Report on the Basic Survey (External Radiation Dose Estimates) of the Fukushima Health Management Survey

1. Summary of Survey

1.1 Purpose

Considering possible 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 inform them of the results for their future health management.

1.2 Survey Population

A. Those who were registered as residents of Fukushima Prefecture from March 11 to July 1, 2011.
B. 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 (hereafter, “Temporary Residents”). We sent them basic survey questionnaires when requested.

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 Fukushima Prefecture population was 27.7% (569,899 out of 2,055,238) as of March 31, 2025. Among those respondents, 75,786 (*1) answered with the simplified questionnaire (Table 1).
The responses received from April 1, 2024, to March 31, 2025 (FY2024) were 41 with the original questionnaire and 167 with the simplified one, for a total of 208.

Table 1 Response rate to the Basic Survey

As of March 31, 2025

Survey Population	2,055,238	*1	Response Rate*2
Original Questionnaire	494,113	(41)	24.0%
Simplified Questionnaire	75,786	(167)	3.7%
Total Responses	569,899	(208)	27.7%

*1 The numbers in parentheses () indicate the number of responses in FY2024.

*2 The response rate has been rounded for each response category.

(1) The number of submissions using the simplified questionnaire may change because we might ask some respondents who used the simplified version to resubmit with the original questionnaire, depending on their responses.

Table 2 shows the response rates for each age group.

Table 2 Response rate by age group

As of March 31, 2025

Age at the time of disaster	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60-	Total
Response Rate	46.9%	36.4%	18.2%	24.9%	22.5%	23.0%	27.9%	27.7%

*Percentages have been rounded

2.2 Radiation Dose Estimates and Results Notification

Out of 569,899 total responses, 555,782 were accepted as valid. Others had incomplete or invalid answers, from which movements and/or location history were inadequately documented for dose estimation (*2). Among valid responses, 555,693 dose estimates have been completed, and results have been reported to 555,505 respondents (Table 3) (*3).

Table 3 Basic Survey response, dose estimation and notification summary by region

As of March 31, 2025

Region	Survey population a	Responses b	Response rate c=b/a	Valid response d	Valid response rate e=d/a	Estimates completed f	Completion rate g=f/d	Results notified h	Notification rate i=h/d
Kenpoku	504,015	152,567	30.3%	149,645	29.7%	149,627	100.0%	149,575	100.0%
Kenchu	557,176	137,437	24.7%	134,339	24.1%	134,318	100.0%	134,306	100.0%
Kennan	152,226	35,686	23.4%	34,877	22.9%	34,874	100.0%	34,864	100.0%
Aizu	267,198	58,509	21.9%	56,307	21.1%	56,288	100.0%	56,279	100.0%
Minamiaizu	30,788	6,434	20.9%	6,127	19.9%	6,122	99.9%	6,121	99.9%
Soso	195,594	90,311	46.2%	87,601	44.8%	87,595	100.0%	87,503	99.9%
Iwaki	348,241	88,955	25.5%	86,886	24.9%	86,869	100.0%	86,857	100.0%
Total	2,055,238	569,899	27.7%	555,782	27.0%	555,693	100.0%	555,505	100.0%

* Some figures include preliminary survey data (Yamakiya District of Kawamata Town, Namie Town, and Iitate Village).
* Refer to Appendix 1 for the results of each municipality. (*3)
* Percentages have been rounded

(*2) Incomplete or invalid responses are those in which additional information was necessary for dose estimation (e.g., by soliciting details of their behavior through direct contact, etc.), but was not obtained because the respondents' contact information was not available or because respondents declined 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, Table 4, and Appendix 1 include data from responses that did not contain behavior records for the full four months after March 11, which is the period favored for dose estimation.

2.3 Response rates and dose estimates for temporary residents

We have been estimating doses for non-residents who visited or stayed in Fukushima Prefecture at the time of the accident (Table 4). (*3)

Table 4 Summary of temporary residents' response status

As of March 31, 2025

Questionnaires sent a	Reponses b	Reponse rate c=b/a	Valid responses d	Valid response rate e=d/a	Estimates completed f	Completion rate g=f/d	Results notified h	Notification rate i=h/d
4,225	2,204	52.2%	2,194	51.9%	2,194	100.0%	2,194	100.0%

*Percentages have been rounded

3. Results of Radiation Dose Estimates

Table 5 shows the breakdown of dose estimates from Table 3, excluding those with an estimation period of less than four months.

Radiation doses for a total of 476,952 residents have been estimated to date. Results for 467,730 respondents (excluding radiation workers) suggest that about 87% of the respondents in Kenpoku and about 92% in Kenchu were exposed to <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. Furthermore, the doses for about 77% of respondents in Soso and more than 99% of respondents in Iwaki were also <1 mSv.

Table 5 Summary of estimated effective dose distribution

As of March 31, 2025

Effective dose (mSv)	Total	Excluding radiation workers					Summary by region, excluding radiation workers													
							Kenpoku (*4)		Kenchu		Kennan		Aizu		Minamiaizu		Soso (*5)		Iwaki	
< 1	296,866	291,132	62.2%	93.8%			24,993	19.9%	58,672	51.5%	26,469	88.2%	46,379	99.3%	4,988	99.3%	55,930	77.3%	73,701	99.1%
< 2	150,134	147,784	31.6%				84,017	67.0%	46,540	40.8%	3,525	11.7%	312	0.7%	37	0.7%	12,716	17.6%	637	0.9%
< 3	26,211	25,837	5.5%	5.8%		99.8%	15,754	12.6%	8,319	7.3%	18	0.1%	25	0.1%	0	—	1,691	2.3%	30	0.0%
< 4	1,587	1,504	0.3%				473	0.4%	429	0.4%	0	—	1	0.0%	0	—	597	0.8%	4	0.0%
< 5	551	505	0.1%	0.2%			40	0.0%	5	0.0%	0	—	0	—	0	—	459	0.6%	1	0.0%
< 6	442	390	0.1%				19	0.0%	3	0.0%	0	—	0	—	0	—	367	0.5%	1	0.0%
< 7	270	231	0.0%	0.1%		0.2%	10	0.0%	1	0.0%	0	—	1	0.0%	0	—	219	0.3%	0	—
< 8	155	116	0.0%				1	0.0%	0	—	0	—	0	—	0	—	115	0.2%	0	—
< 9	118	78	0.0%	0.0%			1	0.0%	0	—	0	—	0	—	0	—	77	0.1%	0	—
<10	73	41	0.0%				0	—	0	—	0	—	0	—	0	—	41	0.1%	0	—
<11	70	37	0.0%	0.0%			0	—	1	0.0%	0	—	0	—	0	—	36	0.0%	0	—
<12	52	30	0.0%				1	0.0%	0	—	0	—	0	—	0	—	29	0.0%	0	—
<13	37	13	0.0%	0.0%		0.0%	0	—	0	—	0	—	0	—	0	—	13	0.0%	0	—
<14	36	12	0.0%				0	—	0	—	0	—	0	—	0	—	12	0.0%	0	—
<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	—
Total	476,952	467,730	100.0%	100.0%	100.0%		125,309	100%	113,970	100%	30,012	100%	46,718	100%	5,025	100%	72,322	100%	74,374	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) Includes the Preliminary survey responses and results of Yamakiya district, Kawamata Town

(*5) Includes the Preliminary survey responses and results of Namie Town and Iitate Village

*Percentages have been rounded to one decimal place

*The summary data is calculated excluding those estimation periods were less than four months

・Distribution of estimated external doses by area, by age group, by gender, and by municipality (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 thus far in prior years. Since previous epidemiological studies indicate no significant health effects at doses ≤100 mSv[1)], we concluded that radiation doses estimated so far are unlikely to cause adverse effects on health. However, 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, Volume 2, submitted to the General Assembly, with scientific annexes.

5. Questionnaire Response Guidance Sessions

In FY2024, we held 29 response guidance sessions in total, at Thyroid Ultrasound Examination venues in 7 regions in the prefecture as follows.

First half of the fiscal year:	10 times between July 21, 2024, and August 19, 2024
Second half of the fiscal year:	19 times between October 27, 2024, and March 26, 2025

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

Appendix 1

Response rates to the Basic Survey by municipality

(Entire prefecture data including preliminary survey)

As of March 31, 2025

Region & Municipalities		Survey population a	Total responses b	Response rate c=b/a	Valid responses d	Valid response rate e=d/a	Estimates completed f	Completion rate g=f/d	Results sent h	Notified rate i=h/d	Remarks
Kenpoku	Fukushima	295,632	94,123	31.8%	92,614	31.3%	92,604	100.0%	92,572	100.0%	
	Nihonmatsu	60,854	16,946	27.8%	16,581	27.2%	16,579	100.0%	16,577	100.0%	
	Date	67,574	18,331	27.1%	17,866	26.4%	17,865	100.0%	17,853	99.9%	
	Motomiya	31,759	9,121	28.7%	8,952	28.2%	8,949	100.0%	8,948	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	5,191	32.7%	5,018	31.6%	5,017	100.0%	5,012	99.9%	
	Otama	8,790	1,939	22.1%	1,895	21.6%	1,894	99.9%	1,894	99.9%	
	Total	504,015	152,567	30.3%	149,645	29.7%	149,627	100.0%	149,575	100.0%	
Kenchu	Koriyama	339,671	87,510	25.8%	85,744	25.2%	85,728	100.0%	85,723	100.0%	
	Sukagawa	80,156	17,355	21.7%	16,919	21.1%	16,917	100.0%	16,917	100.0%	
	Tamura	41,723	10,593	25.4%	10,229	24.5%	10,227	100.0%	10,224	100.0%	
	Kagamiishi	13,109	2,924	22.3%	2,861	21.8%	2,861	100.0%	2,861	100.0%	
	Tenei	6,469	1,259	19.5%	1,228	19.0%	1,228	100.0%	1,228	100.0%	
	Ishikawa	17,489	4,255	24.3%	4,151	23.7%	4,151	100.0%	4,151	100.0%	
	Tamakawa	7,333	1,516	20.7%	1,468	20.0%	1,468	100.0%	1,467	99.9%	
	Hirata	7,053	1,667	23.6%	1,611	22.8%	1,611	100.0%	1,611	100.0%	
	Asakawa	7,163	1,533	21.4%	1,498	20.9%	1,498	100.0%	1,497	99.9%	
	Furudono	6,321	1,329	21.0%	1,294	20.5%	1,294	100.0%	1,294	100.0%	
	Miharu	18,989	4,883	25.7%	4,787	25.2%	4,787	100.0%	4,786	100.0%	
	Ono	11,700	2,613	22.3%	2,549	21.8%	2,548	100.0%	2,547	99.9%	
	Total	557,176	137,437	24.7%	134,339	24.1%	134,318	100.0%	134,306	100.0%	
Kennan	Shirakawa	65,428	16,252	24.8%	15,921	24.3%	15,920	100.0%	15,916	100.0%	
	Nishigo	20,088	5,083	25.3%	4,966	24.7%	4,966	100.0%	4,965	100.0%	
	Izumizaki	6,931	1,445	20.8%	1,406	20.3%	1,405	99.9%	1,404	99.9%	
	Nakajima	5,306	1,026	19.3%	1,001	18.9%	1,001	100.0%	1,001	100.0%	
	Yabuki	18,341	4,143	22.6%	4,037	22.0%	4,036	100.0%	4,035	100.0%	
	Tanagura	15,384	3,082	20.0%	3,017	19.6%	3,017	100.0%	3,017	100.0%	
	Yamatsuri	6,491	1,487	22.9%	1,440	22.2%	1,440	100.0%	1,438	99.9%	
	Hanawa	10,061	2,342	23.3%	2,291	22.8%	2,291	100.0%	2,290	100.0%	
	Samegawa	4,196	826	19.7%	798	19.0%	798	100.0%	798	100.0%	
	Total	152,226	35,686	23.4%	34,877	22.9%	34,874	100.0%	34,864	100.0%	
Aizu	Aizuwakamatsu	127,814	29,920	23.4%	28,945	22.6%	28,930	99.9%	28,929	99.9%	
	Kitakata	53,199	11,160	21.0%	10,732	20.2%	10,731	100.0%	10,726	99.9%	
	Kitashiobara	3,276	613	18.7%	590	18.0%	590	100.0%	590	100.0%	
	Nishiaizu	7,725	1,464	19.0%	1,362	17.6%	1,362	100.0%	1,362	100.0%	
	Bandai	3,888	796	20.5%	778	20.0%	778	100.0%	777	99.9%	
	Inawashiro	16,271	3,672	22.6%	3,540	21.8%	3,540	100.0%	3,539	100.0%	
	Aizubange	17,881	3,336	18.7%	3,192	17.9%	3,190	99.9%	3,190	99.9%	
	Yugawa	3,513	749	21.3%	716	20.4%	716	100.0%	716	100.0%	
	Yanaizu	4,077	734	18.0%	702	17.2%	702	100.0%	702	100.0%	
	Mishima	2,029	377	18.6%	343	16.9%	343	100.0%	343	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	4,703	20.1%	4,505	19.2%	4,504	100.0%	4,503	100.0%	
	Total	267,198	58,509	21.9%	56,307	21.1%	56,288	100.0%	56,279	100.0%	
Minamiaizu	Shimogo	6,649	1,261	19.0%	1,203	18.1%	1,202	99.9%	1,202	99.9%	
	Hinoemata	614	144	23.5%	135	22.0%	135	100.0%	135	100.0%	
	Tadami	5,030	1,152	22.9%	1,090	21.7%	1,090	100.0%	1,090	100.0%	
	Minamiaizu	18,495	3,877	21.0%	3,699	20.0%	3,695	99.9%	3,694	99.9%	
	Total	30,788	6,434	20.9%	6,127	19.9%	6,122	99.9%	6,121	99.9%	
Soso	Soma	37,365	13,335	35.7%	12,828	34.3%	12,828	100.0%	12,809	99.9%	
	Minamisoma	70,013	30,323	43.3%	29,523	42.2%	29,519	100.0%	29,498	99.9%	
	Hirono	5,165	2,244	43.4%	2,154	41.7%	2,154	100.0%	2,152	99.9%	
	Naraha	7,963	4,192	52.6%	4,034	50.7%	4,034	100.0%	4,026	99.8%	
	Tomioka	15,749	8,649	54.9%	8,433	53.5%	8,433	100.0%	8,424	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	12,997	60.9%	12,703	59.5%	12,701	100.0%	12,686	99.9%	
	Katsurao	1,541	825	53.5%	768	49.8%	768	100.0%	768	100.0%	
	Shinchi	8,356	2,712	32.5%	2,613	31.3%	2,613	100.0%	2,610	99.9%	
	Iitate	6,588	3,446	52.3%	3,335	50.6%	3,335	100.0%	3,328	99.8%	
	Total	195,594	90,311	46.2%	87,601	44.8%	87,595	100.0%	87,503	99.9%	
Iwaki	Iwaki	348,241	88,955	25.5%	86,886	24.9%	86,869	100.0%	86,857	100.0%	
Grand Total		2,055,238	569,899	27.7%	555,782	27.0%	555,693	100.0%	555,505	100.0%	

