

Report on the Basic Survey (Radiation Dose Estimates)

1. Summary of Survey

1.1 Purpose

In consideration of radiation effects of the Fukushima Daiichi Nuclear Power Plant accident caused by the Great East Japan Earthquake, we aim to estimate external exposure doses of Fukushima residents from their behavior records, and to inform them of the results for their future health management.

1.2 Survey Population

- (1) Those who were registered residents of Fukushima Prefecture from March 11 to July 1 2011.
- (2) Those who lived or stayed in Fukushima without being registered as residents and who commuted to Fukushima from outside for work, school, or other reasons (hereinafter, "Temporary Visitors"). Upon request from eligible persons, we would send Basic Survey questionnaires for their participation.

2. Response Rates and Radiation Dose Estimates

2.1 Response Rates of Residents

The overall response rate to the Basic Survey (radiation dose estimates), for the entire population of Fukushima Prefecture, was 27.7% (569,188 of 2,055,236) as of March 31, 2022.

Among the respondents, 75,250 (*1) answered using the simplified questionnaire.

The number of responses received from April 1, 2021 to March 31, 2022 (FY2021) was 48 with the original questionnaire, and 297 with a simplified one.

Table 1 Response rate to the Basic Survey

As of March 31, 2022

Survey Population	2,055,236	Response Rate
Original Questionnaire	493,938	24.0%
Simplified questionnaire *1	75,250	3.7%
Total Responses	569,188	27.7%

*1 The number of submissions using the simplified questionnaire could not be fixed yet, because we may need to ask some of the respondents who used the simplified questionnaire for resubmission using the original questionnaire, depending on the content of their simplified questionnaire.

Table 2 shows the response rate for each age group

Table 2 Response rate by age group

As of March 31, 2022

Age group	Age 0-9	Age 10-19	Age 20-29	Age 30-39	Age 40-49	Age 50-59	Age 60 and over	Total
Response rate	46.7%	36.3%	18.2%	24.8%	22.5%	23.0%	27.9%	27.7%

2.2 Radiation Dose Estimates

Out of 569,188 total responses, 555,067 is the number of valid responses, excluding incomplete or invalid answers that are insufficient to track movements or location history required for dose estimation (*2). Among those, 554,929 have already been processed to complete their dose estimations, and result reports have been sent to 554,741 respondents (*3).

Table 3 Response rate to the Basic Survey									
As of March 31, 2022									
Region	Survey population	Responses	Response rate	Valid responses	Valid response rate	Estimation completed	Estimation Rate	Sent	Notification rate
	a	b	c=b/a	d	e=d/a	f	g=f/d	h	i=h/d
Kenpoku	504,015	152,449	30.2%	149,527	29.7%	149,511	100.0%	149,459	100.0%
Kenchu	557,176	137,235	24.6%	134,134	24.1%	134,078	100.0%	134,066	99.9%
Kennan	152,225	35,618	23.4%	34,808	22.9%	34,788	99.9%	34,778	99.9%
Aizu	267,198	58,371	21.8%	56,170	21.0%	56,163	100.0%	56,154	100.0%
Minamiaizu	30,788	6,427	20.9%	6,120	19.9%	6,116	99.9%	6,115	99.9%
Soso	195,594	90,267	46.2%	87,557	44.8%	87,555	100.0%	87,463	99.9%
Iwaki	348,240	88,821	25.5%	86,751	24.9%	86,718	100.0%	86,706	99.9%
Total	2,055,236	569,188	27.7%	555,067	27.0%	554,929	100.0%	554,741	99.9%

*The figures include responses from the area covered by the initial survey area. (Yamakiya district of Kawamata Town, Namie Town and Iitate Village)

*See appendix 1 for the results of each municipality.

*Percentages are rounded to one decimal place.

(*2) "Incomplete or invalid responses" are those in which additional information was necessary for dose estimation (by soliciting details of their behavior through a direct contact, etc.), but was not obtained because the respondents' contact information was not available or because respondents expressed their refusal to participate in the survey (including those informed through our Call Center).

(*3) The number of responses, valid responses, dose estimates completed, and results returned in Table 3, 4, and Appendix 1 include data from the responses that did not contain behavior records for four full months after March 11, which is the period favored for dose estimation.

2.3 Response rate and dose estimation for temporary visitors

We have been estimating doses for non-residents who were visiting or staying in Fukushima Prefecture at the time of the accident (see Table 4)

Table 4 Report of temporary visitors status								
As of March 31, 2022								
Survey population	Responses	Response rate	Valid responses	Valid response rate	Dose estimation completed	Estimation rate	Sent	Notification rate
a	b	c=b/a	d	e=d/a	f	g=f/d	h	i=h/d
4,151	2,155	51.9%	2,145	51.7%	2,145	100.0%	2,145	100.0%

3. Results of Radiation Dose Estimates

Table 5 shows a breakdown of completed dose estimates (from Table 3), excluding those from periods of less than four months. Radiation doses for a total of 476,189 residents have been estimated to date. The result for 466,972 respondents (excluding radiation workers) suggest that the result of dose estimation for about 87% of the respondents in Kenpoku and about 92% in Kenchu were <2 mSv. The doses for approximately 88% of the respondents in Kennan and more than 99% of those in Aizu and Minamiaizu were <1 mSv. Doses for about 77% of respondents in Soso and more than 99% of respondents in Iwaki were also <1 mSv.

Table 5 Distribution of estimated external doses

As of March 31, 2022

Effective dose (mSv)	Total	Excluding radiation workers				Number of respondents by region excluding "radiation workers"													
						Kenpoku (*4)		Kenchu		Kennan		Aizu		Minamiaizu		Soso (*5)		Iwaki	
<1	296,353	290,622	62.2%	93.8%	99.8%	24,977	20.0%	58,559	51.5%	26,397	88.2%	46,255	99.3%	4,982	99.3%	55,900	77.3%	73,552	99.1%
1-2	149,927	147,579	31.6%			83,934	67.0%	46,441	40.8%	3,513	11.7%	311	0.7%	37	0.7%	12,706	17.6%	637	0.9%
2-3	26,168	25,794	5.5%	5.8%		15,737	12.6%	8,293	7.3%	18	0.1%	25	0.1%	0	—	1,691	2.3%	30	0.0%
3-4	1,587	1,504	0.3%			473	0.4%	429	0.4%	0	—	1	0.0%	0	—	597	0.8%	4	0.0%
4-5	551	505	0.1%	0.2%		40	0.0%	5	0.0%	0	—	0	—	0	—	459	0.6%	1	0.0%
5-6	442	390	0.1%		19	0.0%	3	0.0%	0	—	0	—	0	—	367	0.5%	1	0.0%	
6-7	270	231	0.0%	0.1%	0.2%	10	0.0%	1	0.0%	0	—	1	0.0%	0	—	219	0.3%	0	—
7-8	155	116	0.0%			1	0.0%	0	—	0	—	0	—	0	—	115	0.2%	0	—
8-9	118	78	0.0%	0.0%		1	0.0%	0	—	0	—	0	—	0	—	77	0.1%	0	—
9-10	73	41	0.0%			0	—	0	—	0	—	0	—	0	—	41	0.1%	0	—
10-11	70	37	0.0%	0.0%		0.0%	0	—	1	0.0%	0	—	0	—	0	—	36	0.0%	0
11-12	52	30	0.0%		1		0.0%	0	—	0	—	0	—	0	—	29	0.0%	0	—
12-13	37	13	0.0%	0.0%	0		—	0	—	0	—	0	—	0	—	13	0.0%	0	—
13-14	36	12	0.0%		0		—	0	—	0	—	0	—	0	—	12	0.0%	0	—
14-15	27	6	0.0%	0.0%	0		—	0	—	0	—	0	—	0	—	6	0.0%	0	—
>15	323	14	0.0%		0.0%	0	—	0	—	0	—	0	—	0	—	14	0.0%	0	—
計	476,189	466,972	100.0%	100.0%	100.0%	125,193	100%	113,732	100%	29,928	100%	46,593	100%	5,019	100%	72,282	100%	74,225	100%
Max	66mSv	25mSv				11mSv		10mSv		2.6mSv		6.0mSv		1.9mSv		25mSv		5.9mSv	
Mean value	0.9mSv	0.8mSv				1.4mSv		1.0mSv		0.6mSv		0.2mSv		0.1mSv		0.7mSv		0.3mSv	
Median	0.6mSv	0.6mSv				1.4mSv		0.9mSv		0.5mSv		0.2mSv		0.1mSv		0.5mSv		0.3mSv	

(*4) Including the area covered by the initial survey (Yamakiya District in Kawamata Town).

(*5) Including the area covered by the initial survey (Namie Town and Iitate Village)

• Distribution of estimated external doses by area, by age group, by gender, and by municipality are shown in Appendix 2, 3-1, 3-2, and 4, respectively.

4. Evaluation of the effective dose estimation results

The latest effective radiation dose estimates show similar trends to those observed so far in past years. Since previous epidemiological studies indicate no significant health effects at doses ≤ 100 mSv¹⁾, we concluded that radiation doses estimated so far are unlikely to cause adverse effects on health, although this conclusion is based on external radiation doses estimated only for the first four months following the accident.

Reference

- 1) Sources and effects of ionizing radiation, United Nations Scientific Committee on the Effects of Atomic Radiation, UNSCEAR 2008 Report to the General Assembly, with scientific annexes vol 2.

5. Questionnaire Response Guidance

In FY2021, we held a total of 26 response guidance sessions at Thyroid Ultrasound Examination venues in 7 regions in the prefecture (the schedule was as follows).

First half of the year:	12 times between July 18, 2021 – August 17, 2021
Second half of the year:	14 times between December 19, 2021 - March 28, 2022

Contact opportunities continue for those who wish to know about their level of exposure. Reissuance of questionnaires can still be requested through the homepage of the Radiation Medical Science Center and the Call Center. In addition, information leaflets about the Basic Survey are available at municipal offices.

Response rates to the Basic Survey by municipality

As of March 31, 2022

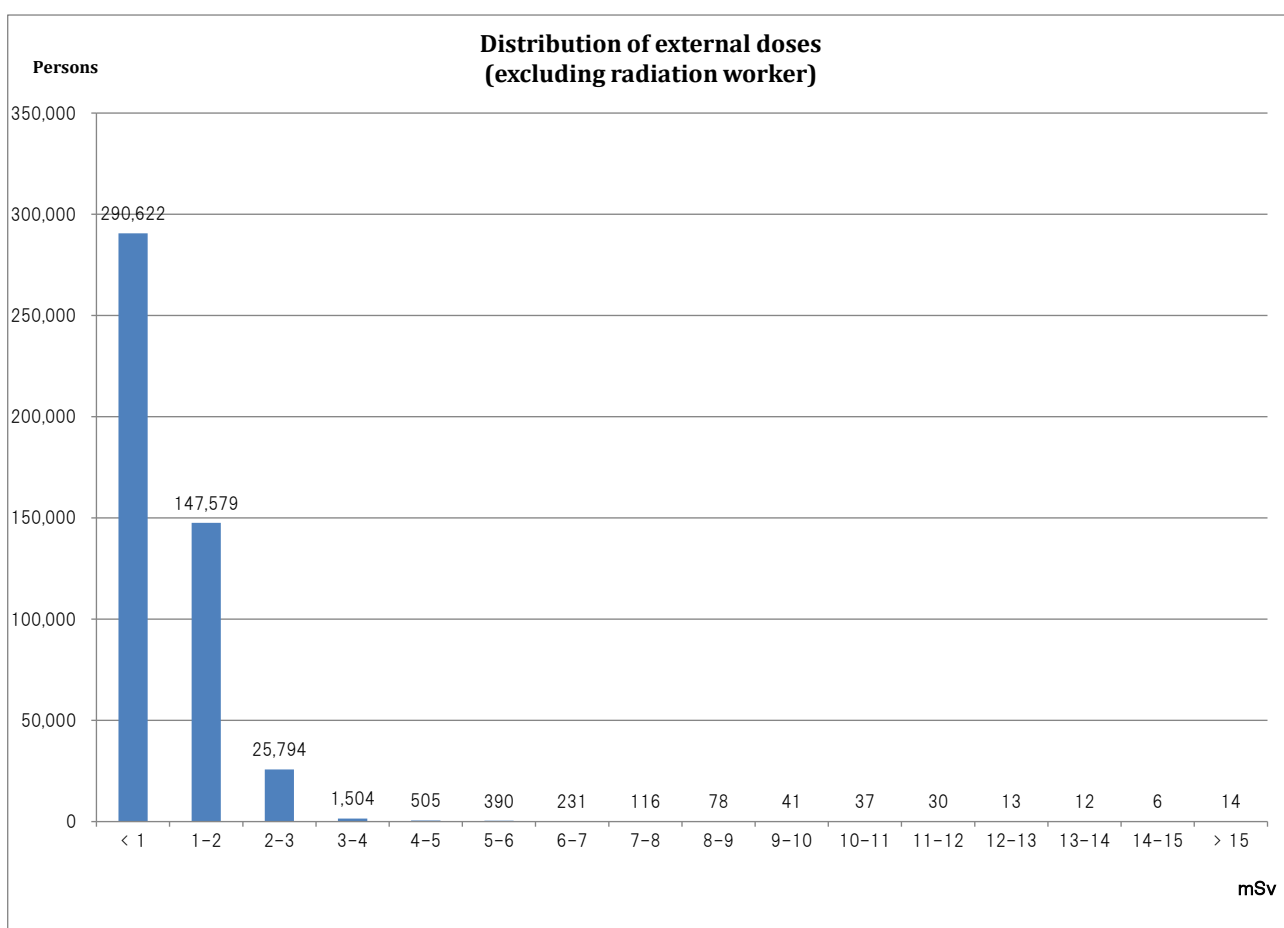
Region & Municipalities		Survey population a	responses b	Response rate c=b/a	Valid responses d	Valid response rate e=d/a	Dose estimated f	Complete d rate g=f/d	Results sent h	Notified rate i=h/d	Remarks
Kenpoku	Fukushima	295,632	94,035	31.8%	92,526	31.3%	92,512	100.0%	92,480	100.0%	
	Nihonmatsu	60,854	16,935	27.8%	16,570	27.2%	16,570	100.0%	16,568	100.0%	
	Date	67,574	18,320	27.1%	17,855	26.4%	17,855	100.0%	17,843	99.9%	
	Motomiya	31,759	9,116	28.7%	8,947	28.2%	8,947	100.0%	8,946	100.0%	
	Koori	13,207	3,886	29.4%	3,777	28.6%	3,777	100.0%	3,777	100.0%	
	Kunimi	10,316	3,030	29.4%	2,942	28.5%	2,942	100.0%	2,942	100.0%	
	Kawamata	15,883	5,190	32.7%	5,017	31.6%	5,015	100.0%	5,010	99.9%	
	Otama	8,790	1,937	22.0%	1,893	21.5%	1,893	100.0%	1,893	100.0%	
Total		504,015	152,449	30.2%	149,527	29.7%	149,511	100.0%	149,459	100.0%	
Kenchu	Koriyama	339,671	87,367	25.7%	85,600	25.2%	85,551	99.9%	85,546	99.9%	
	Sukagawa	80,156	17,331	21.6%	16,893	21.1%	16,888	100.0%	16,888	100.0%	
	Tamura	41,723	10,585	25.4%	10,221	24.5%	10,221	100.0%	10,218	100.0%	
	Kagamiishi	13,109	2,923	22.3%	2,860	21.8%	2,860	100.0%	2,860	100.0%	
	Tenei	6,469	1,256	19.4%	1,225	18.9%	1,225	100.0%	1,225	100.0%	
	Ishikawa	17,489	4,248	24.3%	4,144	23.7%	4,143	100.0%	4,143	100.0%	
	Tamakawa	7,333	1,510	20.6%	1,462	19.9%	1,462	100.0%	1,461	99.9%	
	Hirata	7,053	1,666	23.6%	1,610	22.8%	1,610	100.0%	1,610	100.0%	
	Asakawa	7,163	1,532	21.4%	1,497	20.9%	1,496	99.9%	1,495	99.9%	
	Furudono	6,321	1,325	21.0%	1,290	20.4%	1,290	100.0%	1,290	100.0%	
	Miharu	18,989	4,880	25.7%	4,784	25.2%	4,784	100.0%	4,783	100.0%	
	Ono	11,700	2,612	22.3%	2,548	21.8%	2,548	100.0%	2,547	100.0%	
Total		557,176	137,235	24.6%	134,134	24.1%	134,078	100.0%	134,066	99.9%	
Kennan	Shirakawa	65,427	16,212	24.8%	15,880	24.3%	15,878	100.0%	15,874	100.0%	
	Nishigo	20,088	5,078	25.3%	4,961	24.7%	4,961	100.0%	4,960	100.0%	
	Izumizaki	6,931	1,444	20.8%	1,405	20.3%	1,405	100.0%	1,404	99.9%	
	Nakajima	5,306	1,025	19.3%	1,000	18.8%	1,000	100.0%	1,000	100.0%	
	Yabuki	18,341	4,137	22.6%	4,031	22.0%	4,031	100.0%	4,030	100.0%	
	Tanakura	15,384	3,071	20.0%	3,006	19.5%	2,999	99.8%	2,999	99.8%	
	Yamatsuri	6,491	1,485	22.9%	1,438	22.2%	1,436	99.9%	1,434	99.7%	
	Hanawa	10,061	2,340	23.3%	2,289	22.8%	2,281	99.7%	2,280	99.6%	
	Samekawa	4,196	826	19.7%	798	19.0%	797	99.9%	797	99.9%	
Total		152,225	35,618	23.4%	34,808	22.9%	34,788	99.9%	34,778	99.9%	
Aizu	Aizuwakamatsu	127,814	29,831	23.3%	28,856	22.6%	28,854	100.0%	28,853	100.0%	
	Kitakata	53,199	11,143	20.9%	10,715	20.1%	10,714	100.0%	10,709	99.9%	
	Kitashiobara	3,276	611	18.7%	588	17.9%	588	100.0%	588	100.0%	
	Nishiaizu	7,725	1,463	18.9%	1,361	17.6%	1,361	100.0%	1,361	100.0%	
	Bandai	3,888	796	20.5%	778	20.0%	778	100.0%	777	99.9%	
	Inawashiro	16,271	3,671	22.6%	3,539	21.8%	3,539	100.0%	3,538	100.0%	
	Aizubange	17,881	3,327	18.6%	3,184	17.8%	3,182	99.9%	3,182	99.9%	
	Yukawa	3,513	745	21.2%	712	20.3%	712	100.0%	712	100.0%	
	Yanaizu	4,077	734	18.0%	702	17.2%	702	100.0%	702	100.0%	
	Mishima	2,029	374	18.4%	340	16.8%	340	100.0%	340	100.0%	
	Kaneyama	2,544	631	24.8%	575	22.6%	575	100.0%	575	100.0%	
	Showa	1,569	354	22.6%	327	20.8%	327	100.0%	327	100.0%	
	Aizumisato	23,412	4,691	20.0%	4,493	19.2%	4,491	100.0%	4,490	99.9%	
Total		267,198	58,371	21.8%	56,170	21.0%	56,163	100.0%	56,154	100.0%	
Minamiaizu	Shimogo	6,649	1,259	18.9%	1,201	18.1%	1,199	99.8%	1,199	99.8%	
	Hinoemata	614	144	23.5%	135	22.0%	133	98.5%	133	98.5%	
	Tadami	5,030	1,152	22.9%	1,090	21.7%	1,090	100.0%	1,090	100.0%	
	Minamiaizu	18,495	3,872	20.9%	3,694	20.0%	3,694	100.0%	3,693	100.0%	
Total		30,788	6,427	20.9%	6,120	19.9%	6,116	99.9%	6,115	99.9%	
Soso	Soma	37,365	13,324	35.7%	12,817	34.3%	12,817	100.0%	12,798	99.9%	
	Minamisoma	70,013	30,311	43.3%	29,511	42.2%	29,509	100.0%	29,488	99.9%	
	Hirono	5,165	2,236	43.3%	2,146	41.5%	2,146	100.0%	2,144	99.9%	
	Naraha	7,963	4,191	52.6%	4,033	50.6%	4,033	100.0%	4,025	99.8%	
	Tomioka	15,749	8,641	54.9%	8,425	53.5%	8,425	100.0%	8,416	99.9%	
	Kawauchi	2,996	1,543	51.5%	1,489	49.7%	1,489	100.0%	1,489	100.0%	
	Okuma	11,473	6,092	53.1%	5,868	51.1%	5,868	100.0%	5,867	100.0%	
	Futaba	7,051	3,953	56.1%	3,853	54.6%	3,853	100.0%	3,846	99.8%	
	Namie	21,334	12,994	60.9%	12,700	59.5%	12,700	100.0%	12,685	99.9%	
	Katsurao	1,541	825	53.5%	768	49.8%	768	100.0%	768	100.0%	
	Shinchi	8,356	2,711	32.4%	2,612	31.3%	2,612	100.0%	2,609	99.9%	
	Iitate	6,588	3,446	52.3%	3,335	50.6%	3,335	100.0%	3,328	99.8%	
Total		195,594	90,267	46.2%	87,557	44.8%	87,555	100.0%	87,463	99.9%	
Iwaki	Iwaki	348,240	88,821	25.5%	86,751	24.9%	86,718	100.0%	86,706	99.9%	
計		2,055,236	569,188	27.7%	555,067	27.0%	554,929	100.0%	554,741	99.9%	

Distribution of estimated external doses by region

As of March 31, 2022

Estimated dose (mSv)	Total	Excluding radiation worker	Breakdown by region							Proportion		
			Kenpoku	Kenchu	Kennan	Aizu	Minami aizu	Soso	Iwaki			
< 1	296,353	290,622	24,977	58,559	26,397	46,255	4,982	55,900	73,552	62.2%	93.8%	99.8%
1-2	149,927	147,579	83,934	46,441	3,513	311	37	12,706	637	31.6%		
2-3	26,168	25,794	15,737	8,293	18	25	0	1,691	30	5.5%	5.8%	
3-4	1,587	1,504	473	429	0	1	0	597	4	0.3%		
4-5	551	505	40	5	0	0	0	459	1	0.1%	0.2%	
5-6	442	390	19	3	0	0	0	367	1	0.1%		0.2%
6-7	270	231	10	1	0	1	0	219	0	0.0%	0.1%	
7-8	155	116	1	0	0	0	0	115	0	0.0%		
8-9	118	78	1	0	0	0	0	77	0	0.0%	0.0%	
9-10	73	41	0	0	0	0	0	41	0	0.0%		
10-11	70	37	0	1	0	0	0	36	0	0.0%	0.0%	0.0%
11-12	52	30	1	0	0	0	0	29	0	0.0%		
12-13	37	13	0	0	0	0	0	13	0	0.0%	0.0%	
13-14	36	12	0	0	0	0	0	12	0	0.0%		
14-15	27	6	0	0	0	0	0	6	0	0.0%	0.0%	
> 15	323	14	0	0	0	0	0	14	0	0.0%	0.0%	0.0%
Total	476,189	466,972	125,193	113,732	29,928	46,593	5,019	72,282	74,225	100.0%	100.0%	100.0%
Max	66	25	11	10	2.6	6.0	1.9	25	5.9			
Mean Value	0.9	0.8	1.4	1.0	0.6	0.2	0.1	0.7	0.3			
Median	0.6	0.6	1.4	0.9	0.5	0.2	0.1	0.5	0.3			

*Percentages have been rounded and may not total to 100%.



Estimation Period - 4 months (From March 11 to July 11)

As of March 31, 2022

Distribution of estimated external doses by age group (excluding radiation workers)

Estimated Dose (mSv)	Age at the time of the disaster (years)									Total
	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 -	
< 1	48,389	45,407	21,434	34,448	28,806	32,909	36,337	25,736	17,156	290,622
1-2	23,112	21,908	10,173	18,374	16,721	18,559	19,499	12,294	6,939	147,579
2-3	6,506	4,307	1,142	2,352	2,252	2,975	3,424	1,996	840	25,794
3-4	253	161	81	158	154	230	233	164	70	1,504
4-5	19	47	35	39	75	95	81	76	38	505
5-6	14	13	29	34	47	86	73	66	28	390
6-7	3	7	10	22	24	45	52	47	21	231
7-8	4	4	8	9	13	35	22	14	7	116
8-9	2	6	2	7	8	16	16	12	9	78
9-10	0	1	2	3	3	12	11	5	4	41
10-11	1	1	2	2	6	11	5	6	3	37
11-12	0	0	1	3	0	5	8	11	2	30
12-13	0	0	0	0	1	6	4	1	1	13
13-14	0	0	1	1	1	4	3	2	0	12
14-15	0	0	0	0	0	3	3	0	0	6
> 15	0	0	0	0	2	3	6	1	2	14
Total	78,303	71,862	32,920	55,452	48,113	54,994	59,777	40,431	25,120	466,972

As of March 31, 2022

Distribution of estimate external doses by gender (excluding radiation workers)

Estimated dose (mSv)	By gender				Total	Proportion (%)
	Male	Proportion (%)	Female	Proportion (%)		
< 1	129,629	60.6	160,993	63.6	290,622	62.2%
1-2	68,372	32.0	79,207	31.3	147,579	31.6%
2-3	14,008	6.6	11,786	4.7	25,794	5.5%
3-4	955	0.4	549	0.2	1,504	0.3%
4-5	282	0.1	223	0.1	505	0.1%
5-6	199	0.1	191	0.1	390	0.1%
6-7	130	0.1	101	0.0	231	0.0%
7-8	64	0.0	52	0.0	116	0.0%
8-9	49	0.0	29	0.0	78	0.0%
9-10	24	0.0	17	0.0	41	0.0%
10-11	23	0.0	14	0.0	37	0.0%
11-12	16	0.0	14	0.0	30	0.0%
12-13	6	0.0	7	0.0	13	0.0%
13-14	8	0.0	4	0.0	12	0.0%
14-15	3	0.0	3	0.0	6	0.0%
> 15	11	0.0	3	0.0	14	0.0%
Total	213,779	100.0	253,193	100.0	466,972	100.0%

*Percentages have been rounded and may not total to 100%.

Summary of estimated dose results (Estimation period for 4 months from March 11 to July 11)

As of March 31, 2022

Distribution of estimated external doses by municipality (excluding radiation workers)

Region	Municipality	Mean dose	Estimated cumulative doses)																計
			< 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	> 15	
Kenpoku	Fukushima	1.4	16,198	52,672	9,408	151	13	10	4	0	0	0	0	0	0	0	0	0	78,456
	Nihonmatsu	1.6	1,318	8,678	3,537	91	1	0	0	0	0	0	0	0	0	0	0	0	13,625
	Date	1.3	4,395	9,102	1,135	147	8	2	3	1	1	0	0	0	0	0	0	0	14,794
	Motomiya	1.5	746	5,464	1,261	24	1	0	0	0	0	0	0	0	0	0	0	0	7,496
	Koori	1.3	315	2,754	66	2	0	1	0	0	0	0	0	0	0	0	0	0	3,138
	Kunimi	1.0	968	1,437	12	0	0	0	0	0	0	0	0	0	0	0	0	0	2,417
	Kawamata	1.2	643	2,752	185	56	17	6	3	0	0	0	0	1	0	0	0	0	3,663
	Otama	1.3	394	1,075	133	2	0	0	0	0	0	0	0	0	0	0	0	0	1,604
Subtotal		1.4	24,977	83,934	15,737	473	40	19	10	1	1	0	0	1	0	0	0	0	125,193
Kenchu	Koriyama	1.3	24,053	40,849	7,839	419	5	3	1	0	0	0	0	0	0	0	0	0	73,169
	Sukagawa	0.7	10,878	3,223	338	4	0	0	0	0	0	0	0	0	0	0	0	0	14,443
	Tamura	0.4	7,699	684	24	3	0	0	0	0	0	0	0	0	0	0	0	0	8,410
	Kagamiishi	0.5	2,371	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,447
	Tenei	1.2	405	588	59	1	0	0	0	0	0	0	0	0	0	0	0	0	1,053
	Ishikawa	0.3	3,205	39	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3,246
	Tamakawa	0.3	1,184	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1,206
	Hirata	0.3	1,301	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,335
	Asakawa	0.3	1,234	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,249
	Furudono	0.3	1,073	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1,089
	Miharu	0.7	3,128	817	24	2	0	0	0	0	0	0	1	0	0	0	0	0	3,972
	Ono	0.3	2,028	83	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2,113
Subtotal		1.0	58,559	46,441	8,293	429	5	3	1	0	0	0	1	0	0	0	0	0	113,732
Kennan	Shirakawa	0.7	12,503	1,282	9	0	0	0	0	0	0	0	0	0	0	0	0	0	13,794
	Nishigo	0.9	2,250	2,043	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4,296
	Izumizaki	0.4	1,164	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,186
	Nakajima	0.4	845	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	859
	Yabuki	0.4	3,390	83	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3,474
	Tanagura	0.4	2,562	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,593
	Yamatsuri	0.1	1,158	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,167
	Hanawa	0.2	1,871	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,894
	Samegawa	0.3	654	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	665
	Subtotal	0.6	26,397	3,513	18	0	0	0	0	0	0	0	0	0	0	0	0	0	29,928
Aizu	Aizuwakamatsu	0.2	23,857	160	13	0	0	0	1	0	0	0	0	0	0	0	0	0	24,031
	Kitakata	0.3	8,973	56	3	1	0	0	0	0	0	0	0	0	0	0	0	0	9,033
	Kitashiobara	0.4	479	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	483
	Nishiaizu	0.1	1,022	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,024
	Bandai	0.3	657	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	667
	Inawashiro	0.2	2,862	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,896
	Aizubange	0.3	2,677	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,692
	Yugawa	0.4	608	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	612
	Yanaizu	0.2	558	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	563
	Mishima	0.2	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247
	Kaneyama	0.1	407	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	410
	Showa	0.2	245	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	246
	Aizumisato	0.3	3,663	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3,689
	Subtotal	0.2	46,255	311	25	1	0	0	1	0	0	0	0	0	0	0	0	0	46,593
Minamiaizu	Shimogo	0.1	969	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	974
	Hinoemata	0.1	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
	Tadami	0.1	882	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	887
	Minami-aizu	0.1	3,028	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,055
	Subtotal	0.1	4,982	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,019
Soso	Soma	0.6	10,035	467	87	20	5	0	0	0	0	2	0	0	0	0	0	0	10,616
	Minamisoma	0.7	19,141	6,226	514	99	35	3	7	4	1	0	0	1	0	0	0	0	26,031
	Hirono	0.3	1,839	59	2	0	0	0	1	0	1	0	0	0	0	0	0	0	1,902
	Naraha	0.3	3,403	131	13	2	0	1	1	0	0	0	0	0	0	0	0	0	3,551
	Tomioka	0.5	5,834	1,104	100	18	3	2	1	3	2	0	0	1	0	0	0	0	7,068
	Kawauchi	0.6	963	350	16	1	0	1	1	1	0	0	0	0	0	0	0	0	1,333
	Okuma	0.8	3,374	1,284	112	17	6	4	4	3	0	2	2	1	0	4	0	1	4,814
	Futaba	0.6	2,676	468	77	19	6	4	3	6	2	1	0	2	0	0	0	1	3,265
	Namie	0.8	5,767	2,118	383	68	40	17	12	13	9	6	11	7	5	4	3	8	8,471
	Katsurao	0.7	502	162	24	4	0	1	0	0	0	0	0	0	0	0	0	0	693
	Shinchi	0.5	2,180	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,200
	Iitate	4.0	186	317	363	349	364	334	189	85	62	30	23	17	8	4	3	4	2,338
Subtotal		0.7	55,900	12,706	1,691	597	459	367	219	115	77	41	36	29	13	12	6	14	72,282
Iwaki	Iwaki	0.3	73,552	637	30	4	1	1	0	0	0	0	0	0	0	0	0	0	74,225
Total (A)		0.8	290,622	147,579	25,794	1,504	505	390	231	116	78	41	37	30	13	12	6	14	466,972
Proportion (%)			62.2%	31.6%	5.5%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
			93.8%		5.8%			0.2%		0.1%		0.0%		0.0%		0.0%		0.0%	100.0%
					99.8%					0.2%				0.0%				0.0%	100.0%
Temporary visitors (B)			1,573	283	18	2	0	0	0	0	0	0	0	0	0	0	0	1	1,877
Total (A) + (B)			292,195	147,862	25,812	1,506	505	390	231	116	78	41	37	30	13	12	6	15	468,849

*Percentages have been rounded and may not total to 100%.

Results of the Mental Health and Lifestyle Survey for FY2020

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 FY2011-2019, 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 (including those who moved out from those areas)
- Those who were registered as residents of municipalities designated as evacuation zones as of April 1, 2020
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

The total number of eligible persons: 199,461 (as of October 31, 2021)

Ages 0–3 Survey: Those born from April 2, 2017 to April 1, 2020	2,767 people
Ages 4–6 Survey: Those born from April 2, 2014 to April 1, 2017	3,385 people
Elementary School Survey: Residents born from April 2, 2008 to April 1, 2014	8,678 people
Junior High School Survey: Residents born from April 2, 2005 to April 1, 2008	5,179 people
Adult Survey: Residents born on or before April 1, 2005	179,452 people

* Covered areas: Municipalities that were designated as evacuation zones by the Japanese Government 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 Adult Survey sheets were to be answered by the addressees themselves, and other survey sheets (Junior High School Survey and surveys for younger age groups) were to be answered by the parents/guardians of the addressees. The Junior High School Survey also contains questions to be answered by the addressees themselves.

B. Mailing dates

Survey sheets were mailed out starting January 28, 2021.

C. Method of answering

Responses were returned either by post or online.

(Online responses were accepted from the day when the survey sheets were delivered to March 31, 2021.)

(3) Data tabulation period

Responses received from the day when the FY2020 survey started to October 31, 2021 were tabulated.

3. Summary of Survey Results

The results were tabulated for 5 age groups: Ages 0 – 3, Ages 4 – 6, Elementary School Students, Junior High School Students, and Adults. Due to some unreported items, the totals 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 FY2020 Mental Health and Lifestyle Survey."

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

A. Number of respondents (and rates)

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

An online response system was newly introduced in FY2016. The percentages of online responses in FY2016 were 8.0% for those aged 0 to 3, 6.3% for those aged 4 to 6, 6.7% for elementary school students, and 8.0% for junior high school students, and the relevant percentages in FY2020 were 29.5%, 25.3%, 21.7%, and 21.1%, respectively.

Table 1. FY2020 Number of total responses and valid responses (response rates)

Age group	Respondents	Response Rate	Valid responses	Response Rate
0-3	376 (13.6)		376 (13.6)	
4-6	447 (13.2)		447 (13.2)	
Elementary school students	1,273 (14.7)		1,265 (14.6)	
Junior high school students	693 (13.4)		693 (13.4)	
Total	2,789 (13.9)		2,781 (13.9)	

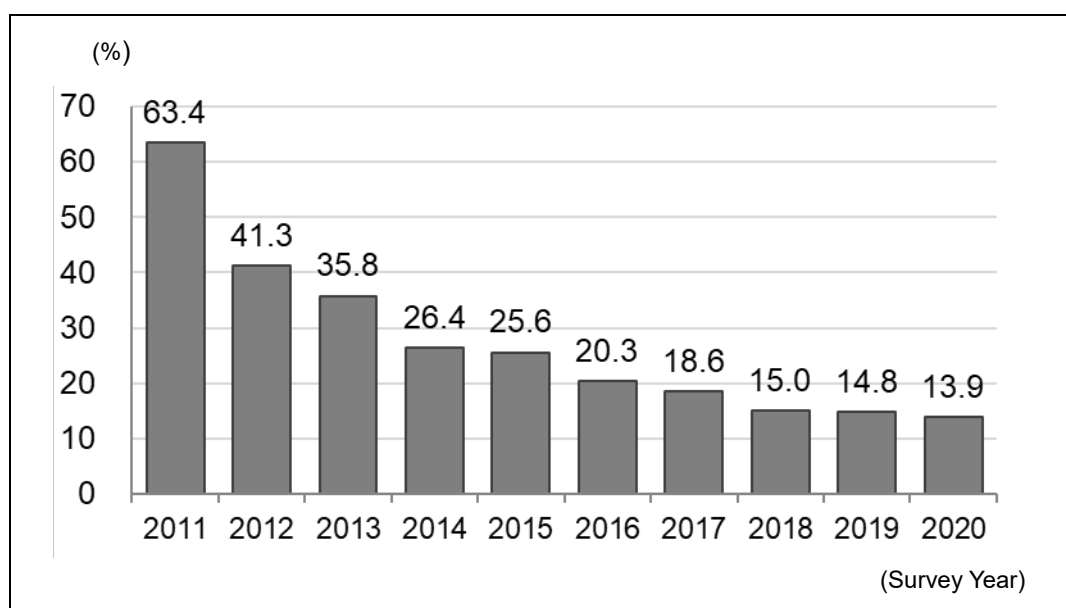


Figure 1. Changes in response rates for the children's surveys

B. Frequency of daily exercise

In the FY2020 survey, “Rarely” was the response among 0.9% in ages 2-3, 3.1% in ages 4-6, 36.0% in elementary school students, and 30.6% 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 also showed improvement since the FY2011 survey, when the percentages were 53.0% for elementary school students and 47.0% for junior high school students (Figures 4 and 5).

