individual result reports were already sent to them.

Of these, 6,852 (31.7%) had Grade A1 results, 14,544 (67.3%) had Grade A2, 228 (1.1%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)		Participants with finalized results (%)				
			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	144,858	21,533 (14.9)	3,243	19,956 (92.7)	6,309 (31.6)	13,465 (67.5)	182 (0.9)	0 (0.0)
FY2021	107,984	1,879 (1.7)	330	1,668 (88.8)	543 (32.6)	1,079 (64.7)	46 (2.8)	0 (0.0)
Total	252,842	23,412 (9.3)	3,573	21,624 (92.4)	6,852 (31.7)	14,544 (67.3)	228 (1.1)	0 (0.0)

Table 2 Number and proportion 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)
FY2020	19,956	182 (0.9)	101 (0.5)	0 (0.0)	13,561 (68.0)
FY2021	1,668	46 (2.8)	24 (1.4)	0 (0.0)	1,106 (66.3)
Total	21,624	228 (1.1)	125 (0.6)	0 (0.0)	14,667 (67.8)

- 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)	144,858	37,063	61,907	45,888
	Participants	(b)	21,533	9,143	10,137	2,253
	Participation rate (%)	(b/a)	14.9	24.7	16.4	4.9
FY2021	Age group **			9-11	12-17	18-24
	Eligible persons	(a)	107,984	19,721	45,056	43,207
	Participants	(b)	1,879	167	190	1,522
	Participation rate (%)	(b/a)	1.7	0.8	0.4	3.5
Total	Eligible persons	(a)	252,842	56,784	106,963	89,095
	Participants	(b)	23,412	9,310	10,327	3,775
	Participation rate (%)	(b/a)	9.3	16.4	9.7	4.2

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 19,779 participants with Grade A1 or A2 results in the fourth-round survey, 19662 (99.4%) had Grade A1 or A2 results and 117 (0.6%) had Grade B results in the fifth-round survey.

Among 100 participants with Grade B results in the fourth-round survey, 16 (16.0%) had Grade A1 or A2 results and 84 (84.0%) had Grade B results in the fifth-round survey.

Table 4 Comparison of the fourth- and fifth-round surveys As of September 30, 2020

			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	591 (100.0)	476 (80.5)	113 (19.1)	2 (0.3)	0 (0.0)
		A2	1,140 (100.0)	132 (11.6)	999 (87.6)	9 (0.8)	0 (0.0)
	B		15 (100.0)	1 (6.7)	3 (20.0)	11 (73.3)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		392 (100.0)	138 (35.2)	250 (63.8)	4 (1.0)	0 (0.0)
Total			2,138 (100.0)	747 (34.9)	1,365 (63.8)	26 (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. 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 March 31, 2021, all 822 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 March 31, 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.