Appendix 2

Basic Survey

Estimation Period - 4 months (from March 11, 2011 to July 11, 2011)

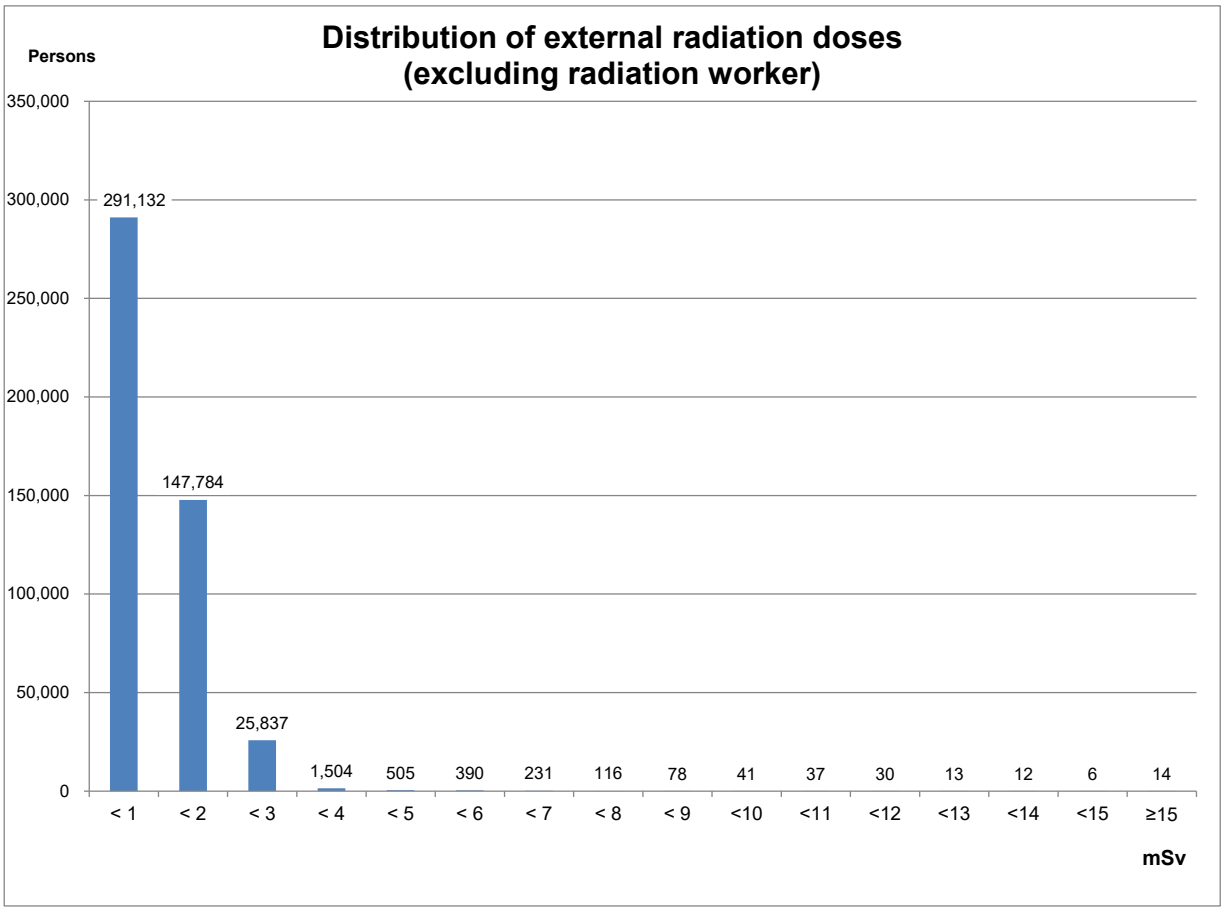
As of March 31, 2025

(Entire prefecture data including preliminary survey)

Distribution of estimated external radiation doses by region

Estimated dose (mSv)	Total	Excluding radiation workers	Breakdown by region							Proportion (%)		
			Kenpoku	Kenchu	Kennan	Aizu	Minami aizu	Soso	Iwaki			
< 1	296,866	291,132	24,993	58,672	26,469	46,379	4,988	55,930	73,701	62.2	93.8	99.8
< 2	150,134	147,784	84,017	46,540	3,525	312	37	12,716	637	31.6		
< 3	26,211	25,837	15,754	8,319	18	25	0	1,691	30	5.5	5.8	
< 4	1,587	1,504	473	429	0	1	0	597	4	0.3		
< 5	551	505	40	5	0	0	0	459	1	0.1	0.2	
< 6	442	390	19	3	0	0	0	367	1	0.1		0.2
< 7	270	231	10	1	0	1	0	219	0	0.0	0.1	
< 8	155	116	1	0	0	0	0	115	0	0.0		
< 9	118	78	1	0	0	0	0	77	0	0.0	0.0	
<10	73	41	0	0	0	0	0	41	0	0.0		
<11	70	37	0	1	0	0	0	36	0	0.0	0.0	0.0
<12	52	30	1	0	0	0	0	29	0	0.0		
<13	37	13	0	0	0	0	0	13	0	0.0	0.0	
<14	36	12	0	0	0	0	0	12	0	0.0		
<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	476,952	467,730	125,309	113,970	30,012	46,718	5,025	72,322	74,374	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, 2011, to July 11, 2011)

Appendix 3-1

As of March 31, 2025

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

Estimated Dose (mSv)	Age at the time of the disaster (years-old)									Total
	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 -	
< 1	48,615	45,575	21,445	34,515	28,835	32,917	36,338	25,736	17,156	291,132
< 2	23,197	21,992	10,180	18,395	16,728	18,560	19,499	12,294	6,939	147,784
< 3	6,525	4,325	1,143	2,355	2,253	2,975	3,425	1,996	840	25,837
< 4	253	161	81	158	154	230	233	164	70	1,504
< 5	19	47	35	39	75	95	81	76	38	505
< 6	14	13	29	34	47	86	73	66	28	390
< 7	3	7	10	22	24	45	52	47	21	231
< 8	4	4	8	9	13	35	22	14	7	116
< 9	2	6	2	7	8	16	16	12	9	78
<10	0	1	2	3	3	12	11	5	4	41
<11	1	1	2	2	6	11	5	6	3	37
<12	0	0	1	3	0	5	8	11	2	30
<13	0	0	0	0	1	6	4	1	1	13
<14	0	0	1	1	1	4	3	2	0	12
<15	0	0	0	0	0	3	3	0	0	6
≥15	0	0	0	0	2	3	6	1	2	14
Total	78,633	72,132	32,939	55,543	48,150	55,003	59,779	40,431	25,120	467,730

Estimation Period - 4 months (From March 11, 2011, to July 11, 2011)

Appendix 3-2

As of March 31, 2025

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

Estimated dose (mSv)	By gender				Total	Proportion (%)
	Male	Proportion (%)	Female	Proportion (%)		
< 1	129,790	60.6	161,342	63.6	291,132	62.2
< 2	68,440	32.0	79,344	31.3	147,784	31.6
< 3	14,030	6.6	11,807	4.7	25,837	5.5
< 4	955	0.4	549	0.2	1,504	0.3
< 5	282	0.1	223	0.1	505	0.1
< 6	199	0.1	191	0.1	390	0.1
< 7	130	0.1	101	0.0	231	0.0
< 8	64	0.0	52	0.0	116	0.0
< 9	49	0.0	29	0.0	78	0.0
<10	24	0.0	17	0.0	41	0.0
<11	23	0.0	14	0.0	37	0.0
<12	16	0.0	14	0.0	30	0.0
<13	6	0.0	7	0.0	13	0.0
<14	8	0.0	4	0.0	12	0.0
<15	3	0.0	3	0.0	6	0.0
≥15	11	0.0	3	0.0	14	0.0
Total	214,030	100.0	253,700	100.0	467,730	100.0

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

Basic Survey

Appendix 4

Summary of estimated external radiation dose results (Estimation period for 4 months from March 11, 2011, to July 11, 2011)