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

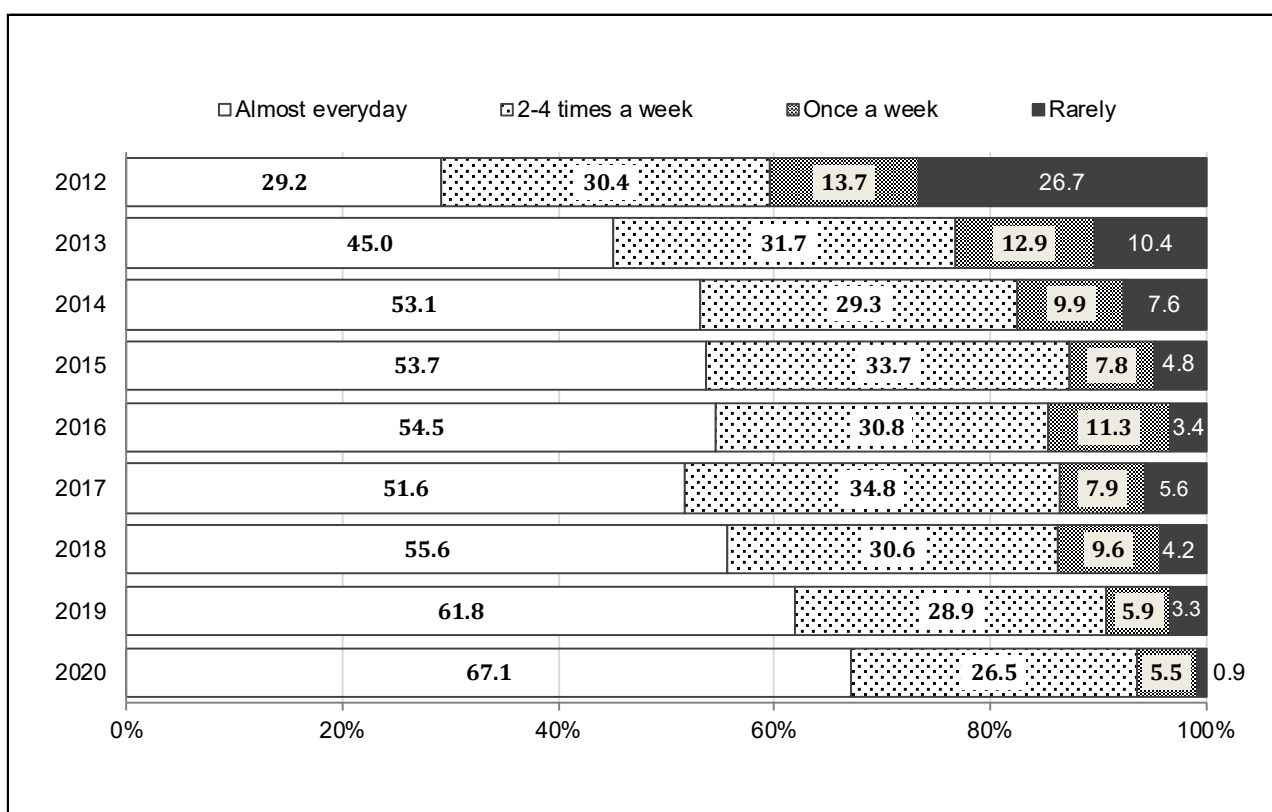


Figure 2. Changes in frequency of exercise: ages 2–3

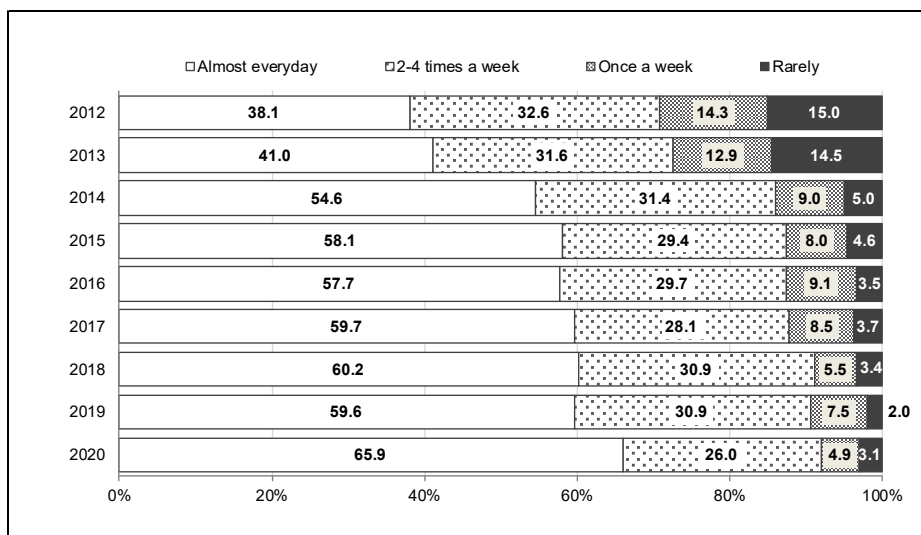


Figure 3. Changes in frequency of exercise: Ages 4–6

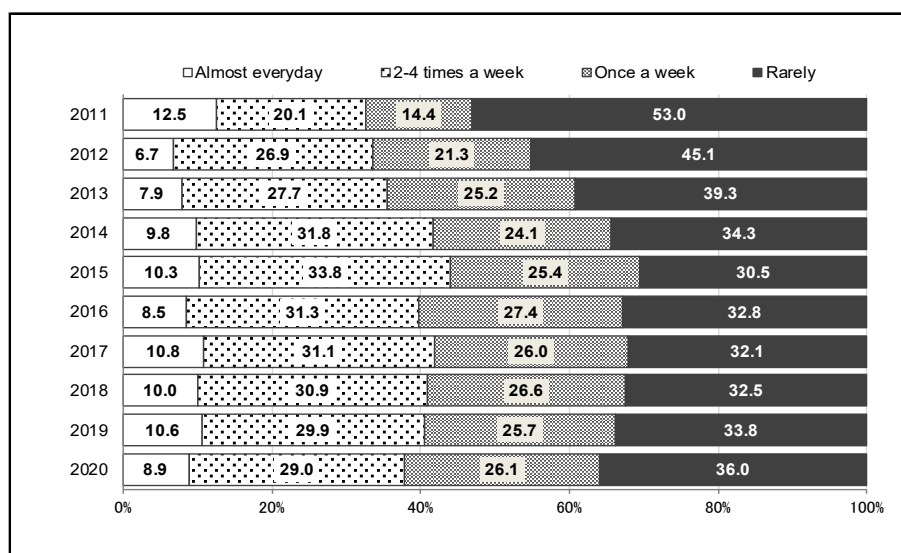


Figure 4. Changes in frequency of exercise: Elementary school students

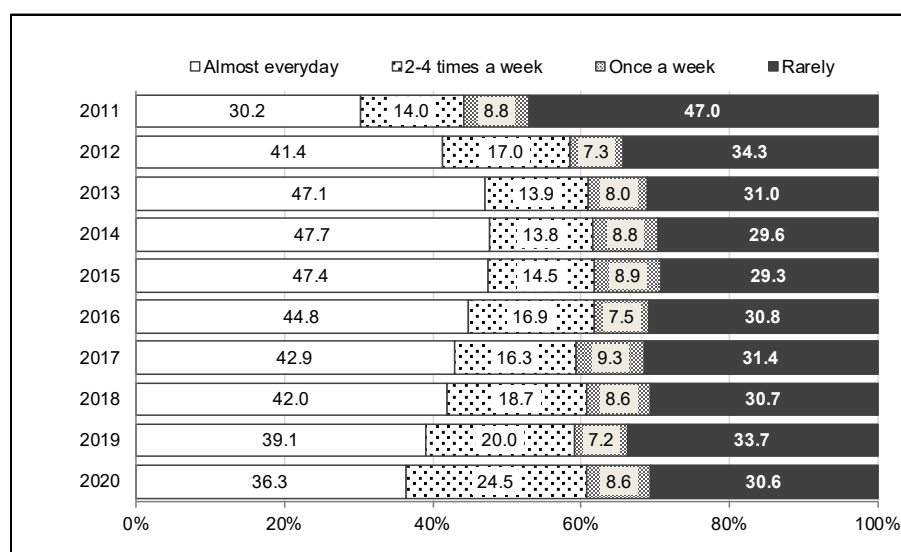


Figure 5. Changes in frequency of exercise: Junior high school students

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 FY2020, the proportion of children with high-risk scores (SDQ score of 16 or higher) showing certain problematic behavior was 7.0% for children aged 4 to 6, 9.0% for elementary school children, and 10.9% 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 FY2020 survey results showed improvements, with the percentage almost the same as that in the prior survey (Figure 6).

However, consideration should be given that many of the surveyed children up to elementary school age have not experienced the Great East Japan Earthquake. 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 (both in and 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.

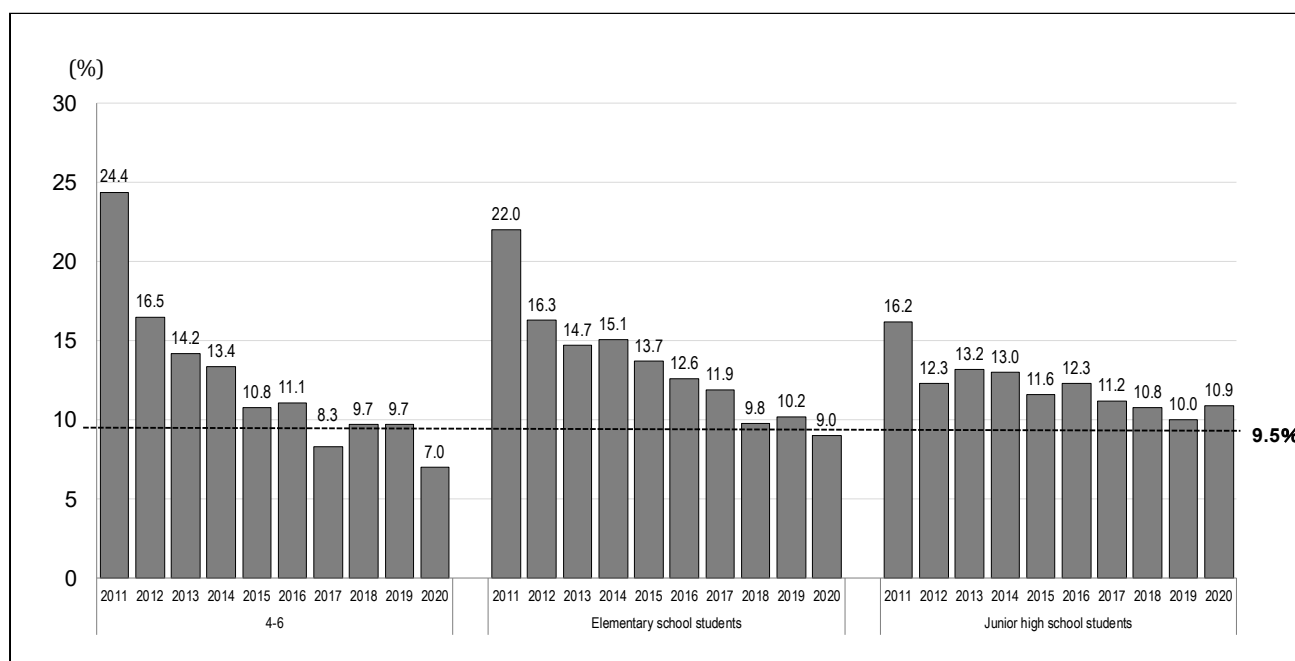


Figure 6. Changes in the proportion of those scoring 16 points or higher in SDQ: all age groups

*16 points: reference points from the previous study.

*9.5% is the rate of those with SDQ scores of 16 points or higher in non-disaster-affected area (Matsuishi et al., 2008)

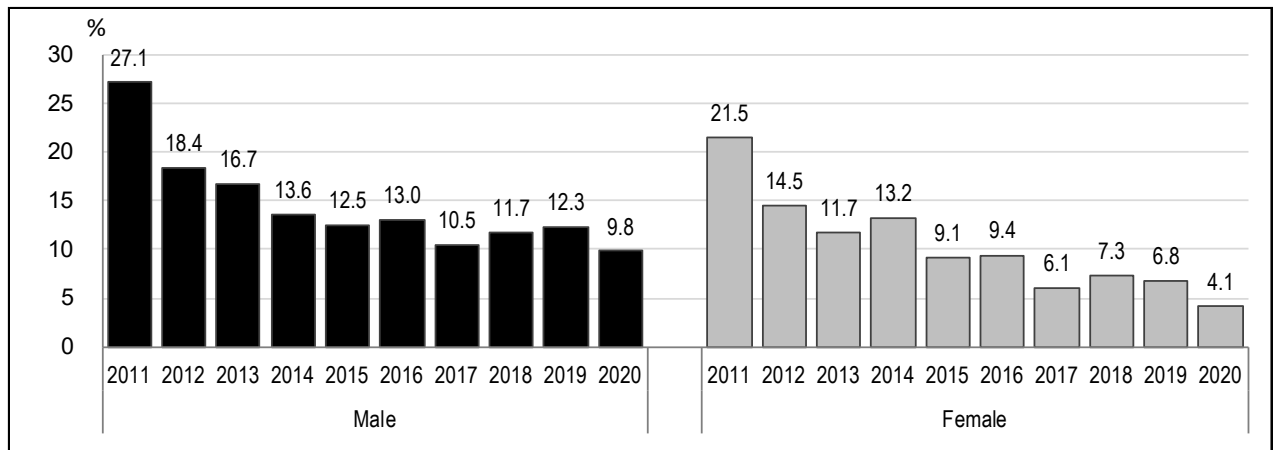


Figure 7. Changes in the proportion of those scoring 16 points or higher in SDQ: ages 4–6

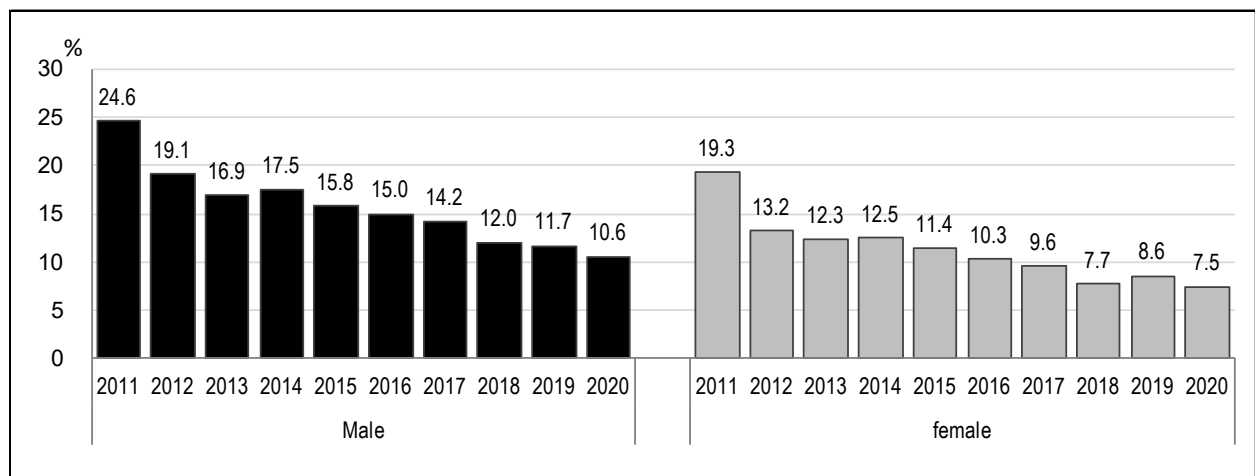


Figure 8. Changes in the proportion of those scoring 16 points or higher in SDQ: elementary school students

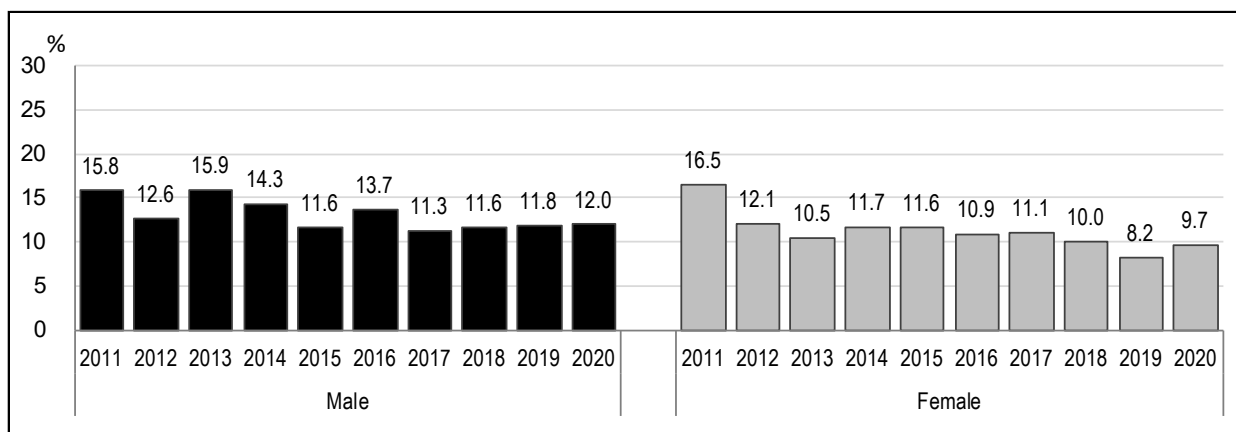


Figure 9. Changes in the proportion of those scoring 16 points or higher in SDQ: Junior high school students

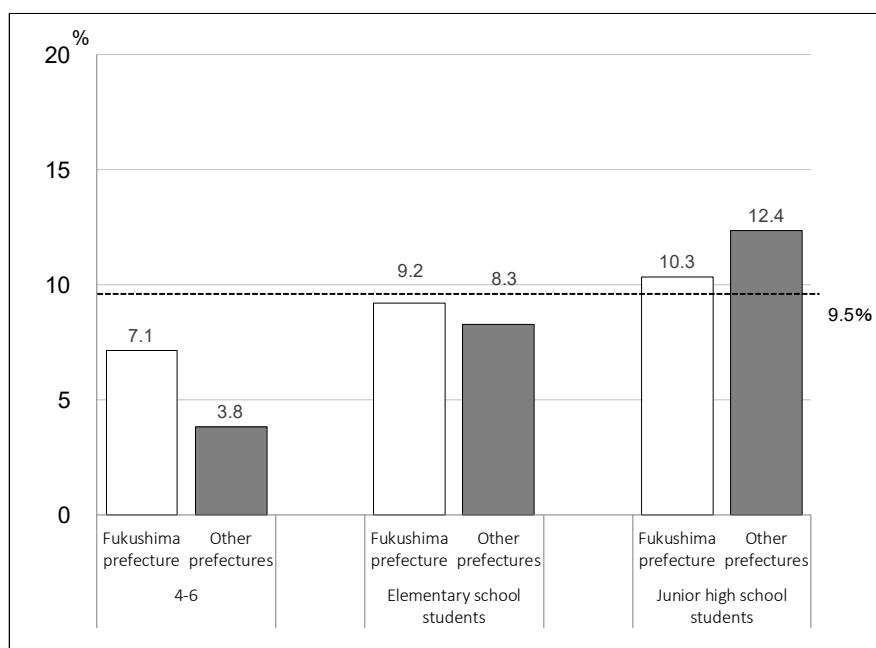


Figure 10. FY2020 Changes in proportion of those scoring 16 points or higher in SDQ, by the location of residence at the time of the survey

D. Influence on daily life due to the spread of COVID-19

In the FY2020 survey, those who responded that COVID-19 exerted influence on their daily life "To some extent" or "Significantly" accounted for 52.7% for those aged 0 to 3, 58.4% for those aged 4 to 6, 56.9% for elementary school students, 59.7% for junior high school students, and 64.0% for guardians of junior high school students. * Those in older age groups were more affected by COVID-19 (Figure 11).

*From parents'/guardians' standpoint of influence

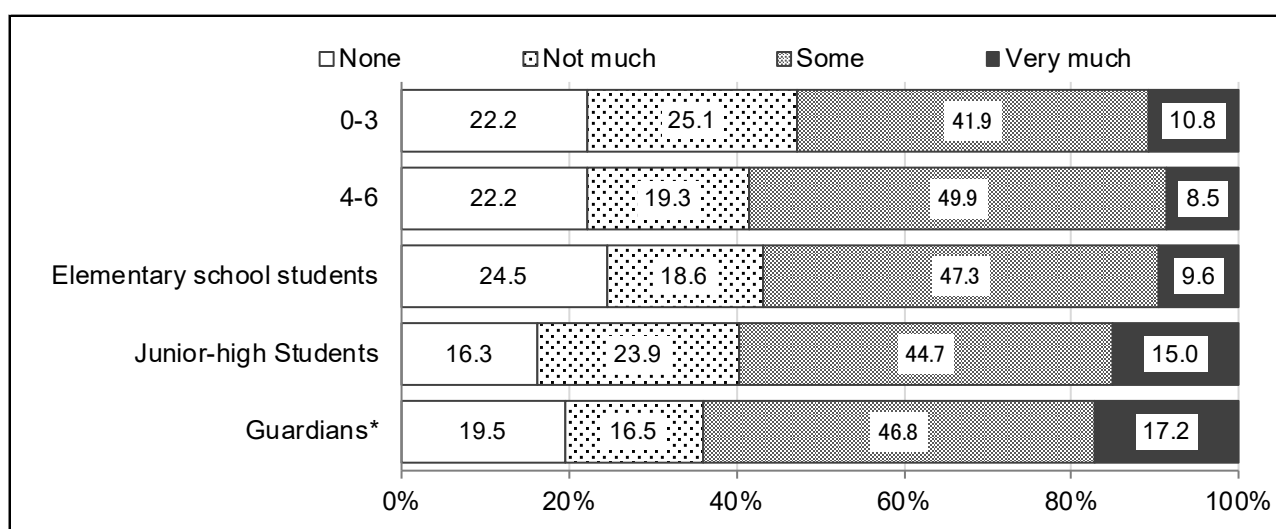


Figure 11. FY2020 Influence on daily life by the COVID-19 pandemic

(2) Results of the Adults Survey (for Those Aged 16 or Older)

A. Number of respondents (response rate)

The number of adult respondents (aged 16 or older) (response rate) was 35,840 people (20.0%), and the number of those who made valid responses (valid response rate) was 35,690 people (19.9%). Annual changes are as shown in Figure 12.

By age group, the number of respondents (response rate) was 5,037 people (11.0%) for those aged 16 to 39; 10,183 people (17.9%) for those aged 40 to 64; and 20,620 people (26.8%) for those aged 65 or older (Figure 13).

An online response system was newly introduced in FY2016, and the percentage of online responses was 4.2% in FY2016 but increased to 10.8% in FY2020.

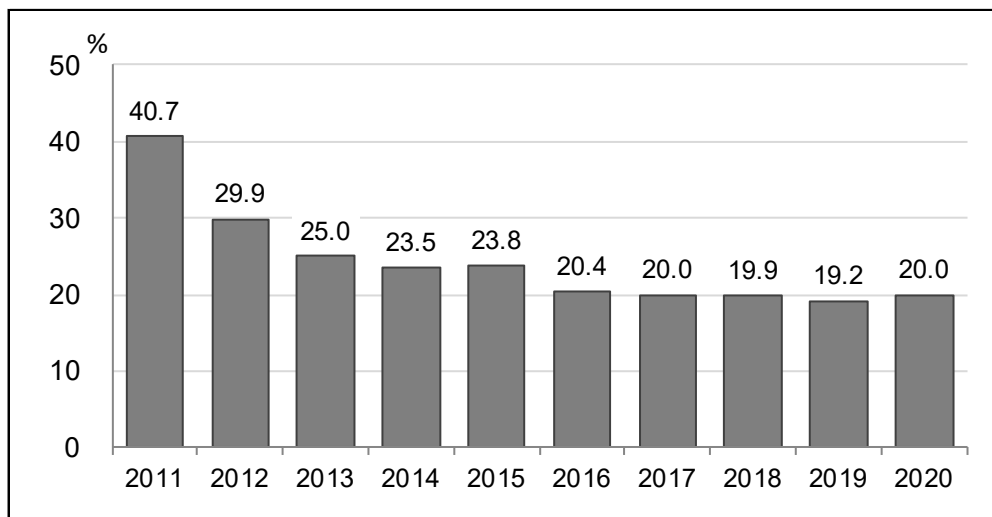


Figure 12. Changes in the response rates in the Adults Survey

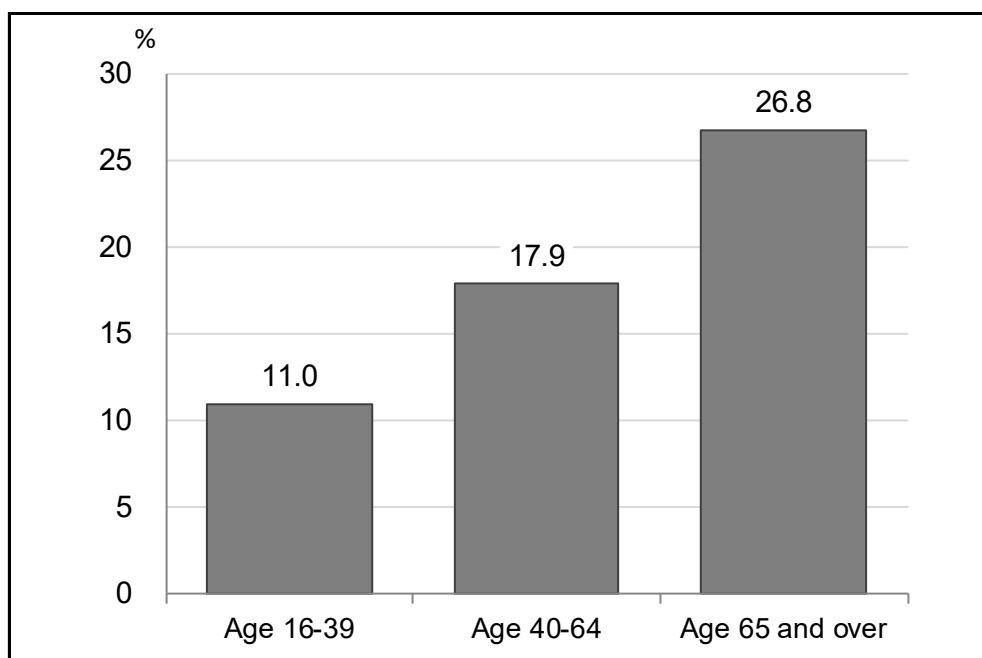


Figure 13. Response rates in the FY2020 Adults Survey, by age group

B. Subjective health conditions

Regarding their health condition, 25.6% answered "Very good" or "Good" in the FY2020 survey. Figure 14 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 slightly year by year.

Conversely, the proportion of those who responded "Bad" or "Very bad" was 18.5% in FY2011 but declined to 13.3% in FY2020.

When looked at by age group, the proportion of those who answered "Bad" or "Very bad" in the FY2020 Survey increased with age: 15.7% in Age 65 or older, substantially higher than 5.8% in Age 39 or younger (Figure 15).

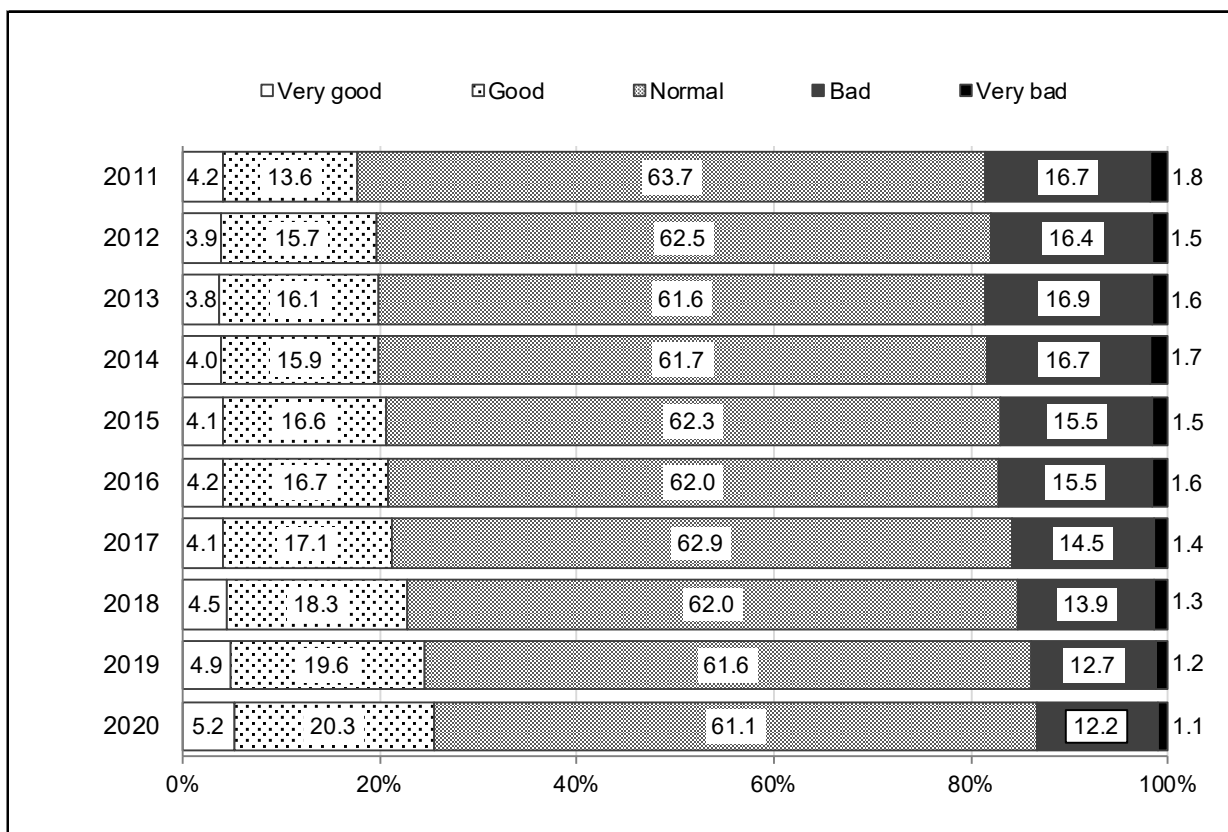


Figure 14. Changes in subjective health conditions

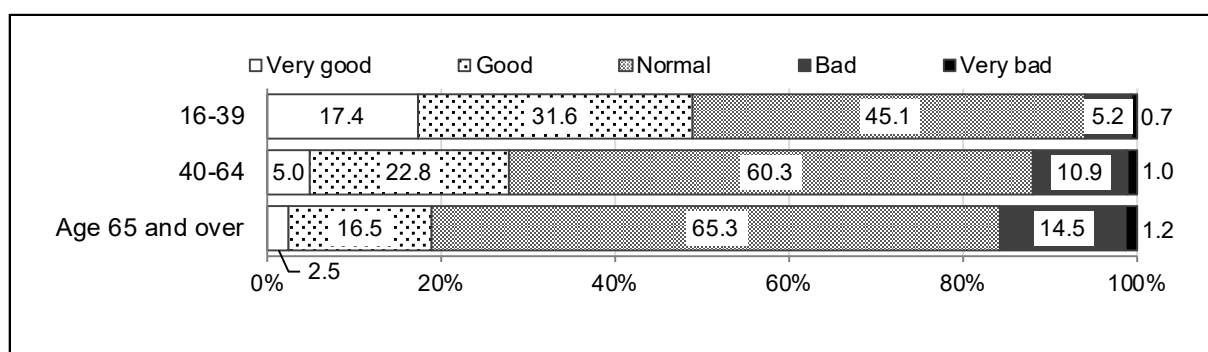


Figure 15. Subjective health conditions by age group in the FY2020 Adults Survey

C. Sufficiency of sleep

41.5% of the respondents answered “Sufficient” in the FY2020 survey. Figure 16 shows yearly changes in the proportion of sleep sufficiency. In FY2011, it was 33.3% 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 12.8% in FY2020. However, about 60% were still dissatisfied with their sleep.

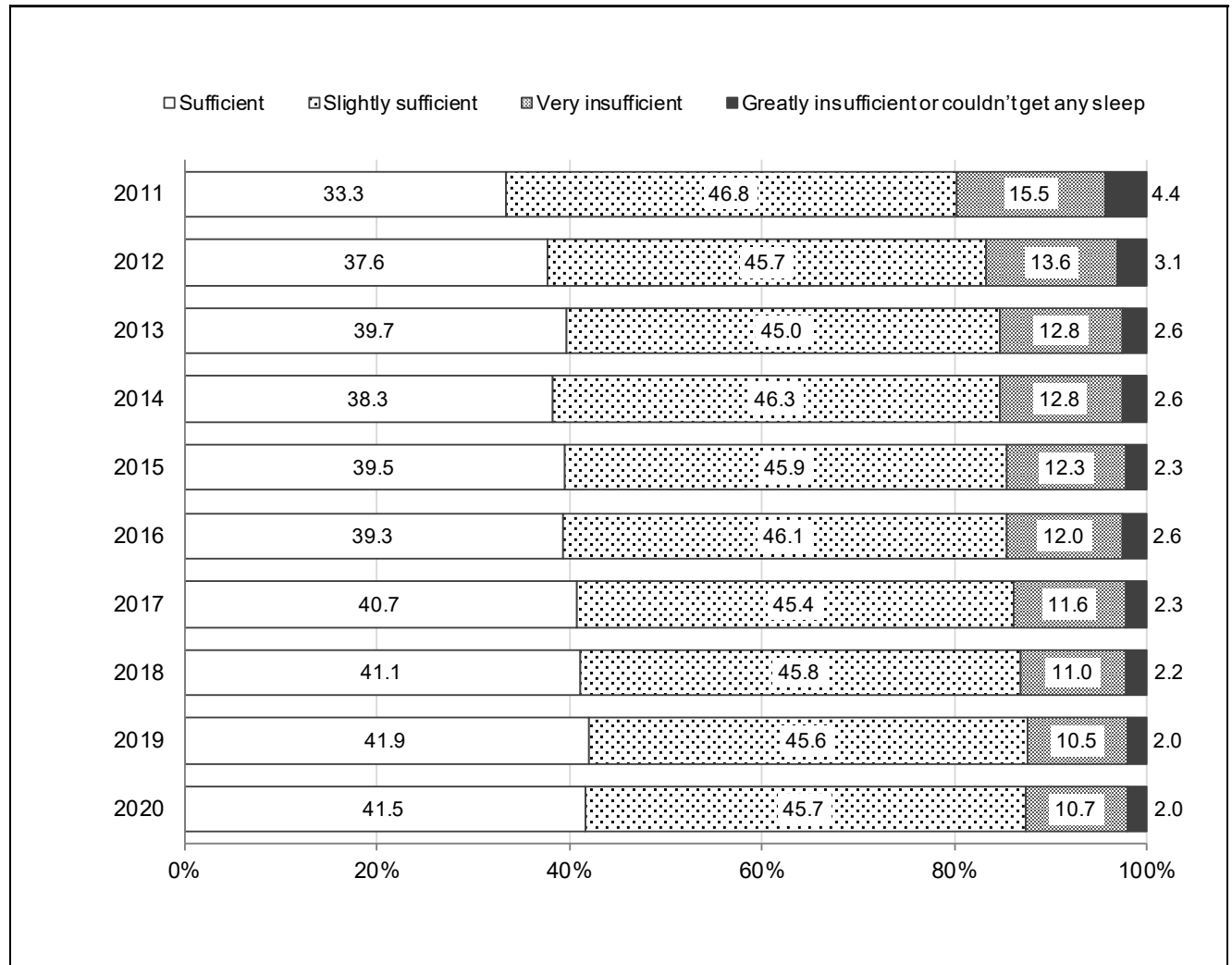


Figure 16. Changes in the degree of sleep sufficiency in adults

D. Frequency of exercise

In FY2020 survey, 38.8% answered “Rarely” in frequency of exercise. Figure 17 shows yearly changes in frequency of exercise. In FY2011 survey, “Rarely” was the answer of about half of the respondents, so the frequency of exercise has gradually been increasing.

At the same time, the respondents who answered “Almost every day” or “2–4 times a week” was 44.4% in FY2020. In a national survey conducted in FY2019(*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 FY2020 survey. (Figure 18)

https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyuu_chousa.html

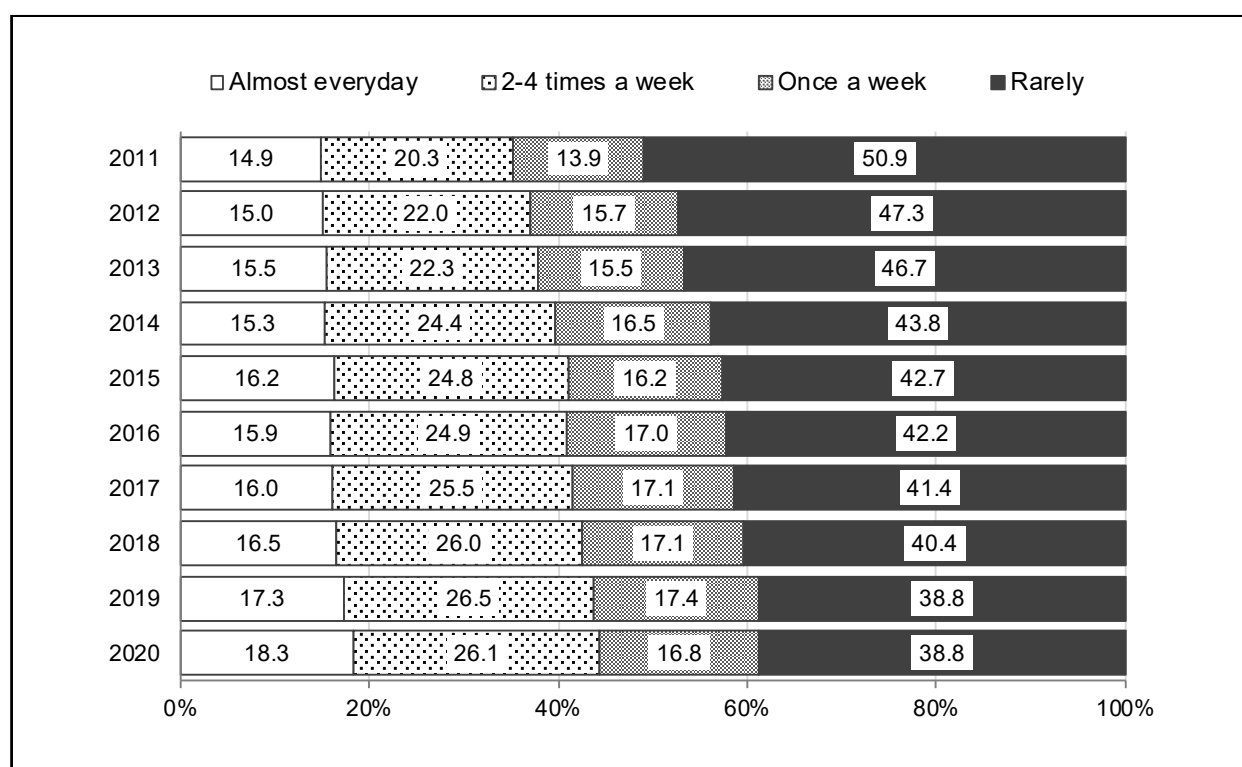


Figure 17. Changes in the frequency of exercise in adults

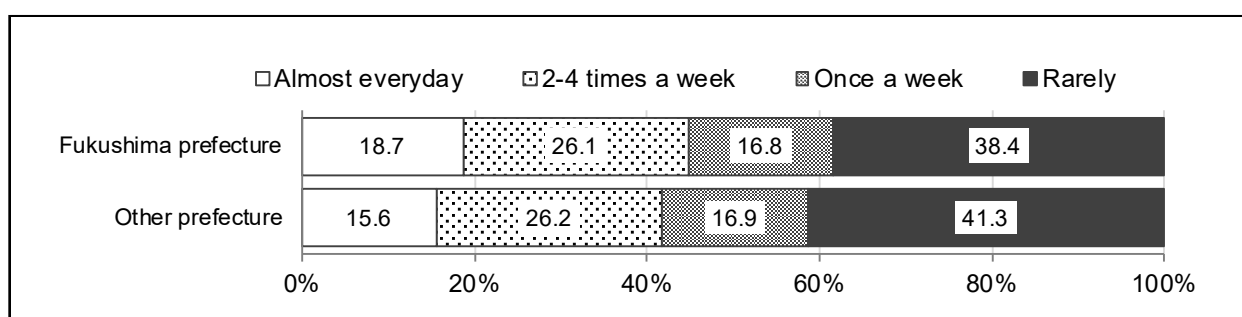


Figure 18. Frequency of exercise by location of residence at the time of the survey (in Fukushima prefecture or other prefecture) in the FY2020 Adults Survey

E. Prevalence of smoking

In the FY2020 survey, the proportion of smokers was 21.4% among males and 5.6% among females, with an overall ratio of 13.1%. Figure 19 shows yearly changes in the proportion of smokers by gender, with a definite downward trend since FY2011, when the percentage was 33.2% among males and 10.5% among females.