As of March 31, 2025

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

Region	Municipality	Mean dose	Estimated cumulative doses)																Total
			< 1	< 2	< 3	< 4	< 5	< 6	< 7	< 8	< 9	< 10	< 11	< 12	< 13	< 14	< 15	≥ 15	
Kenpoku	Fukushima	1.4	16,212	52,739	9,419	151	13	10	4	0	0	0	0	0	0	0	0	0	78,548
	Nihonmatsu	1.6	1,318	8,681	3,543	91	1	0	0	0	0	0	0	0	0	0	0	0	13,634
	Date	1.3	4,397	9,110	1,135	147	8	2	3	1	1	0	0	0	0	0	0	0	14,804
	Motomiya	1.5	746	5,466	1,261	24	1	0	0	0	0	0	0	0	0	0	0	0	7,498
	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	2,754	185	56	17	6	3	0	0	0	0	1	0	0	0	0	3,665
	Otama	1.3	394	1,076	133	2	0	0	0	0	0	0	0	0	0	0	0	0	1,605
Subtotal		1.4	24,993	84,017	15,754	473	40	19	10	1	1	0	0	1	0	0	0	0	125,309
Kenchu	Koriyama	1.3	24,114	40,938	7,864	419	5	3	1	0	0	0	0	0	0	0	0	0	73,344
	Sukagawa	0.7	10,900	3,230	338	4	0	0	0	0	0	0	0	0	0	0	0	0	14,472
	Tamura	0.4	7,705	684	24	3	0	0	0	0	0	0	0	0	0	0	0	0	8,416
	Kagamiishi	0.5	2,372	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,448
	Tenei	1.2	405	590	60	1	0	0	0	0	0	0	0	0	0	0	0	0	1,056
	Ishikawa	0.3	3,213	39	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3,254
	Tamakawa	0.3	1,190	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1,212
	Hirata	0.3	1,301	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,336
	Asakawa	0.3	1,236	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,251
	Furudono	0.3	1,077	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1,093
	Miharu	0.7	3,131	817	24	2	0	0	0	0	0	0	1	0	0	0	0	0	3,975
	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	58,672	46,540	8,319	429	5	3	1	0	0	0	1	0	0	0	0	0	113,970
Kennan	Shirakawa	0.7	12,537	1,289	9	0	0	0	0	0	0	0	0	0	0	0	0	0	13,835
	Nishigo	0.9	2,250	2,048	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4,301
	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	846	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	860
	Yabuki	0.4	3,395	83	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3,479
	Tanagura	0.4	2,579	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,610
	Yamatsuri	0.1	1,162	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,171
	Hanawa	0.2	1,881	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,904
	Samegawa	0.3	655	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	666
Subtotal		0.6	26,469	3,525	18	0	0	0	0	0	0	0	0	0	0	0	0	0	30,012
Aizu	Aizuwakamatsu	0.2	23,932	161	13	0	0	0	1	0	0	0	0	0	0	0	0	0	24,107
	Kitakata	0.3	8,990	56	3	1	0	0	0	0	0	0	0	0	0	0	0	0	9,050
	Kitashiobara	0.4	481	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	485
	Nishiaizu	0.1	1,023	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,025
	Bandai	0.3	657	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	667
	Inawashiro	0.2	2,863	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,897
	Aizubange	0.3	2,685	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,700
	Yugawa	0.4	612	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	616
	Yanaizu	0.2	558	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	563
	Mishima	0.2	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
	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	3,676	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3,702
Subtotal		0.2	46,379	312	25	1	0	0	1	0	0	0	0	0	0	0	0	0	46,718
Minamiaizu	Shimogo	0.1	972	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	977
	Hinoemata	0.1	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
	Tadami	0.1	882	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	887
	Minamiaizu	0.1	3,029	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,056
Subtotal		0.1	4,988	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,025
Soso	Soma	0.6	10,046	467	87	20	5	0	0	0	0	2	0	0	0	0	0	0	10,627
	Minamisoma	0.7	19,146	6,231	514	99	35	3	7	4	1	0	0	1	0	0	0	0	26,041
	Hirono	0.3	1,847	59	2	0	0	0	1	0	1	0	0	0	0	0	0	0	1,910
	Naraha	0.3	3,404	131	13	2	0	1	1	0	0	0	0	0	0	0	0	0	3,552
	Tomioka	0.5	5,838	1,108	100	18	3	2	1	3	2	0	0	1	0	0	0	0	7,076
	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	2,119	383	68	40	17	12	13	9	6	11	7	5	4	3	8	8,472
	Katsurao	0.7	502	162	24	4	0	1	0	0	0	0	0	0	0	0	0	0	693
	Shinchi	0.5	2,181	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,201
	Iitate	4.0	186	317	363	349	364	334	189	85	62	30	23	17	8	4	3	4	2,338
Subtotal		0.7	55,930	12,716	1,691	597	459	367	219	115	77	41	36	29	13	12	6	14	72,322
Iwaki	Iwaki	0.3	73,701	637	30	4	1	1	0	0	0	0	0	0	0	0	0	0	74,374
Total (A)		0.8	291,132	147,784	25,837	1,504	505	390	231	116	78	41	37	30	13	12	6	14	467,730
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	0.0	100.0
			99.8					0.2					0.0					0.0	100.0
Temporary visitors (B)			1,621	284	18	2	0	0	0	0	0	0	0	0	0	0	0	1	1,926
Total (A) + (B)			292,753	148,068	25,855	1,506	505	390	231	116	78	41	37	30	13	12	6	15	469,656

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

Report on the Results of Mental Health and Lifestyle Survey for FY2023

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. The objectives of the Mental Health and Lifestyle Survey are to properly assess our residents' physical, psychological, and lifestyle conditions and provide them with appropriate care and social support.

2. Methods

2-1 Eligible persons

- Those who were registered as residents in covered areas* from March 11, 2011, to April 1, 2012 (even after moving from those areas)
- Those who were registered as residents of municipalities designated as evacuation zones as of April 1, 2023
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

The total number of eligible persons: 190,748 (as of October 31, 2024)

Ages 0–3 Survey: born from April 2, 2020, to April 1, 2023	2,044 persons
Ages 4–6 Survey: born from April 2, 2017, to April 1, 2020	2,643 persons
Elementary School Students Survey: born from April 2, 2011, to April 1, 2017	6,789 persons
Junior High School Students Survey: born from April 2, 2008 to April 1, 2011	5,125 persons
Adults Survey: born on April 1, 2008, or before	174,147 persons

* Covered areas: Municipalities designated as evacuation zones by the Government of Japan 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 (including specific spots recommended for evacuation)

2-2 Survey details

A. Survey sheets

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

The 2021 questionnaire reflects the decisions of the 40th Prefectural Oversight Committee Meeting, which considered the possibility that many survey items might be burdensome for respondents, so the number of survey items was reduced. Questions were focused on general mental health, sleep status, alcohol consumption, and other topics directly related to our support (reducing by about half the general mental health-related items of the Questionnaire). The questions were also slightly modified (e.g., smoking questions included vaping with electronic cigarettes).

B. Mailing dates

Survey sheets were mailed out in order on January 29, 2024.

C. Response Method

Responses were returned either by post or online.
(Online responses were accepted from the day the survey sheets were delivered through April 30, 2023.)

2-3 Data tabulation period

Responses received from the start through October 31, 2024, were tabulated.

3. Summary of Survey Results

The results were tabulated by age groups, including children (Ages 0 – 3, Ages 4 – 6, Elementary School Students, Junior High School Students) and adults. Due to some unreported items, totals may not match the number of valid responses. Percentages in this text and tabulation results are rounded, so they may not add up to 100%.

To mark yearly trends, the first survey year for FY2011 (or the second year for FY2012), the fifth year for FY2015, and the tenth year for FY2020, FY2021, FY2022, and this year's survey for FY2023 — excluding questions about 'COVID-19 influences on daily lives' — and this year's results are indicated in their respective graphs and figures.

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

A. Number of respondents (and rates)

Total responses (and response rates) to the surveys on children (ages 0–3, ages 4–6, elementary school, and junior high school) in FY2023 are as indicated in Table 1 and Figure 1.

The percentages of online responses in FY2023 were 53.2% for those aged 0 to 3, 45.4% for those aged 4 to 6, 48.8% for elementary school students, and 44.8% for junior high school students; these were the highest percentages ever.

Table 1: FY2022 Number of total responses and valid responses (response rates)

Age group	Respondents	Response Rate	Valid responses	Response Rate
0-3	219	(10.7)	218	(10.7)
4-6	216	(8.2)	216	(8.2)
Elementary school students	645	(9.5)	644	(9.5)
Junior high school students	581	(11.3)	581	(11.3)
Total	1,661	(10.0)	1,659	(10.0)

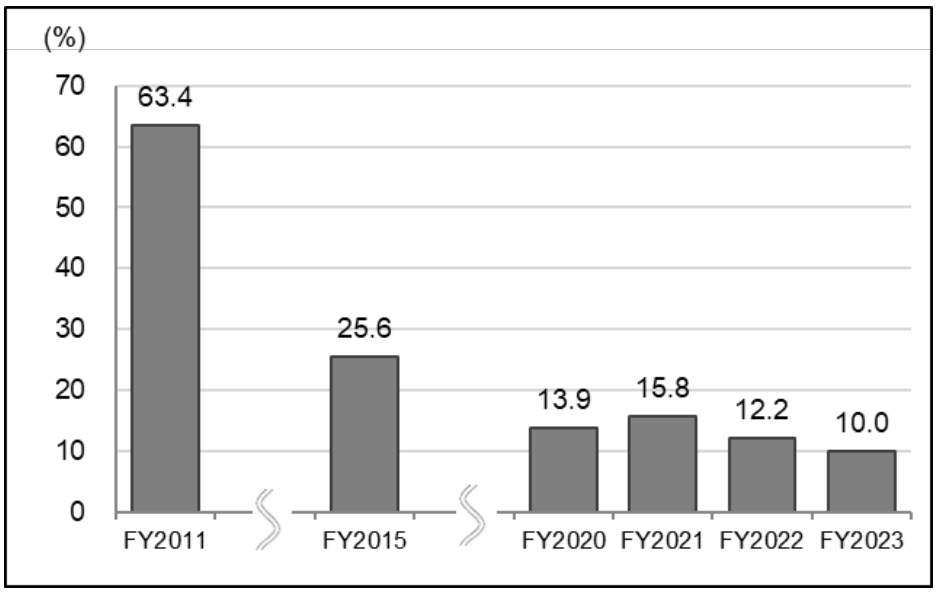


Figure 1: Changes in response rates for the children's surveys

B. Frequency of daily exercise

In the FY2023 survey, “Rarely” was the response of 2.3% in ages 2-3, 2.3% in ages 4-6, 34.4% of elementary school students, and 33.6% of junior high school students (see Figure 2 – 5).

According to a national survey on school children conducted in FY2023*1, the proportions of those who exercise for less than 60 minutes per week (excluding PE classes at school) were 9.0% of elementary school (5th grade) boys and 16.2% of elementary school (5th grade) girls, 11.3% of junior high school (8th grade) boys and 25.1% of junior high school (8th grade) girls. Although the national survey results are not directly comparable to our survey since the respondents, questions, and response method differ from the National Survey, they are worthy of attention and action.

*1 Sports Agency “FY2023 National Survey on Physical Fitness, Athletic Performance, and Exercise Habits” Chapter 1. Summary of the Survey Results, https://www.mext.go.jp/sports/content/20231218-spt_sseisaku02-000032954_12.pdf