However, it is still high, compared with the goal of 12% set out in "Healthy Japan 21 (Phase 2)."

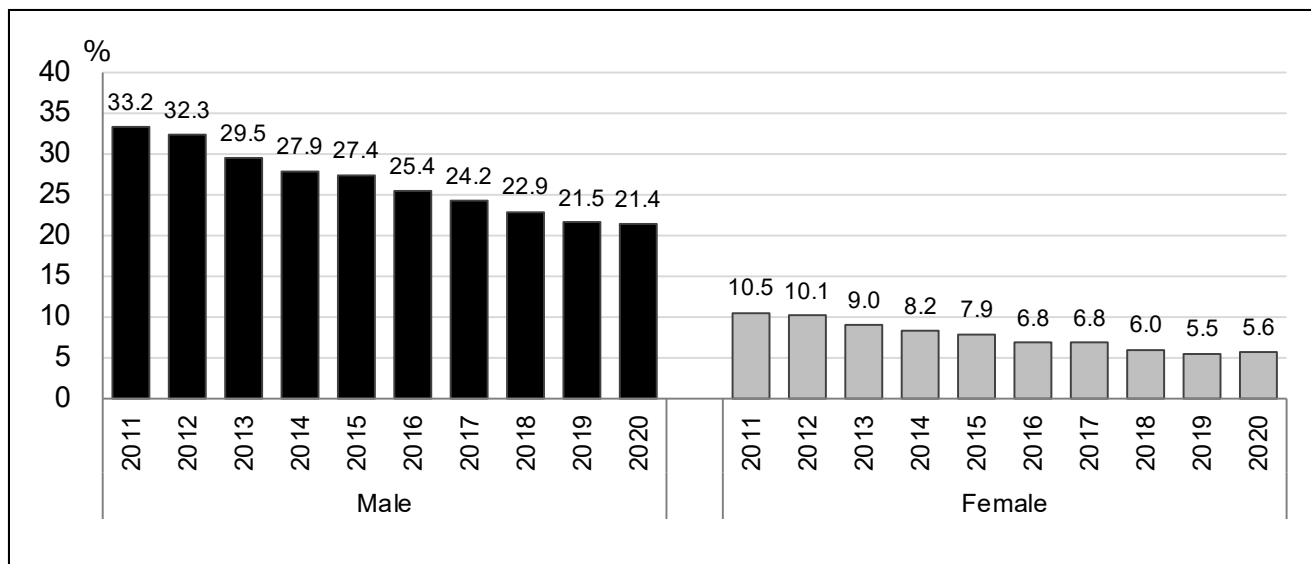
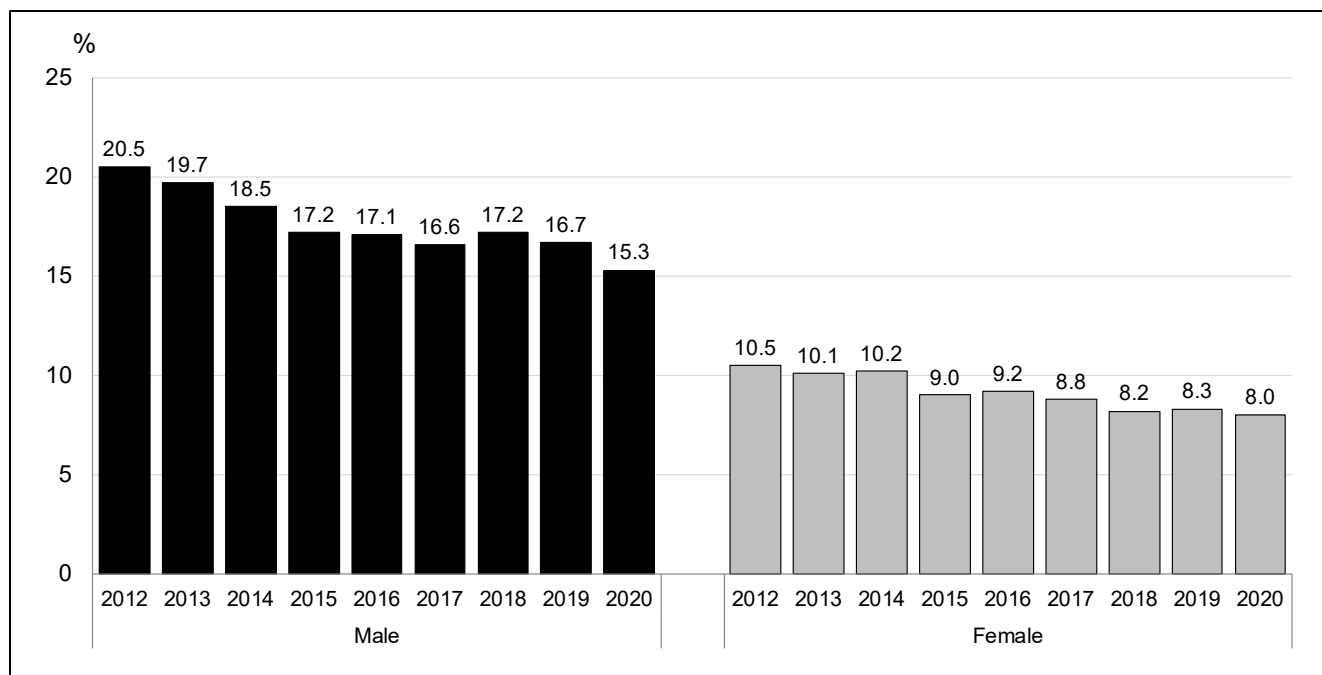


Figure 19. Changes in prevalence of smoking, by gender

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 FY2020 survey, the proportion of those with high-risk scores (CAGE score of 2 points or higher) was 15.3% among males and 8.0% among females. Figure 20 shows yearly changes, indicating a downward trend for both genders since FY2012, when the proportion was 20.5% among males and 10.5% among females. By age group, the percentage was highest among those aged 40 to 64 (Figure 21). When compared by residential location at the time of the survey (in or outside the prefecture), the percentage was slightly higher among those living outside the prefecture for females (Figure 22).



[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 20. Changes in proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE), by gender

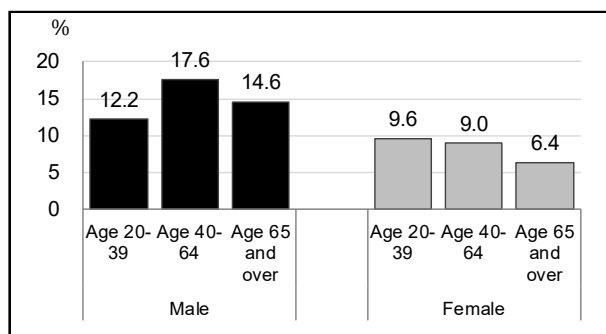


Figure 21. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2020 Survey, by age

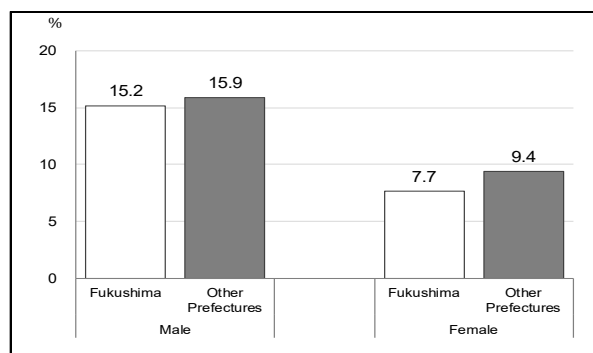


Figure 22. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2020 Survey, by residential location and by gender

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 FY2020 survey, the proportion of those with high-risk scores (K6 score of 13 points or higher) for mood disorder or anxiety disorder was 5.2% overall. Figure 23 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 through FY2014 and has declined 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 gender, the percentage was higher among females (5.6%) than males (4.7%), consistent with results of the aforementioned previous study (Figure 24). The 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 25).

The comparison by residential location at the time of the survey (in or outside of Fukushima prefecture) showed that 7.6% of those living outside the prefecture were at high risk, versus 4.8% of those living in the prefecture (Figure 26).

[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 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 a FY2006 Health and Labor Science Research Grant (for research projects on advanced utilization of statistical information).

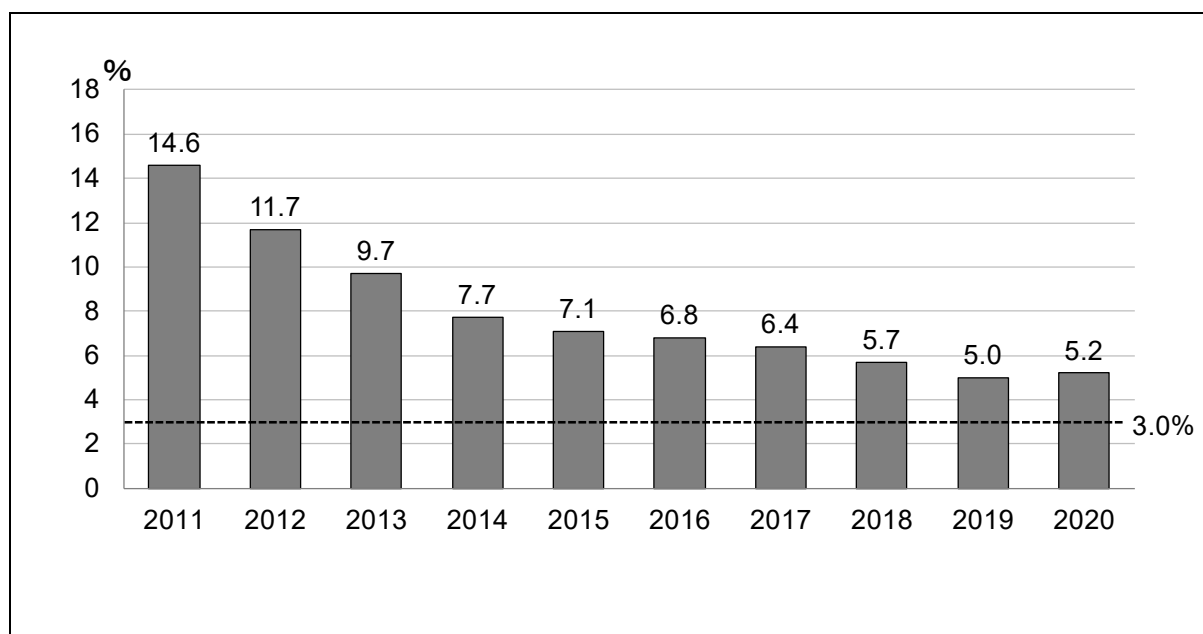


Figure 23. Changes in the proportion of those scoring 13 or higher on K6

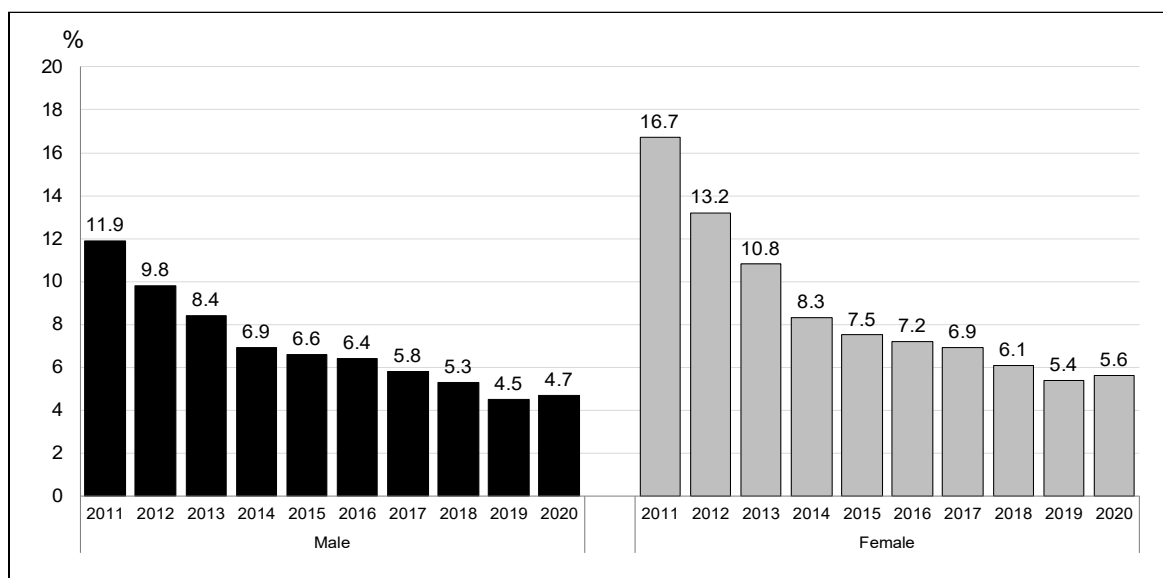


Figure 24. Changes in the proportion of those scoring 13 points or higher on K6, by gender

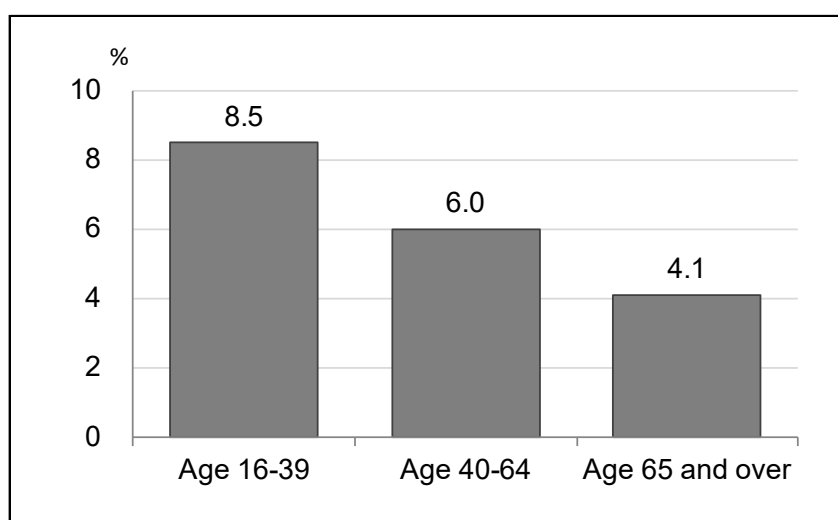


Figure 25. Proportion of those scoring 13 points or higher on K6 in the FY2020 Survey, by age group

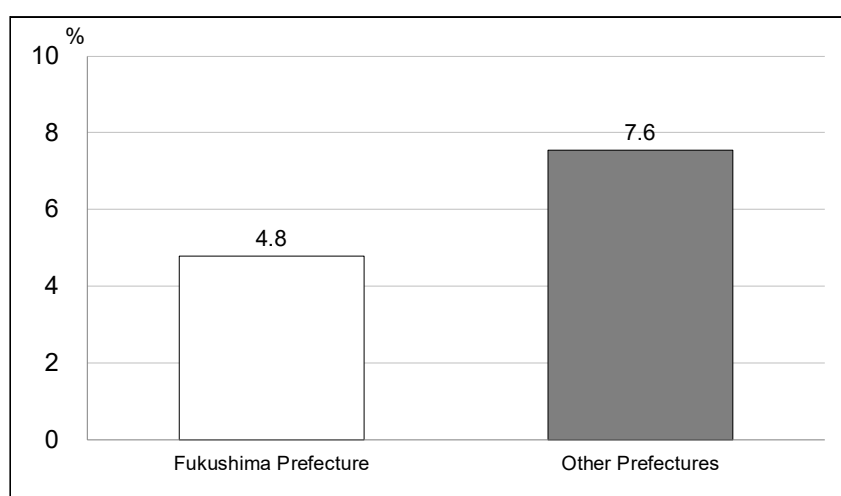


Figure 26. Proportion of those scoring 13 points or higher on K6 in the FY2020 Survey, by location of residence at the time of the survey

H. Influence on daily life due to the spread of COVID-19

In the FY2020 survey, those who responded that COVID-19 exerted influence on their daily life "Significantly" or "To some extent" (the affected group) accounted for 42.8% (Figure 27).

By gender, the affected group accounted for 41.9% among males and 43.5% among females (Figure 28). By age group, the affected group accounted for 40.2% among those aged 16 to 39, 44.7% among those aged 40 to 64, and 42.4% among those aged 65 or older (Figure 29). Thus, there were no substantial differences regarding influence on daily life by gender or by age group.

On the other hand, comparing the percentages of those scoring 13 points or higher on K6 between the group of people who were affected by COVID-19 to some extent or significantly and the group of people who were not at all affected or were scarcely affected by COVID-19, the relevant percentage was considerably higher for the former group (Figure 30), showing substantial differences in mental health conditions between these groups.

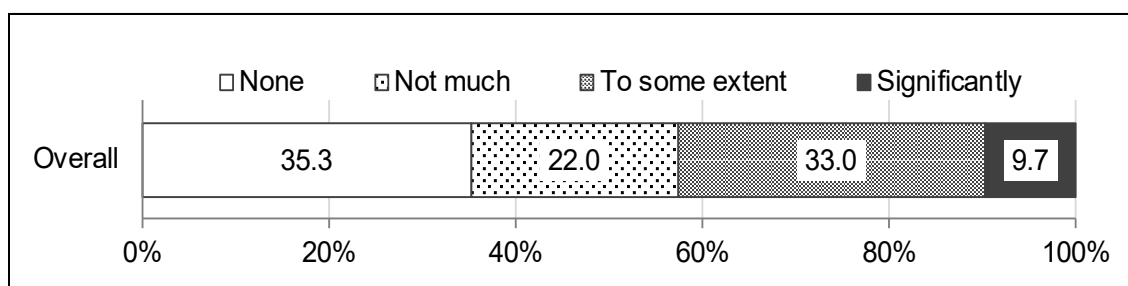


Figure 27. FY2020: Influence on daily life due to the spread of COVID-19: Overall

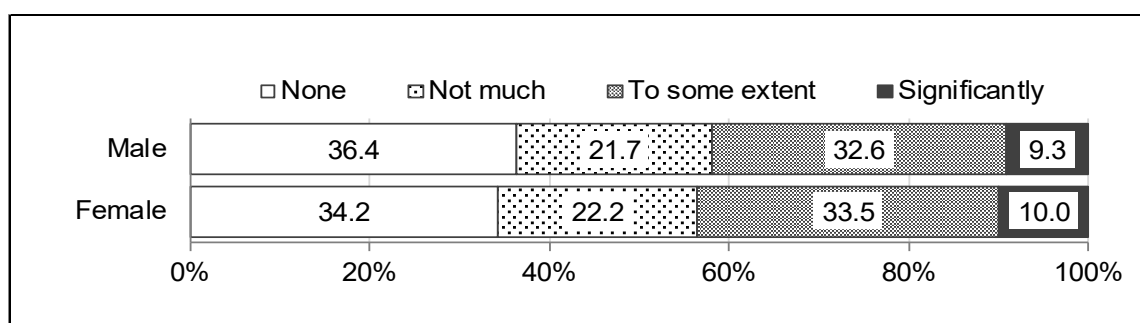


Figure 28. FY2020: Influence on daily life due to the spread of COVID-19: By gender

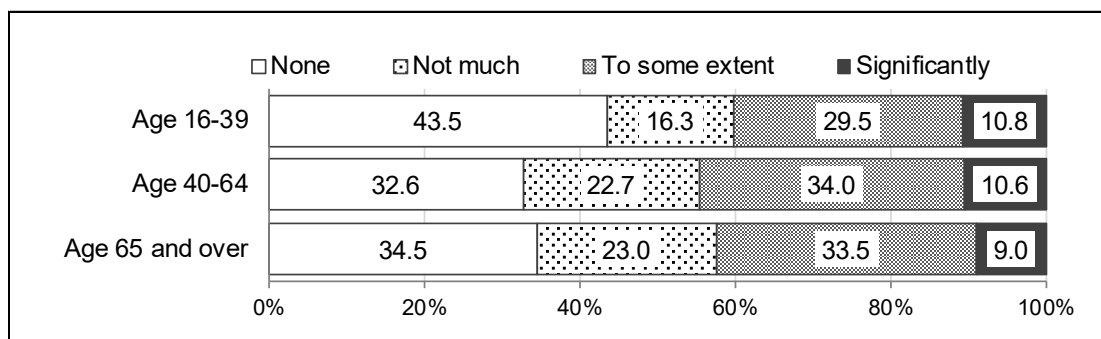


Figure 29. FY2020: Influence on daily life due to the spread of COVID-19: By age group

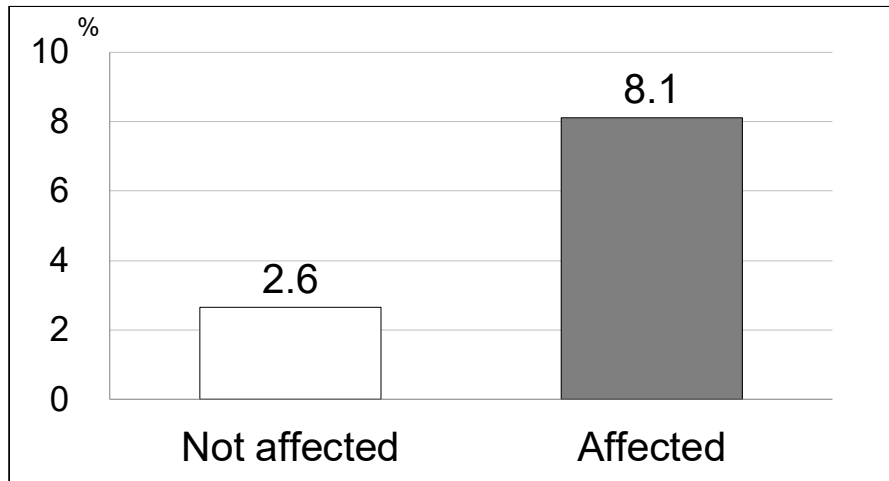


Figure 30. FY2020: Percentage of those scoring 13 points or higher on K6 by level of influence on daily life due to the spread of COVID-19

I. 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 FY2020 Survey, the proportion of those with high-risk scores (PCL-4 score of 12 or more) was 8.4%, which was lower than the results from FY2016 to FY2018, the first survey years to use PCL-4 (Figure 31). The comparison by gender shows that the percentage has been higher among females than among males in any given year (Figure 32). This trend is consistent with many prior studies.

Figure 33 shows a comparison by age group. The proportion of those with high-risk scores increased with age. This result is consistent with previous studies. Figure 34 shows a comparison by residential location at the time of the survey (in or outside Fukushima 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 of 12 points or higher is considered to indicate possible PTSD.

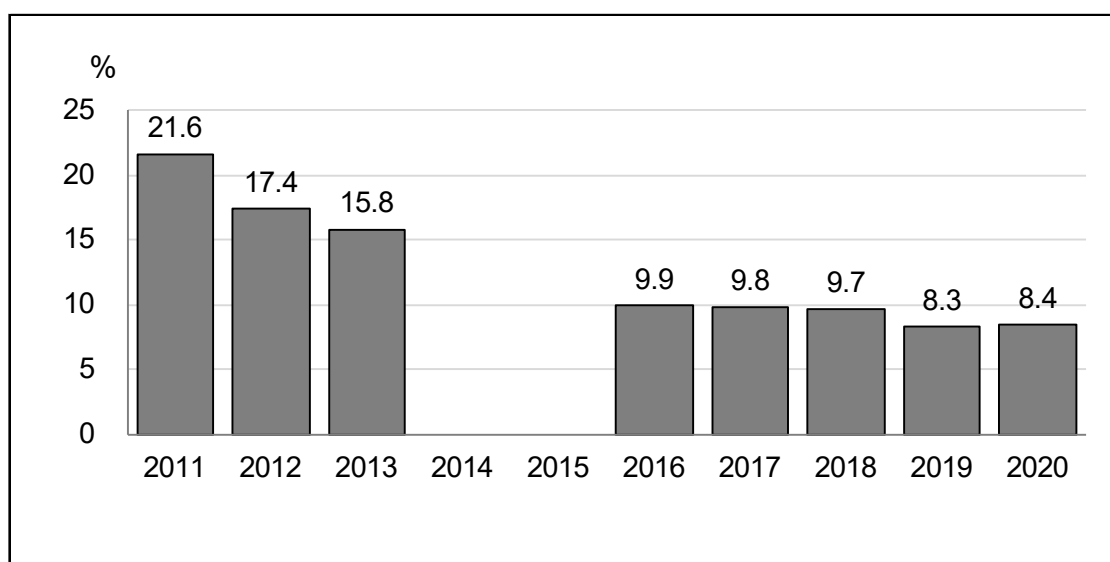


Figure 31. Changes in proportion of those in need of support for traumatic reactions

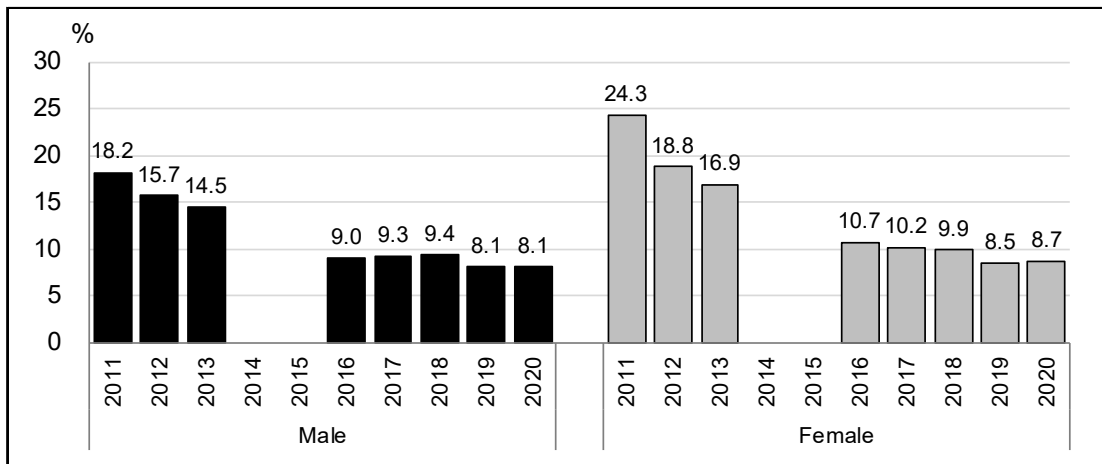
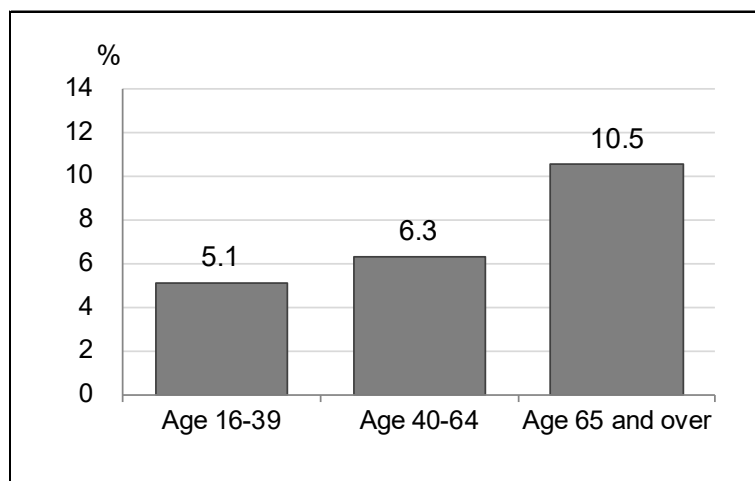


Figure 32. Changes in proportion of adults in need of support for traumatic reactions, by gender



**Figure 33. Traumatic reactions in adults (based on PCL-4) in the FY2020 Survey:
Proportion of those in need of support, by age group**

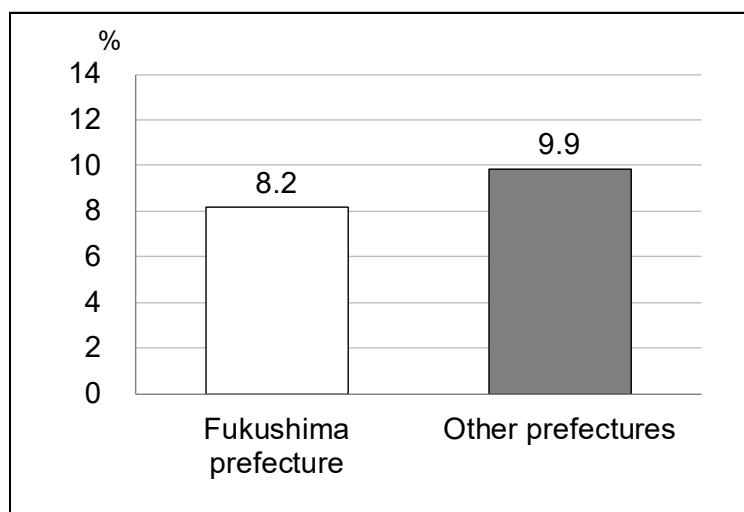


Figure 34. Traumatic reactions in adults (based on PCL-4) in the FY2020 Survey: Proportion of those in need of support, by location of residence at the time of the survey

J. 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), 27.4% of the respondents to the FY2020 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, followed by a trend to decrease in the most recent 2 years. (Figure 35)

Regarding effects on the next generation, 27.2% responded that they think effects on the next generation are likely to occur (“Possibilities are high” and “Possibilities are very high” combined) in the FY2020 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 and FY2020. (Figure 36)

In a comparison by residential location at the time of the survey (FY2020 / 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 37 and 38)

* The proportion of those who responded “Possibilities are very low” or “Possibilities are very high” decreased substantially in FY2017–FY2020 surveys, compared to the percentages in FY2016 survey. This may be due in whole or part to changes in the questionnaire (see p. 50).

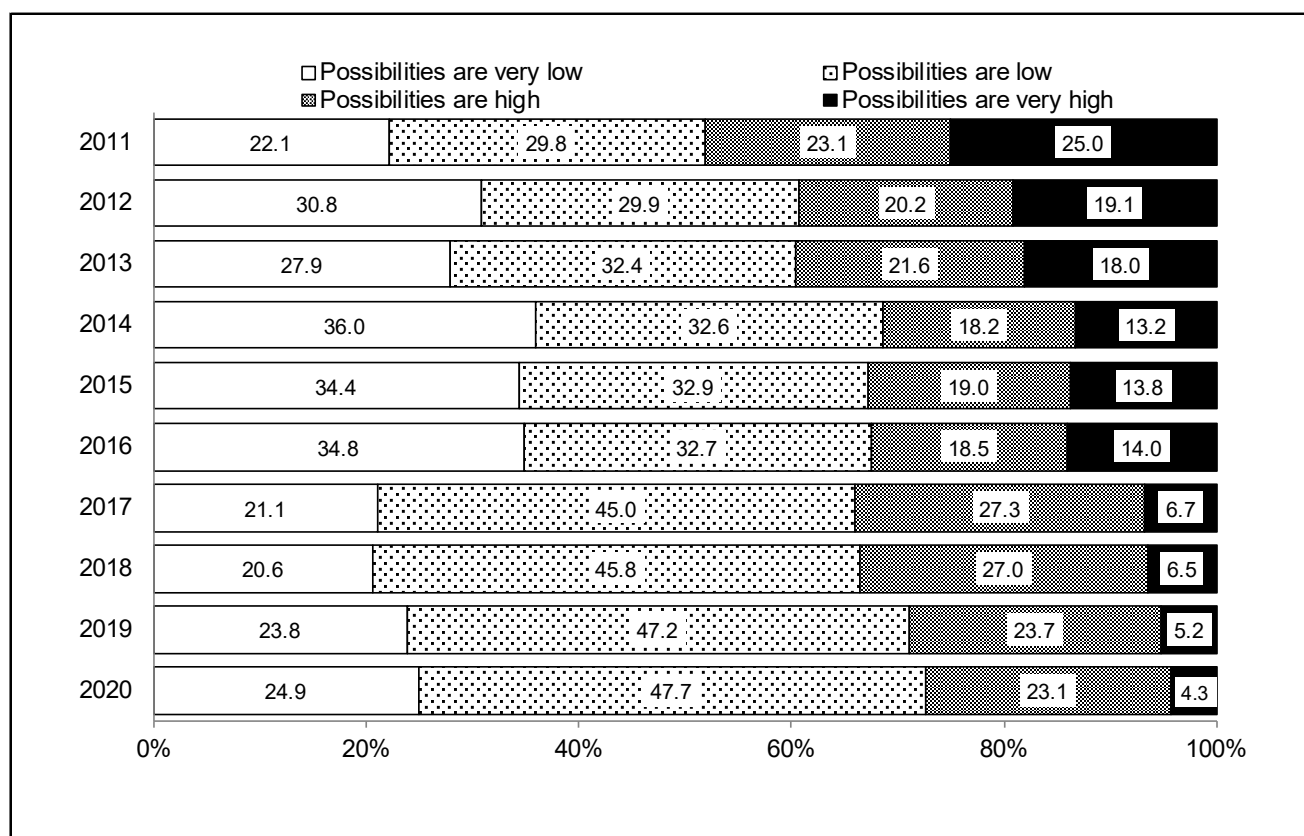


Figure 35. Changes in risk perception of radiation effects (late effects)

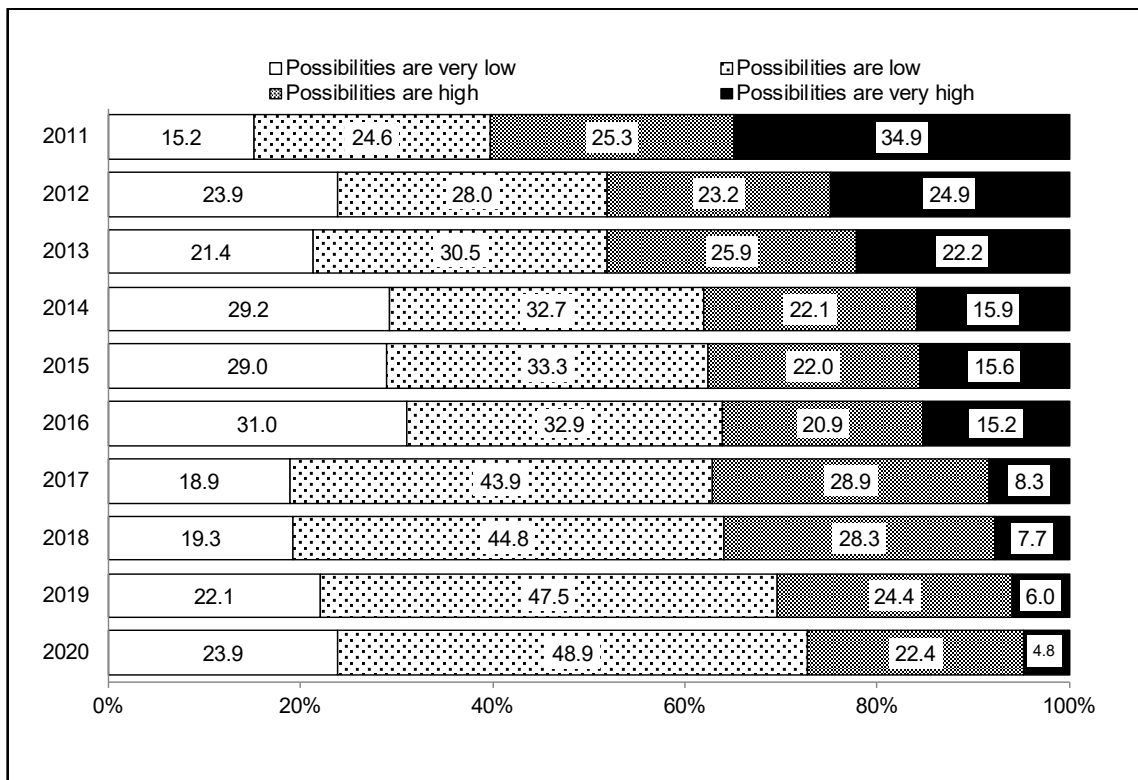


Figure 36. Changes in risk perception of radiation effects (next-generation effects)

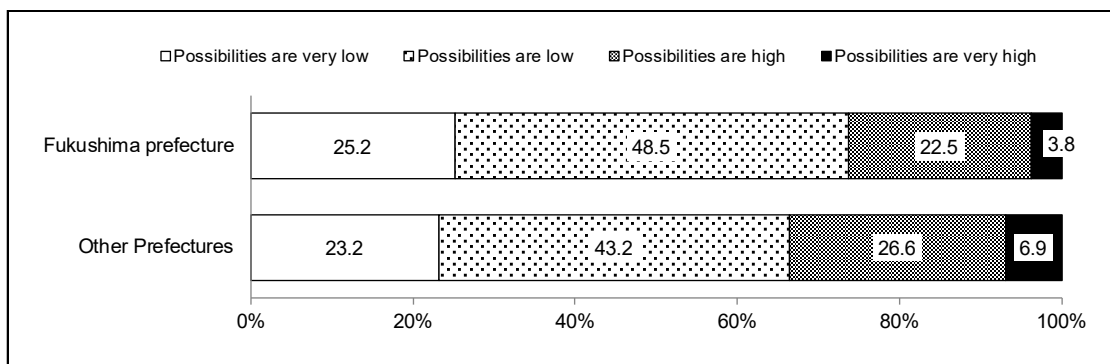


Figure 37. Risk perception of radiation effects (late effects) in FY2020 Survey, by location of residence at the time of the survey

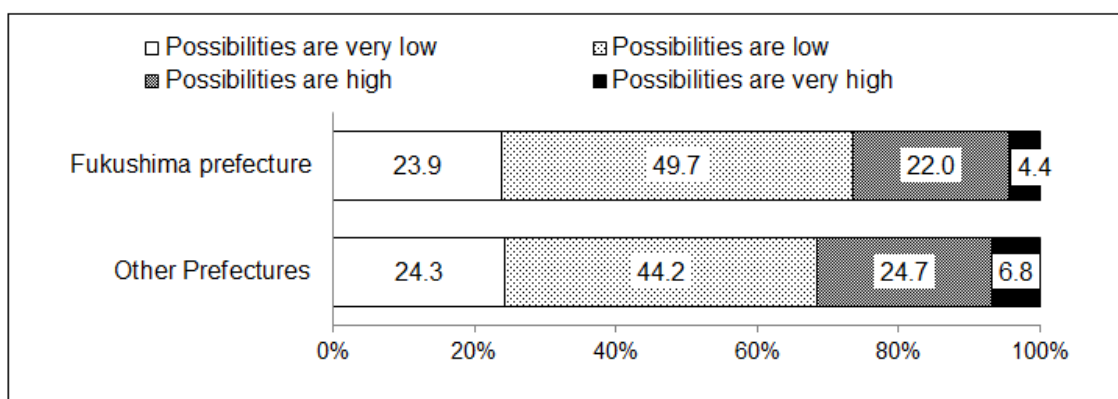


Figure 38. Risk perception of radiation effects (next-generation effects) in FY2020 Survey, by location of residence at the time of the survey

K. Availability of consultation resources

Figure 39 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 31,121 (89.4%) answered “Yes,” while 3,672 (10.6%) answered “No.”

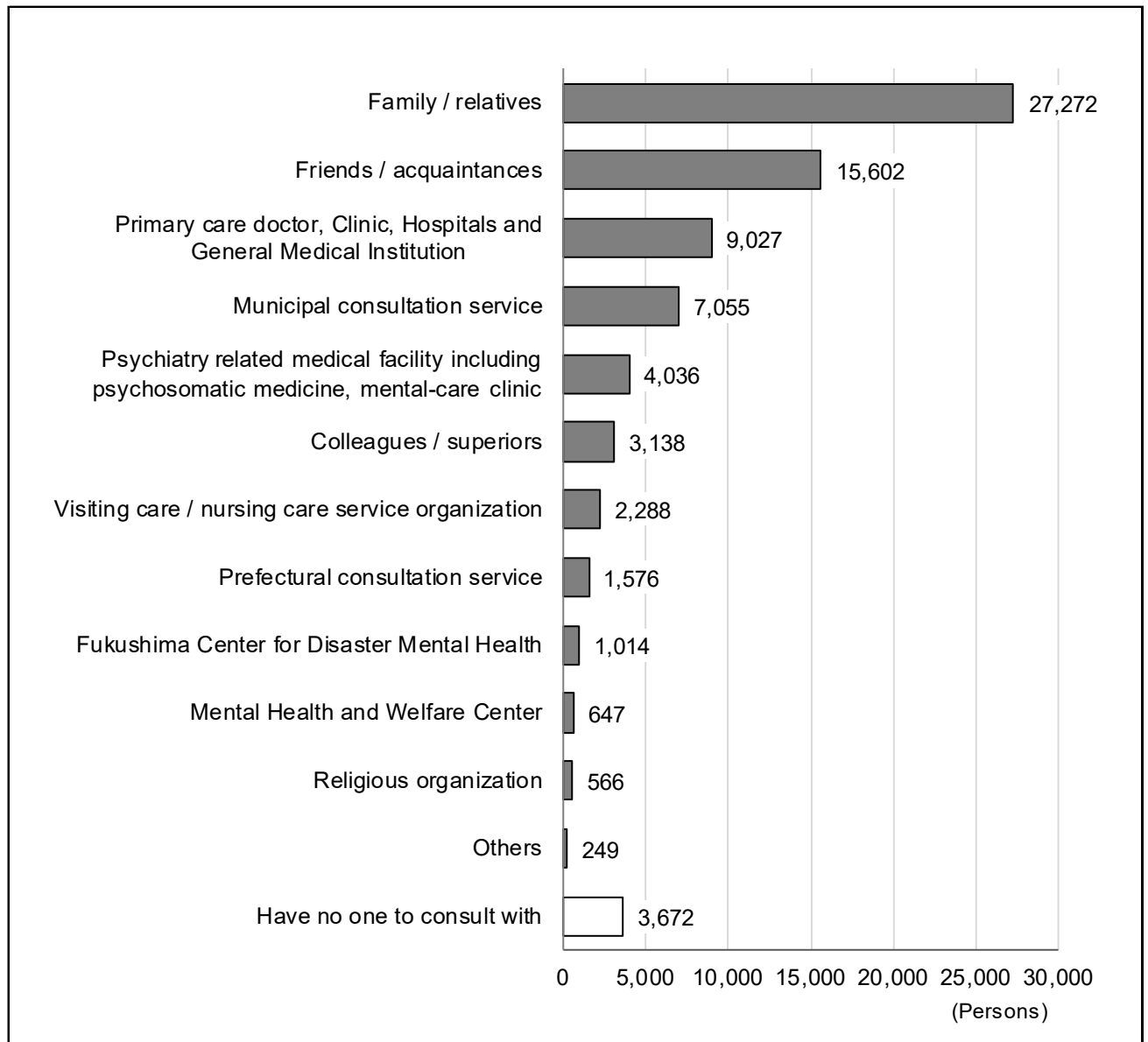


Figure 39. FY2020 Consultation resources for physical and mental problems of adults (multiple responses)

(3) Conclusions

Regarding eligible children (up to junior high school students), exercise habits are improving for children aged 2 to 3 and 4 to 6, but improvements have not been observed for elementary and junior high school students. The percentage of high-risk children based on parents' assessment of their emotions and behavior (SDQ) has improved to a level approaching national standards, but it should be noted that the number of survey-eligible children without disaster experience is increasing.

Regarding adults (aged 16 or older), their subjective sense of well-being is improving constantly, but elderly people's subjective sense of well-being was generally worse. Sufficiency of sleep and frequency of exercise are also improving moderately, but those living outside the prefecture tended to exercise slightly less frequently than those living in the prefecture. The percentages of smokers and those having problematic drinking behaviors are decreasing for both males and females. Among males, the percentage of those having problematic drinking behaviors is high for those aged 40 to 64, and among females, the relevant percentage tends to be higher for younger people.

Adults' mental health conditions have improved significantly compared with the results of the first survey, but the improvement has become slow in recent years and their K6 scores have remained higher than national standards. In particular, it is of concern that K6 scores of those aged 16 to 39 have continually been significantly higher. When compared by residential location at the time of the survey, mental health conditions were generally worse for those living outside the prefecture.

Regarding the influence on daily life due to the spread of COVID-19, other various surveys and studies have suggested the possibility of significant influence on people's lifestyles, including their mental health. It was found that among children (up to junior high school students), the older they are, the larger the influence. In contrast, more than half of the adult respondents answered that they were "Not at all" affected or were "Scarcely" affected, which suggests that many coped with COVID-19 better than had been expected. However, the percentage of those with high-risk scores (K6 score of 13 points or higher) was much higher among respondents who answered that they were affected than among respondents who answered that they were not, and it is considered necessary to pay attention to COVID-19's influence on people's mental health.

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 need 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 FY2020 Mental Health and Lifestyle Survey, those who were judged to be needed counseling or support by telephone or mail were covered as support candidates.

Tabulation in this report covers those who responded by October 31, 2021, and to whom we provided support by December 31, 2021.

(2) Individual result report

Individual result reports were sent in September and October 2021 to those who responded by August 31, 2021, to help guide their understanding of mental health and lifestyle issues and better manage their own health.

Table 2. Number of individual result reports sent out

Type of survey sheet	Number of notices sent	Contents
For children aged 0 - 3	371	Height, weight, dietary habits (children aged 1 or older), fitness habits(children aged 2 or older), and bedtime
For children aged 4 - 6	446	Height, weight, dietary habits, fitness habits, bedtime, and mental and behavioral stress reaction (SDQ score)*1
For elementary school students	1,272	
For junior high school students	691	
For adults	35,572	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

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 regarding issues for 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 for adults

		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	

* Smoking cessation calls for those who meet the support criteria and have a Brinkmann index of 200 or higher.

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 of 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 needed support based on the content of their replies. For those who have any problems pertaining to medical control, 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 40. The number of support candidates was 370, or 13.3% of all respondents. Of these, 121 were judged to be in need of telephone counseling, of whom 95 actually received telephone counseling.

Basic attributes of children (based on telephone counseling) are shown in Table 5. By gender, there were 75 boys (62.0%) and 46 girls (38.0%). By location of residence, 92 children (76.0%) were living in the prefecture and 29 children (24.0%) were living outside the prefecture.

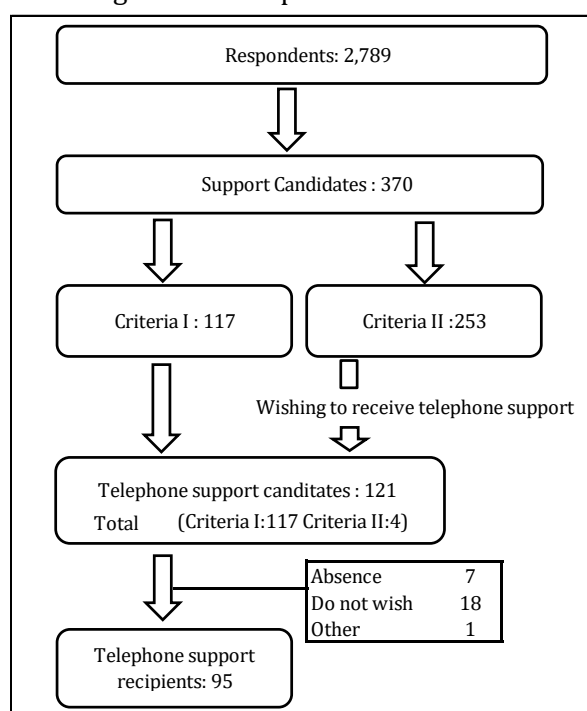


Figure 40. Numbers of support candidates and recipients for issues regarding children

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

Support Candidates (Person)	All 121	0 - 3 2	4 - 6 15	Elementary school children 58	Junior high school students 46
Boys	75 (62.0%)	2 (100.0%)	13 (86.7%)	37 (63.8%)	23 (50.0%)
Girls	46 (38.0%)	0 (0.0%)	2 (13.3%)	21 (36.2%)	23 (50.0%)
In the prefecture	92 (76.0%)	2 (100.0%)	15 (100.0%)	47 (81.0%)	28 (60.9%)
Outside the prefecture	29 (24.0%)	0 (0.0%)	0 (0.0%)	11 (19.0%)	18 (39.1%)
Support recipients	95	2	12	49	32
In the prefecture	69 (72.6%)	2 (100.0%)	12 (100.0%)	39 (79.6%)	16 (50.0%)
Outside the prefecture	26 (27.4%)	0 (0.0%)	0 (0.0%)	10 (20.4%)	16 (50.0%)

*Residence registration status is as of distribution of the questionnaire for the FY2020 survey

(B) Results of the Support

The Mental Health Support Team made phone calls to responders (mostly to the parents or guardians) and asked about current issues, based on survey form the responses. Figure 41 shows the issues identified through telephone counseling from FY2012 to FY2020.

“Anxiety caused by the disaster or radiation and its exposure” was the most frequent in FY2012, but “School life-related matters” has become the most frequent issue in subsequent years.

Number/%

FY2012 623	FY2013 473	FY2014 327	FY2015 250	FY2016 181	FY2017 162	FY2018 138	FY2019 112	FY2020 95
Anxiety caused by the disaster. radiation or exposure 147 23.6%	School life-related matters 70 14.8%	School life-related matters 49 15.0%	School life-related matters 54 21.6%	School life-related matters 23 12.7%	School life-related matters 29 17.9%	School life-related matters 35 25.4%	School life-related matters 29 25.9%	School life-related matters 25 26.3%
School life-related matters 136 21.8%	Behavioral issues (anger, Irritation, or violence) 52 11.0%	Physical health 29 8.9%	Physical health 15 6.0%	Behavioral issues (anger, Irritation, or violence) 10 5.5%	Physical health 13 8.0%	Physical health 15 10.9%	Behavioral issues (anger, Irritation, or violence) 14 12.5%	Daily life 18 18.9%
Physical health 102 16.4%	Physical health 32 6.8%	Behavioral issues (anger, Irritation, or violence) 27 8.3%	Sleep 9 3.6%	Physical health 9 5.0%	Behavioral issues (anger, Irritation, or violence) 11 6.8%	Dietary habits 12 8.7%	Physical health 9 8.0%	Behavioral issues (anger, Irritation, or violence) 12 12.6%
Behavioral issues (anger, Irritation, or violence) 90 14.4%	Anxiety caused by the disaster. radiation or exposure 25 5.3%	Anxiety caused by the disaster. radiation or exposure 19 5.8%	Behavioral issues (anger, Irritation, or violence) 8 3.2%	Sleep 4 2.2%	Sleep 9 5.6%	Sleep 11 8.0%	Sleep 9 8.0%	Sleep 9 9.5%
Depression 83 13.3%	Depression 23 4.9%	Sleep 11 3.4%	Dietary habits 4 1.6%	Dietary habits 4 2.2%	Dietary habits 6 3.7%	Behavioral issues (anger, Irritation, or violence) 10 7.2%	Dietary habits 7 6.3%	Physical health 6 6.3% Dietary habits 6 6.3%

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

Figure 41. Numbers of support candidates and recipients for issues regarding children

Table 6 shows the results of the first telephone support. Among telephone support recipients, 14 (14.7%) were judged to be in need of continued support, while 74 (77.9%) were judged to need one-time support; no details were obtained from 1 (1.1%), and 6 (6.3%) declined support.

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

Survey age groups Number of support recipients	Number of persons/%					
	All 95	0-3 2	4-6 12	Elementary school 49	Junior high school 32	
Continuous support needed	14 (14.7%)	1 (50.0%)	3 (25.0%)	6 (12.2%)	4 (12.5%)	
One time support	74 (77.9%)	1 (50.0%)	7 (58.3%)	40 (81.6%)	26 (81.3%)	
Details unknown	1 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.1%)	
Support declined	6 (6.3%)	0 (0.0%)	2 (16.7%)	3 (6.1%)	1 (3.1%)	

- Continuous support needed:

Those judged as needing continuous support, including those with poor physical conditions, those gravely affected by the disaster or unable to adapt to society or school, and those who have been isolated or have other remaining concerns. Continued support includes recommending consultation with specialists at healthcare/medical facilities and providing their information to other support organizations.

- One time 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.

- Support declined:

Those who turned down the support.

Table 7 shows the reasons for judging that continued support would be necessary after the first telephone support. The major reason was “school maladaptation” for 4 (28.6%), followed by “mental/physical problems” for 2 (14.3%). Reasons for continued support due to the conditions of adult respondents include physical problems for 3 (21.4%) and mental problems for 3 (21.4%)

Table 7. Reasons for continued support for issues regarding children

Number of persons / (%)

Number of continuous support candidates		All 14	0-3 1	4-6 3	Elementary School 6	Junior high School 4
Children	Physical health problem	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Mental health problem	2 (14.3%)	0 (0.0%)	0 (0.0%)	2 (33.3%)	0 (0.0%)
	Incompatible with school	4 (28.6%)	0 (0.0%)	1 (33.3%)	1 (16.7%)	2 (50.0%)
	Others	8 (57.1%)	1 (100.0%)	2 (66.7%)	3 (50.0%)	2 (50.0%)
Guardians	Physical health problem	3 (21.4%)	0 (0.0%)	1 (33.3%)	0 (0.0%)	2 (50.0%)
	Mental health problem	3 (21.4%)	0 (0.0%)	1 (33.3%)	0 (0.0%)	2 (50.0%)
	Others	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

• Breakdowns are the aggregate numbers.

Table 8 shows the types of telephone support provided: “Attentive listening,” 62 (65.3%); “Recommendation to see a doctor,” 1 (1.1%); “Guidance on daily habits,” 1 (1.1%); “Psychoeducation,” 10 (10.5%); and “Provide information by phone,” 1 (1.1%).

Table 8. Types of telephone support for issues regarding children

Number of persons / (%)

Number of support recipients	All 95	0-3 2	4-6 12	Elementary School 49	Junior high School 32
Attentive listening	62 (65.3%)	2 (100.0%)	9 (75.0%)	30 (61.2%)	21 (65.6%)
Recommendation to see a doctor	1 (1.1%)	0 (0.0%)	0 (0.0%)	1 (2.0%)	0 (0.0%)
Guidance on daily habits	1 (1.1%)	0 (0.0%)	0 (0.0%)	1 (2.0%)	0 (0.0%)
Psychoeducation	10 (10.5%)	0 (0.0%)	2 (16.7%)	3 (6.1%)	5 (15.6%)
Provide information by phone	1 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.1%)
Others	34 (35.8%)	0 (0.0%)	4 (33.3%)	19 (38.8%)	11 (34.4%)

Table 9 shows further measures taken after telephone support. Relevant documents were sent to 1 (1.1%).

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

Number of persons / (%)

Number of support recipients	All 95	0-3 2	4-6 12	Elementary School 49	Junior high School 32
A	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B	1 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.1%)
C	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

*Refer below description for the corresponding items in the table

A: Communication with external organizations:

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

B: 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

C: Actions by other departments:

Other departments of the Radiation Medical Science Center for the Fukushima Health Management Survey (FHMS) 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

Figure 42 shows the numbers of support candidates and recipients based on Criteria I or II and support recipients. The number of support candidates was 6,929, which was 19.3% of all respondents. Of these, the number of those judged to need telephone counseling was 2,443 in total, including those with mental health issues and with lifestyle issues.

Table 10 shows the distribution of support candidates by gender and by age group. Among support candidates for mental health issues, 934 (43.2%) were males and 1,226 (56.8%) were females. Among support candidates for lifestyle issues, 207 (73.1%) were males and 76 (26.9%) were females.

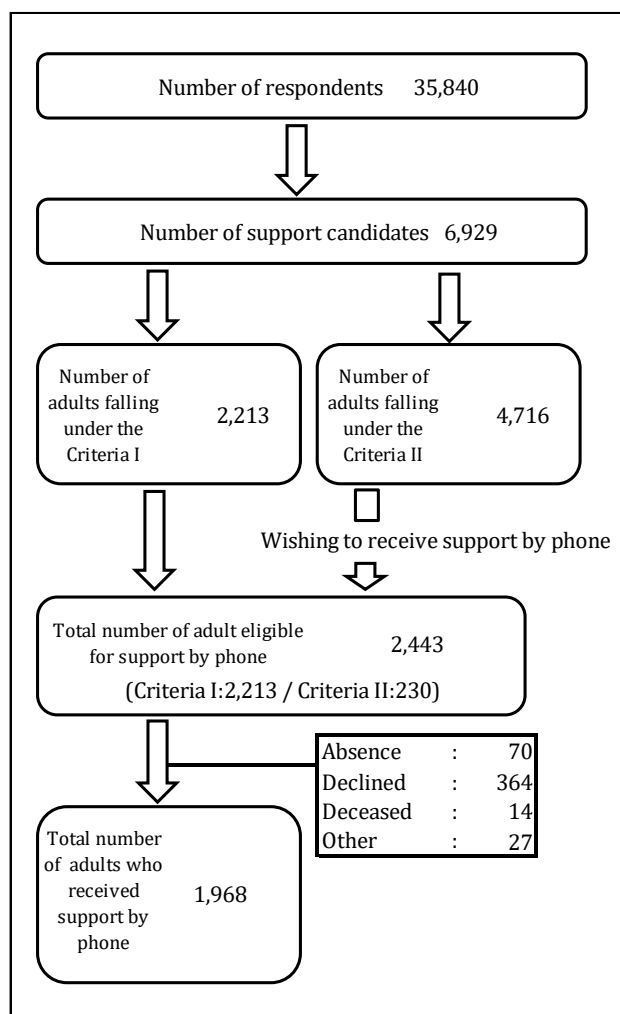


Figure 42. Number of support candidates and recipients, for personal issues of adults

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

Age group	Mental Health			Lifestyle			Number of persons / (%)	
	Overall	Male	Female	Overall	Male	Female		
Aged 10-19	36	14 (38.9%)	22 (61.1%)	2	1 (50.0%)	1 (50.0%)		
Aged 20-29	178	59 (33.1%)	119 (66.9%)	14	12 (85.7%)	2 (14.3%)		
Aged 30-39	168	68 (40.5%)	100 (59.5%)	28	20 (71.4%)	8 (28.6%)		
Aged 40-49	225	90 (40.0%)	135 (60.0%)	48	36 (75.0%)	12 (25.0%)		
Aged 50-59	239	118 (49.4%)	121 (50.6%)	58	41 (70.7%)	17 (29.3%)		
Aged 60-69	346	161 (46.5%)	185 (53.5%)	83	59 (71.1%)	24 (28.9%)		
Aged 70-79	466	222 (47.6%)	244 (52.4%)	41	33 (80.5%)	8 (19.5%)		
Aged 80 or older	502	202 (40.2%)	300 (59.8%)	9	5 (55.6%)	4 (44.4%)		
合計	2,160	934 (43.2%)	1,226 (56.8%)	283	207 (73.1%)	76 (26.9%)		

As of April 1, 2020

Table 11 shows residency status at the time of the survey. Among support candidates for mental health issues, 1,969 persons (80.6%) were living in the prefecture and 474 (19.4%) were living outside Fukushima. Of all telephone support candidates, telephone counseling was actually provided to 1,968 persons.

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

	Number of persons / (%)		
Number of support candidates	Overall	Regarding mental health	Regarding lifestyle
	2,443	2,160	283
In the prefecture	1,969 (80.6%)	1,726 (79.9%)	243 (85.9%)
Outside the prefecture	474 (19.4%)	434 (20.1%)	40 (14.1%)
Number of adults who received support	1,968	1,743	225
In the prefecture	1,596 (81.1%)	1,405 (80.6%)	191 (84.9%)
Outside the prefecture	372 (18.9%)	338 (19.4%)	34 (15.1%)

• Address at the time of sending survey sheets for FY2020

Table 12 shows the breakdowns of support candidates and recipients with lifestyle issues.

Table 12. Breakdown of support candidates regarding lifestyle issues

	Number of persons / (%)				
Support Candidates	Overall	Obesity only	Drinking habits only	Both obesity and drinking habits	Sleep
Number of persons	283	174	88	15	6
In the prefecture	243 (85.9%)	155 (89.1%)	77 (87.5%)	7 (46.7%)	4 (66.7%)
Outside the prefecture	40 (14.1%)	19 (10.9%)	11 (12.5%)	8 (53.3%)	2 (33.3%)
Support recipients	225	137	68	14	6
In the prefecture	191 (84.9%)	120 (87.6%)	60 (88.2%)	7 (50.0%)	4 (66.7%)
Outside the prefecture	34 (15.1%)	17 (12.4%)	8 (11.8%)	7 (50.0%)	2 (33.3%)

*Residence registration status is as of distribution of the questionnaire for the FY2020 survey

(B) Results of Support

The Mental Health Support Team made phone calls and asked about current issues, based on survey form responses. Figure 43 shows the issues identified through telephone counseling from FY2012 to FY2020. “Physical problems” has been the most frequent, followed by “sleep problems” and “depression” since FY2012 to FY2020

Number of persons / (%)

FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
5,991	3,913	3,053	2,567	2,382	2,202	2,206	1,875	1,968
Physical Health 2,761 (46.1%)	Physical Health 1,913 (48.9%)	Physical Health 1,279 (41.9%)	Physical Health 1,145 (44.6%)	Physical Health 1,090 (45.8%)	Physical Health 986 (44.8%)	Physical Health 961 (43.6%)	Physical Health 750 (40.0%)	Physical Health 866 (44.0%)
Sleep 2,349 (39.2%)	Sleep 1,593 (40.7%)	Sleep 865 (28.3%)	Sleep 798 (31.1%)	Sleep 699 (29.3%)	Sleep 613 (27.8%)	Sleep 603 (27.3%)	Sleep 467 (24.9%)	Sleep 583 (29.6%)
Depressive feeling 1,417 (23.7%)	Depressive feeling 765 (19.6%)	Depressive feeling 485 (15.9%)	Depressive feeling 342 (13.3%)	Depressive feeling 231 (9.7%)	Depressive feeling 240 (10.9%)	Depressive feeling 312 (14.1%)	Depressive feeling 235 (12.5%)	Depressive feeling 296 (15.0%)
Family relationship 1,058 (17.7%)	Living environment 751 (19.2%)	Worries over the future 342 (11.2%)	Dietary habits 236 (9.2%)	Dietary habits 227 (9.5%)	Worries over the future 226 (10.3%)	Worries over the future 191 (8.7%)	Exercise 186 (9.9%)	Dietary habits 249 (12.7%)
Living environment 1,049 (17.5%)	Family relationship 726 (18.6%)	Family relationship 302 (9.9%)	Worries over the future 235 (9.2%)	Family relationship 192 (8.1%)	Family relationship 179 (8.1%)	Exercise 172 (7.8%)	Dietary habits 174 (9.3%)	Exercise 245 (12.4%)

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

Figure 43. Contents of consultations regarding personal issues of adults

Table 13 shows the results of the first telephone support. Among telephone support recipients, 231 (11.7%) were judged to need continued support, while 1,680 (85.4%) were judged to need no more support. No details were obtained from 30 (1.5%), and 27 (1.4%) declined support

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

Number of persons / (%)

Number of support recipients	Overall 1,968	Mental Health 1,743	Lifestyle 225
Continuous Support	231 (11.7%)	227 (13.0%)	4 (1.8%)
One time support	1,680 (85.4%)	1,461 (83.8%)	219 (97.3%)
Details unknown	30 (1.5%)	30 (1.7%)	0 (0.0%)
Support declined	27 (1.4%)	25 (1.4%)	2 (0.9%)

- Need continuous support

Those judged as needing continuous support, for reasons of poor physical conditions, gravely affected by the disaster, unable to adapt to society or school, seeming to be isolated, and other remaining concerns. Continuous support includes recommending consultation at healthcare/medical facilities and providing their information to other support organizations.

- One-time support:

Those judged to have some improvements in their physical conditions or living environment, and/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 continuous support would be necessary after the first telephone support. The most frequent reason was “mental problems” among 131 (56.7%), followed by “physical problems” among 112 (48.5%).

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

Number of persons / (%)

Number of continued support candidates	Overall 231	Mental health 227	Lifestyle 4
Poor (physical) health conditions	112 (48.5%)	111 (49.9%)	1 (25.0%)
Poor (mental) health conditions	131 (56.7%)	131 (57.7%)	0 (0.0%)
Inability to adapt to social life	8 (3.5%)	8 (3.5%)	0 (0.0%)
Isolation	27 (11.7%)	26 (11.5%)	1 (25.0%)
Others	14 (6.1%)	11 (4.8%)	3 (75.0%)

Note* Breakdowns are the aggregate numbers.

Table 15 shows the types of telephone support provided: “Attentive listening,” 1,715 (87.1%); “Recommendation to see a physician,” 112 (5.7%); “Guidance on daily habits,” 325 (16.5%); “Psychoeducation,” 46 (2.3%); and “Information provision by phone,” 38 (1.9%)

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

Number of persons / (%)

Number of continued support candidates	Overall 1,968	Mental health 1,743	Lifestyle 225
Attentive listening	1,715 (87.1%)	1,500 (86.1%)	215 (95.6%)
Recommendation to see a physician	112 (5.7%)	93 (5.3%)	19 (8.4%)
Guidance on daily habits	325 (16.5%)	155 (8.9%)	170 (75.6%)
Psychoeducation	46 (2.3%)	46 (2.6%)	0 (0.0%)
Information provision by phone	38 (1.9%)	37 (2.1%)	1 (0.4%)
Other (only confirmation of circumstances, etc.)	248 (12.6%)	240 (13.8%)	8 (3.6%)

Note* Breakdowns are the aggregate numbers.

Table 16 shows further measures taken after telephone support. “Sending of relevant documents” was for 15 cases (0.8%).

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

Number of continued support candidates	Overall 1,968	Mental health 1,743	Lifestyle 225
Communication with external organizations	0 (0.0%)	0 (0.0%)	0 (0.0%)
Sending of relevant documents	15 (0.8%)	15 (0.9%)	0 (0.0%)
Actions by other departments	0 (0.0%)	0 (0.0%)	0 (0.0%)

Number of persons / (%)

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 Medical 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 3,910 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 347 persons, 1,125 persons, and 2,438 persons, respectively.

(3) Conclusions

- In the first telephone support for issues regarding children, 14 (14.7%) were judged to need continuous 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, 227 (13.0%) were judged to need continuous support due to mental health issues and 4 (1.8%) 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."
- As a consequence of COVID-19, many answered that they came to have less contact with others as seen in such answers as "Having lost opportunities to see my friends or family members living separately" and "Having lost time for enjoying hobbies, such as park golf," and that troubles among family members increased as a result of being forced to stay home, as seen in such answers as "Increase in time spent together at home caused family members to feel irritated with each other" and "Children got frustrated and had family quarrels often during school's temporary closure."
- 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 to whom 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 FY2020 Mental Health and Lifestyle Survey

(1) Survey for Ages 0-3

Survey for ages 0-3

				Number	Percentage	
Response method		(Valid responses:	376)	• Paper	265	70.5%
				• Online	111	29.5%
Sex		(Valid responses:	376)	• Boys	209	55.6%
(Average age: 1.8)				• Girls	167	44.4%
Residential location at the time of survey		(Valid responses:	376)	• In the prefecture	359	95.5%
				• Outside the prefecture	17	4.5%
Q1 Health condition		(Valid responses:	371)	• Very good	202	54.4%
				• Good	128	34.5%
				• Fair	41	11.1%
				• Unsatisfactory	0	0.0%
				• Very unsatisfactory	0	0.0%
Q2 Height	Boys	Age 1	(Valid responses:	75)	Average height	79.0 cm
		Age 2	(Valid responses:	55)	Average height	87.4 cm
		Age 3	(Valid responses:	52)	Average height	95.6 cm
	Girls	Age 1	(Valid responses:	48)	Average height	77.8 cm
		Age 2	(Valid responses:	49)	Average height	86.9 cm
		Age 3	(Valid responses:	46)	Average height	95.5 cm
Weight	Boys	Age 1	(Valid responses:	79)	Average weight	10.3 kg
		Age 2	(Valid responses:	62)	Average weight	12.4 kg
		Age 3	(Valid responses:	57)	Average weight	14.8 kg
	Girls	Age 1	(Valid responses:	56)	Average weight	10.1 kg
		Age 2	(Valid responses:	53)	Average weight	12.0 kg
		Age 3	(Valid responses:	49)	Average weight	14.6 kg
Q3 Sleep time and naps						
1) Sleep time		(Valid responses:	373)	Average sleep hours	9 hr 52 min	
		(Valid responses:	373)	Average bed time	9:05 pm	
		(Valid responses:	373)	Average get-up time	6:58 am	
2) Take naps?		(Valid responses:	373)	• No	34	9.1%
				• Yes	336	90.9%
		(Valid responses:	336)	Average nap hours	1 hr 55 min	
Q4 Frequency of exercising		(Valid responses:	219)	• Almost everyday	147	67.1%
				• 2-4 times a week	58	26.5%
				• Once a week	12	5.5%
				• Rarely	2	0.9%
Q5 Your child's diet during the past month						
1) Eats seafood 3 times or more per week?		(Valid responses:	356)	• Yes	180	50.6%
				• No	176	49.4%
2) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?		(Valid responses:	356)	• Yes	261	73.3%
				• No	95	26.7%
3) Eats fruit almost every day?		(Valid responses:	356)	• Yes	234	65.7%
				• No	122	34.3%
4) Eats soy products almost every day?		(Valid responses:	356)	• Yes	259	72.8%
				• No	97	27.2%
5) Has dairy products almost every day?		(Valid responses:	356)	• Yes	300	84.3%
				• No	56	15.7%
Q6 Loss of confidence in child rearing		(Valid responses:	374)	• Yes	58	15.5%
				• No	167	44.7%
				• Neither yes nor no	149	39.8%
Q7 Worries about the child		(Valid responses:	374)	• Yes	52	13.9%
				• No	249	66.6%
				• Neither yes nor no	73	19.5%
Q8 Availability of consultation resources		(Valid responses:	373)	• Yes	367	98.4%
Have someone to consult with about child rearing?				(Family)	358	-
				(Neighbor)	37	-
				(Friend)	245	-
				(Medical facility)	64	-
				(Child guidance center)	8	-
				(Public health nurse/midwife)	86	-
				(Nursery school/kindergarten teacher)	146	-
				(Other)	7	-
				• No	6	1.6%
Q9 Influence of the COVID-19 pandemic		(Valid responses:	370)	• Not at all	82	22.2%
Is the COVID-19 affecting your daily life?				• Not much	93	25.1%
				• To some extent	155	41.9%
				• Very much	40	10.8%

(2) Survey for Ages 4–6

Survey for ages 4-6

Response method			(Valid responses: 447)	• Paper	334	74.7%
				• Online	112	25.3%
Sex			(Valid responses: 447)	• Boys	225	50.3%
(Average age: 4.9)				• Girls	222	49.7%
Residential location at the time of survey			(Valid responses: 447)	• In the prefecture	421	94.2%
				• Outside the prefecture	26	5.8%
Q1 Health condition			(Valid responses: 445)	• Very good	216	48.5%
				• Good	170	38.2%
				• Fair	59	13.3%
				• Unsatisfactory	0	0.0%
				• Very unsatisfactory	0	0.0%
Q2 Height	Boys	Age 4	(Valid responses: 78)	Average height	101.2	cm
		Age 5	(Valid responses: 72)	Average height	110.0	cm
		Age 6	(Valid responses: 67)	Average height	116.4	cm
	Girls	Age 4	(Valid responses: 76)	Average height	102.5	cm
		Age 5	(Valid responses: 54)	Average height	108.9	cm
		Age 6	(Valid responses: 75)	Average height	114.7	cm
Weight	Boys	Age 4	(Valid responses: 77)	Average weight	16.4	kg
		Age 5	(Valid responses: 71)	Average weight	19.3	kg
		Age 6	(Valid responses: 67)	Average weight	21.9	kg
	Girls	Age 4	(Valid responses: 77)	Average weight	16.4	kg
		Age 5	(Valid responses: 57)	Average weight	18.4	kg
		Age 6	(Valid responses: 75)	Average weight	20.9	kg
Q3 Sleep time and naps						
1) Sleep time			(Valid responses: 446)	Average sleep hours	9 hr 35 min	
			(Valid responses: 446)	Average bed time	9:00 pm	
			(Valid responses: 446)	Average get-up time	6:45 am	
2) Take naps?			(Valid responses: 443)	• No	249	56.2%
				• Yes	194	43.8%
			(Valid responses: 185)	Average nap hours	1 hr 35 min	
Q4 Frequency of exercising			(Valid responses: 446)	• Almost everyday	294	65.9%
				• 2-4 times a week	116	26.0%
				• Once a week	22	4.9%
				• Rarely	14	3.1%
Q5 Your child's diet during the past month						
1) Eats faster/slower than others			(Valid responses: 443)	• Faster	19	4.3%
				• Average/slower	424	95.7%
2) Drinks sugared beverages almost every day?			(Valid responses: 445)	• Yes	127	28.5%
				• No	318	71.5%
3) Eats seafood 3 times or more per week?			(Valid responses: 446)	• Yes	222	49.8%
				• No	224	50.2%
4) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?			(Valid responses: 446)	• Yes	307	68.8%
				• No	139	31.2%
5) Eats fruit almost every day?			(Valid responses: 445)	• Yes	267	60.0%
				• No	178	40.0%
6) Eats soy products almost every day?			(Valid responses: 445)	• Yes	295	66.3%
				• No	150	33.7%
7) Has dairy products almost every day?			(Valid responses: 446)	• Yes	379	85.0%
				• No	67	15.0%
8) Eats pre-cooked food almost every day?			(Valid responses: 446)	• Yes	39	8.7%
				• No	407	91.3%
9) Eats out almost every day?			(Valid responses: 446)	• Yes	2	0.4%
				• No	444	99.6%