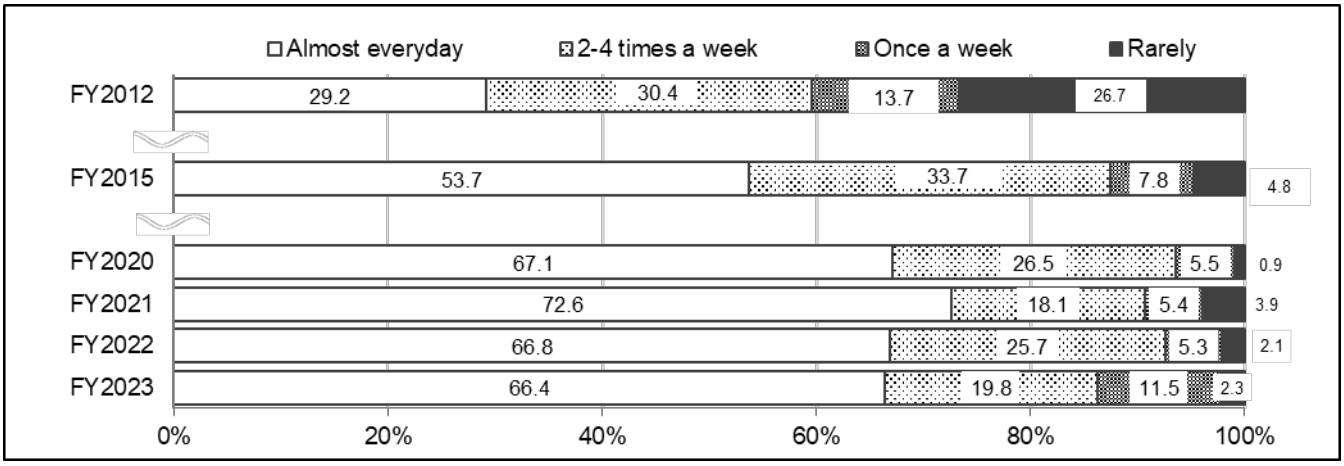


Figure 2: Changes in frequency of exercise: ages 2–3

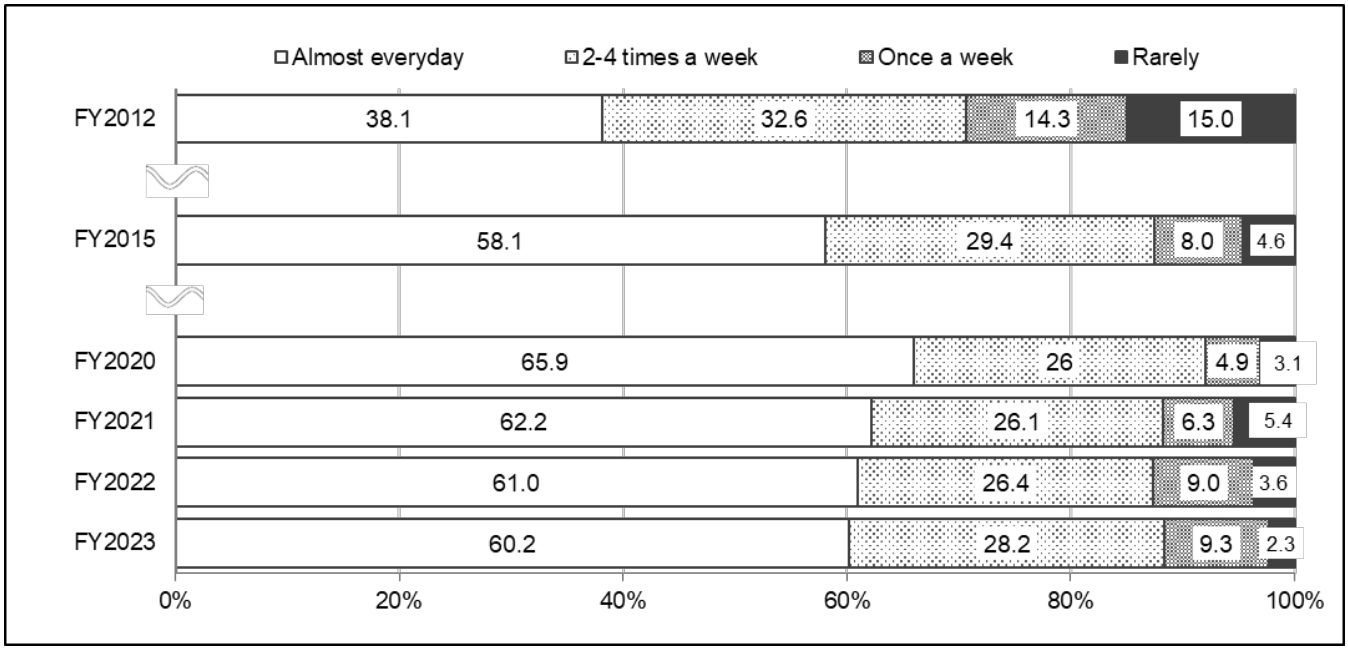


Figure 3: Changes in frequency of exercise: ages 4–6

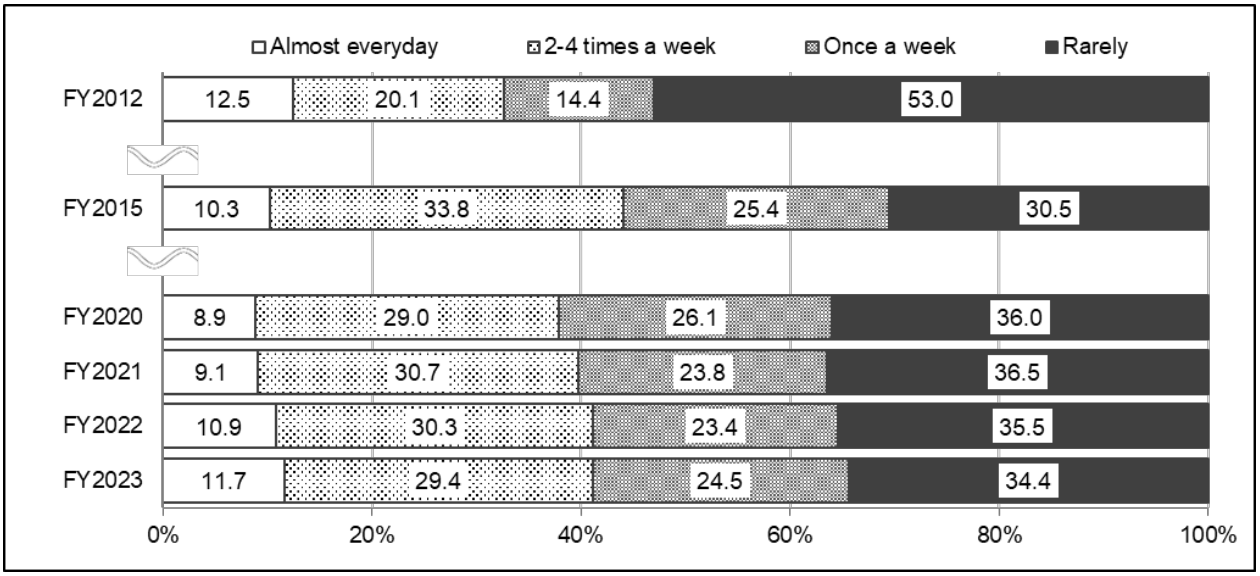


Figure 4: Changes in frequency of exercise: elementary school students

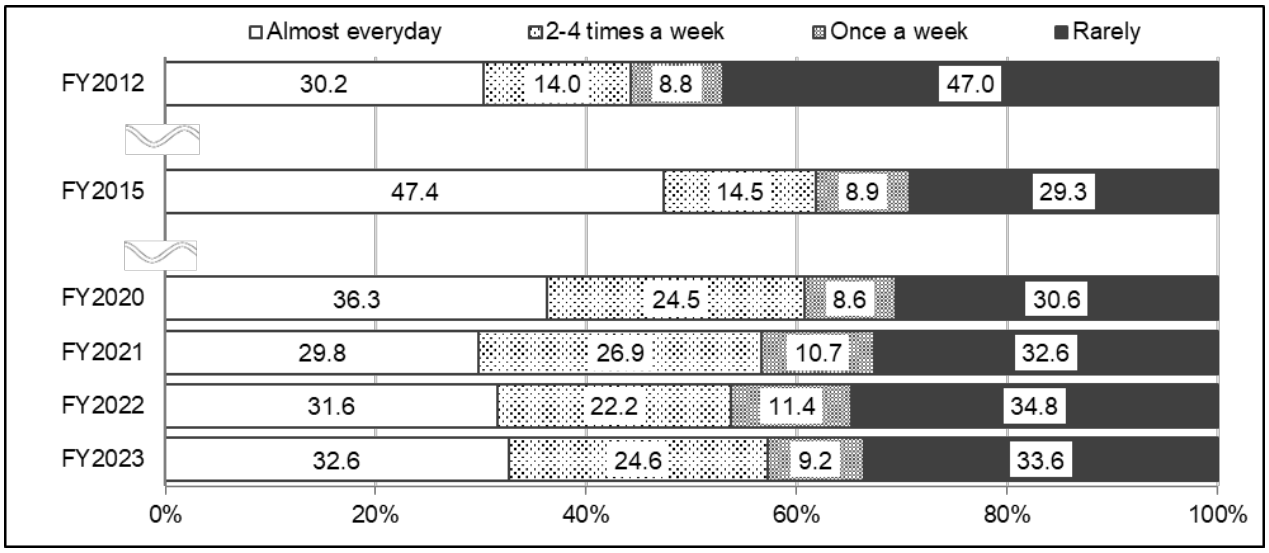


Figure 5: Changes in frequency of exercise: junior high school students

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 FY2023, the proportion of children with high-risk scores (SDQ score of 16 or higher) having certain emotional or behavioral problems was 9.7% for children aged 4 to 6, 10.7% for elementary school students, and 8.4% 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 (*2), the proportion of 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, where it improved to about the same as prior studies (Figure 6). Refer to Figure 7–9 for results by gender, and to Figure 10 for results by residential location at the time of the survey.

[About SDQ]

The SDQ consists of 25 questions 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 have certain emotional or behavioral problems that warrant expert support.

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

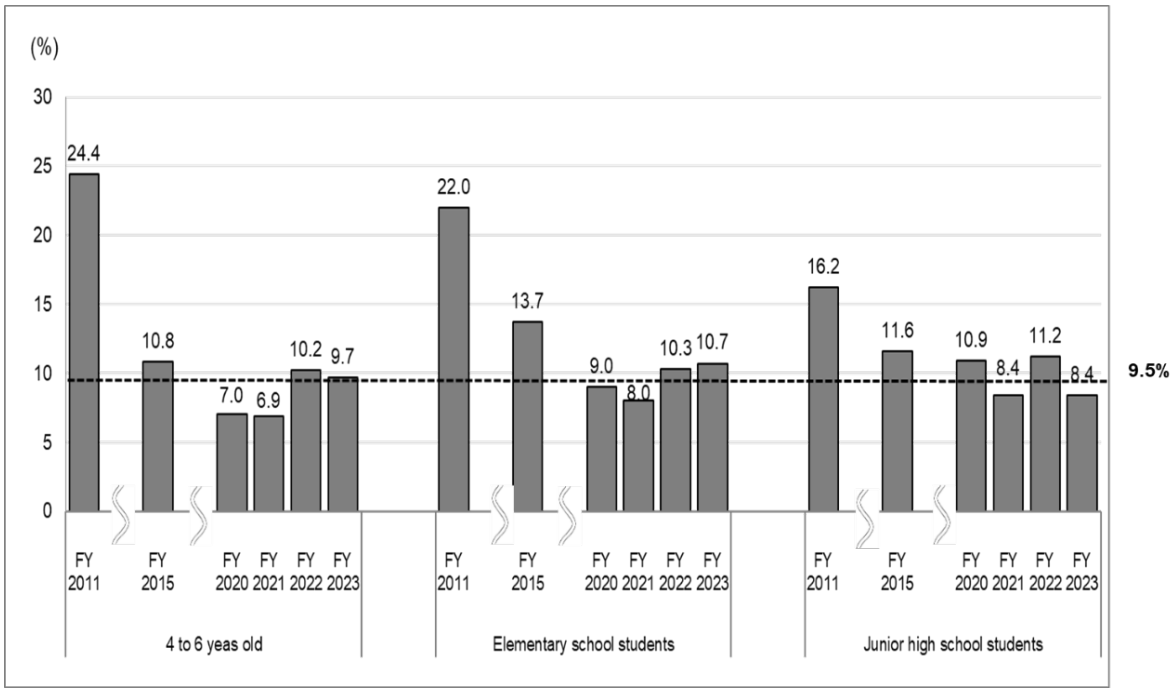


Figure 6: Changes in the proportion of those scoring 16 points or higher in SDQ: all age groups

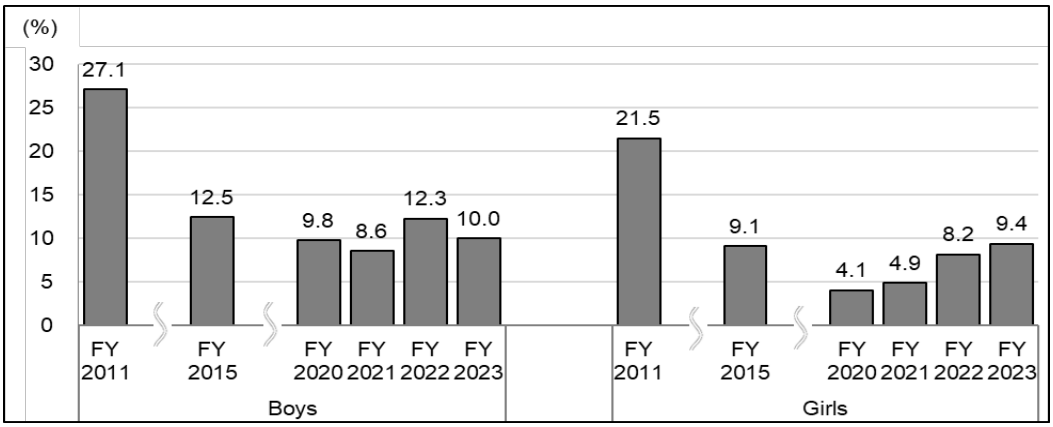


Figure 7: Changes in the proportion of those scoring 16 points or higher in SDQ: ages 4–6

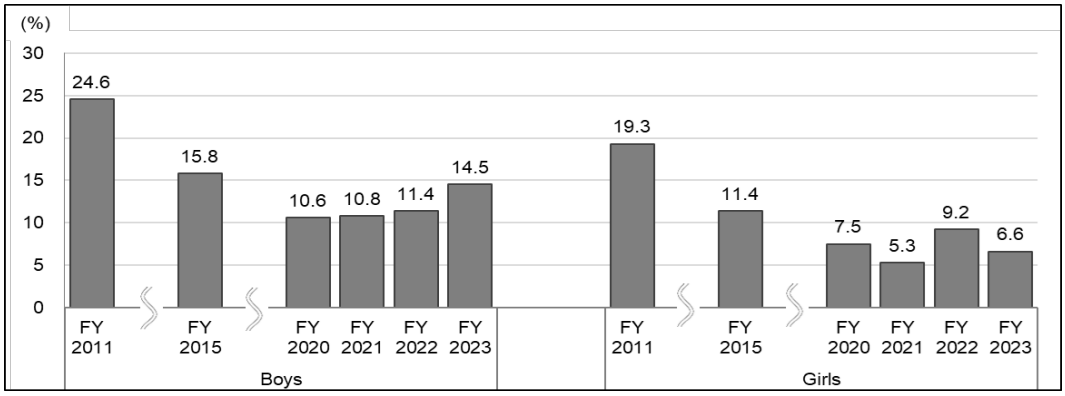


Figure 8: Changes in the proportion of those scoring 16 points or higher in SDQ: elementary school students

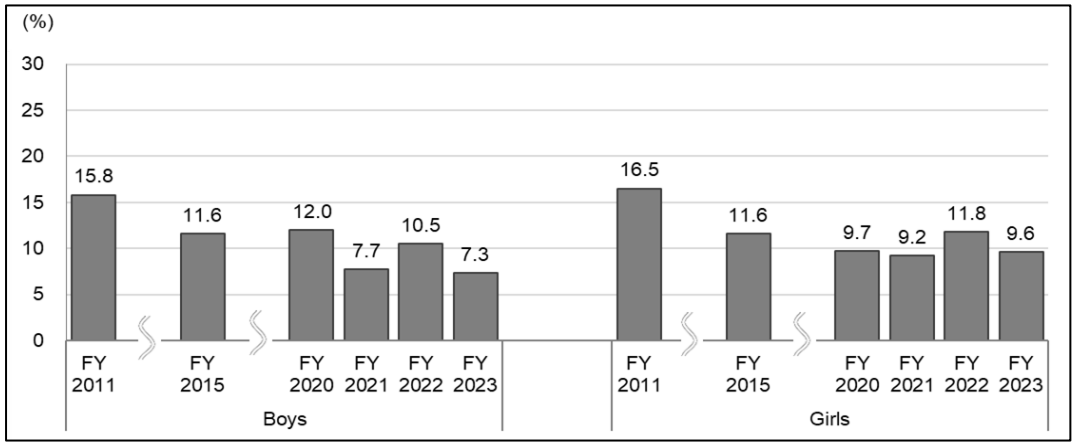


Figure 9: Changes in the proportion of those scoring 16 points or higher in SDQ: junior high school students

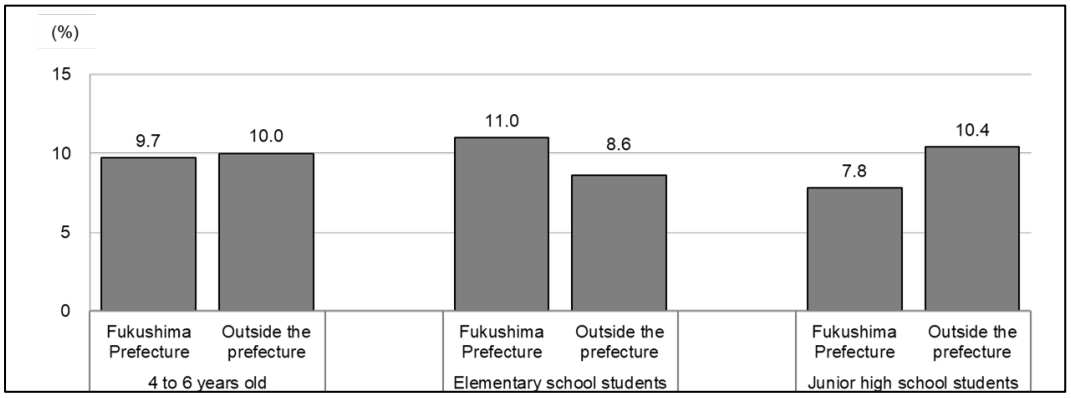


Figure 10: Changes in the proportion of those scoring 16 points or higher in SDQ, by residential location at the time of the FY2023 survey.

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

In the FY2023 survey, those who responded that COVID-19 exerted influence on their daily life "To some extent" or "Significantly" accounted for 24.3% of those aged 0 to 3, 27.2% of those aged 4 to 6, 25.0% of elementary school students, 34.3% of junior high school students themselves and 25.5% of the guardians of junior high school students (*). Generally, the percentage of children affected was lower than the previous year (Figure 11).

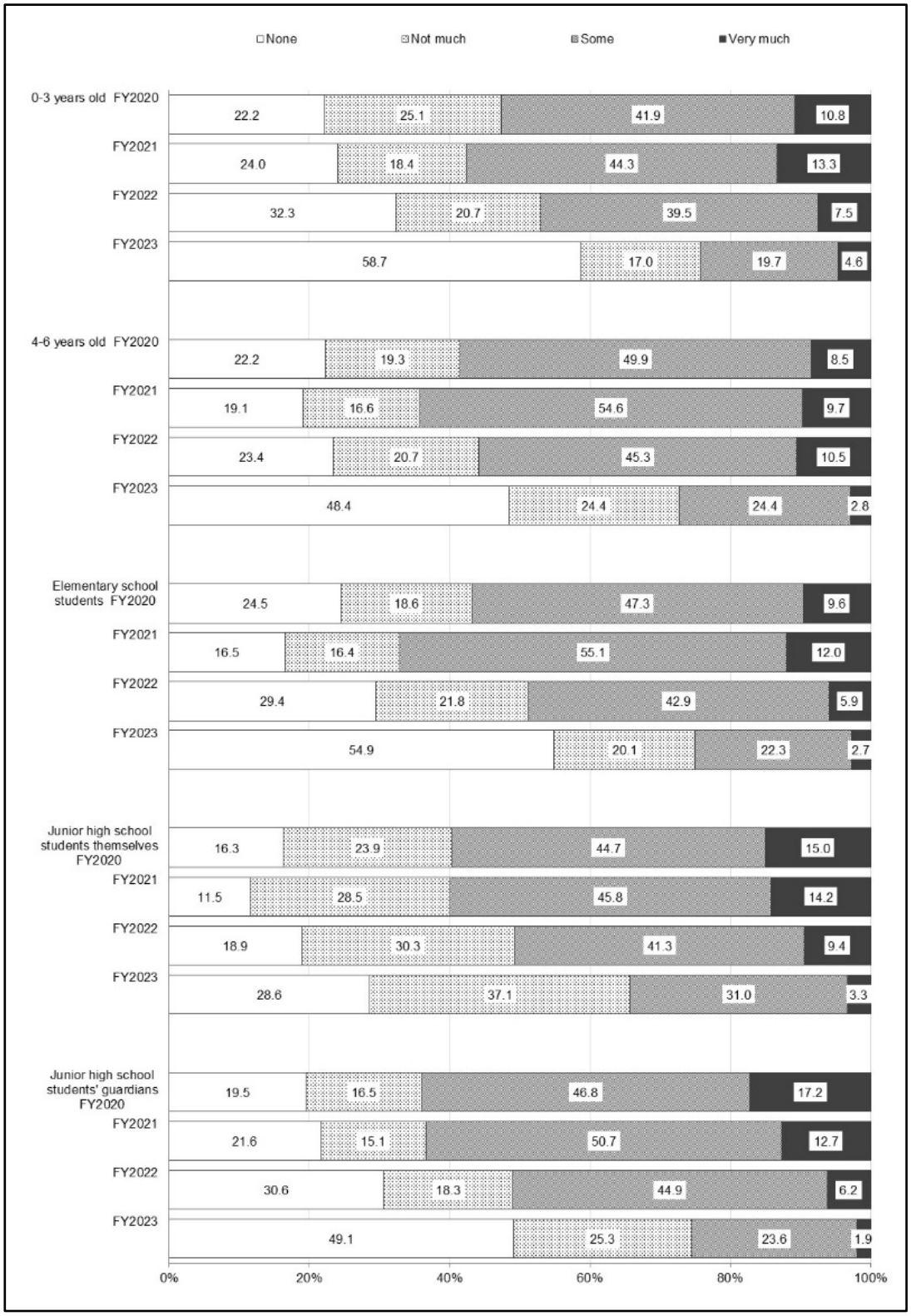


Figure 11: Influence on daily life by the COVID-19 epidemic

*From the standpoint of parents/guardians

3-2 Results of the Adults Survey (ages 16 or older)

A. Number of respondents (response rate)

In the FY2023 survey, the number of adult respondents (ages 16 and older) was 31,372 (response rate 18.0%), with 31,257 valid responses (valid response rate 17.9%) (Figure 12). By age group, the number of respondents (response rate) was 3,794 (8.0%) for those 16 to 39 years old, 8.283 (13.7%) for those 40 to 64 years old, and 19,295 (29.2%) for those 65 years and older (Figure 13). An online response system was introduced in FY2016, and the percentage of online responses was the highest ever in FY2023, at 22.7%.

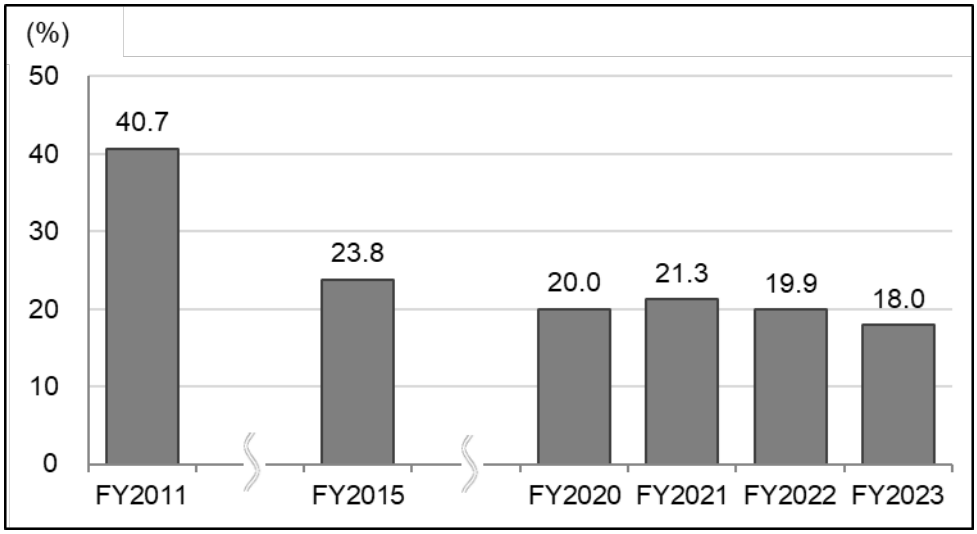


Figure 12: Changes in the response rates in the Adults Survey

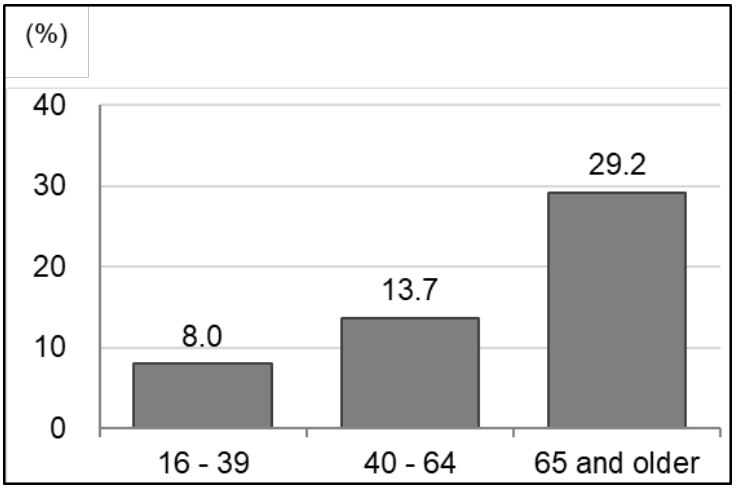


Figure 13: Response rates in the FY2023 Adults Survey, by age group

B. Subjective health condition

Regarding self-reported health conditions in FY2023, "Very good" or "Good" answers reached 29.4% (Figure 14). By age group, the proportion of those who answered "Very good" or "Good" was higher among younger generations: 23.2% for ages 65 and older, and 51.9% for ages 16 to 39 (Figure 15).