				Number	Percentage
Q6	Child's emotion and behavior (SDQ)				
1) SDQ	(Valid responses: 446)	Average score		8.2 points	
	(Valid responses: 224)	Average score (Boys)		8.9 points	
	(Valid responses: 222)	Average score (Girls)		7.5 points	
		• ≥ 16 points		31	7.0%
		(Boys)		22	9.8%
		(Girls)		9	4.1%
	(Valid responses: 420)	(In Fukushima)		30	7.1%
	(Valid responses: 26)	(Outside of Fukushima)		1	3.8%
2) Child's difficulties and their level	(Valid responses: 445)	• No		341	76.6%
		• Yes (minor difficulties)		91	20.4%
		• Yes (definite difficulties)		9	2.0%
		• Yes (severe difficulties)		4	0.9%
3) Degree of the child's upset	(Valid responses: 103)	• Not at all		51	49.5%
		• Only a little		50	48.5%
		• A medium degree		1	1.0%
		• A great deal		1	1.0%
4) Developmental/psychological problem	(Valid responses: 437)	• Yes		91	20.8%
		(Attention deficiency, hyperactivity)		12	-
		(Autistic spectrum disorder)		14	-
		(Intellectual delays)		15	-
		(Tic)		2	-
		(Bedwetting)		13	-
		(Speech or language problems)		30	-
		(Dietary problems)		39	-
		(Sleep problems)		5	-
		(PTSD)		0	-
		(Other)		19	-
		• No		346	79.2%
Q7	Refusal to go to nursery school, etc.	(Valid responses: 443)	• Yes	84	19.0%
	Missed nursery school, etc. due to refusal?		(Did not miss nursery school, etc.)	65	78.3%
			(Missed nursery school, etc.)	18	21.7%
			• No	351	79.2%
			• Currently not enrolled	8	1.8%
Q8	Availability of consultation resources	(Valid responses: 444)	• Yes	436	98.2%
	Have someone to consult with about child rearing?		(Family)	414	-
			(Neighbor)	65	-
			(Friend)	307	-
			(Medical facility)	77	-
			(Child guidance center)	20	-
			(Public health nurse/midwife)	39	-
			(Nursery school/kindergarten teacher)	278	-
			(Other)	25	-
			• No	8	1.8%
Q9	Influence of the COVID-19 pandemic	(Valid responses: 445)	• Not at all	99	22.2%
	Is the COVID-19 affecting your daily life?		• Not much	86	19.3%
			• To some extent	222	49.9%
			• Very much	38	8.5%

(3) Survey for Elementary School Students

Survey for elementary school students

					Number	Percentage	
Response method			(Valid responses:	1,265)	• Paper	991	78.3%
					• Online	274	21.7%
Sex			(Valid responses:	1,265)	• Boys	623	49.2%
(Average age: 9.8)					• Girls	642	50.8%
Residential location at the time of survey			(Valid responses:	1,265)	• In the prefecture	997	78.8%
					• Outside the prefecture	268	21.2%
Q1 Health condition			(Valid responses:	1,257)	• Very good	478	38.0%
					• Good	513	40.8%
					• Fair	258	20.5%
					• Unsatisfactory	7	0.6%
					• Very unsatisfactory	1	0.1%
Q2 Height	Boys	Grade 1	(Valid responses:	76)	Average height	122.0	cm
		Grade 2	(Valid responses:	63)	Average height	126.9	cm
		Grade 3	(Valid responses:	92)	Average height	131.4	cm
		Grade 4	(Valid responses:	107)	Average height	138.1	cm
		Grade 5	(Valid responses:	130)	Average height	144.5	cm
		Grade 6	(Valid responses:	128)	Average height	152.1	cm
	Girls	Grade 1	(Valid responses:	65)	Average height	120.9	cm
		Grade 2	(Valid responses:	52)	Average height	127.1	cm
		Grade 3	(Valid responses:	117)	Average height	132.4	cm
		Grade 4	(Valid responses:	108)	Average height	139.9	cm
		Grade 5	(Valid responses:	143)	Average height	146.2	cm
		Grade 6	(Valid responses:	127)	Average height	150.4	cm
Weight	Boys	Grade 1	(Valid responses:	76)	Average weight	24.7	kg
		Grade 2	(Valid responses:	62)	Average weight	27.0	kg
		Grade 3	(Valid responses:	92)	Average weight	29.6	kg
		Grade 4	(Valid responses:	108)	Average weight	35.7	kg
		Grade 5	(Valid responses:	129)	Average weight	40.3	kg
		Grade 6	(Valid responses:	125)	Average weight	44.6	kg
	Girls	Grade 1	(Valid responses:	65)	Average weight	23.5	kg
		Grade 2	(Valid responses:	54)	Average weight	27.6	kg
		Grade 3	(Valid responses:	116)	Average weight	29.8	kg
		Grade 4	(Valid responses:	110)	Average weight	33.6	kg
		Grade 5	(Valid responses:	143)	Average weight	38.9	kg
		Grade 6	(Valid responses:	125)	Average weight	43.9	kg
Q3 Sleep time			(Valid responses:	1,260)	Average sleep hours	8 hr 46 min	
			(Valid responses:	1,261)	Average bed time	9:35 pm	
			(Valid responses:	1,260)	Average get-up time	6:21 am	
Q4 Frequency of exercising			(Valid responses:	1,260)	• Almost everyday	112	8.9%
					• 2-4 times a week	366	29.0%
					• Once a week	329	26.1%
					• Rarely	453	36.0%
Q5 Your child's diet during the past month							
1) Eats faster/slower than others			(Valid responses:	1,261)	• Faster	168	13.3%
					• Average/slower	1,093	86.7%
2) Often skips breakfast?			(Valid responses:	1,263)	• Yes	71	5.6%
					• No	1,192	94.4%
3) Drinks sugared beverages almost every day?			(Valid responses:	1,262)	• Yes	309	24.5%
					• No	953	75.5%
4) Eats seafood 3 times or more per week?			(Valid responses:	1,262)	• Yes	599	47.5%
					• No	663	52.5%
5) Eats vegetables, sea vegetables, and/or mushrooms at almost every meal?			(Valid responses:	1,262)	• Yes	905	71.7%
					• No	357	28.3%
6) Eats fruit almost every day?			(Valid responses:	1,261)	• Yes	507	40.2%
					• No	754	59.8%
7) Eats soy products almost every day?			(Valid responses:	1,261)	• Yes	762	60.4%
					• No	499	39.6%
8) Has dairy products almost every day?			(Valid responses:	1,260)	• Yes	1,075	85.3%
					• No	185	14.7%
9) Eats pre-cooked food almost every day?			(Valid responses:	1,261)	• Yes	90	7.1%
					• No	1,171	92.9%
10) Eats out almost every day?			(Valid responses:	1,262)	• Yes	6	0.5%
					• No	1,256	99.5%

				Number	Percentage
Q6	Child's emotion and behavior (SDQ)				
1) SDQ	(Valid responses: 1,261)	Average score		8.1	points
	(Valid responses: 622)	Average score (Boys)		8.5	points
	(Valid responses: 639)	Average score (Girls)		7.7	points
		• ≥ 16 points		114	9.0%
		(Boys)		66	10.6%
		(Girls)		48	7.5%
	(Valid responses: 996)	(In Fukushima)		92	9.2%
	(Valid responses: 265)	(Outside of Fukushima)		22	8.3%
2) Child's difficulties and their level	(Valid responses: 1,258)	• No		978	77.7%
		• Yes (minor difficulties)		212	16.9%
		• Yes (definite difficulties)		54	4.3%
		• Yes (severe difficulties)		14	1.1%
3) Degree of the child's upset	(Valid responses: 276)	• Not at all		99	35.9%
		• Only a little		155	56.2%
		• A medium degree		17	6.2%
		• A great deal		5	1.8%
4) Developmental/psychological problem	(Valid responses: 1,230)	• Yes		214	17.4%
		(Attention deficiency, hyperactivity)		48	-
		(Autistic spectrum disorder)		67	-
		(Learning disability)		23	-
		(Intellectual delays)		29	-
		(Speech or language problems)		39	-
		(Tic)		14	-
		(Bedwetting)		25	-
		(Dietary problems)		49	-
		(Sleep problems)		13	-
		(Depression)		0	-
		(PTSD)		7	-
		(Shut-in/Hikikomori)		3	-
		(Bullying)		6	-
		(Other)		34	-
		• No		1,016	82.6%
Q7	Refusal to go to school	(Valid responses: 1,259)	• Yes	186	14.8%
	Missed school due to refusal?		(Did not miss school)	120	64.5%
			(Missed school < 30 days)	54	29.0%
			(Missed school ≥ 30 days)	12	6.5%
			• No	1,073	85.2%
Q8	Availability of consultation resources	(Valid responses: 1,256)	• Yes	1,224	97.5%
	Have someone to consult with about child rearing?		(Family)	1,140	-
			(Neighbor)	192	-
			(Friend)	833	-
			(Medical facility)	186	-
			(Child guidance center)	36	-
			(School teacher)	664	-
			(School counselor)	118	-
			(Other)	59	-
			• No	32	2.5%
Q9	Influence of the COVID-19 pandemic	(Valid responses: 1,249)	• Not at all	306	24.5%
	Is the COVID-19 affecting your daily life?		• Not much	232	18.6%
			• To some extent	591	47.3%
			• Very much	120	9.6%

(4) Survey for Junior High School Students

					Number	Percentage
Response method		(Valid responses:	693)	• Paper	547	78.9%
				• Online	146	21.1%
Sex		(Valid responses:	693)	• Boys	344	49.6%
(Average age: 13.9)				• Girls	349	50.4%
Residential location at the time of survey		(Valid responses:	693)	• In the prefecture	512	73.9%
				• Outside the prefecture	181	26.1%
Q1 Health condition		(Valid responses:	472)	• Very good	167	35.4%
				• Good	150	31.8%
				• Fair	145	30.7%
				• Unsatisfactory	9	1.9%
				• Very unsatisfactory	1	0.2%
Q2 Height	Boys	Grade 7	(Valid responses:	85)	Average height	159.4 cm
		Grade 8	(Valid responses:	67)	Average height	166.1 cm
		Grade 9	(Valid responses:	69)	Average height	168.5 cm
	Girls	Grade 7	(Valid responses:	77)	Average height	153.9 cm
		Grade 8	(Valid responses:	95)	Average height	156.4 cm
		Grade 9	(Valid responses:	78)	Average height	155.8 cm
Weight	Boys	Grade 7	(Valid responses:	83)	Average weight	49.9 kg
		Grade 8	(Valid responses:	66)	Average weight	52.2 kg
		Grade 9	(Valid responses:	69)	Average weight	57.6 kg
	Girls	Grade 7	(Valid responses:	77)	Average weight	47.1 kg
		Grade 8	(Valid responses:	91)	Average weight	50.4 kg
		Grade 9	(Valid responses:	78)	Average weight	51.0 kg
Q3 Sleep time						
1) Sleep time		(Valid responses:	469)	Average sleep hours	7 hr 34 min	
		(Valid responses:	469)	Average bed time	10:56 pm	
		(Valid responses:	470)	Average get-up time	6:30 am	
2) Sleep time is sufficient?		(Valid responses:	474)	• Sufficient	251	53.2%
				• Slightly insufficient	171	36.2%
				• Insufficient	50	10.6%
Q4 Frequency of exercising		(Valid responses:	472)	• Almost everyday	172	36.3%
				• 2-4 times a week	116	24.5%
				• Once a week	41	8.6%
				• Rarely	145	30.6%
Q5 Diet during the past month						
1) Eat faster/slower than others				• Faster	100	21.3%
		(Valid responses:	469)	• Average/slower	369	78.7%
2) Often skip breakfast?				• Yes	52	11.0%
		(Valid responses:	473)	• No	421	89.0%
3) Go to bed within 1-2 hrs after dinner?				• Yes	43	9.1%
		(Valid responses:	473)	• No	430	90.9%
4) Drink sugared beverages almost every day?				• Yes	124	26.3%
		(Valid responses:	471)	• No	347	73.7%
5) Eat seafood 3 times or more per week?				• Yes	233	49.4%
		(Valid responses:	472)	• No	239	50.6%
6) Eat vegetables, sea vegetables, and/or mushrooms at almost every meal?				• Yes	330	69.8%
		(Valid responses:	473)	• No	143	30.2%
7) Eat fruit almost every day?				• Yes	164	34.7%
		(Valid responses:	473)	• No	309	65.3%
8) Eat soy products almost every day?				• Yes	269	56.9%
		(Valid responses:	473)	• No	204	43.1%
9) Have dairy products almost every day?				• Yes	386	81.6%
		(Valid responses:	473)	• No	87	18.4%
10) Eat pre-cooked food almost every day?				• Yes	67	14.2%
		(Valid responses:	473)	• No	406	85.8%
11) Eat out almost every day?				• Yes	2	0.4%
		(Valid responses:	473)	• No	471	99.6%
Q6 Influence of the COVID-19 pandemic		(Valid responses:	472)	• Not at all	77	16.3%
Is the COVID-19 affecting your daily life?				• Not much	113	23.9%
(From student himself/herself perspective)				• To some extent	211	44.7%
				• Very much	71	15.0%

				Number	Percentage
Q7	Child's emotion and behavior (SDQ)				
1) SDQ	(Valid responses: 681)	Average score		8.1	points
	(Valid responses: 341)	Average score (Boys)		8.3	points
	(Valid responses: 340)	Average score (Girls)		7.8	points
		• ≥ 16 points		74	10.9%
		(Boys)		41	12.0%
		(Girls)		33	9.7%
	(Valid responses: 503)	(In Fukushima)		52	10.3%
	(Valid responses: 178)	(Outside of Fukushima)		22	12.4%
2) Child's difficulties and their level	(Valid responses: 676)	• No		484	71.6%
		• Yes (minor difficulties)		140	20.7%
		• Yes (definite difficulties)		34	5.0%
		• Yes (severe difficulties)		18	2.7%
3) Degree of the child's upset	(Valid responses: 190)	• Not at all		36	18.9%
		• Only a little		123	64.7%
		• A medium degree		19	10.0%
		• A great deal		12	6.3%
4) Developmental/psychological problem	(Valid responses: 669)	• Yes		116	17.3%
		(Attention deficiency, hyperactivity)		31	-
		(Autistic spectrum disorder)		31	-
		(Learning disability)		25	-
		(Intellectual delays)		25	-
		(Tic)		7	-
		(Insomnia)		16	-
		(Sleep rhythm problem)		30	-
		(Eating disorders)		4	-
		(PTSD)		5	-
		(Depression)		7	-
		(Shut-in)		14	-
		(Bullying)		10	-
		(Delinquency)		1	-
		(Other)		20	-
		• No		553	82.7%
Q8	Refusal to go to school	(Valid responses: 679)	• Yes	121	17.8%
	Missed school due to refusal?		(Did not miss school)	46	38.0%
			(Missed school < 30 days)	56	46.3%
			(Missed school $\geq$ 30 days)	19	15.7%
		• No		558	82.2%
Q9	Availability of consultation resources	(Valid responses: 673)	• Yes	648	96.3%
	Have someone to consult with about child rearing?		(Family)	481	-
			(Neighbor)	70	-
			(Friend)	344	-
			(Medical facility)	92	-
			(Child guidance center)	18	-
			(School teacher)	259	-
			(School counselor)	61	-
			(Other)	25	-
		• No		25	3.7%
Q10	Influence of the COVID-19 pandemic	(Valid responses: 673)	• Not at all	131	19.5%
	Is the COVID-19 affecting your daily life?		• Not much	111	16.5%
	(From parents/guardians perspective)		• To some extent	315	46.8%
			• Very much	116	15.0%

(5) Survey for Adults

				Number of persons	Percentage			
Response method	(Valid responses:		35,690)	• Paper	31,827	89.2%		
				• Online	3,863	10.8%		
Sex	(Valid responses:		35,690)	• Male	16,489	46.2%		
(Average age: 63.5)				• Female	19,201	53.8%		
Residential location at the time of survey	(Valid responses:		35,690)	• In the prefecture	30,500	85.5%		
				• Outside the prefecture	5,190	14.5%		
Q1 Health condition	(Valid responses:		30,993)	• Very good	1,621	5.2%		
				• Good	6,301	20.3%		
				• Fair	18,951	61.1%		
				• Unsatisfactory	3,787	12.2%		
				• Very unsatisfactory	333	1.1%		
	Age 16-39	(Valid responses:	4,151)	• Very good	724	17.4%		
				• Good	1,313	31.6%		
				• Fair	1,873	45.1%		
				• Unsatisfactory	214	5.2%		
				• Very unsatisfactory	27	0.7%		
	Age 40-64	(Valid responses:	8,922)	• Very good	445	5.0%		
				• Good	2,037	22.8%		
				• Fair	5,382	60.3%		
				• Unsatisfactory	973	10.9%		
				• Very unsatisfactory	85	1.0%		
	Age 65 and over	(Valid responses:	17,920)	• Very good	452	2.5%		
				• Good	2,951	16.5%		
				• Fair	11,696	65.3%		
				• Unsatisfactory	2,600	14.5%		
				• Very unsatisfactory	221	1.2%		
Q2 Height and weight								
1) Height, weight, BMI								
Height	Male	(Valid responses:	16,160)	Average height	166.2	cm		
	Female	(Valid responses:	18,589)	Average height	153.3	cm		
Weight	Male	(Valid responses:	16,155)	Average weight	66.8	kg		
	Female	(Valid responses:	18,599)	Average weight	54.3	kg		
BMI	Male	(Valid responses:	16,069)	Average BMI	24.2	kg/m ²		
				• < 18.5 kg/m ²	571	3.6%		
				• ≥ 18.5 kg/m ² — < 25.0kg/m ²	9,591	59.7%		
				• ≥ 25.0 kg/m ² — < 27.5kg/m ²	3,466	21.6%		
				• ≥ 27.5 kg/m ² — < 30.0kg/m ²	1,526	9.5%		
				• ≥ 30.0 kg/m ²	915	5.7%		
	Female	(Valid responses:	18,408)	Average BMI	23.1	kg/m ²		
				• < 18.5 kg/m ²	1,405	7.6%		
				• ≥ 18.5 kg/m ² — < 25.0kg/m ²	12,079	65.6%		
				• ≥ 25.0 kg/m ² — < 27.5kg/m ²	2,765	15.0%		
				• ≥ 27.5 kg/m ² — < 30.0kg/m ²	1,223	6.6%		
				• ≥ 30.0 kg/m ²	936	5.1%		
2) Change in weight								
Male	(Valid responses:	15,878)	• Increased by ≥ 3 kg	1,790	11.3%			
			• Almost no change	12,722	80.1%			
			• Decreased by ≥ 3 kg	1,366	8.6%			
			Female	(Valid responses:	18,330)	• Increased by ≥ 3 kg	2,379	13.0%
						• Almost no change	14,581	79.5%
						• Decreased by ≥ 3 kg	1,370	7.5%
Q3 Past Medical history								
1) Hypertension (or high blood pressure)								
	(Valid responses:	34,882)	• No	18,934	54.3%			
			• Yes	15,948	45.7%			
			(Currently under treatment)	14,393	91.7%			
			(Not under treatment)	1,309	8.3%			
2) Diabetes (or uncontrolled blood sugar)								
	(Valid responses:	34,340)	• No	28,369	83.4%			
			• Yes	5,701	16.6%			
			(Currently under treatment)	5,117	91.5%			
			(Not under treatment)	474	8.5%			

				Number of persons	Percentage
Q3 Past Medical history					
3) Hyperlipidemia	(Valid responses: 34,309)	• No		21,296	62.1%
		• Yes		13,013	37.9%
		(Currently under treatment)		9,396	73.9%
		(Not under treatment)		3,303	26.1%
4) Mental disorder	(Valid responses: 34,577)	• No		31,463	91.0%
		• Yes		3,114	9.0%
		(Currently under treatment)		2,299	75.9%
		(Currently not under treatment due to improvement)		425	14.0%
		(Not under treatment)		305	10.1%
5) Cancer (incl. leukemia & lymphoma)	(Valid responses: 34,756)	• No		32,046	92.2%
		• Yes		2,710	7.8%
6) Stroke	(Valid responses: 34,818)	• No		33,269	95.6%
		• Yes		1,549	4.4%
		(Occlusive stroke)		1,106	-
		(Cerebral hemorrhage)		174	-
		(Subarachnoid hemorrhage)		158	-
		(Other)		17	-
		(I don't know)		126	-
7) Heart disease	(Valid responses: 34,938)	• No		30,434	87.1%
		• Yes		4,504	12.9%
		(Myocardinal infarction)		547	-
		(Angina)		1,204	-
		(Arrhythmia)		2,273	-
		(Other)		734	-
		(I don't know)		272	-
8) Thyroid disease	(Valid responses: 34,701)	• No		33,337	96.1%
		• Yes		1,364	3.9%
		(Hyperthyroidism [Basedow disease])		273	-
		(Hypothyroidism)		598	-
		(Other)		505	-
Q4 Sleeping habits					
1) Sleep time	(Valid responses: 34,975)	Average sleep time		6 hr 58 min	
2) Satisfaction with sleep	(Valid responses: 31,634)	• Sufficient		13,143	41.5%
		• Slightly insufficient		14,454	45.7%
		• Very insufficient		3,389	10.7%
		• Greatly insufficient		648	2.0%
3) Sleep experience					
1. Takes time to fall asleep after getting in bed	(Valid responses: 31,059)	• Yes		11,649	37.5%
		• No		19,410	62.5%
2. Wake up at night in the middle of sleep	(Valid responses: 31,235)	• Yes		20,339	65.1%
		• No		10,896	34.9%
3. Wake up before intended time and can't go back to sleep	(Valid responses: 30,635)	• Yes		11,675	38.1%
		• No		18,960	61.9%
4. Total sleep time is insufficient	(Valid responses: 30,229)	• Yes		10,603	35.1%
		• No		19,626	64.9%
5. Feel depressed during the day	(Valid responses: 29,977)	• Yes		6,556	21.9%
		• No		23,421	78.1%
6. Low physical/mental activity level during the day	(Valid responses: 30,204)	• Yes		7,710	25.5%
		• No		22,494	74.5%
7. Feel sleepy during the day	(Valid responses: 30,679)	• Yes		14,045	45.8%
		• No		16,634	54.2%
Q5 Frequency of exercising					
	(Valid responses: 35,028)	• Almost everyday		6,396	18.3%
		• 2-4 times a week		9,140	26.1%
		• Once a week		5,894	16.8%
		• Rarely		13,598	38.8%
	In Fukushima (Valid responses: 29,895)	• Almost everyday		5,594	18.7%
		• 2-4 times a week		7,795	26.1%
		• Once a week		5,029	16.8%
		• Rarely		11,477	38.4%
	Outside of Fukushima (Valid responses: 5,133)	• Almost everyday		802	15.6%
		• 2-4 times a week		1,345	26.2%
		• Once a week		865	16.9%
		• Rarely		2,121	41.3%

				Number of persons	Percentage
Q6	Smoking	(Valid responses: 33,655)	• I have never smoked	19,414	57.7%
			• I quit	9,838	29.2%
			• Yes	4,403	13.1%
	Male (Valid responses: 15,837)			3,397	21.4%
	Female (Valid responses: 17,818)			1,006	5.6%
	(Valid responses: 4,215)		Average years of smoking	33.7 years	
	(Valid responses: 4,323)		Average no. of cigarettes per day	15.2	15.1
Q7	Alcohol				
	1) Alcohol consumption	(Valid responses: 33,841)	• No, or rarely	18,501	54.7%
			• I quit	1,680	5.0%
			• Yes (Once a month or more)	13,660	40.4%
	2) Frequency of consumption	(Valid responses: 13,072)	• 1 day per week	1,898	14.5%
			• 2 days per week	1,312	10.0%
			• 3 days per week	1,245	9.5%
			• 4 days per week	775	5.9%
			• 5 days per week	1,409	10.8%
			• 6 days per week	1,623	12.4%
			• 7 days per week	4,810	36.8%
	3) Daily alcohol consumption	(Valid responses: 12,712)	Average amount	1.1 gou*	
		(Valid responses: 33,841)	No. of those who drink 2 gou* or more	2,650	7.8%
			* 1 gou = a glass of Sake (approximately 180 ml)		
	4) Experiences related to alcohol				
	1. Have you ever felt the necessity of cut back on drinking?		• No	9,020	71.2%
		(Valid responses: 12,664)	• Yes	3,644	28.8%
	2. Have you ever felt offended because others accused you of drinking ?		• No	11,499	91.5%
		(Valid responses: 12,563)	• Yes	1,064	8.5%
	3. Have you felt guilty about drinking ?		• No	11,191	89.0%
		(Valid responses: 12,576)	• Yes	1,385	11.0%
	4. Have you ever had an another drink in the morning for curing a hangover?		• No	11,756	93.4%
		(Valid responses: 12,580)	• Yes	824	6.6%
			≥ 2 points on CAGE	1,631	13.0%
		(Valid responses: 8,595)	Male	1,317	15.3%
		(Valid responses: 3,920)	Female	314	8.0%
	Male (Valid responses: 691)		Age 20 - 39	84	12.2%
		(Valid responses: 2,700)	Age 40cc-64	474	17.6%
		(Valid responses: 5,204)	Age 65 and over	759	14.6%
	Female (Valid responses: 678)		Age 20 - 39	65	9.6%
		(Valid responses: 1,653)	Age 40cc-64	148	9.0%
		(Valid responses: 1,589)	Age 65 and over	101	6.4%
	Male (Valid responses: 7,416)		In Fukushima	1,129	15.2%
		(Valid responses: 1,179)	Outside of Fukushima	188	15.9%
	Female (Valid responses: 3,122)		In Fukushima	239	7.7%
		(Valid responses: 798)	Outside of Fukushima	75	9.4%
Q8	Appetite	(Valid responses: 34,191)	• No days	28,026	82.0%
	How often did you lose appetite over the past 2 weeks?		• Several days	4,956	14.5%
			• Most days	704	2.1%
			• Almost every day	505	1.5%

			Number of persons	Percentage
Q9 Diet during the past month				
1) Eat faster/slower than others?		• Faster	9,412	26.7%
	(Valid responses: 35,231)	• Average/slower	25,819	73.3%
2) Often skip breakfast?		• Yes	4,995	14.2%
	(Valid responses: 35,243)	• No	30,248	85.8%
3) Go to bed within 1-2 hrs after dinner?		• Yes	10,012	28.5%
	(Valid responses: 35,133)	• No	25,121	71.5%
4) Drink sugared beverages almost every day?		• Yes	7,301	20.8%
	(Valid responses: 35,024)	• No	27,723	79.2%
5) Eat seafood 3 times or more per week?		• Yes	20,939	59.6%
	(Valid responses: 35,144)	• No	14,205	40.4%
6) Eat vegetables, sea vegetables, and/or mushrooms at almost every meal?		• Yes	24,279	68.8%
	(Valid responses: 35,276)	• No	10,997	31.2%
7) Eat fruit almost every day?		• Yes	17,323	49.2%
	(Valid responses: 35,201)	• No	17,878	50.8%
8) Eat soy products almost every day?		• Yes	23,869	67.6%
	(Valid responses: 35,287)	• No	11,418	32.4%
9) Have dairy products almost every day?		• Yes	23,033	65.5%
	(Valid responses: 35,167)	• No	12,134	34.5%
10) Eat pre-cooked food almost every day?		• Yes	7,502	21.4%
	(Valid responses: 35,119)	• No	27,617	78.6%
Q10 General mental health status				
1) Kessler psychological distress scale (K6)	(Valid responses: 30,928)	Average score	3.9 points	
	(Valid responses: 14,390)	Average score (Male)	3.6 points	
	(Valid responses: 16,538)	Average score (Female)	4.2 points	
		• ≥ 13 points	1,608	5.2%
	(Valid responses: 14,390)	(Male)	682	4.7%
	(Valid responses: 16,538)	(Female)	926	5.6%
	(Valid responses: 4,158)	(Age 16 - 39)	352	8.5%
	(Valid responses: 8,974)	(Age 40 - 64)	535	6.0%
	(Valid responses: 17,796)	(Age 65 and older)	721	4.1%
	(Valid responses: 26,323)	(In Fukushima)	1,260	4.8%
	(Valid responses: 4,605)	(Outside of Fukushima)	348	7.6%
2) Hindrance to daily life	(Valid responses: 31,632)	• Not at all	21,882	69.2%
		• Only a little	6,462	20.4%
		• Sometimes	2,296	7.3%
		• Most of the time	528	1.7%
		• Always	464	1.5%
Q11 Life events				
Life events experienced over the past year		• Returned to hometown due to lifting of evacuation orders	2,058	-
*Multiple answers allowed		• Relocated due to a reason other than the above	1,576	-
		• Got married	450	-
		• Child/grandchild was born	3,051	-
		• Deterioration of health status	8,966	-
		• Deterioration of a family member's health status	4,863	-
		• Started nursing care for a family member	3,216	-
		• Got divorced/separated from the partner	359	-
		• Started living apart from the family	1,911	-
		• Death of a family member	2,345	-
		• Death of a loved one other than family members	5,338	-
		• Entering higher education	979	-
		• Started working or changed jobs	1,561	-
		• Promotion at work	393	-
		• Lost a job	930	-
		• Retired or quit a job	1,197	-
		• Deterioration of the financial status	4,236	-
		• Suffering from natural disasters	2,352	-
		• Increased interpersonal problems	1,845	-
		• Other significant event	1,366	-
		• None of the above	9,168	-

				Number of persons	Percentage
Q12 Influence of the COVID-19 pandemic Impact on daily life	(Valid responses:	32,776)	• Not at all	11,564	35.3%
			• Not much	7,199	22.0%
			• To some extent	10,832	33.0%
			• Very much	3,181	9.7%
	Male (Valid responses:	15,403)	• Not at all	5,614	36.4%
			• Not much	3,335	21.7%
			• To some extent	5,015	32.6%
			• Very much	1,439	9.3%
	Female (Valid responses:	17,373)	• Not at all	5,950	34.2%
			• Not much	3,864	22.2%
			• To some extent	5,817	33.5%
			• Very much	1,742	10.0%
	Age 16-39 (Valid responses:	4,704)	• Not at all	2,046	43.5%
			• Not much	766	16.3%
			• To some extent	1,386	29.5%
			• Very much	506	10.8%
	Age 40-64 (Valid responses:	9,212)	• Not at all	3,007	32.6%
			• Not much	2,089	22.7%
			• To some extent	3,136	34.0%
			• Very much	980	10.6%
	Age 65 and older (Valid responses:	18,860)	• Not at all	6,511	34.5%
			• Not much	4,344	23.0%
			• To some extent	6,310	33.5%
			• Very much	1,695	9.0%
Kessler psychological distress scale (K6)					
≥ 13 points					
	(Valid responses:	16,433)	• Not at all / Not much	435	2.6%
	(Valid responses:	12,428)	• To some extent / Very much	1,009	8.1%
Interfering event during COVID 19 pandemic					
*Multiple answers allowed					
			• Deterioration of health status	5,164	-
			• Deterioration of a family member's health status	2,723	-
			• Nursing care for a family member	1,627	-
			• Got divorced/separated from the partner	97	-
			• Started living apart from the family	652	-
			• Death of a family member	812	-
			• Death of a loved one other than family members	2,079	-
			• Started working or changed jobs	448	-
			• Lost a job	466	-
			• Retired or quit a job	372	-
			• Increased interpersonal problems	4,670	-
			• Entering higher education	1,119	-
			• Other significant event	3,087	-
Q13 Great East Japan Earthquake and trauma reactions					
1) Events experienced during and after the earthquake					
*Multiple answers allowed					
			• Earthquake	29,547	-
			• Tsunami	5,955	-
			• Nuclear accident	26,836	-
			• None of the above	1,280	-
2) Trauma reactions (PCL-4)					
	(Valid responses:	27,304)	Average score	6.5	points
	(Valid responses:	12,804)	Average score (Male)	6.4	points
	(Valid responses:	14,500)	Average score (Female)	6.6	points
			• ≥ 12 points	2,303	8.4%
	(Valid responses:	12,804)	(Male)	1,041	8.1%
	(Valid responses:	14,500)	(Female)	1,262	8.7%
	(Valid responses:	3,976)	(Age 16 - 39)	202	5.1%
	(Valid responses:	8,548)	(Age 40 - 64)	542	6.3%
	(Valid responses:	14,780)	(Age 65 and older)	1,559	10.5%
	(Valid responses:	22,975)	(In Fukushima)	1,876	8.2%
	(Valid responses:	4,329)	(Outside of Fukushima)	427	9.9%

				Number of persons	Percentage
Q14 Current living conditions					
1) Living condition with family					
Do you live apart from family members that you used to live with due to the earthquake? (Valid responses: 34,132)			• Yes	8,902	26.1%
			• No	25,230	73.9%
2) People you live with					
*Multiple answers allowed			• No one (living alone)	5,445	-
			• Spouse or life partner	20,999	-
			• Children (incl. in-laws)	12,563	-
			• Grandchildren	3,520	-
			• Parents (incl. in-laws)	6,364	-
			• Grandparents	960	-
			• Other	1,410	-
3) Current living conditions					
3-1) Types of residence					
*Multiple answers allowed			• Owned house	27,292	-
			• Rented house/apartment	4,416	-
			• Housing provided by municipalities	576	-
			• Restoration public housing	1,852	-
			• Relative's house	526	-
			• Temporally housing	23	-
			• Other	392	-
3-2) Evacuation status (Valid responses: 21,023)					
			• Living in the house at the original address	9,386	44.6%
			• Living at a different address in the same area where the evacuation order has been lifted	5,773	27.5%
			• Living out side of the area where the evacuation order has been lifted	5,864	27.9%
4) Employment status (Valid responses: 32,770)					
			• Full-time/self-employed	9,739	29.7%
			• Part-time	2,991	9.1%
			• Unemployed (incl. students, home-makers, etc.)	20,040	61.2%
5) Financial circumstances (Valid responses: 34,142)					
			• Tough	2,944	8.6%
			• Slightly tough	7,871	23.1%
			• Normal	20,975	61.4%
			• Slightly comfortable	1,687	4.9%
			• Comfortable	665	1.9%
Q15 Risk perception of radiation health effects					
1) Risk perception of radiation health effects					
1 Possibility of disorders (cancer, etc.) in later years? (Valid responses: 30,555)			• Very low	7,605	24.9%
			• Low	14,583	47.7%
			• High	7,059	23.1%
			• Very high	1,308	4.3%
In Fukushima (Valid responses: 25,958)					
			• Very low	6,538	25.2%
			• Low	12,595	48.5%
			• High	5,836	22.5%
			• Very high	989	3.8%
Outside of Fukushima (Valid responses: 4,597)					
			• Very low	1,067	23.2%
			• Low	1,988	43.2%
			• High	1,223	26.6%
			• Very high	319	6.9%
2 Possibility of disorders in future generations? (Valid responses: 29,971)					
			• Very low	7,172	23.9%
			• Low	14,653	48.9%
			• High	6,721	22.4%
			• Very high	1,425	4.8%
In Fukushima (Valid responses: 25,446)					
			• Very low	6,072	23.9%
			• Low	12,652	49.7%
			• High	5,605	22.0%
			• Very high	1,117	4.4%
Outside of Fukushima (Valid responses: 4,525)					
			• Very low	1,100	24.3%
			• Low	2,001	44.2%
			• High	1,116	24.7%
			• Very high	308	6.8%
2) Hindrance to daily life (Valid responses: 30,478)					
Daily life hindered by fear of radiation during the past month?			• Frequently	709	2.3%
			• Sometimes	2,566	8.4%
			• Rarely	4,539	14.9%
			• Never	22,664	74.4%

					Number of persons	Percentage
Q16	Availability of consultation resources	(Valid responses:	34,793)	• Yes	31,121	89.4%
	Do you have someone to consult with or			- Family/relatives	27,272	-
	talk about you mental/physical problems?			- Friends/acquaintances	15,602	-
				- Colleagues/superiors	3,138	-
				- Municipal consultation service,	7,055	-
				incl. municipal health offices / centers		
				- Prefectural consultation service,	1,576	-
				incl. prefectural health offices/welfare centers		
				- Fukushima Mental Health and Welfare Center	647	-
				- Fukushima Center for Disaster Mental Health	1,014	-
				- Visiting care/nursing care service	2,288	-
				- Mental health clinics, or psychosomatic therapy	4,036	-
				- Medical facilities other than the above	9,027	-
				- Religious organizations, or church etc.	566	-
				- Other	249	-
				• No	3,672	10.6%

<Survey Question relates to the health effects of radiation>

Risk perception of health effects of radiation in the 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 the 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 fourth-round survey)

As of March 31, 2022

1. Summary

1.1 Purpose

In order to monitor the long-term health of children, we are now engaged in the Full-Scale Survey (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 assess thyroid gland status.

1.2 Eligible Persons

All Fukushima residents approximately 18 years old or younger at the time of the Great East Japan Earthquake (those born between April 2, 1992 and April 1, 2012).

1.3 Implementation Period

FY2018 and FY2019, starting in April 2018:

1.3-1 For those 18 years old or younger

The examination will be carried out on a municipality-by-municipality basis in FY2018 and FY2019.

1.3-2 For those 19-20 years old

The examination will be carried out on an age group basis (i.e., school grade).

FY2018: those born in FY1996 and FY1998

FY2019: those born in FY1997 and FY1999

1.3-3 For those 25 years old and older

Those who are older than 20 are recommended to receive the examination every 5 years at the ages of 25, 30, and so on.

FY 2018: those born in FY1993

FY 2019: those born in FY1994

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

1.4 Implementing Organizations (Number of medical facilities with agreements for implementation of thyroid examinations as of March 31, 2022)

Fukushima Prefecture commissioned Fukushima Medical University (FMU) to conduct the survey in cooperation with organizations inside and outside Fukushima for the convenience of participants.

1.4-1 Primary examination facilities

In Fukushima Prefecture	83 medical facilities
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Outside Fukushima Prefecture	129 medical facilities
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1.4-2 Confirmatory examination facilities

In Fukushima Prefecture	5 medical facilities, including FMU
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Outside Fukushima Prefecture	37 medical facilities
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1.5 Method

1.5-1 Primary examination

Ultrasonography of the thyroid gland

Assessments are made by specialists on the basis of the following criteria:

- Grade A
 - A1: No nodules/cysts
 - A2: Nodules ≤ 5.0 mm and/or cysts ≤ 20.0 mm
- Grade B
 - Nodules ≥ 5.1 mm and/or cysts ≥ 20.1 mm
 - Some A2 results may be re-classified as B results when clinically indicated.
- Grade C
 - 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.