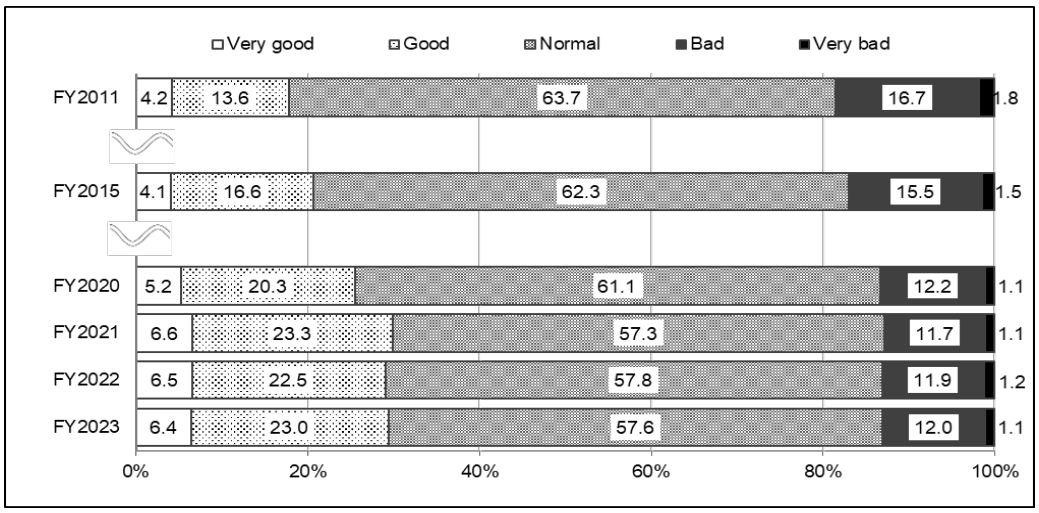


Figure 14: Changes in subjective health condition

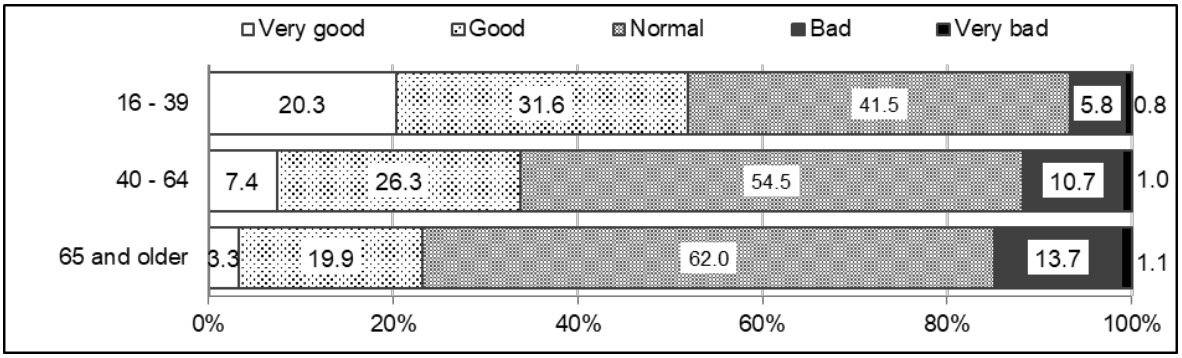


Figure 15: Subjective health condition by age group in the FY2023 Adults Survey

C. Sufficiency of sleep

37.9% of the respondents answered “Sufficient” in the FY2023 survey. Conversely, the proportion of those who answered “Very insufficient” or “Greatly insufficient or couldn’t get any sleep” was 13.8% (Figure 16).

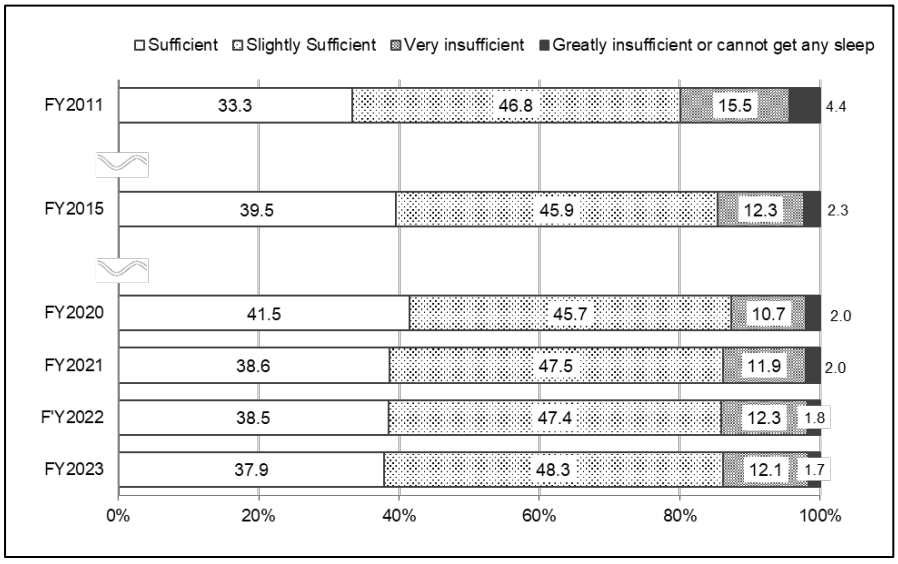


Figure 16: Changes in the degree of sleep sufficiency in adults

D. Frequency of exercise

In the FY2023 Survey, exercise frequency of “Almost every day” and “2-4 times a week” was 43.9% (Figure 17). A national survey (*3) showed 44.8% for those 20 years and older who exercised more than 2 days a week; although national survey results are not directly comparable, exercise habits reported in our survey were similar to those in Japan overall. When looked at by residential location at the time of the survey, those living in Fukushima prefecture tended to exercise more frequently than those living outside the prefecture (Figure 18).

*3 FY2023 National Health and Nutrition Survey, Ministry of Health, Labour and Welfare
https://www.mhlw.go.jp/content/001435374.pdf

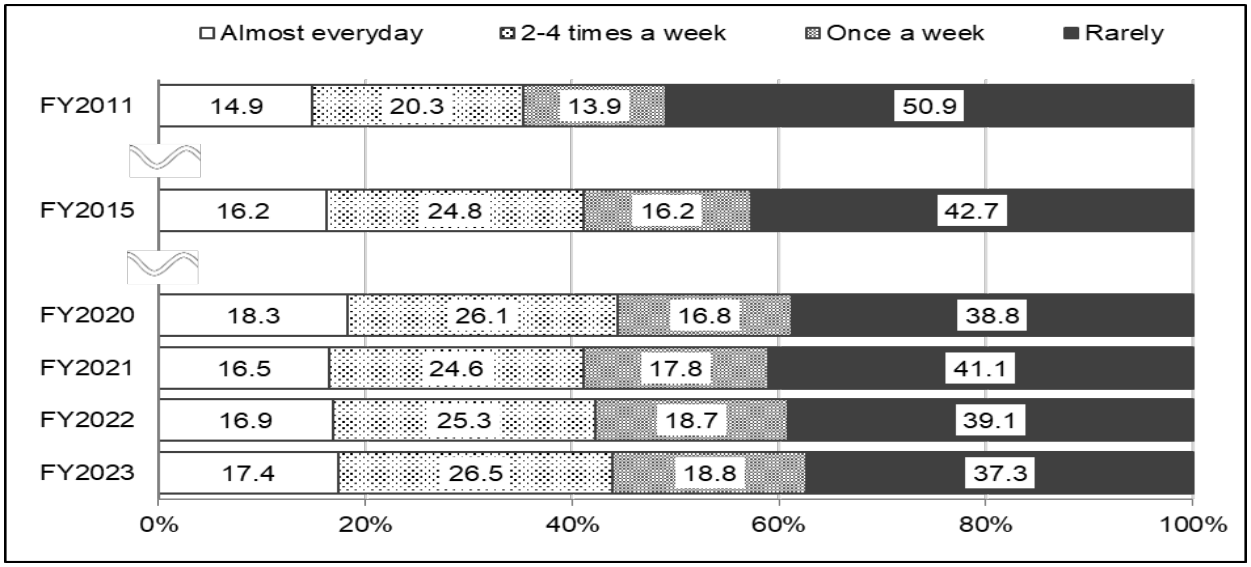


Figure 17: Changes in the frequency of exercise in adults

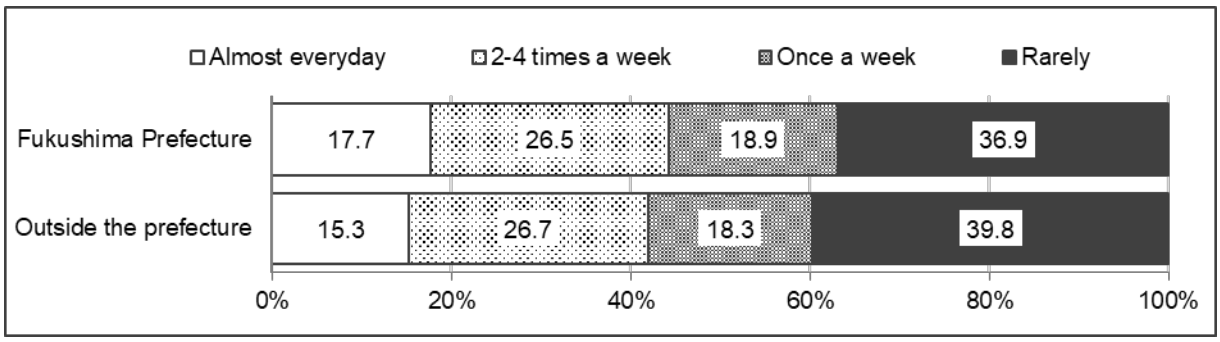


Figure 18: Frequency of exercise by location of residence at the time of the survey (in Fukushima or other prefectures) in the FY2023 Adults Survey

E. Prevalence of smoking

In the FY2023 survey, the proportion of smokers was 21.3% among males and 6.1% among females, for an overall proportion of 13.4% (Figure 19). Achieving the 12% target of Healthy Japan 21 (Phase 2) will require further efforts.