1.5-3 Flow chart

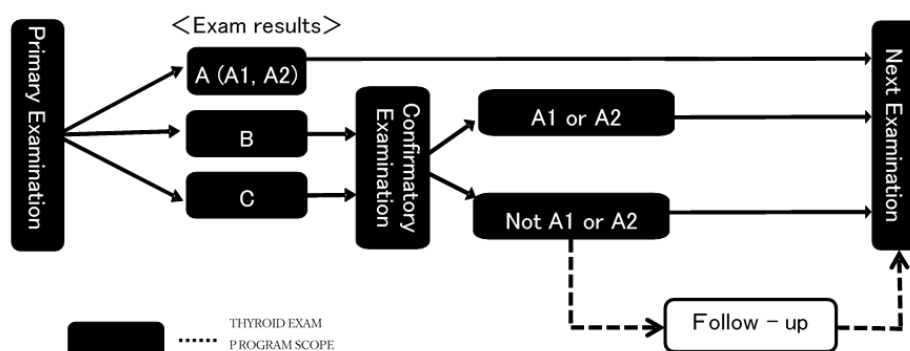


Fig.1 Flow chart

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:

- 25 municipalities covered in FY2018
- 34 municipalities covered in FY2019

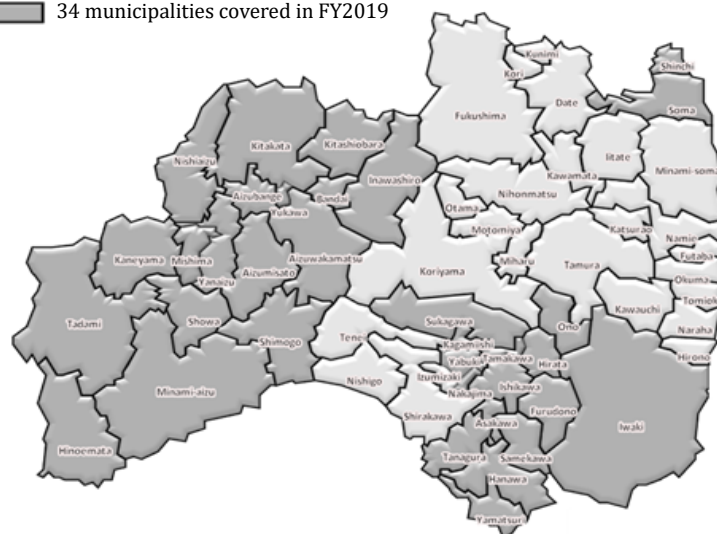


Fig.2 Municipalities surveyed in FY2018 and FY2019

Note: Primary examinations scheduled in March 2020 at elementary and junior high schools in Iwaki City, but postponed due to the COVID-19 pandemic, were conducted in September and October of 2020.

2. Results as of March 31, 2022

2.1 Results of the Primary Examination

2.1-1 Implementation status

The examination was carried out for 183,407 (62.3%) participants by March 31, 2022

(Implementation status for each municipality and prefectures other than Fukushima are shown in Appendix 1 and Appendix 2).

Results of 183,398 participants (100.0%) have been finalized and individual result reports were already sent to them. (Result for each municipality are shown in Appendix 3).

Of these, 61,708 (33.6%) had Grade A1 results; 120,298 (65.6%) were Grade A2; 1,392 (0.8%) were Grade B; none were Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)			Participants with finalized results (%)					
		b	(b/a)		Outside the prefecture	A		Those referred to confirmatory exam		
						A1	A2	B	C	
						d	(d/c)	e	(e/c)	f
FY2018	168,023	108,000 (64.3)	7,231	107,994 (100.0)	36,893 (34.2)	70,396 (65.2)	705 (0.7)	0 (0.0)		
FY2019	126,205	75,407 (59.7)	3,000	75,404 (100.0)	24,815 (32.9)	49,902 (66.2)	687 (0.9)	0 (0.0)		
Total	294,228	183,407 (62.3)	10,231	183,398 (100.0)	61,708 (33.6)	120,298 (65.6)	1,392 (0.8)	0 (0.0)		

Table 2 Number and percentage of participants with nodules/cysts

	Participants with finalized results a	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
		b (b/a)	c (c/a)	d (d/a)	e (e/a)
FY2018	107,994	701 (0.6)	368 (0.3)	4 (0.0)	70,754 (65.5)
FY2019	75,404	686 (0.9)	300 (0.4)	1 (0.0)	50,245 (66.6)
Total	183,398	1,387 (0.8)	668 (0.4)	5 (0.0)	120,999 (66.0)

- Percentages are rounded to a lower decimal place. This applies to other tables as well.
- Those born between FY1992 and FY1995 are excluded as they are eligible for the Age 25 Survey. Results for Age 25 Survey participants will be reported separately.
- Age 25 Survey for those born in FY1992 (approx. 23,000), FY1993 (approx. 22,000), FY1994 (approx. 22,000), and FY1995 (approx. 21,000) took place in FY2017, FY2018, FY2019, and FY2020, respectively.

2.1-2 Participation rates by age group

The participation rate for each age group as of April 1 of each year is shown in Table 3.

Table 3 Participation rates by age group

		Total	Age group		
FY2018	Age group*		6-11	12-17	18-24
	Survey population (a)	168,023	56,935	64,826	46,262
	Participants (b)	108,000	49,638	52,673	5,689
	Participation rate (%) (b/a)	64.3	87.2	81.3	12.3
FY2019	Age group *		7-11	12-17	18-24
	Survey population (a)	126,205	34,206	47,274	44,725
	Participants (b)	75,407	30,187	39,253	5,967
	Participation rate (%) (b/a)	59.7	88.3	83.0	13.3
Total	Survey population (a)	294,228	91,141	112,100	90,987
	Participants (b)	183,407	79,825	91,926	11,656
	Participation rate (%) (b/a)	62.3	87.6	82.0	12.8

- Age groups are based on 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 163,674 participants with Grade A1 or A2 results in the third-round survey, 162,995 (99.6%) had Grade A1 or A2 results, and 679 (0.4%) had Grade B results in the fourth-round survey.

Among 731 participants Grade B results in the third-round survey, 148 (20.2%) had Grade A1 or A2 results, and 583 (79.8%) had Grade B results in the fourth-round survey.

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

			Results of the third-round survey*	Results of the fourth-round survey**			
				A		B	C
				A1	A2		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the third-round survey	A	A1	56,479 (100.0)	42,753 (75.7)	13,619 (24.1)	107 (0.2)	0 (0.0)
		A2	107,195 (100.0)	11,281 (10.5)	95,342 (88.9)	572 (0.5)	0 (0.0)
	B		731 (100.0)	12 (1.6)	136 (18.6)	583 (79.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		18,993 (100.0)	7,662 (40.3)	11,201 (59.0)	130 (0.7)	0 (0.0)
	Total		183,398 (100.0)	61,708 (33.6)	120,298 (65.6)	1,392 (0.8)	0 (0.0)

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

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By March 31, 2022, 1,036 (74.4%) of 1,392 people have received the examination. Of those, 1,013 (97.8%) had completed the entire process of the confirmatory examination. (Progress and results of the confirmatory examination are shown in Table 5.)

Of the aforementioned 1,013 participants, 94 (9.3%) were confirmed to meet Grade A diagnostic criteria by the primary examination standards (A1: 6, A2: 88) (including those with other thyroid conditions).

The remaining 919 (90.7%) were confirmed to be outside of A1/A2 criteria.

Table 5 Progress and results of the confirmatory examination

	Those referred to confirmatory exams a	Participants (%) b (b/a)	Those with finalized results (%)					
			Total c (c/b)	A1	A2	Not A1 or A2		
				d (d/c)	e (e/c)	f (f/c)	FNAC g (g/f)	
FY2018	705	525 (74.5)	516 (98.3)	3 (0.6)	46 (8.9)	467 (90.5)	48 (10.3)	
FY2019	687	511 (74.4)	497 (97.3)	3 (0.6)	42 (8.5)	452 (90.9)	43 (9.5)	
Total	1,392	1,036 (74.4)	1,013 (97.8)	6 (0.6)	88 (8.7)	919 (90.7)	91 (9.9)	

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

Among those who underwent FNAC, 39 had nodules classified as malignant or suspicious for malignancy: 17 of them were male, and 22 were female.

Participants' age at the time of the confirmatory examination ranged from 9 to 24 years (mean age: 17.0 ± 3.1 years). The minimum and maximum tumor diameters were 6.1 mm and 29.4 mm. Mean tumor diameter was 13.1 ± 6.3 mm.

Of these 39 participants, 26 had Grade A results (A1: 6, A2: 20) and 9 had Grade B results in the third-round survey. The remaining 4 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 :	22*
• Male to female ratio :	11:11
• Mean age $\pm$ SD (min – max):	16.9 $\pm$ 3.5 (11 – 24), 8.5 $\pm$ 3.1 (2 – 14) at the time of disaster
• Mean tumor size:	11.7 $\pm$ 5.1 mm (6.9 – 29.4mm)
B. Municipalities surveyed in FY 2019	
• Malignant or suspicious for malignancy :	17*
• Male to female ratio :	6:11
• Mean age $\pm$ SD (min – max) :	17.1 $\pm$ 2.7 (9 – 20), 8.1 $\pm$ 2.8 (0 – 12) at the time of disaster
• Mean tumor size $\pm$ SD (min – max):	14.9 $\pm$ 7.3 mm (6.1 – 29.0 mm)
C. Total	
• Malignant or suspicious for malignancy :	39*
• Male to female ratio :	17:22
• Mean age $\pm$ SD (min – max):	17.0 $\pm$ 3.1 (9 – 24), 8.3 $\pm$ 2.9 (0 – 14) at the time of disaster
• Mean tumor size $\pm$ SD (min – max):	13.1 $\pm$ 6.3 mm (6.1 – 29.4 mm)

* Appendix 6 shows surgery cases.

2.2-3 Age distribution of malignant or suspected malignant cases diagnosed by FNAC

Age distributions of 39 people with malignant or suspected malignant nodules based on their age as of March 11, 2011 is per Fig. 3, and age distribution based on their age at the time of confirmatory examination is per Fig. 4.

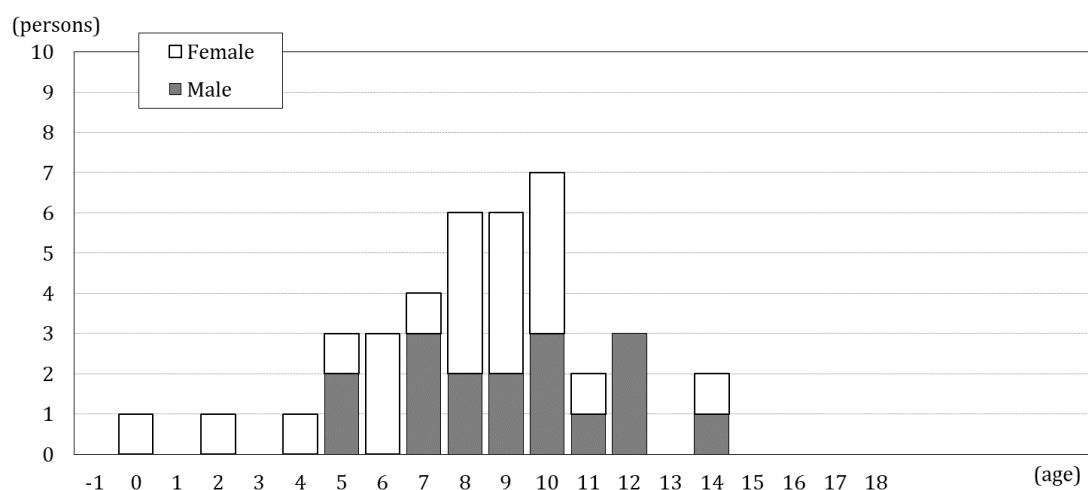


Fig. 3 Age as of March 11, 2011

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

The horizontal axis begins at -1 to include those born between April 2, 2011, and April 1, 2012.

*Those born between March 12 and April 1, 2011, are included as age 0.

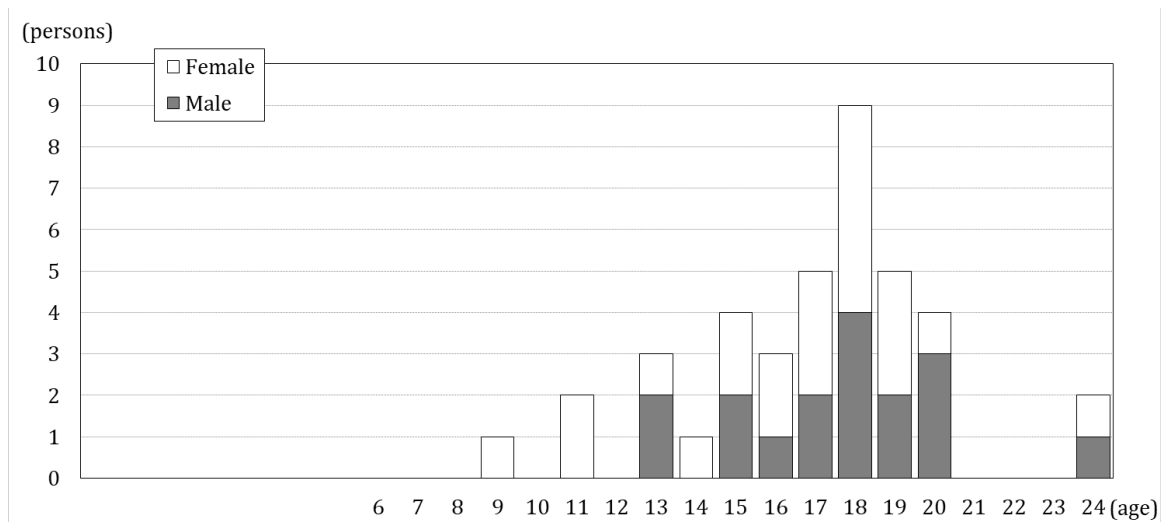


Fig.4 Age as of the date of confirmatory examination

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

Of the 39 people with malignant or suspicious nodules, 19 people (48.7%) had participated in the Basic Survey (for external radiation dose estimation), and all 19 received their results. The highest effective dose documented was 2.4 mSv.

Table 7 A breakdown of dose estimates for Basic Survey participants

Effective dose (mSv)	Age at the time of the disaster									
	0-5		6-10		11-15		16-18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	0	2	3	4	0	0	0	0	3	6
1-1.9	0	0	2	1	2	0	0	0	4	1
2-4.9	2	0	0	2	1	0	0	0	3	2
5-9.9	0	0	0	0	0	0	0	0	0	0
10-19.9	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	2	2	5	7	3	0	0	0	10	9

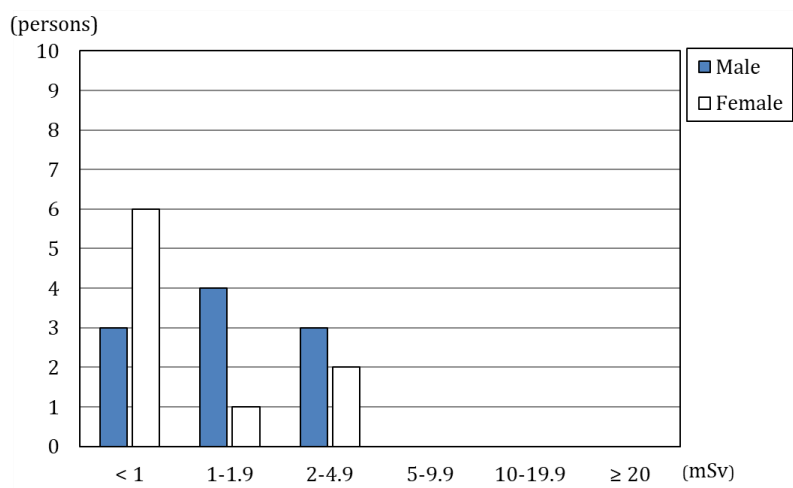


Fig. 5 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 8 Blood test results

	FT4 ¹⁾ (ng/dL)	FT3 ²⁾ (pg/mL)	TSH ³⁾ (μIU/mL)	Tg ⁴⁾ (ng/mL)	TgAb ⁵⁾ (IU/mL)	TPOAb ⁶⁾ (IU/mL)
Reference Range	0.95–1.74 ⁷⁾	2.13–4.07 ⁷⁾	0.340–3.880 ⁷⁾	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 39	1.3±0.1 (2.6%)	3.5±0.5 (0.0%)	1.3±0.7 (2.6%)	32.7±51.8 (25.6%)	38.5%	25.6%
Other: 931	1.2±0.2 (5.0%)	3.5±0.7 (6.8%)	1.2±0.8 (7.7%)	32.8±113.4 (16.6%)	6.9%	6.9%

Table 9 Urinary iodine test results

(μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 39	35	93	189	415	1,783
Other: 921	32	119	192	345	31,920

- 1) FT4: free thyroxine, thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 2) FT3: free triiodothyronine, thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
- 4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
- 5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
- 6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
- 7) Reference interval varies according to age.

2.2-6 Confirmatory examination results by area

The percentages of those with malignant or suspicious nodules were 0.03% in Hamadori and 0.02% in Nakadori and Aizu, versus 0.01% in the 13 municipalities of the nationally-designated evacuation zone.

Table 10 Confirmatory examination results by area

	Number of participants 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⁾	22,565	151	0.7	123	2	0.01
Nakadori ²⁾	104,143	711	0.7	517	23	0.02
Hamadori ³⁾	33,764	323	1.0	245	9	0.03
Aizu ⁴⁾	22,935	207	0.9	151	5	0.02
Total	183,407	1,392	0.8	1,036	39	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, 2022, all 2,654 (100%) of 2,655 participants had visited these consultation booths.

3.2 On-location Lectures and Information Sessions

To help participants or their parents/guardians improve their understanding of the thyroid examination, we have conducted on-location lectures and information sessions since April 2018.

By March 31, 2020, a total of 1,063 people had participated in these sessions, offered at 32 locations.

3.3 Support for Confirmatory Examination Participants

A support team has been set up within Fukushima Medical University to offer psychological support to address any anxieties and concerns of confirmatory examination participants during examination. The team also answers questions and offers counseling via our website.

Since the start of the fourth-round survey, 483 participants (163 males and 320 females) have received support as of March 31, 2022. The number of support sessions provided was 959 in total. Of these, 480 (50.1%) received support at the participants' first examination and 479 (49.9%) 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, 2022

	Number of eligible persons a	Participants b	Participation outside Fukushima ¹⁾	%	Number of participants and participation rate by age group ²⁾			Participants living outside Fukushima c ³⁾	%
					6-11	12-17	18-24		
Municipalities surveyed in FY2018									
Kawamata	1,832	1,135	26	62.0	472 41.6	576 50.7	87 7.7	61	5.4
Namie	2,858	1,520	311	53.2	587 38.6	718 47.2	215 14.1	370	24.3
Iitate	852	544	19	63.8	220 40.4	279 51.3	45 8.3	31	5.7
Minamisoma	10,201	6,008	845	58.9	2,495 41.5	2,980 49.6	533 8.9	951	15.8
Date	8,781	5,929	194	67.5	2,333 39.3	3,042 51.3	554 9.3	235	4.0
Tamura	5,435	3,425	71	63.0	1,515 44.2	1,640 47.9	270 7.9	113	3.3
Hirono	801	448	35	55.9	183 40.8	215 48.0	50 11.2	38	8.5
Naraha	1,094	598	50	54.7	220 36.8	296 49.5	82 13.7	61	10.2
Tomioka	2,340	1,194	198	51.0	445 37.3	571 47.8	178 14.9	220	18.4
Kawauchi	267	152	10	56.9	55 36.2	85 55.9	12 7.9	15	9.9
Okuma	2,020	1,139	211	56.4	442 38.8	551 48.4	146 12.8	226	19.8
Futaba	978	364	63	37.2	146 40.1	179 49.2	39 10.7	66	18.1
Katsurao	174	109	3	62.6	39 35.8	57 52.3	13 11.9	5	4.6
Fukushima	43,240	29,066	1,853	67.2	11,774 40.5	14,384 49.5	2,908 10.0	2,026	7.0
Nihonmatsu	8,104	5,474	204	67.5	2,275 41.6	2,780 50.8	419 7.7	210	3.8
Motomiya	4,910	3,202	101	65.2	1,401 43.8	1,564 48.8	237 7.4	125	3.9
Otama	1,285	918	26	71.4	416 45.3	440 47.9	62 6.8	20	2.2
Koriyama	52,558	33,390	2,539	63.5	13,495 40.4	16,706 50.0	3,189 9.6	2,718	8.1
Koori	1,609	1,130	32	70.2	465 41.2	545 48.2	120 10.6	44	3.9
Kunimi	1,204	810	18	67.3	296 36.5	432 53.3	82 10.1	28	3.5
Tenei	839	525	8	62.6	224 42.7	262 49.9	39 7.4	12	2.3
Shirakawa	9,970	6,522	276	65.4	2,624 40.2	3,294 50.5	604 9.3	340	5.2
Nishigo	3,263	2,214	96	67.9	920 41.6	1,083 48.9	211 9.5	117	5.3
Izumizaki	1,025	668	5	65.2	277 41.5	336 50.3	55 8.2	8	1.2
Miharu	2,383	1,516	37	63.6	562 37.1	780 51.5	174 11.5	45	3.0
Subtotal	168,023	108,000	7,231	64.3	43,881 40.6	53,795 49.8	10,324 9.6	8,085	7.5

- 1) The number of participants who received the examination at facilities outside Fukushima (as of February 28, 2022)
- 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	Participation outside Fukushima ¹⁾	%	Participants and Participation rate ²⁾ by age group			Participants living outside Fukushima c ³⁾	%
					6-11	12-17	18-24		
	a	b	b/a	6-11	12-17	18-24	c ³⁾	c/b	
Municipalities surveyed in FY2019									
Iwaki	49,643	29,892	1,672	60.2	9,471 31.7	16,105 53.9	4,316 14.4	1,874	6.3
Sukagawa	12,377	7,553	221	61.0	2,764 36.6	3,935 52.1	854 11.3	262	3.5
Soma	5,507	3,193	215	58.0	1,263 39.6	1,647 51.6	283 8.9	255	8.0
Kagamiishi	2,133	1,323	33	62.0	491 37.1	702 53.1	130 9.8	36	2.7
Shinchi	1,162	679	33	58.4	233 34.3	375 55.2	71 10.5	34	5.0
Nakajima	849	505	8	59.5	192 38.0	265 52.5	48 9.5	9	1.8
Yabuki	2,671	1,687	28	63.2	727 43.1	837 49.6	123 7.3	41	2.4
Ishikawa	2,182	1,349	26	61.8	543 40.3	677 50.2	129 9.6	44	3.3
Yamatsuri	816	480	15	58.8	213 44.4	238 49.6	29 6.0	18	3.8
Asakawa	1,064	661	22	62.1	238 36.0	360 54.5	63 9.5	30	4.5
Hirata	969	608	8	62.7	245 40.3	308 50.7	55 9.0	7	1.2
Tanagura	2,399	1,469	32	61.2	589 40.1	782 53.2	98 6.7	39	2.7
Hanawa	1,299	707	16	54.4	289 40.9	371 52.5	47 6.6	25	3.5
Samegawa	519	307	7	59.2	137 44.6	156 50.8	14 4.6	7	2.3
Ono	1,487	879	9	59.1	354 40.3	448 51.0	77 8.8	13	1.5
Tamakawa	1,052	658	4	62.5	253 38.4	357 54.3	48 7.3	7	1.1
Furudono	817	522	20	63.9	208 39.8	251 48.1	63 12.1	15	2.9
Hinoemata	87	36	1	41.4	16 44.4	16 44.4	4 11.1	1	2.8
Minamiaizu	2,128	1,170	19	55.0	482 41.2	605 51.7	83 7.1	36	3.1
Kaneyama	147	72	1	49.0	21 29.2	41 56.9	10 13.9	2	2.8
Showa	115	68	3	59.1	31 45.6	33 48.5	4 5.9	3	4.4
Mishima	148	84	0	56.8	29 34.5	50 59.5	5 6.0	0	0.0
Shimogo	747	427	5	57.2	179 41.9	222 52.0	26 6.1	14	3.3
Kitakata	6,948	4,100	82	59.0	1,489 36.3	2,224 54.2	387 9.4	120	2.9
Nishiaizu	761	408	10	53.6	169 41.4	190 46.6	49 12.0	15	3.7
Tadami	555	335	6	60.4	138 41.2	170 50.7	27 8.1	7	2.1
Inawashiro	2,069	1,204	28	58.2	507 42.1	593 49.3	104 8.6	37	3.1
Bandai	477	289	8	60.6	109 37.7	157 54.3	23 8.0	9	3.1
Kitashiobara	445	280	3	62.9	115 41.1	145 51.8	20 7.1	6	2.1
Aizumisato	2,823	1,725	33	61.1	634 36.8	896 51.9	195 11.3	50	2.9
Aizubange	2,402	1,422	39	59.2	540 38.0	724 50.9	158 11.1	46	3.2
Yanaizu	464	284	2	61.2	115 40.5	143 50.4	26 9.2	3	1.1
Aizuwakamatsu	18,424	10,680	385	58.0	3,889 36.4	5,589 52.3	1,202 11.3	496	4.6
Yugawa	519	351	6	67.6	123 35.0	178 50.7	50 14.2	13	3.7
Subtotal	126,205	75,407	3,000	59.7	26,796 35.5	39,790 52.8	8,821 11.7	3,574	4.7
Total	294,228	183,407	10,231	62.3	70,677 38.5	93,585 51.0	19,145 10.4	11,659	6.4

Appendix 2

Implementation status of the TUE primary examination by prefecture

As of February 28, 2022

Prefecture	No. of medical facilities	Participants	Prefecture	No. of medical facilities	Participants	Prefecture	No. of medical facilities	Participants
Hokkaido	7	279	Fukui	1	18	Hiroshima	2	27
Aomori	2	124	Yamanashi	2	87	Yamaguchi	1	21
Iwate	3	250	Nagano	3	123	Tokushima	1	5
Miyagi	2	2,256	Gifu	1	29	Kagawa	1	25
Akita	1	156	Shizuoka	3	83	Ehime	1	15
Yamagata	3	472	Aichi	5	179	Kochi	1	11
Ibaraki	4	571	Mie	1	17	Fukuoka	3	73
Tochigi	8	631	Shiga	1	14	Saga	1	1
Gunma	2	174	Kyoto	3	80	Nagasaki	3	25
Saitama	3	530	Osaka	8	174	Kumamoto	1	28
Chiba	5	471	Hyogo	2	124	Oita	1	13
Tokyo	19	1,725	Nara	2	24	Miyazaki	1	20
Kanagawa	7	753	Wakayama	1	9	Kagoshima	1	5
Niigata	3	448	Tottori	1	7	Okinawa	1	34
Toyama	2	27	Shimane	1	11			
Ishikawa	1	35	Okayama	3	47			
						Total	129	10,231

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

Appendix 3

TUE primary examination results by municipality

As of March 31, 2022

	No. of participants	Those with finalized results	No. of participants by grade				No. of partipants with nodules		No. of participants with cysts	
			%							
		b	A		B	C	%		%	
		%	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
		a			b/a					
Municipalities surveyed in FY2018										
Kawamata	1,135	1,135	408	722	5	0	4	3	1	726
		100.0	35.9	63.6	0.4	0.0	0.4	0.3	0.1	64.0
Namie	1,520	1,520	499	1,007	14	0	14	6	0	1,012
		100.0	32.8	66.3	0.9	0.0	0.9	0.4	0.0	66.6
Iitate	544	544	203	337	4	0	4	2	0	340
		100.0	37.3	61.9	0.7	0.0	0.7	0.4	0.0	62.5
Minamisoma	6,008	6,008	2,117	3,847	44	0	44	29	0	3,863
		100.0	35.2	64.0	0.7	0.0	0.7	0.5	0.0	64.3
Date	5,929	5,929	2,043	3,851	35	0	35	19	0	3,872
		100.0	34.5	65.0	0.6	0.0	0.6	0.3	0.0	65.3
Tamura	3,425	3,425	1,271	2,132	22	0	22	10	0	2,142
		100.0	37.1	62.2	0.6	0.0	0.6	0.3	0.0	62.5
Hirono	448	448	169	273	6	0	6	3	0	273
		100.0	37.7	60.9	1.3	0.0	1.3	0.7	0.0	60.9
Naraha	598	598	208	388	2	0	2	1	0	388
		100.0	34.8	64.9	0.3	0.0	0.3	0.2	0.0	64.9
Tomioka	1,194	1,194	423	764	7	0	7	4	0	766
		100.0	35.4	64.0	0.6	0.0	0.6	0.3	0.0	64.2
Kawauchi	152	152	45	105	2	0	2	0	0	107
		100.0	29.6	69.1	1.3	0.0	1.3	0.0	0.0	70.4
Okuma	1,139	1,139	392	739	8	0	8	5	0	746
		100.0	34.4	64.9	0.7	0.0	0.7	0.4	0.0	65.5
Futaba	364	364	110	253	1	0	1	0	0	254
		100.0	30.2	69.5	0.3	0.0	0.3	0.0	0.0	69.8
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	29,066	29,062	10,019	18,869	174	0	173	94	1	18,956
		100.0	34.5	64.9	0.6	0.0	0.6	0.3	0.0	65.2
Nihonmatsu	5,474	5,474	1,912	3,509	53	0	52	20	1	3,539
		100.0	34.9	64.1	1.0	0.0	0.9	0.4	0.0	64.7
Motomiya	3,202	3,202	1,124	2,064	14	0	14	8	0	2,066
		100.0	35.1	64.5	0.4	0.0	0.4	0.2	0.0	64.5
Otama	918	918	305	606	7	0	7	2	0	609
		100.0	33.2	66.0	0.8	0.0	0.8	0.2	0.0	66.3
Koriyama	33,390	33,390	10,985	22,189	216	0	215	116	1	22,303
		100.0	32.9	66.5	0.6	0.0	0.6	0.3	0.0	66.8
Koori	1,130	1,130	400	723	7	0	7	2	0	726
		100.0	35.4	64.0	0.6	0.0	0.6	0.2	0.0	64.2
Kunimi	810	810	261	540	9	0	9	1	0	547
		100.0	32.2	66.7	1.1	0.0	1.1	0.1	0.0	67.5
Tenei	525	525	192	329	4	0	4	2	0	333
		100.0	36.6	62.7	0.8	0.0	0.8	0.4	0.0	63.4
Shirakawa	6,522	6,521	2,277	4,202	42	0	42	25	0	4,223
		100.0	34.9	64.4	0.6	0.0	0.6	0.4	0.0	64.8
Nishigo	2,214	2,214	740	1,460	14	0	14	9	0	1,467
		100.0	33.4	65.9	0.6	0.0	0.6	0.4	0.0	66.3
Izumizaki	668	667	243	422	2	0	2	2	0	424
		99.9	36.4	63.3	0.3	0.0	0.3	0.3	0.0	63.6
Miharu	1,516	1,516	513	991	12	0	12	5	0	998
		100.0	33.8	65.4	0.8	0.0	0.8	0.3	0.0	65.8
Subtotal	108,000	107,994	36,893	70,396	705	0	701	368	4	70,754
		100.0	34.2	65.2	0.7	0.0	0.6	0.3	0.0	65.5

	No. of participants	Those with finalized results	No. of participants by grade				No. of participants with nodules		No. of participants with cysts	
			%							
		b	A		B	C	%		%	
		%	A1	A2			≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	a	b/a								
Municipalities surveyed in FY2019										
Iwaki	29,892	29,889	9,433	20,178	278	0	277	118	1	20,308
		100.0	31.6	67.5	0.9	0.0	0.9	0.4	0.0	67.9
Sukagawa	7,553	7,553	2,376	5,107	70	0	70	45	0	5,140
		100.0	31.5	67.6	0.9	0.0	0.9	0.6	0.0	68.1
Soma	3,193	3,193	1,058	2,095	40	0	40	11	0	2,122
		100.0	33.1	65.6	1.3	0.0	1.3	0.3	0.0	66.5
Kagamiishi	1,323	1,323	410	900	13	0	13	6	0	905
		100.0	31.0	68.0	1.0	0.0	1.0	0.5	0.0	68.4
Shinchi	679	679	229	445	5	0	5	3	0	448
		100.0	33.7	65.5	0.7	0.0	0.7	0.4	0.0	66.0
Nakajima	505	505	175	327	3	0	3	1	0	330
		100.0	34.7	64.8	0.6	0.0	0.6	0.2	0.0	65.3
Yabuki	1,687	1,687	613	1,066	8	0	8	7	0	1,070
		100.0	36.3	63.2	0.5	0.0	0.5	0.4	0.0	63.4
Ishikawa	1,349	1,349	460	875	14	0	14	4	0	883
		100.0	34.1	64.9	1.0	0.0	1.0	0.3	0.0	65.5
Yamatsuri	480	480	151	329	0	0	0	2	0	329
		100.0	31.5	68.5	0.0	0.0	0.0	0.4	0.0	68.5
Asakawa	661	661	211	443	7	0	7	3	0	444
		100.0	31.9	67.0	1.1	0.0	1.1	0.5	0.0	67.2
Hirata	608	608	235	371	2	0	2	2	0	372
		100.0	38.7	61.0	0.3	0.0	0.3	0.3	0.0	61.2
Tanagura	1,469	1,469	541	918	10	0	10	7	0	926
		100.0	36.8	62.5	0.7	0.0	0.7	0.5	0.0	63.0
Hanawa	707	707	267	435	5	0	5	2	0	436
		100.0	37.8	61.5	0.7	0.0	0.7	0.3	0.0	61.7
Samegawa	307	307	130	174	3	0	3	0	0	175
		100.0	42.3	56.7	1.0	0.0	1.0	0.0	0.0	57.0
Ono	879	879	273	597	9	0	9	1	0	604
		100.0	31.1	67.9	1.0	0.0	1.0	0.1	0.0	68.7
Tamakawa	658	658	243	404	11	0	11	2	0	410
		100.0	36.9	61.4	1.7	0.0	1.7	0.3	0.0	62.3
Furudono	522	522	202	318	2	0	2	2	0	317
		100.0	38.7	60.9	0.4	0.0	0.4	0.4	0.0	60.7
Hinoemata	36	36	12	24	0	0	0	0	0	24
		100.0	33.3	66.7	0.0	0.0	0.0	0.0	0.0	66.7
Minamiaizu	1,170	1,170	436	722	12	0	12	3	0	728
		100.0	37.3	61.7	1.0	0.0	1.0	0.3	0.0	62.2
Kaneyama	72	72	22	49	1	0	1	0	0	50
		100.0	30.6	68.1	1.4	0.0	1.4	0.0	0.0	69.4
Showa	68	68	23	45	0	0	0	0	0	45
		100.0	33.8	66.2	0.0	0.0	0.0	0.0	0.0	66.2
Mishima	84	84	21	62	1	0	1	0	0	63
		100.0	25.0	73.8	1.2	0.0	1.2	0.0	0.0	75.0
Shimogo	427	427	162	261	4	0	4	0	0	263
		100.0	37.9	61.1	0.9	0.0	0.9	0.0	0.0	61.6
Kitakata	4,100	4,100	1,409	2,659	32	0	32	22	0	2,667
		100.0	34.4	64.9	0.8	0.0	0.8	0.5	0.0	65.0
Nishiaizu	408	408	149	256	3	0	3	1	0	258
		100.0	36.5	62.7	0.7	0.0	0.7	0.2	0.0	63.2
Tadami	335	335	117	217	1	0	1	0	0	218
		100.0	34.9	64.8	0.3	0.0	0.3	0.0	0.0	65.1
Inawashiro	1,204	1,204	418	770	16	0	16	4	0	783
		100.0	34.7	64.0	1.3	0.0	1.3	0.3	0.0	65.0
Bandai	289	289	83	202	4	0	4	1	0	204
		100.0	28.7	69.9	1.4	0.0	1.4	0.3	0.0	70.6
Kitashiobara	280	280	96	182	2	0	2	0	0	184
		100.0	34.3	65.0	0.7	0.0	0.7	0.0	0.0	65.7
Aizumisato	1,725	1,725	553	1,156	16	0	16	8	0	1,160
		100.0	32.1	67.0	0.9	0.0	0.9	0.5	0.0	67.2
Aizubange	1,422	1,422	446	965	11	0	11	6	0	973
		100.0	31.4	67.9	0.8	0.0	0.8	0.4	0.0	68.4
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	10,680	10,680	3,616	6,964	100	0	100	36	0	7,017
		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	75,407	75,404	24,815	49,902	687	0	686	300	1	50,245
		100.0	32.9	66.2	0.9	0.0	0.9	0.4	0.0	66.6
Total	183,407	183,398	61,708	120,298	1,392	0	1,387	668	5	120,999
		100.0	33.6	65.6	0.8	0.0	0.8	0.4	0.0	66.0

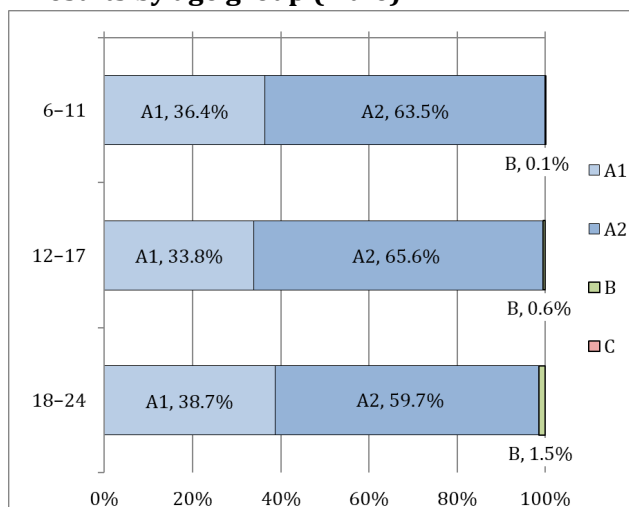
Appendix 4

1 TUE primary examination results by age and sex

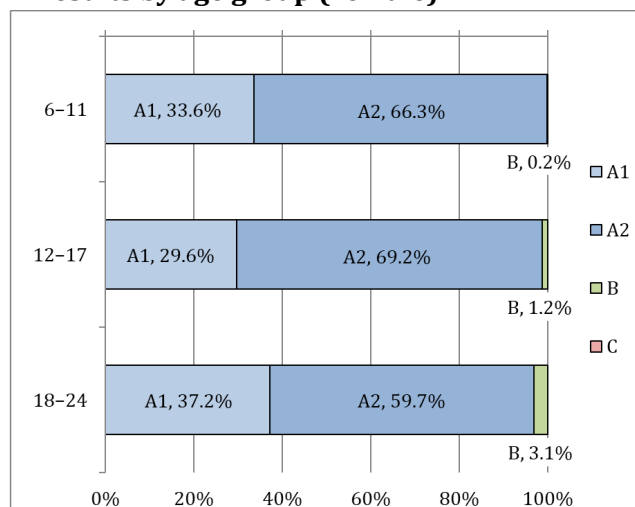
As of March 31, 2022

Grade Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
6-11	13,179	11,563	24,742	23,008	22,831	45,839	39	57	96	0	0	0	36,226	34,451	70,677
12-17	16,059	13,652	29,711	31,182	31,853	63,035	284	555	839	0	0	0	47,525	46,060	93,585
18-24	3,429	3,826	7,255	5,291	6,133	11,424	136	321	457	0	0	0	8,856	10,280	19,136
Total	32,667	29,041	61,708	59,481	60,817	120,298	459	933	1,392	0	0	0	92,607	90,791	183,398