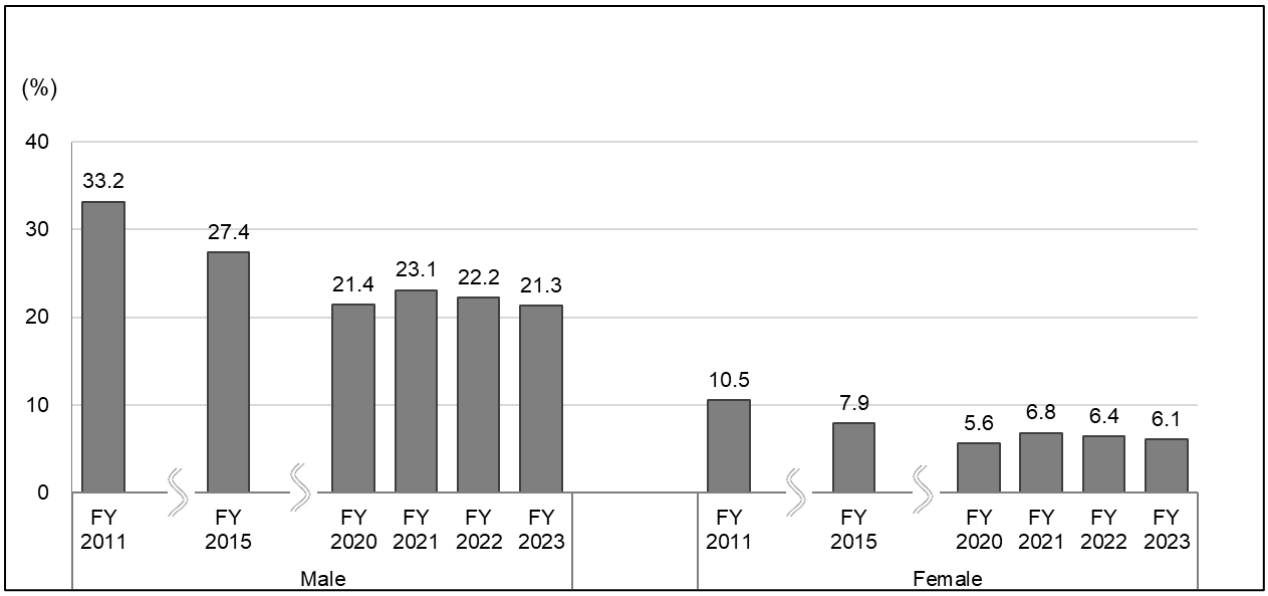


Figure 19: Changes in the prevalence of smoking, by gender

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 FY2023 survey, the proportion of those with high-risk scores (CAGE score of 2 points or higher) was 13.9% among males and 6.5% among females, part of a downward trend for both, but the female proportion was slightly increased (Figure 20). When looked at by age groups and gender, the percentage was the 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 both males and 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 problematic drinking**.**

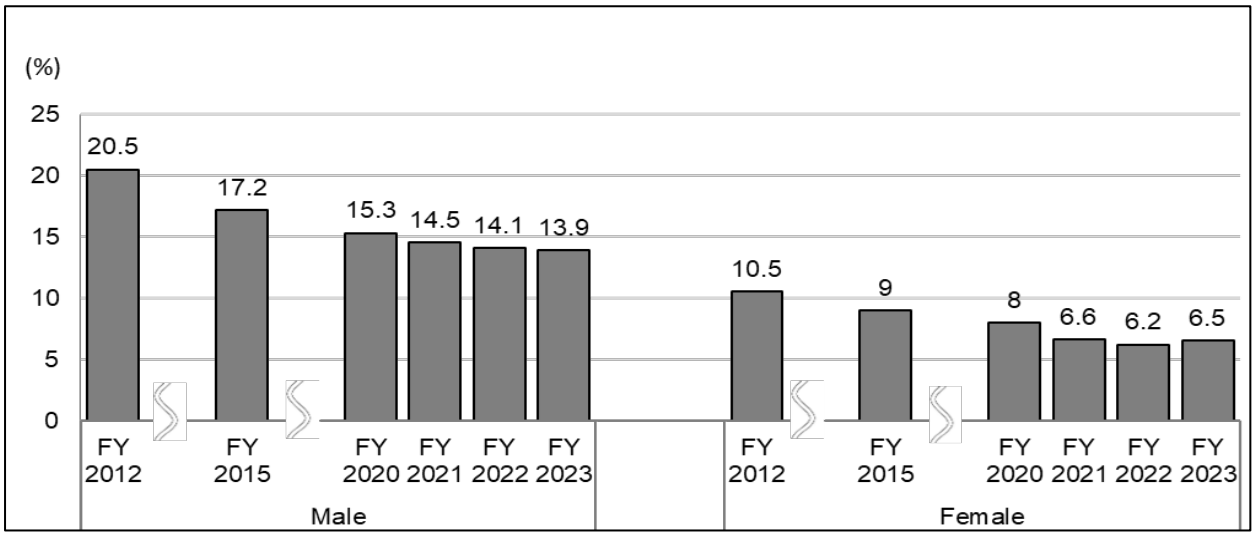


Figure 20: Changes in the proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE), by gender

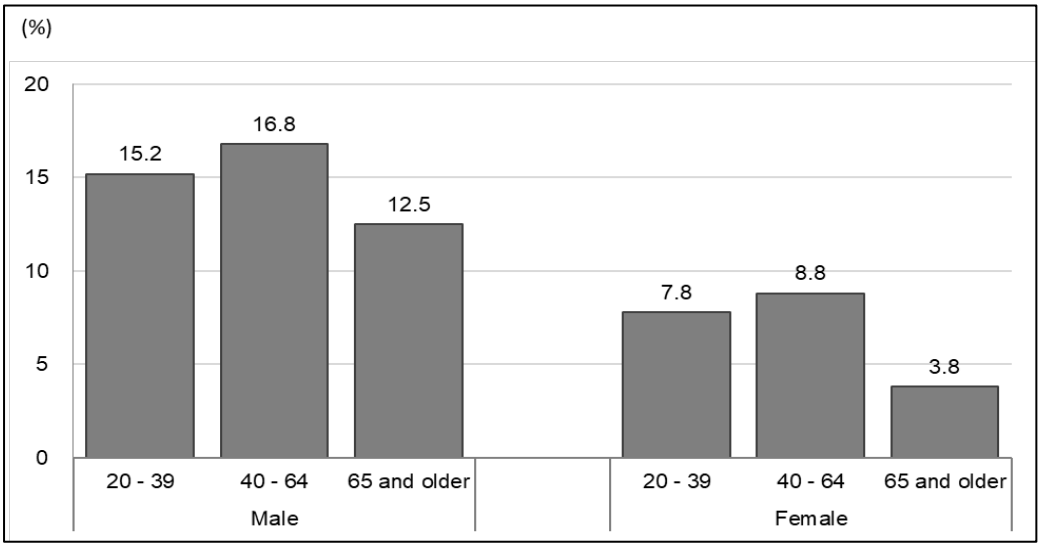


Figure 21: The proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2023 Survey, by age group and by gender

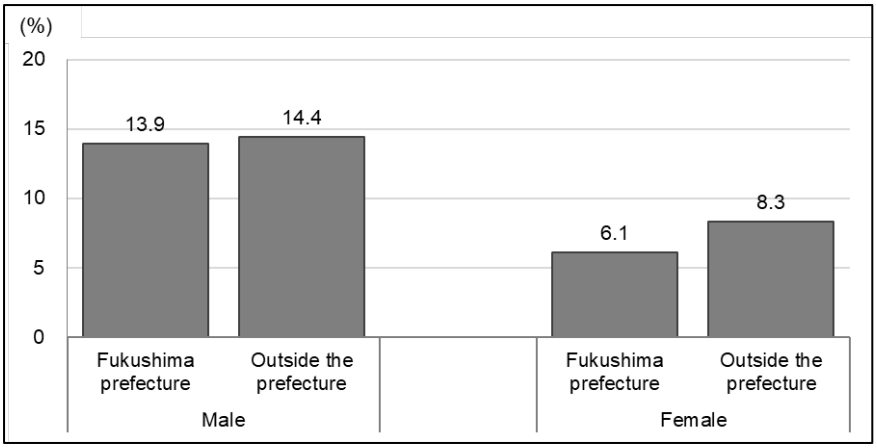


Figure 22: The proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2023 Survey, by residential location and by gender

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

General mental health and the possibility of a mood disorder (e.g., depression) or anxiety disorder were examined using the K6 Distress Scale (with a cutoff value of 13 based on previous studies).

In the FY2023 survey, the proportion of those with high-risk scores (K6 score of 13 points or higher) for mood disorder or anxiety disorder was 5.4% overall (Figure 23). However, the percentage is still high in Fukushima compared to the result of 3% from a previous study covering members of the public who were not affected by the disaster. (*4) By gender, the percentage was higher among females (5.9%) than among males (4.8%) (Figure 24). The comparison by age group showed that the percentage was higher among younger people than among older people (Figure 25). The comparison by residential area at the time of the survey (in or outside Fukushima Prefecture) showed that 5.0% of those living in the prefecture, versus 7.7% of those living outside the prefecture, were at high risk (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, Toshiaki Furukawa, 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 the health status of Japanese people from the perspective of households) supported by a FY2007 Health and Labor Science Research Grant (for research projects on advanced utilization of statistical information).

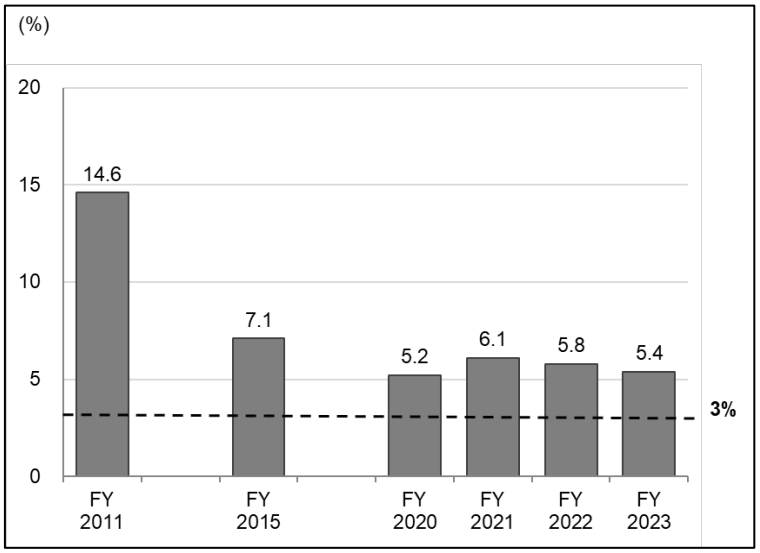


Figure 23: Changes in the proportion of those scoring 13 or higher on K6

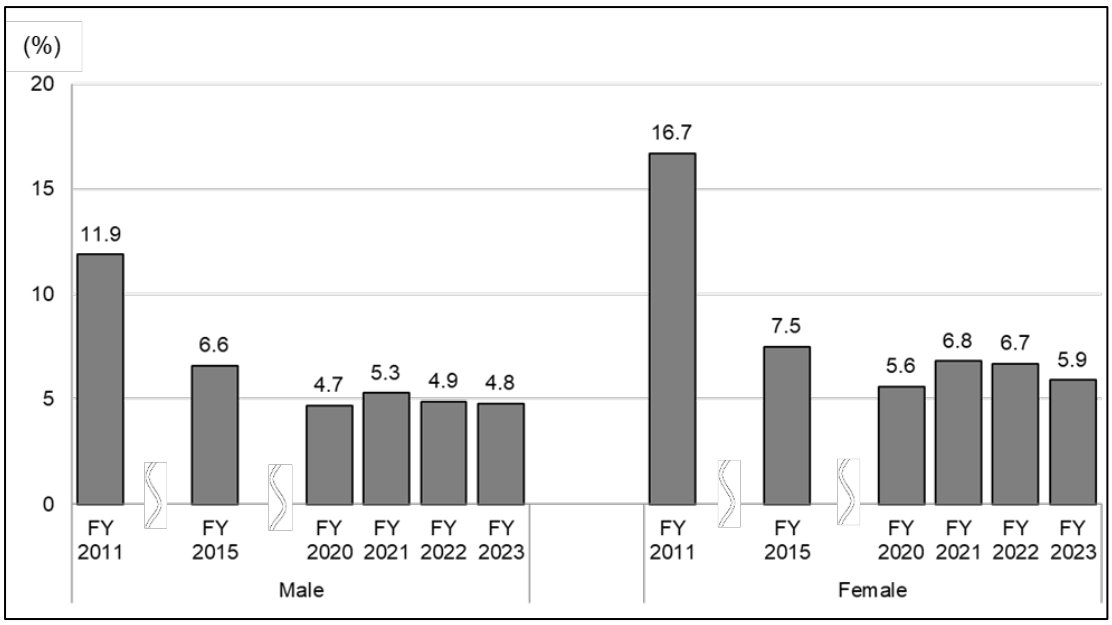


Figure 24: Changes in the proportion of those scoring 13 points or higher on K6, by gender