Results by age group (Male)



Results by age group (Female)

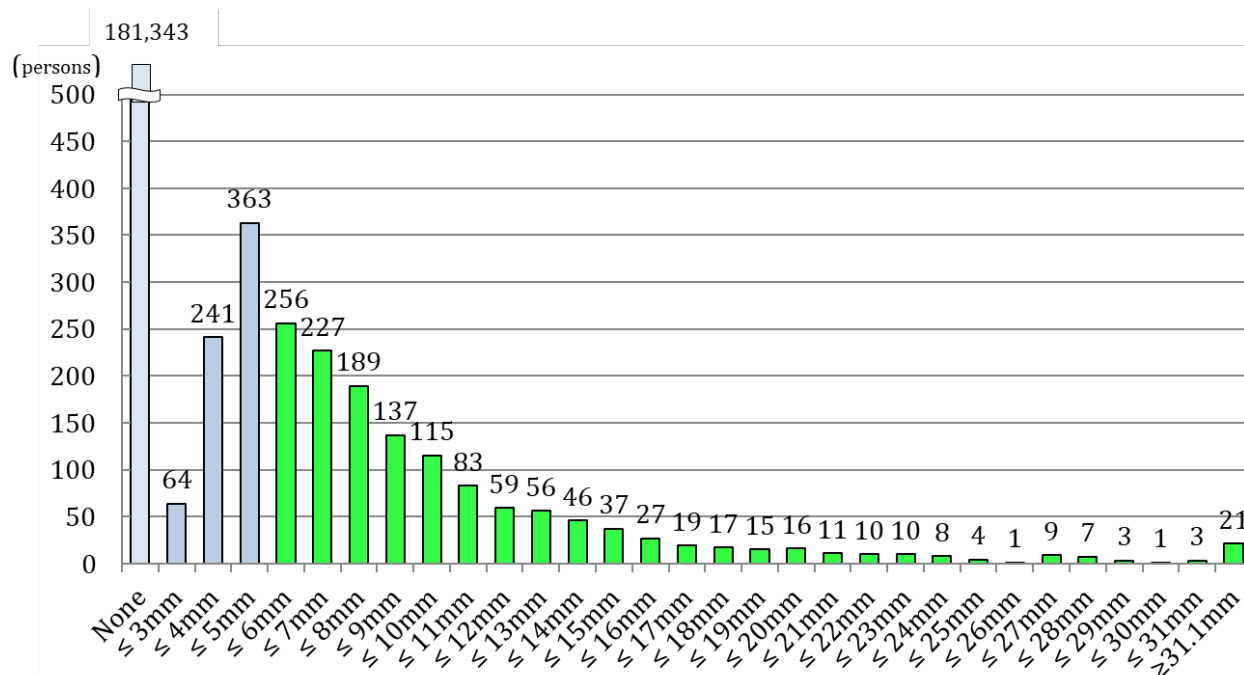
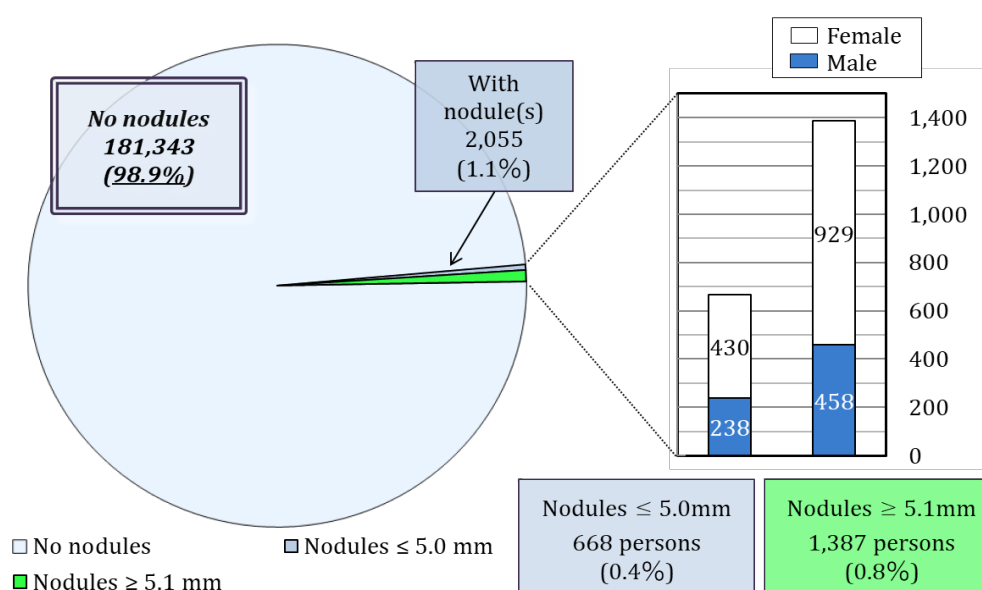


2 Nodule characteristics

(persons)

As of March 31, 2022

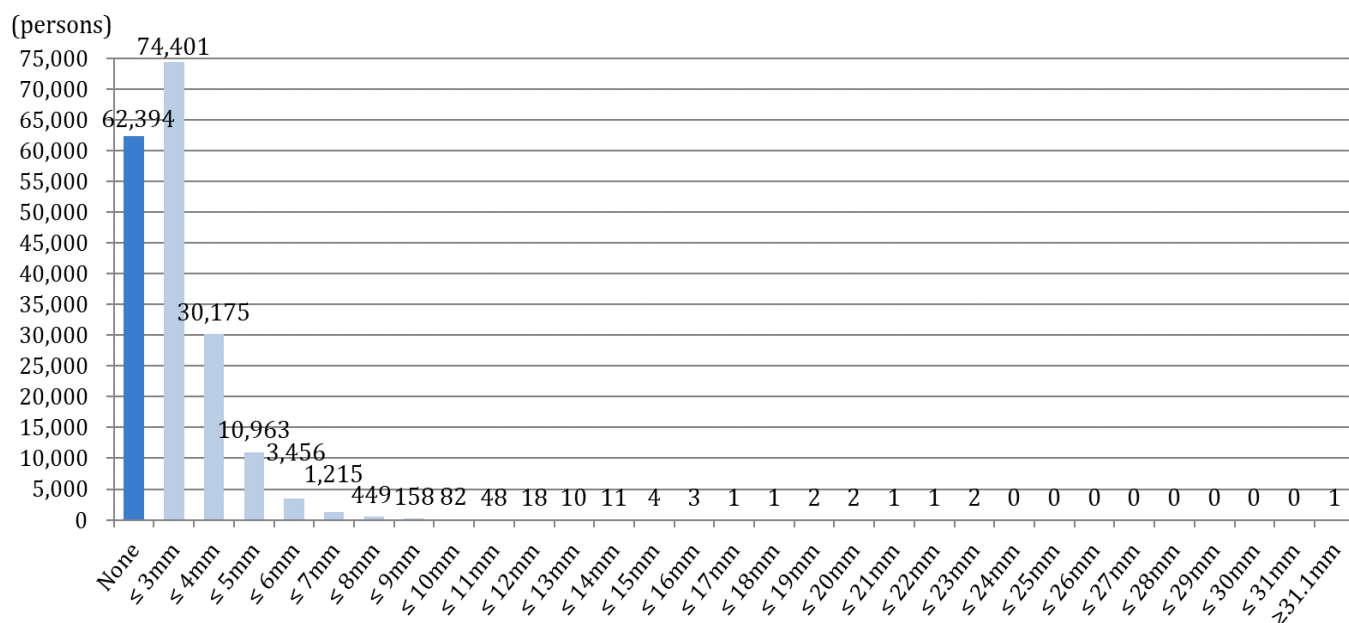
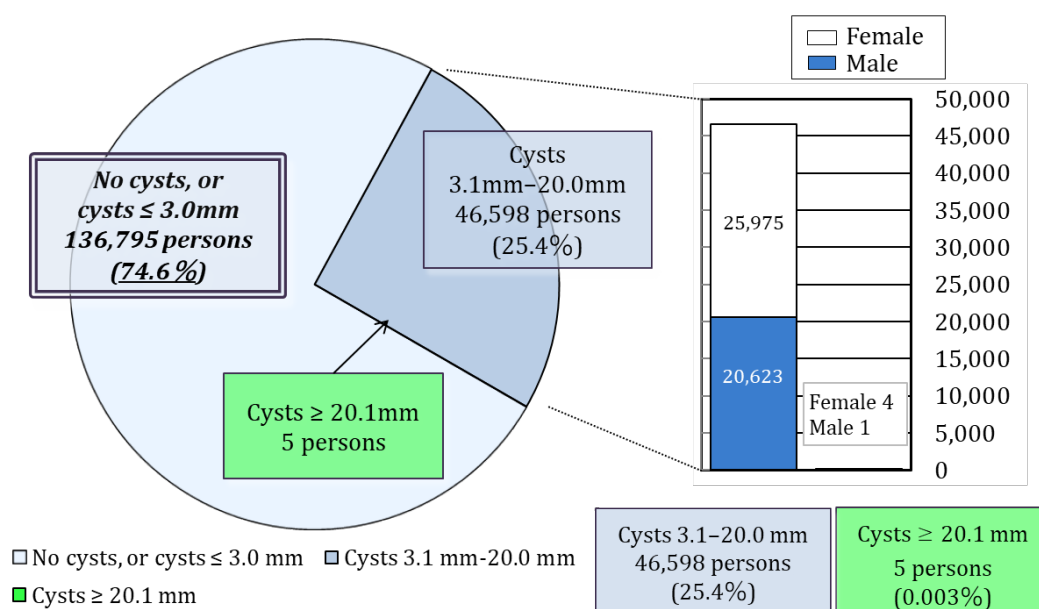
Nodule size	Total			Grade	
		Male	Female		
None	181,343	91,911	89,432	A1	98.9%
≤ 3.0mm	64	31	33	A2	0.4%
3.1–5.0mm	604	207	397		
5.1–10.0mm	924	313	611	B	0.8%
10.1–15.0mm	281	94	187		
15.1–20.0mm	94	27	67		
20.1–25.0mm	43	13	30		
≥ 25.1mm	45	11	34		
Total	183,398	92,607	90,791		



3 Cyst characteristics

As of March 31, 2022
(persons)

Cyst size	Total	Grade			
		Male	Female		
None	62,394	32,919	29,475	A1	74.6%
≤ 3.0mm	74,401	39,064	35,337	A2	
3.1–5.0mm	41,138	18,683	22,455		
5.1–10.0mm	5,360	1,906	3,454		
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	183,398	92,607	90,791		



Appendix 5

Implementation status of the TUE confirmatory examination by area

As of March 31, 2022

	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	
				d	e	f				j	FNAC
				b/a (%)	c/b (%)	d/c (%)					
a							g	h	i	j	k
		b/a (%)	c/b (%)	d/c (%)	e/c (%)	f/c (%)	g/c (%)	h/g (%)	i/g (%)	j/g (%)	k/j (%)
13 municipalities ¹⁾	22,565	151	123	7	71	45	119	1	8	110	7
		0.7	81.5	5.7	57.7	36.6	96.7	0.8	6.7	92.4	6.4
Nakadori ²⁾	104,143	711	517	45	279	193	508	3	52	453	49
		0.7	72.7	8.7	54.0	37.3	98.3	0.6	10.2	89.2	10.8
Hamadori ³⁾	33,764	323	245	10	143	92	242	1	17	224	23
		1.0	75.9	4.1	58.4	37.6	98.8	0.4	7.0	92.6	10.3
Aizu ⁴⁾	22,935	207	151	7	82	62	144	1	11	132	12
		0.9	72.9	4.6	54.3	41.1	95.4	0.7	7.6	91.7	9.1
Total	183,407	1,392	1,036	69	575	392	1,013	6	88	919	91
		0.8	74.4	6.7	55.5	37.8	97.8	0.6	8.7	90.7	9.9

- 1) Tamura, Minami-soma, Date, Kawamata, Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namic, 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, Mihar, 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:	22 (18 surgical cases: 18 papillary thyroid carcinomas)
2. Municipalities surveyed in FY2019	
Malignant or suspicious for malignancy:	17 (16 surgical case: 16 papillary thyroid carcinomas)
3. Total	
Malignant or suspicious for malignancy:	39 (34 surgical cases: 34 papillary thyroid carcinomas)

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

As of March 31, 2022

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 assess 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 FY2022, 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

FY2022: no eligible persons

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

FY2022: those born in FY1997

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

1.4 Implementing Organizations (Number of medical facilities with agreements for implementation of thyroid examinations as of March 31, 2022)

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	83 medical facilities
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Outside Fukushima Prefecture	129 medical facilities
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1.4-2 Confirmatory examination facilities

Inside Fukushima Prefecture	5 medical facilities including FMU
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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

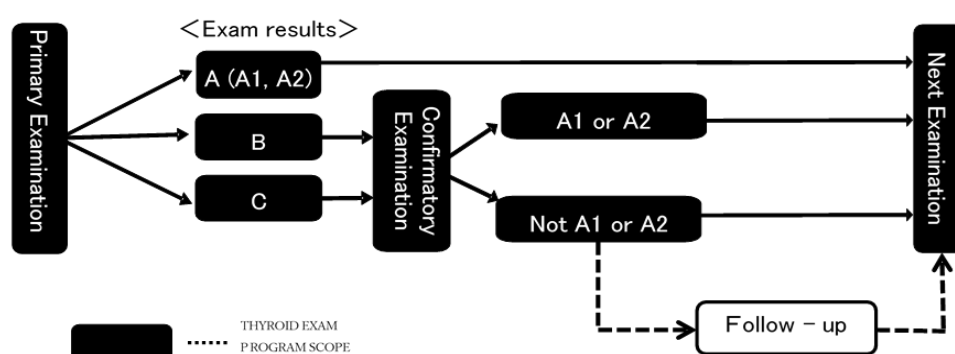


Fig. 1 Flow chart

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:

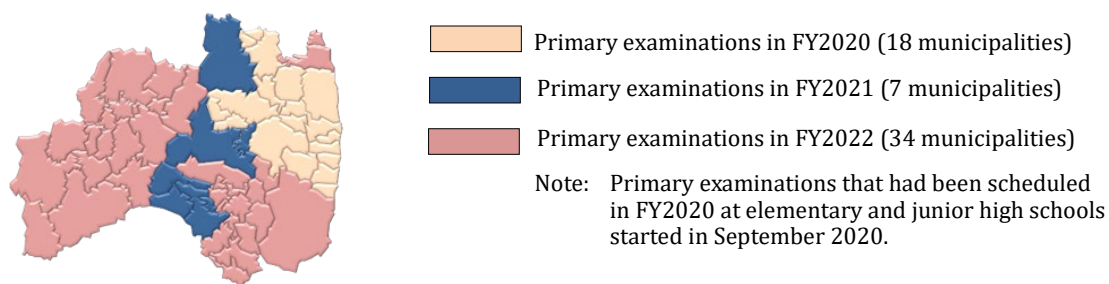


Fig. 2 Municipalities covered for primary examinations at elementary and junior high schools

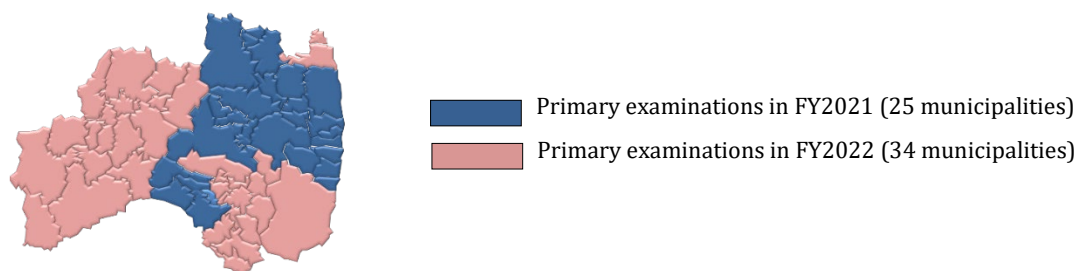


Fig. 3 Municipalities covered for primary examinations at high schools and other facilities

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, 2022

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was carried out for 74,964 participants (29.6%) by March 31, 2022.

Results of 69,822 participants (93.1%) have been finalized and individual result reports were already sent to them.

Of these, 20,481 (29.3%) had Grade A1 results; 48,472 (69.4%) were Grade A2; 869 (1.2%) were Grade B; none were Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)			Participants with finalized results (%)			
		b (b/a)	Outside the prefecture		A		Those referred to confirmatory exam	
					A1	A2	B	C
					d (d/c)	e (e/c)	f (f/c)	g (g/c)
FY2020	144,904	65,040 (44.9)	5,076	60,615 (93.2)	17,623 (29.1)	42,345 (69.9)	647 (1.1)	0 (0.0)
FY2021	107,998	9,924 (9.2)	2,138	9,207 (92.8)	2,858 (31.0)	6,127 (66.5)	222 (2.4)	0 (0.0)
Total	252,902	74,964 (29.6)	7,214	69,822 (93.1)	20,481 (29.3)	48,472 (69.4)	869 (1.2)	0 (0.0)

Table 2 Number and proportion of participants with nodules/cysts
(See Appendix 1 for more details)

	Participants with finalized results a	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
		b (b/a)	c (c/a)	d (d/a)	e (e/a)
FY2020	60,615	647 (1.1)	332 (0.5)	1 (0.0)	42,707 (70.5)
FY2021	9,207	222 (2.4)	87 (0.9)	0 (0.0)	6,253 (67.9)
Total	69,822	869 (1.2)	419 (0.6)	1 (0.0)	48,960 (70.1)

- 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)	144,904	37,104	61,913	45,887
	Participants (b)	65,040	26,169	34,098	4,773
	Participation rate (%) (b/a)	44.9	70.5	55.1	10.4
FY2021	Age group *		9-11	12-17	18-24
	Eligible persons (a)	107,998	19,735	45,058	43,205
	Participants (b)	9,924	1,152	4,382	4,390
	Participation rate (%) (b/a)	9.2	5.8	9.7	10.2
Total	Eligible persons (a)	252,902	56,839	106,971	89,092
	Participants (b)	74,964	27,321	38,480	9,163
	Participation rate (%) (b/a)	29.6	48.1	36.0	10.3

* Age groups are based on age as of April 1 of each fiscal year.

2.1-3 Comparison of the fourth- and fifth-round survey results

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

Among 64,790 participants with Grade A1 or A2 results in the fourth-round survey, 64,320 (99.3%) had Grade A1 or A2 results and 470 (0.7%) had Grade B results in the fifth-round survey.

Among 365 participants with Grade B results in the fourth-round survey, 67 (18.4%) had Grade A1 or A2 results and 298 (81.6%) had Grade B results in the fifth-round survey.

Table 4 Comparison of the fourth- and fifth-round surveys

			Results of the fourth-round survey*	Results of the fifth-round survey**			
				A		B	C
				A1	A2		
				a (%)	b (b/a)	c (c/a)	d (d/a)
Results of the fourth-round survey	A	A1	21,403 (100.0)	15,041 (70.3)	6,276 (29.3)	86 (0.4)	0 (0.0)
		A2	43,387 (100.0)	3,837 (8.8)	39,166 (90.3)	384 (0.9)	0 (0.0)
	B		365 (100.0)	6 (1.6)	61 (16.7)	298 (81.6)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		4,667 (100.0)	1,597 (34.2)	2,969 (63.6)	101 (2.2)	0 (0.0)
Total			69,822 (100.0)	20,481 (29.3)	48,472 (69.4)	869 (1.2)	0 (0.0)

* Results of the fourth-round survey are from fifth-round survey participants with finalized results, not the breakdown of all fourth-round survey participants.

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By March 31, 2022, 517 (59.5%) of the 869 eligible persons had participated in the confirmatory examination, and 435 (84.1%) of them had completed the entire procedure of the examination.

Of the aforementioned 435 participants, 50 (A1: 4, A2: 46) (11.5%) were confirmed to meet A1 or A2 diagnostic criteria by the primary examination standards (including those with other thyroid conditions) after detailed examination; 385 (88.5%) were confirmed to be outside of A1/A2 criteria.

Table 5 Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (%)		Those with finalized results (%)									
				Total		A1		A2		Not A1 or A2			
										FNAC			
				a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f
FY2020	647	398 (61.5)		340	(85.4)	4 (1.2)		39 (11.5)		297 (87.4)		27 (9.1)	
FY2021	222	119 (53.6)		95	(79.8)	0 (0.0)		7 (7.4)		88 (92.6)		5 (5.7)	
Total	869	517 (59.5)		435	(84.1)	4 (0.9)		46 (10.6)		385 (88.5)		32 (8.3)	

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

Among those who underwent FNAC, 11 people had nodules classified as malignant or suspicious for malignancy: one of them was male and ten were female.

Participants' age at the time of the confirmatory examination ranged from 13 to 22 (mean age: 17.6 ± 2.9 years). The minimum and maximum tumor diameters were 7.5 mm and 14.7 mm. Mean tumor diameter was 11.3 ± 2.6 mm.

Of these 11 participants, 8 had Grade A (A1:3, A2:5), 2 had Grade B and the results in the previous survey, and the remaining 1 participant did not receive the third-round survey.

Table 6 Results of FNAC.

A. Municipality surveyed in FY2020	
• Malignant or suspicious for malignancy:	8*
• Male to female ratio:	1:7
B. Municipalities surveyed in FY2021	
• Malignant or suspicious for malignancy:	3*
• Male to female ratio:	0:3
C. Total	
• Malignant or suspicious for malignancy:	11*
• Male to female ratio:	1:10
• Mean age $\pm$ SD (min – max)	17.6 ± 2.9 (13–22), 7.2 ± 3.2 (2–12)
• Mean tumor size $\pm$ SD (min – max)	11.3 ± 2.6 mm (7.5–14.7 mm)

* Surgical cases are as shown in Appendix 2.

2.2-3 Age distribution of malignant or suspected malignant cases diagnosed by FNAC

Age distribution of 11 people with malignant or suspected malignant nodules based on their age as of March 11, 2011 is per Fig. 4, and age distribution based on their age at the time of confirmatory examination is per Fig. 5.

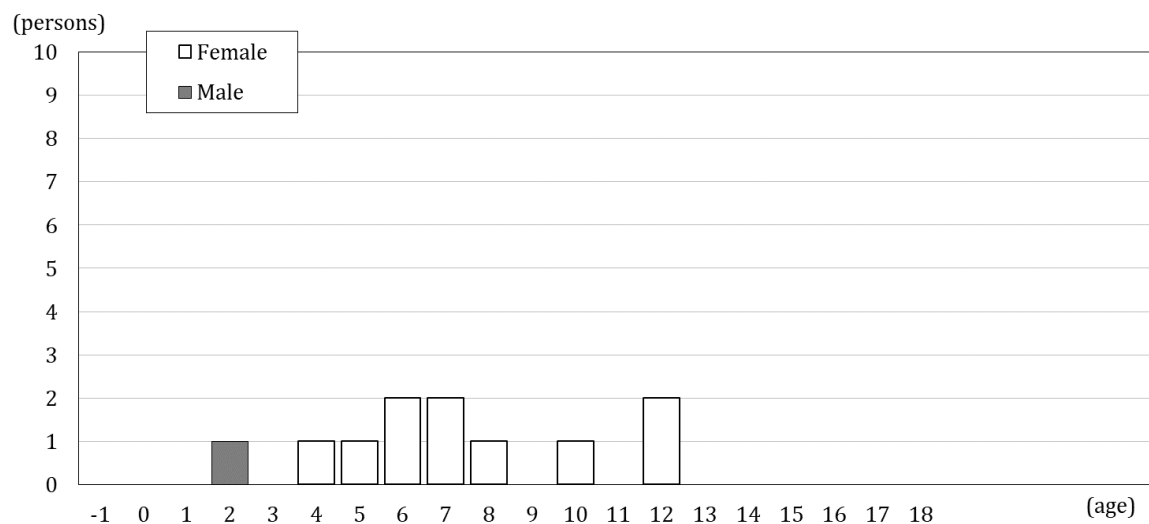


Fig. 4 Age as of March 11, 2011

Note: Those aged between 13 and 18 at the time of the disaster are not included in the fifth-round survey participants. The horizontal axis begins at -1 to include those born between April 2, 2011, and April 1, 2012.

*Those born between March 12 and April 1, 2011 are included as age 0.

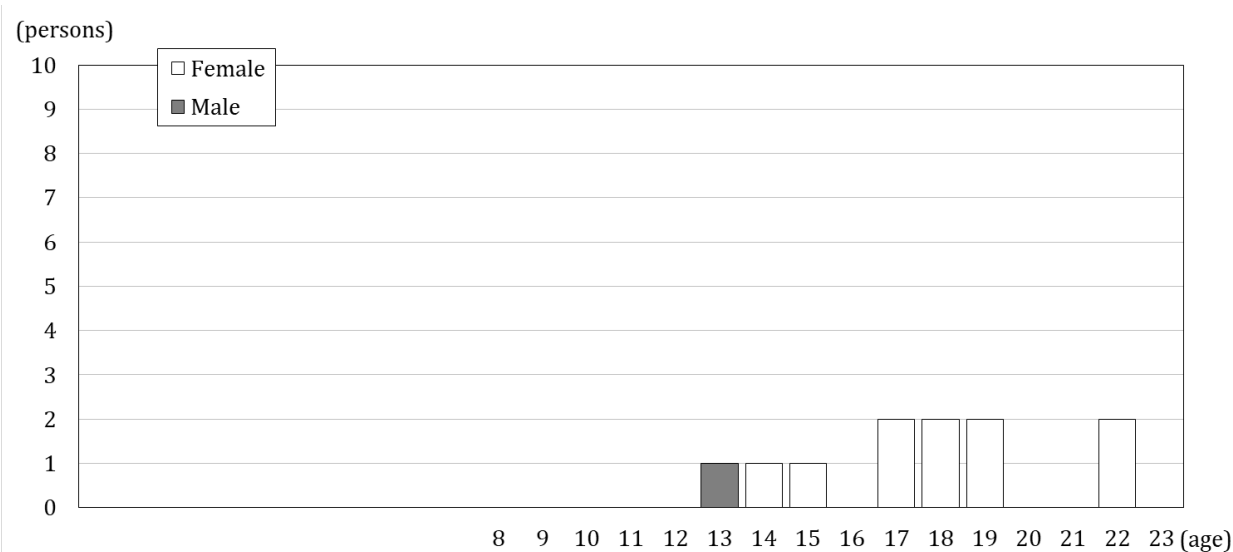


Fig. 5 Age as of the date of confirmatory examination

2.2-4 Blood and urinary iodine test results

Table 7 Blood test results

	FT4 ¹⁾ (ng/dL)	FT3 ²⁾ (pg/mL)	TSH ³⁾ (μIU/mL)	Tg ⁴⁾ (ng/mL)	TgAb ⁵⁾ (IU/mL)	TPOAb ⁶⁾ (IU/mL)
Reference Range	0.95–1.74 ⁷⁾	2.13–4.07 ⁷⁾	0.340–3.880 ⁷⁾	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 11	1.1±0.2 (18.2%)	3.3±0.4 (0.0%)	1.2±0.6 (9.1%)	31.1±28.3 (36.4%)	9.1%	18.2%
Other: 391	1.2±0.2 (4.9%)	3.5±0.5 (5.1%)	1.3±1.1 (8.2%)	34.1±105.1 (15.9%)	7.4%	7.4%

Table 8 Urinary iodine test results

					(µg/day)
	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 11	61	116	175	571	1,311
Other: 392	24	112	187	314	12,670

- 1) FT4: free thyroxine, thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 2) FT3: free triiodothyronine, thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
- 4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
- 5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
- 6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
- 7) Reference interval varies according to age.

3. Mental Health Care

We provide the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

After the examination, medical doctors offer person-to-person explanation on examination results, showing ultrasound images in private consultation booths at examination venues set up in public facilities.

Consultation booths were set up at all venues for examinations conducted in and after April 2020, and as of March 31, 2022, all 2,195 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, 2022, a total of 466 people participated in these sessions offered at 8 locations.

Since the start of these sessions, 15,552 people have participated.

3.3 Support for Confirmatory Examination Participants

A support team has been set up within Fukushima Medical University to offer psychological support to address any anxieties and concerns of confirmatory examination participants during examination. The team also answers questions and offers counseling via our website.

Since the start of the fifth-round survey, 278 participants (95 males and 183 females) have received support as of March 31, 2022. The number of support sessions provided was 471 in total. Of these, 278 (59.0%) received support at the participants' first examination and 193 (41.0%) at subsequent examinations.

For those who proceeded to regular insured medical care, the support team continues to provide support in cooperation with teams of medical staff at hospitals.

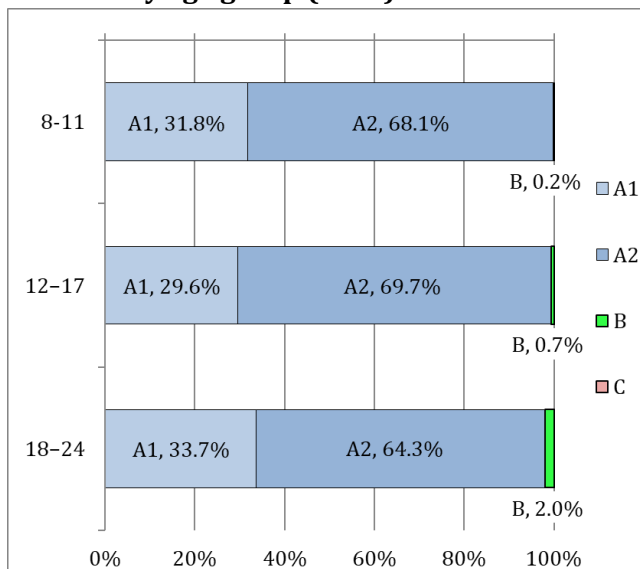
Appendix 1

1. Implementation status of the TUE primary examination by municipality

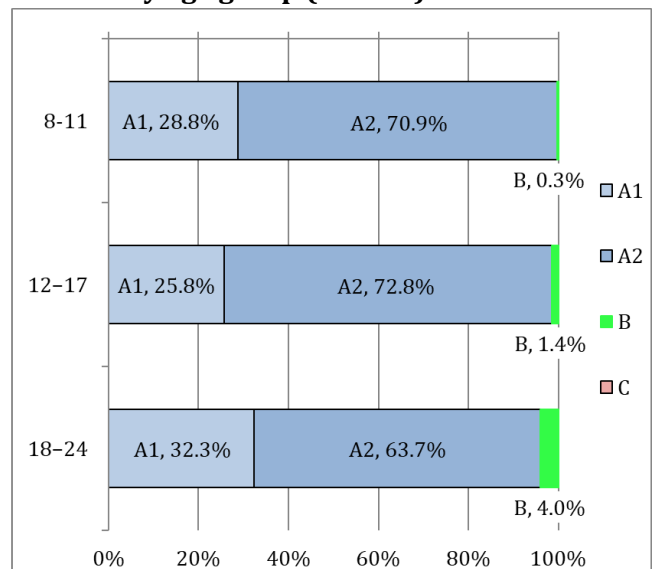
As of March 31, 2022

Grade Age group	A						B			C			Total		
	A1			A2			Male	Female	Total	Male	Female	Total	Male	Female	Total
	Male	Female	Total	Male	Female	Total									
8-11	2,691	2,302	4,993	5,768	5,672	11,440	15	26	41	0	0	0	8,474	8,000	16,474
12-17	5,991	5,095	11,086	14,081	14,409	28,490	137	280	417	0	0	0	20,209	19,784	39,993
18-24	2,031	2,371	4,402	3,873	4,669	8,542	118	293	411	0	0	0	6,022	7,333	13,355
Total	10,713	9,768	20,481	23,722	24,750	48,472	270	599	869	0	0	0	34,705	35,117	69,822

Results by age group (Male)



Results by age group (Female)

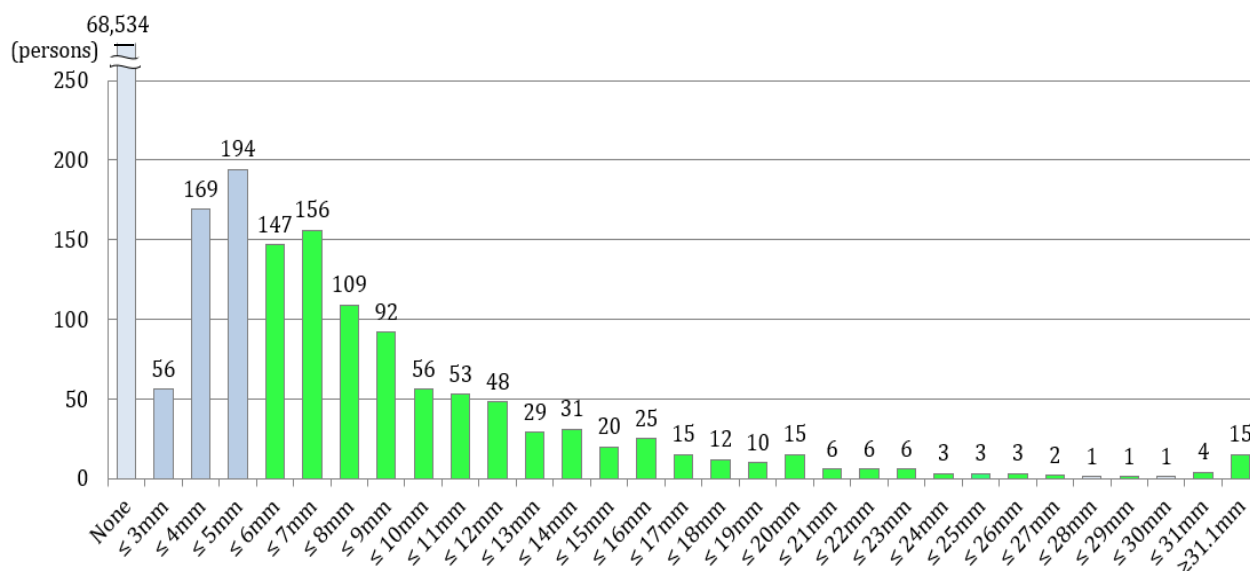
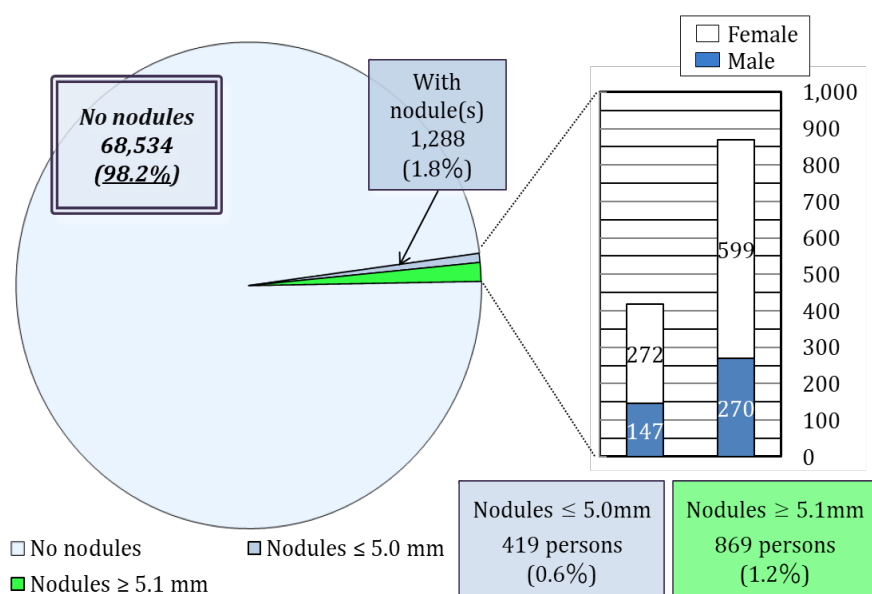


*Age groups are the age at the examination of the fifth round survey

2. Nodule characteristics

(persons)
As of March 31, 2022

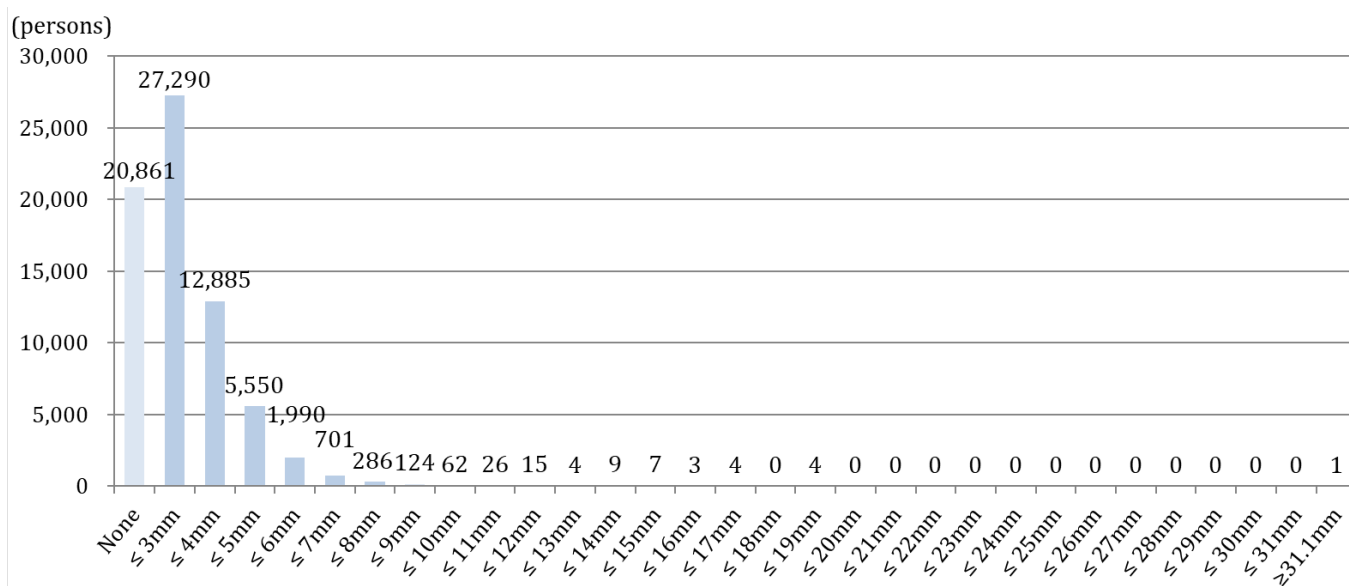
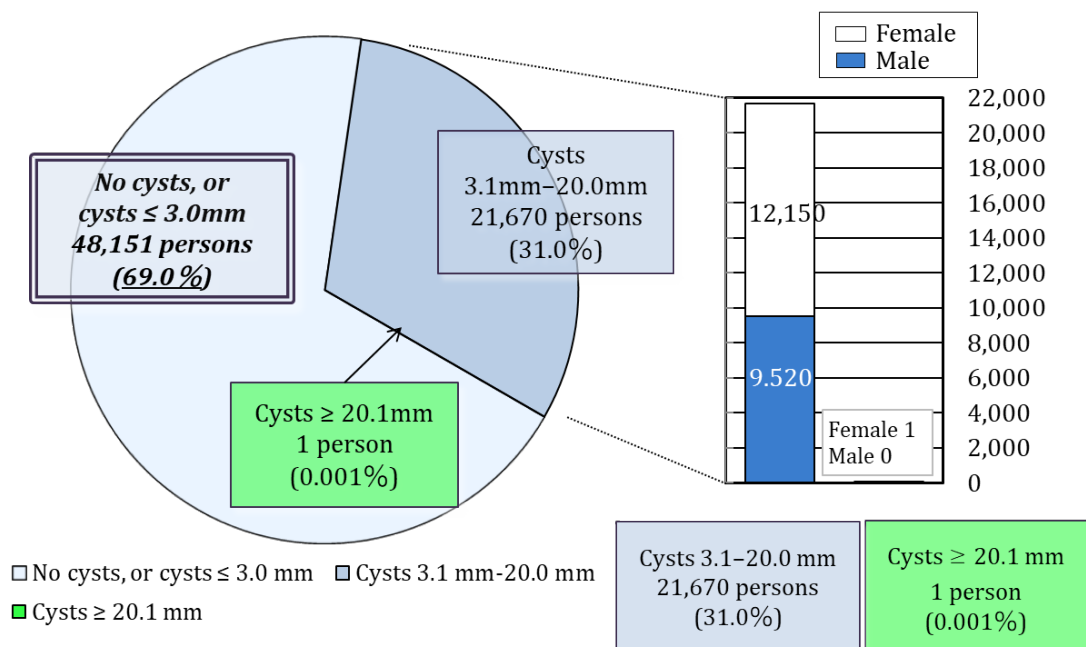
Nodule size	Total	Grade			
		Male	Female		
None	68,534	34,288	34,246	A1	98.2%
≤ 3.0mm	56	16	40	A2	0.6%
3.1–5.0mm	363	131	232		
5.1–10.0mm	560	180	380	B	1.2%
10.1–15.0mm	181	50	131		
15.1–20.0mm	77	25	52		
20.1–25.0mm	24	7	17		
≥ 25.1mm	27	8	19		
Total	69,822	34,705	35,117		



3. Cyst characteristics

As of March 31, 2022

Cyst size	Total	Grade			
		Male	Female		
None	20,861	10,846	10,015	A1	69.0%
≤ 3.0mm	27,290	14,339	12,951	A2	
3.1–5.0mm	18,435	8,399	10,036		
5.1–10.0mm	3,163	1,109	2,054		
10.1–15.0mm	61	11	50		
15.1–20.0mm	11	1	10	31.0%	
20.1–25.0mm	0	0	0		
≥ 25.1mm	1	0	1		
Total	69,822	34,705	35,117	B	0.001%



Appendix 2

Surgical cases for malignancy or suspicion of malignancy

1. Municipalities surveyed in FY2020	
Malignant or suspicious for malignancy:	8 (4 surgical cases: 4 papillary thyroid carcinomas)
2. Municipalities surveyed in FY2021	
Malignant or suspicious for malignancy:	3 (2 surgical cases: 2 papillary thyroid carcinomas)
3. Total	
Malignant or suspicious for malignancy:	11 (6 surgical cases: 6 papillary thyroid carcinomas)

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

As of March 31, 2022

1. Summary**1.1 Eligible Persons**

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

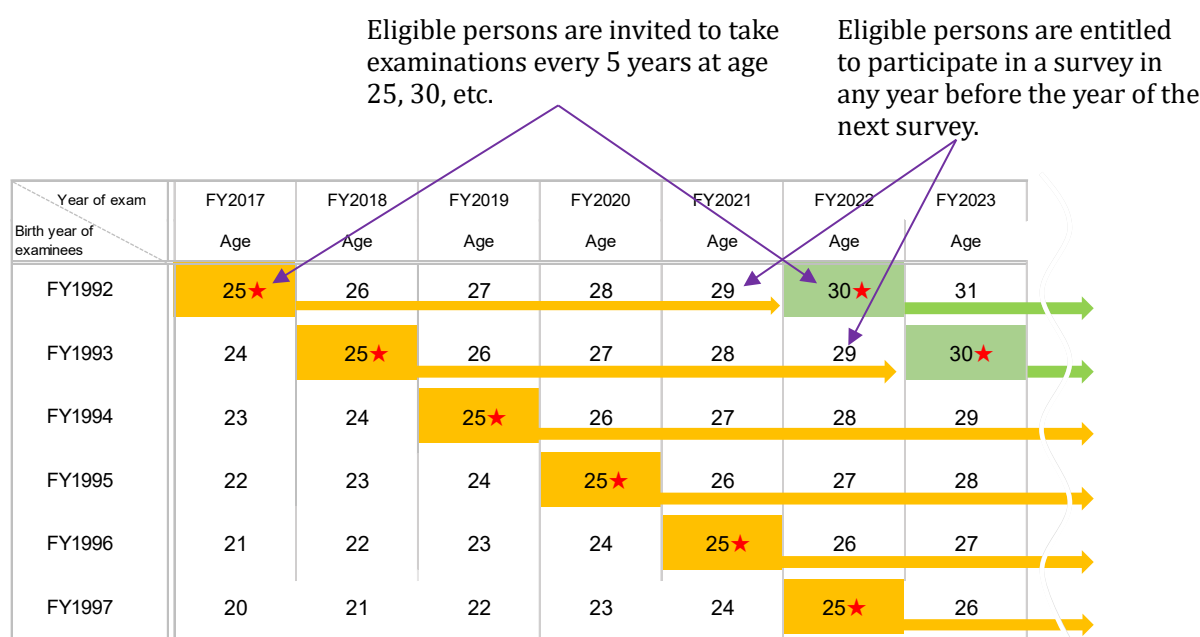
Those born in 1996 are also eligible for the Survey for Age 25, but there have been few participants. Therefore, this report includes the status of the following groups:

- 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)
- Those born in FY1996 (between April 2, 1996 and April 1, 1997)

For those born in FY1996, this report presents only the primary examination results as the number of examinations conducted is limited.

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. Overview age 25+ survey results (as of March 31, 2022)

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 FY1996), of whom 9,841 (9.1%) participated (Implementation status by area and implementation status outside Fukushima Prefecture are shown in Appendix 1 and Appendix 2, respectively).

Results of 9,520 (96.7%) participants have been finalized and individual results reports have already been sent to them. (Refer to Appendix 3 for the results by municipalities)

Of these, 4,043 (42.5%) had Grade A1 results; 4,973 (52.2%) were Grade A2; 504 (5.3%) were Grade B; and none were Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons	Participants (%)			Participants with finalized results (%)				
		b (b/a)	Outside the prefecture		A		Those referred to confirmatory exam		
					A1	A2	B	C	
					d (d/c)	e (e/c)	f (f/c)	g (g/c)	
Born in FY1992	22,653	2,342 (10.3)	768	2,337 (99.8)	978 (41.8)	1,255 (53.7)	104 (4.5)	0 (0.0)	
Born in FY1993	21,890	2,257 (10.3)	825	2,245 (99.5)	1,018 (45.3)	1,114 (49.6)	113 (5.0)	0 (0.0)	
Born in FY1994	22,094	1,824 (8.3)	692	1,811 (99.3)	759 (41.9)	956 (52.8)	96 (5.3)	0 (0.0)	
Born in FY1995	21,056	1,900 (9.0)	708	1,894 (99.7)	782 (41.3)	995 (52.5)	117 (6.2)	0 (0.0)	
Born in FY1996	21,020	1,518 (7.2)	455	1,233 (81.2)	506 (41.0)	653 (53.0)	74 (6.0)	0 (0.0)	
Total	108,713	9,841 (9.1)	3,448	9,520 (96.7)	4,043 (42.5)	4,973 (52.2)	504 (5.3)	0 (0.0)	

Table 2 Number and percentage of participants with nodules/cysts
(Detailed results are shown in Appendix 4)

	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)
Those born in FY1992	2,337	103 (4.4)	52 (2.2)	1 (0.0)	1,301 (55.7)
Those born in FY1993	2,245	113 (5.0)	39 (1.7)	0 (0.0)	1,163 (51.8)
Those born in FY1994	1,811	96 (5.3)	38 (2.1)	0 (0.0)	1,009 (55.7)
Those born in FY1995	1,894	115 (6.1)	36 (1.9)	2 (0.1)	1,046 (55.2)
Those born in FY1996	1,233	74 (6.0)	15 (1.2)	0 (0.0)	690 (56.0)
Total	9,520	501 (5.3)	180 (1.9)	3 (0.0)	5,209 (54.7)

* Percentages are rounded to a lower decimal place. This applies to other tables as well.

** The number and results of the Age 25 Survey participants are, and will be, presented by birth year (fiscal year), not by survey year.

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 5,682 participants with Grade A1 or A2 results in the previous survey, 5,528 (97.3%) had Grade A1 or A2 results and 154 (2.7%) had Grade B results in the Age 25 Survey.

Among 192 participants with Grade B results in the previous survey, 49 (25.5%) had Grade A (A1 or A2) results and 143 (74.5%) 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)
Results of the previous survey	A	A1	2,294 (100.0)	1,863 (81.2)	407 (17.7)	24 (1.0)	0 (0.0)
		A2	3,388 (100.0)	525 (15.5)	2,733 (80.7)	130 (3.8)	0 (0.0)
	B		192 (100.0)	4 (2.1)	45 (23.4)	143 (74.5)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		3,646 (100.0)	1,651 (45.3)	1,788 (49.0)	207 (5.7)	0 (0.0)
	Total		9,520 (100.0)	4,043 (42.5)	4,973 (52.2)	504 (5.3)	0 (0.0)

* Results of the previous survey, just from Age 25 survey participants with finalized results

** Results of the Age 25 Survey participants who were diagnosed with each grade in the previous survey. Lower figures in parentheses are their proportions (%).

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 430 eligible persons, 353 (82.1%) participated, of whom 345 (97.7%) completed the entire process of the confirmatory examination.

Of the aforementioned 345 participants, 25 (7.2%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1:2, A2:23) (including those with other thyroid conditions). The remaining 320 (92.8%) were confirmed to be outside of A1/A2 criteria.

Table 4 Progress of the Confirmatory Examination

	Those referred to confirmatory exams a	Participants (%) b (b/a)	Total c (c/b)	Those with finalized results (%)				
				A1		A2		Not A1 or A2
								FNAC
				d (d/c)	e (e/c)	f (f/c)	g (g/f)	
Those born in FY1992	104	86 (82.7)	83 (96.5)	0 (0.0)	4 (4.8)	79 (95.2)	8 (10.1)	
Those born in FY1993	113	94 (83.2)	94 (100.0)	1 (1.1)	9 (9.6)	84 (89.4)	7 (8.3)	
Those born in FY1994	96	74 (77.1)	72 (97.3)	1 (1.4)	6 (8.3)	65 (90.3)	6 (9.2)	
Those born in FY1995	117	99 (84.6)	96 (97.0)	0 (0.0)	4 (4.2)	92 (95.8)	10 (10.9)	
Total	430	353 (82.1)	345 (97.7)	2 (0.6)	23 (6.7)	320 (92.8)	31 (9.7)	

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

Among those who underwent FNAC, 16 had nodules classified as malignant or suspicious for malignancy: 4 of them were male and 12 were female.

Participants' age at the time of the confirmatory examination ranged from 24 to 27 years (mean age: 25.4 ± 0.7 years). The minimum and maximum tumor diameters were 5.3 mm and 49.9 mm. Mean tumor diameter was 15.6 ± 12.1 mm.

Of these 16 participants, 4 had Grade A2 results and 3 had Grade B results in the previous survey. The remaining 9 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: 16*
- Male to female ratio: 4:12
- Mean age $\pm$ SD (min – max): 25.4 $\pm$ 0.7 (24–27), 16.3 $\pm$ 1.1 (15–18) at the time of disaster
- Mean tumor size $\pm$ SD (min – max): 15.6 $\pm$ 12.1 mm (5.3–49.9 mm)

*Appendix 5 shows surgery cases.

2.2-3 Age distribution of malignant or suspected malignant cases diagnosed by FNAC

Age distributions of 16 people with malignant or suspicious nodules based on their age as of March 11, 2011 is per Fig. 2, and age distribution based on their age at the time of confirmatory examination is per Fig. 3.

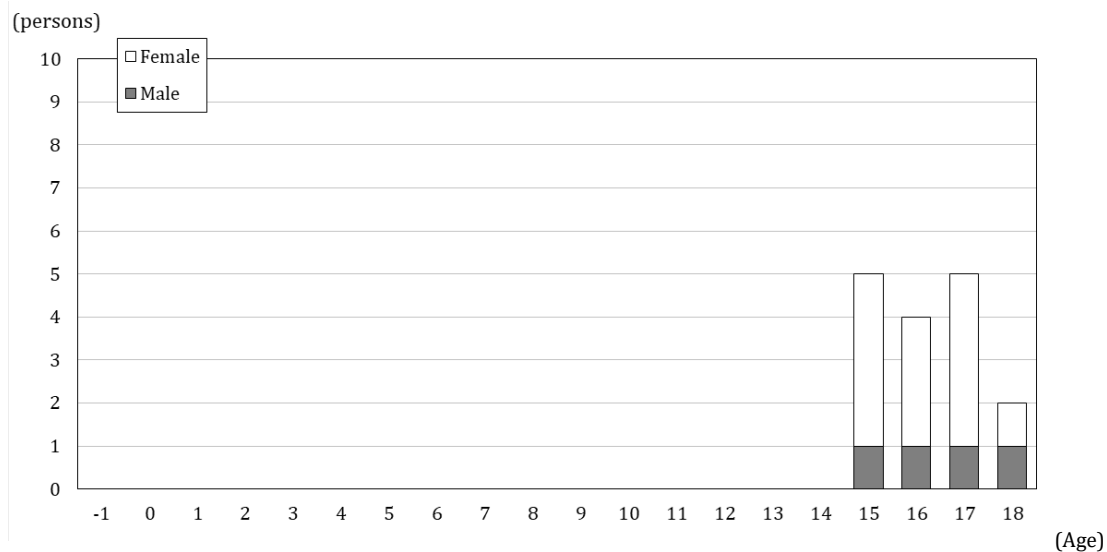


Fig.2 Age as of March 11, 2011

Note: Those aged -1 through 13 at the time of disaster are not included in the participants of the Age 25 survey for those born in FY1992 through FY1995.

The horizontal axis begins at -1 to include those born between April 2, 2011, and April 1, 2012.

*Those born between March 12 and April 1, 2011, are included as age 0.



Fig.3 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 16 people with malignant or suspicious nodules, 9 people (56.3%) had participated in the Basic Survey (for external radiation dose estimation), and all 9 received their results. The highest effective dose documented was 1.9 mSv.

Table 6 A breakdown of dose estimates for Basic Survey participants

Effective dose (mSv)	Age at the time of the disaster									
	0-5		6-10		11-15		16-18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	0	0	0	0	0	1	1	2	1	3
1-1.9	0	0	0	0	1	2	1	1	2	3
2-4.9	0	0	0	0	0	0	0	0	0	0
5-9.9	0	0	0	0	0	0	0	0	0	0
10-19.9	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	3	2	3	3	6

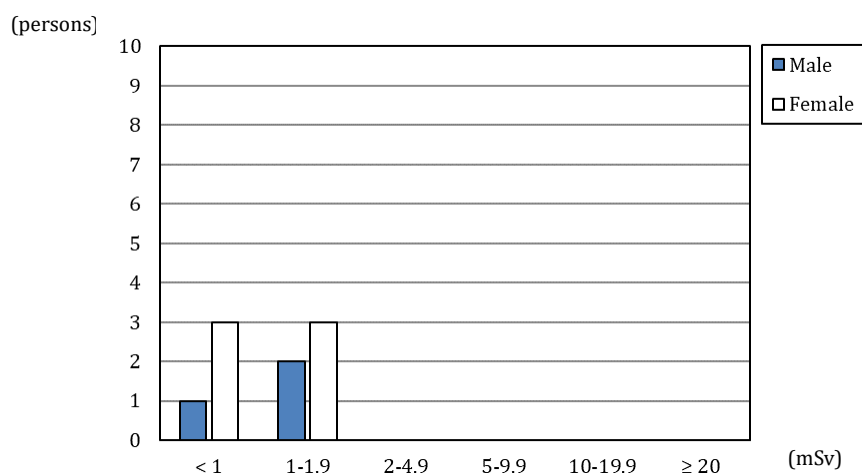


Fig. 4 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 7 Blood test results

	FT4 ¹⁾ (ng/dL)	FT3 ²⁾ (pg/mL)	TSH ³⁾ (μIU/mL)	Tg ⁴⁾ (ng/mL)	TgAb ⁵⁾ (IU/mL)	TPOAb ⁶⁾ (IU/mL)
Reference Range	0.95–1.74 ⁷⁾	2.13–4.07 ⁷⁾	0.340–3.880 ⁷⁾	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 16	1.2±0.1 (6.3%)	3.3±0.5 (12.5%)	1.8±1.8 (18.8%)	42.7±39.3 (50.0%)	6.3%	0.0%
Other: 318	1.2±0.2 (5.0%)	3.2±0.5 (6.9%)	1.1±0.7 (6.9%)	44.2±170.3 (23.6%)	9.1%	9.7%

Table 8 Urinary iodine test results

(μg/day)						
		Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious:	16	73	106	171	280	953
Other:	315	29	118	182	320	11,060

- 1) FT4: free thyroxine, thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 2) FT3: free triiodothyronine, thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
- 3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
- 4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
- 5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease and Graves' disease.
- 6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
- 7) Reference interval varies according to age.

3 Mental Health Care

3.1 Support for Primary Examination Participants

Since April 2017, medical doctors offer person-to-person explanations on examination results, showing ultrasound images in private consultation booths at examination venues set up in public facilities. As of March 31, 2022, there were 749 (99.9%) of 750 participants who 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 any 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, 102 participants (24 males and 78 females) have received support as of March 31, 2022. The number of support sessions provided was 195 in total. Of these, 102 sessions (52.3%) were offered at the participants' first examination and 93 (47.7%) 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

Implementation status of the Survey for Age 25 by area

As of March 31, 2022

	Eligible persons	Participants		Participation rate (%)	Participants living outside the prefecture c ²⁾	Proportion of participants living outside the prefecture c/b
	a	b	Those participated outside the prefecture ¹⁾	b/a		
Number of eligible persons for age 25+ survey (Those born in 1992-1996)						
13 municipalities ³⁾	14,664	1,352	498	9.2	480	35.5
Nakadori ⁴⁾	57,572	5,395	1,870	9.4	1,616	30.0
Hamadori ⁵⁾	20,883	2,152	765	10.3	667	31.0
Aizu ⁶⁾	15,594	942	315	6.0	291	30.9
Total	108,713	9,841	3,448	9.1	3,054	31.0

1) The number of those who received examinations at medical facilities outside the prefecture (as of February 28, 2022)

2) The number of those whose place of residence is outside the prefecture

3) 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, Samegawa 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

Appendix 2

Implementation status of the Survey for Age 25 by prefecture

Prefecture	No. of medical facilities	Participants
Hokkaido	7	47
Aomori	2	18
Iwate	3	48
Miyagi	2	320
Akita	1	15
Yamagata	3	42
Ibaraki	4	170
Tochigi	8	166
Gunma	2	43
Saitama	3	198
Chiba	5	183
Tokyo	19	1,475
Kanagawa	7	322
Niigata	3	65
Toyama	2	4
Ishikawa	1	5

Prefecture	No. of medical facilities	Participants
Fukui	1	4
Yamanashi	2	9
Nagano	3	18
Gifu	1	5
Shizuoka	3	34
Aichi	5	64
Mie	1	2
Shiga	1	5
Kyoto	3	24
Osaka	8	52
Hyogo	2	31
Nara	2	2
Wakayama	1	3
Tottori	1	1
Shimane	1	1
Okayama	3	8

As of February 28, 2022

Prefecture	No. of medical facilities	Participants
Hiroshima	2	12
Yamaguchi	1	2
Tokushima	1	3
Kagawa	1	2
Ehime	1	3
Kochi	1	1
Fukuoka	3	19
Saga	1	1
Nagasaki	3	1
Kumamoto	1	6
Oita	1	3
Miyazaki	1	3
Kagoshima	1	2
Okinawa	1	6
Total	129	3,448

The number of those who received examinations at medical facilities outside the prefecture

Appendix 3

Primary Survey results by regions

As of March 31, 2022

	Number of participants	Those with finalized results b	Number of participants by final result				Those with nodules		Those with cysts	
			(%)				(%)		(%)	
			A		B	C	≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
	A1	A2								
a	(%)	A1	A2							
Number of eligible persons (Those born in 1992-1996)										
13 municipalities ¹⁾	1,352	1,322	569	686	67	0	66	22	1	719
		97.8	43.0	51.9	5.1	0.0	5.0	1.7	0.1	54.4
Nakadori ²⁾	5,395	5,196	2,186	2,746	264	0	262	99	2	2,870
		96.3	42.1	52.8	5.1	0.0	5.0	1.9	0.0	55.2
Hamadori ³⁾	2,152	2,086	918	1,067	101	0	101	40	0	1,103
		96.9	44.0	51.2	4.8	0.0	4.8	1.9	0.0	52.9
Aizu ⁴⁾	942	916	370	474	72	0	72	19	0	517
		97.2	40.4	51.7	7.9	0.0	7.9	2.1	0.0	56.4
Total	9,841	9,520	4,043	4,973	504	0	501	180	3	5,209
		96.7	42.5	52.2	5.3	0.0	5.3	1.9	0.0	54.7

1) 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

2) Fukushima City, Koriyama City, Shirakawa City, Sukagawa City, Nihonmatsu City, Motomoya 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

3) Iwaki City, Soma City, Shinchi Town

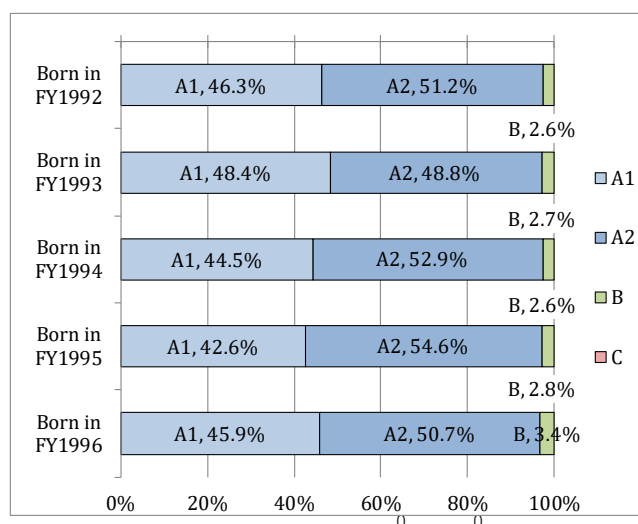
4) Aizuwakamatsu City, Kitakata City, Shimogo Town, Hinoemata Village, Tadami Town, Minamiaizu Town, Kitashiobara Village, Nishiaizu Town, Bandai Town, Inawashiro Town, Aizubange Town, Yugawa Village, Yanaizu Town, Mishima Town, Kaneyama Town, Showa Village, Aizumisato Town

Appendix 4

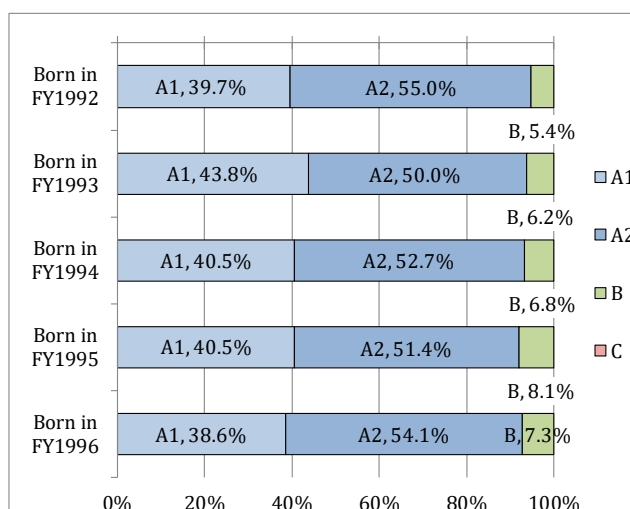
As of march 31, 2022

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	359	619	978	397	858	1,255	20	84	104	0	0	0	776	1,561	2,337
Those born in FY1993	370	648	1,018	373	741	1,114	21	92	113	0	0	0	764	1,481	2,245
Those born in FY1994	290	469	759	345	611	956	17	79	96	0	0	0	652	1,159	1,811
Those born in FY1995	292	490	782	374	621	995	19	98	117	0	0	0	685	1,209	1,894
Those born in FY1996	188	318	506	208	445	653	14	60	74	0	0	0	410	823	1,233
Total	1,499	2,544	4,043	1,697	3,276	4,973	91	413	504	0	0	0	3,287	6,233	9,520

Primary examination results by age group (Male)



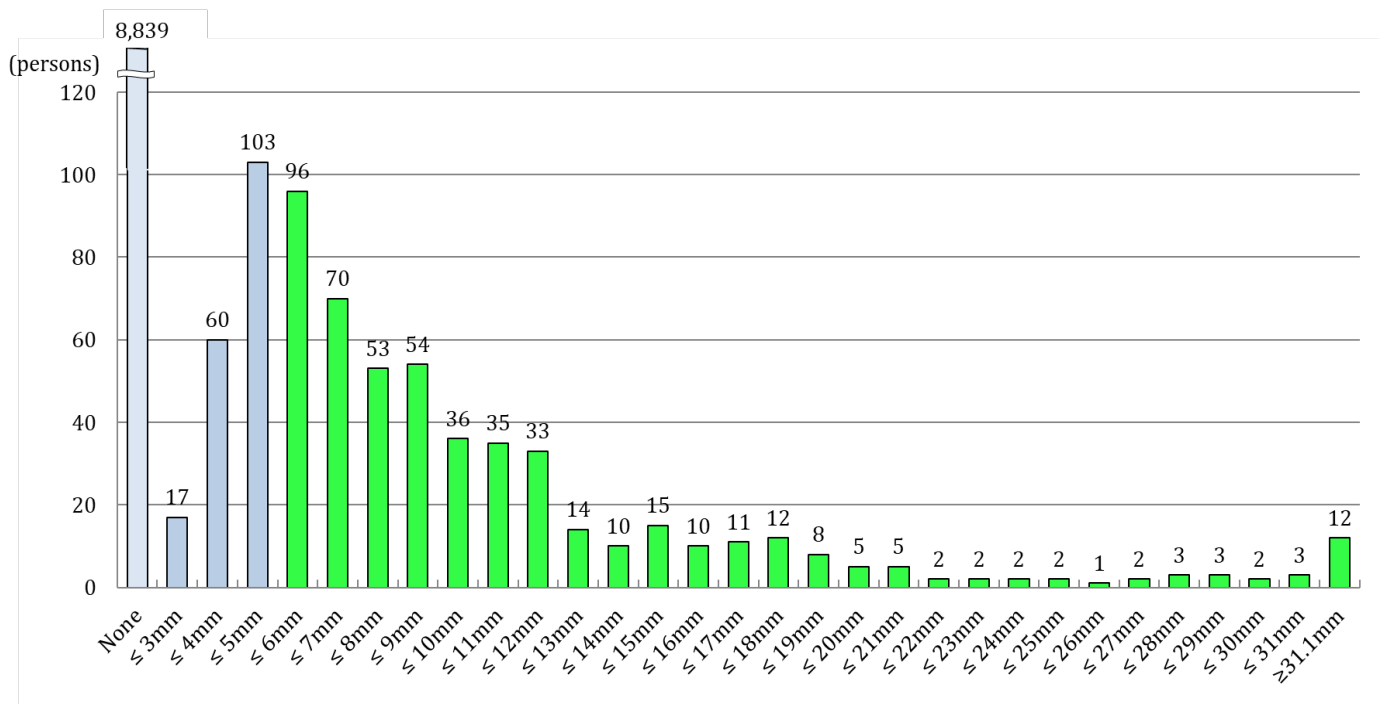
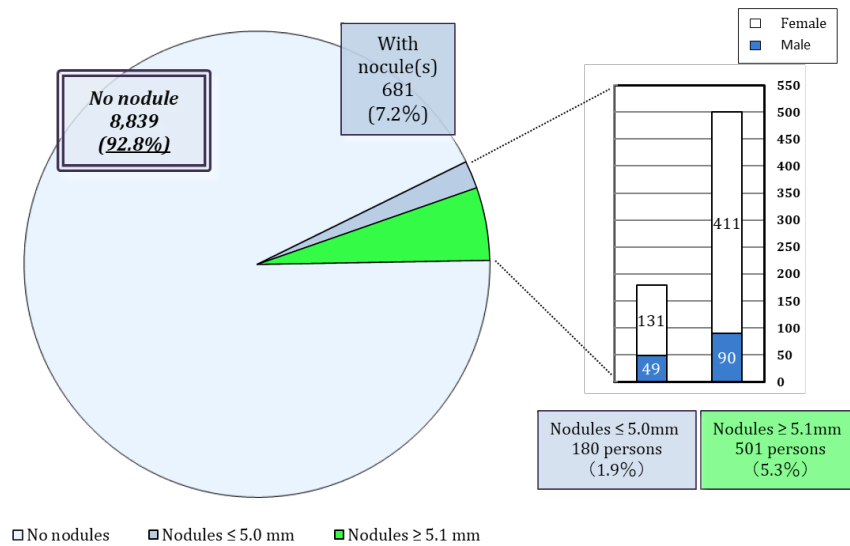
Primary examination results by age group (Female)



2 Nodule characteristics

As of March 31, 2022

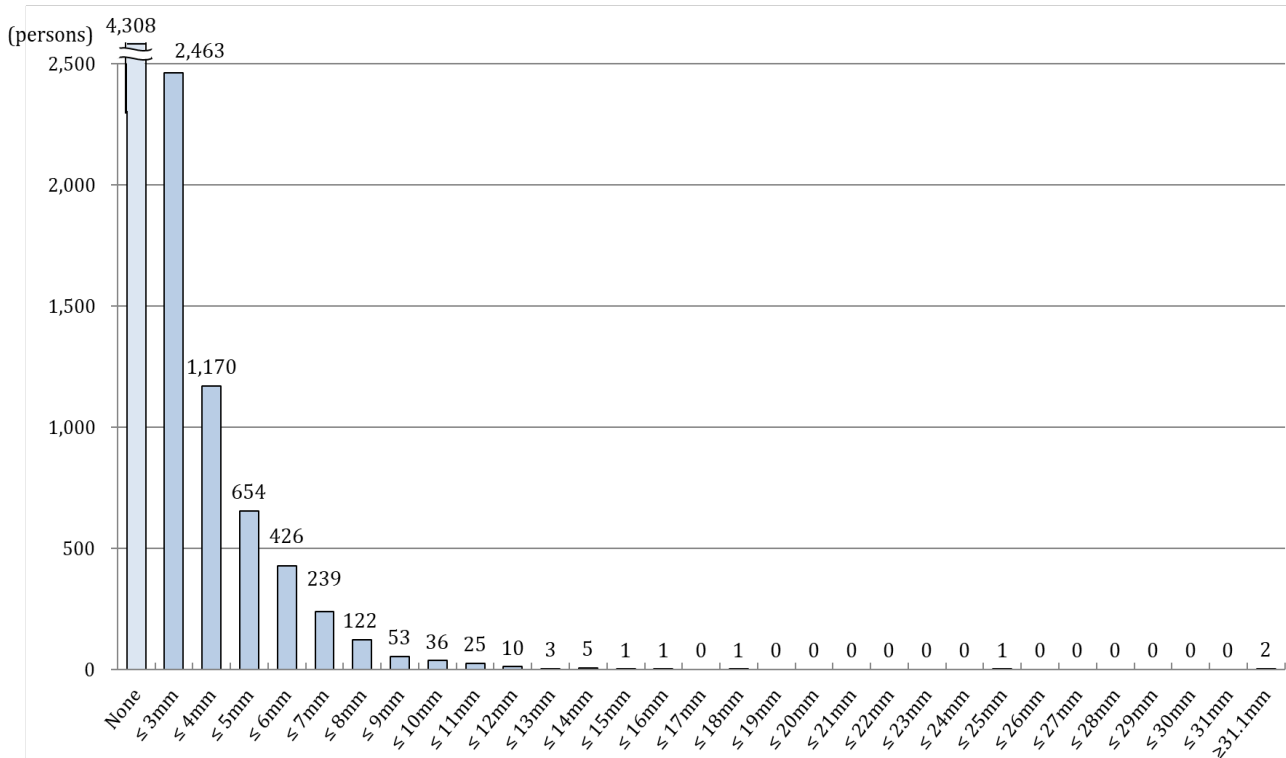
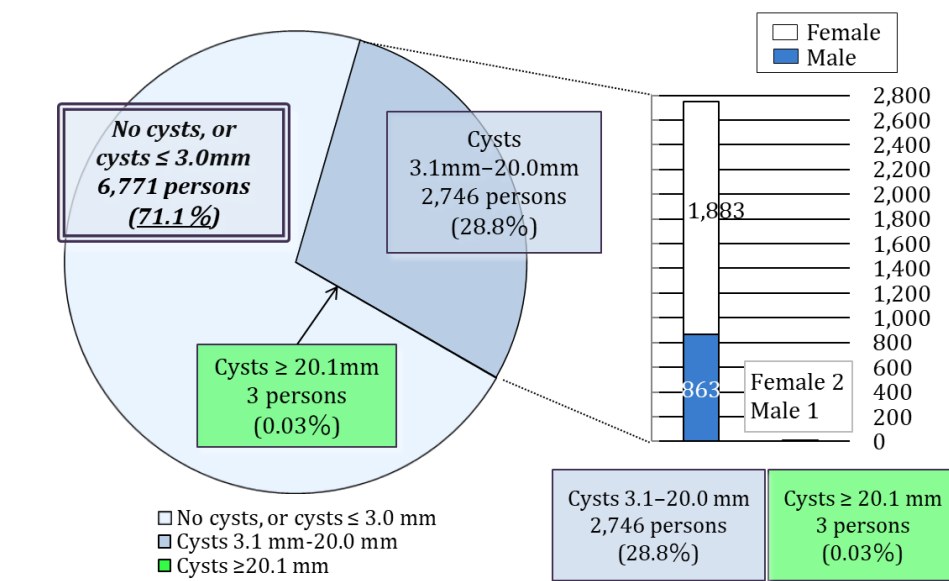
Nodule size	Total	Grade	
		Male	Female
None	8,839	3,148	5,691
≤ 3.0mm	17	4	13
3.1–5.0mm	163	45	118
5.1–10.0mm	309	54	255
10.1–15.0mm	107	25	82
15.1–20.0mm	46	5	41
20.1–25.0mm	13	3	10
≥ 25.1mm	26	3	23
Total	9,520	3,287	6,233



3 Cyst characteristics

As of March 31, 2022

Cyst size	Total			Grade	
		Male	Female		
None	4,308	1,560	2,748	A1	71.1%
≤ 3.0mm	2,463	863	1,600	A2	
3.1–5.0mm	1,824	616	1,208		
5.1–10.0mm	876	238	638		
10.1–15.0mm	44	8	36		
15.1–20.0mm	2	1	1		
20.1–25.0mm	1	0	1	B	0.03%
≥ 25.1mm	2	1	1		
Total	9,520	3,287	6,233		



Appendix 5

Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 25 Survey:

- Malignant or suspicious for malignancy: 16 (10 surgical cases: 9 papillary thyroid carcinomas, 1 follicular thyroid carcinoma)

**Number of malignant and suspected malignant cases
diagnosed in the TUE Full-Scale Survey (second-round survey)
and their surgical treatment**

As of March 31, 2022

• Municipalities surveyed in FY2014

Malignant or suspicious for malignancy: 52 (Males: 21, Females: 31)

42 surgical cases: 41 papillary carcinomas, 1 other type of thyroid cancer

• Municipalities surveyed in FY2015

Malignant or suspicious for malignancy: 19 (Males: 11, Females: 8)

14 surgical cases: 14 papillary carcinomas

Total 71 (Males:32, Females: 39)

56 surgical cases: 55 papillary carcinomas, 1 other type of thyroid cancer