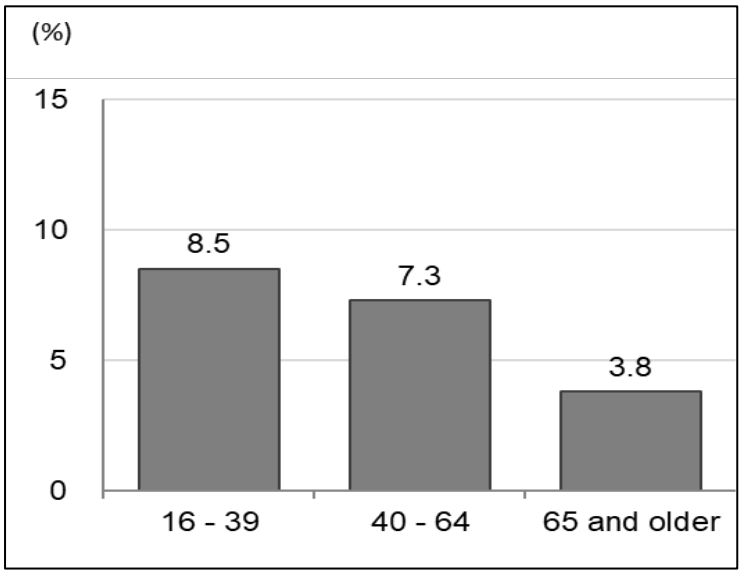


Figure 25: The proportion of those scoring 13 points or higher on K6 in the FY2023 Survey, by age group

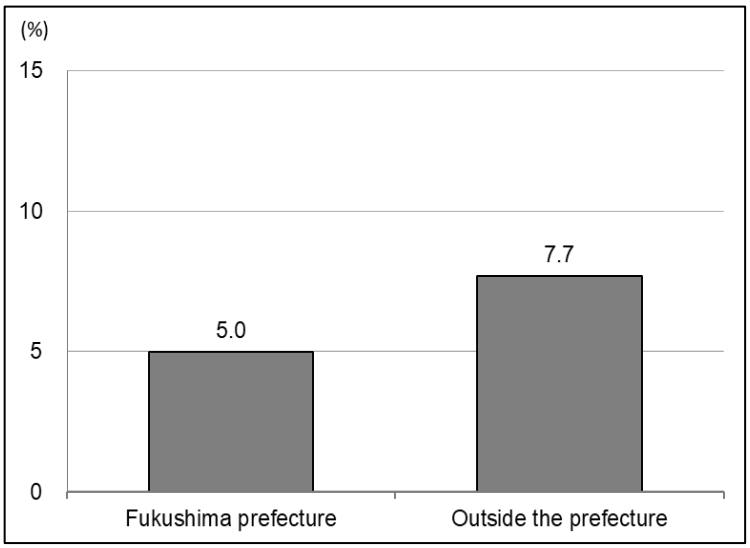


Figure 26: The proportion of those scoring 13 points or higher on K6 in the FY2023 Survey, by location of residence at the time of the survey

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

In the FY2023 survey, those who responded that COVID-19 exerted influence on their daily life "Significantly" or "To some extent" (the affected group) accounted for 26.5%, which decreased compared with the last year (Figure 27). By gender, the affected group accounted for 26.0% among males and a slightly higher 27.0% among females (Figure 28). By age group, the affected group accounted for 23.4% among those ages 16 to 39, 31.1% among those ages 40 to 64, and 25.1% among those ages 65 and older (Figure 29).

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 affected or not much affected by COVID-19, the relevant percentages were considerably higher for the former group (Figure 30), showing substantial differences in mental health conditions between these groups

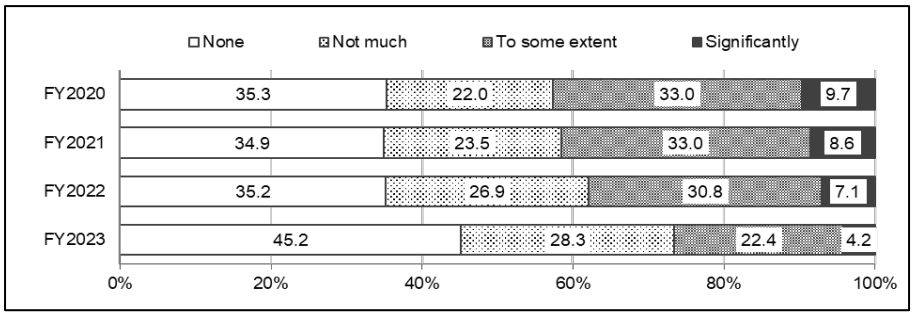


Figure 27: Influence on daily life due to the spread of COVID-19: overall

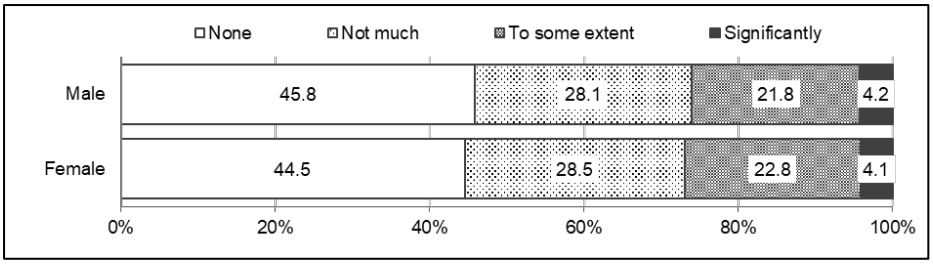


Figure 28: FY2023 Influence on daily life due to the spread of COVID-19: by gender

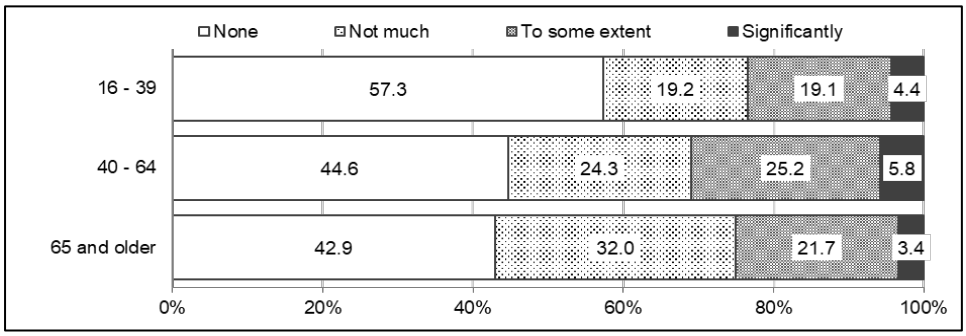


Figure 29: FY2023 Influence on daily life due to the spread of COVID-19: by age group

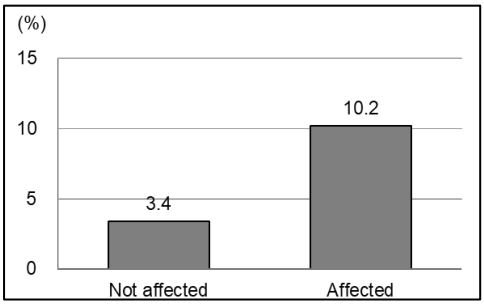


Figure 30: FY2023 Percentage of those scoring 13 points or higher on K6 by level of influence on daily life due to the spread of COVID-19

I. Risk perception of health effects of radiation

Regarding possible effects on the next generation, 19.7% responded that they think effects on the next generation are likely to occur (“Possibilities are high” and “Possibilities are very high” combined) in the FY2023 survey, continuing a downward trend (Figure 31). In a comparison by residential location at the time of the survey (in or outside the prefecture), risk perception was higher among those living outside the prefecture (Figure 32).

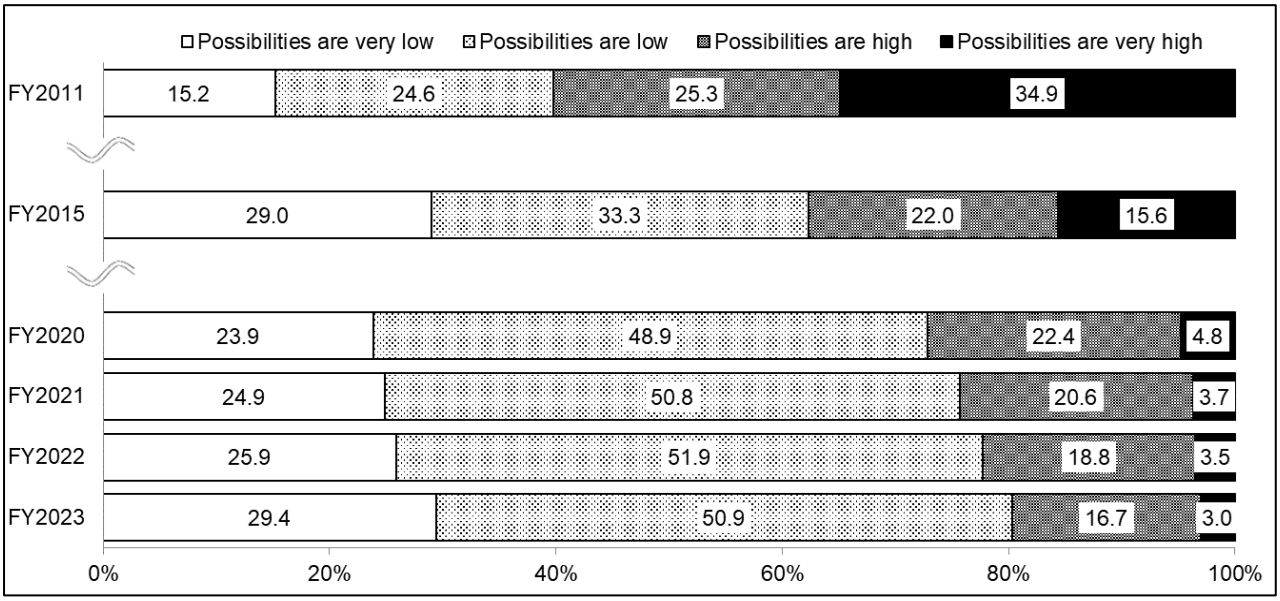


Figure 31: Changes in the proportion of risk perception of radiation effects to the next generation (risk perception)

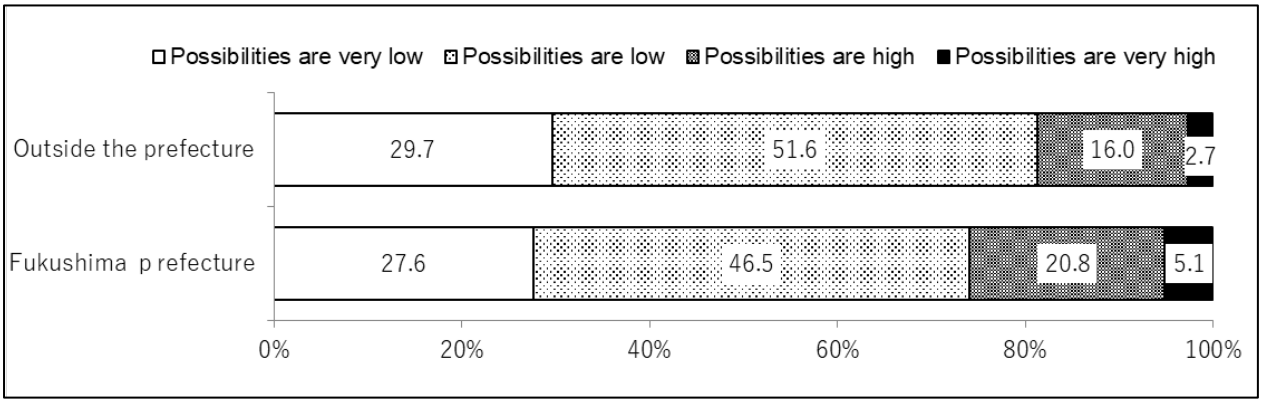


Figure 32: FY2023 Changes in the proportion of risk perception of radiation effects on the next generation, by location of residence at the time of the survey (risk perception)

J. Availability of consultation resources

The FY2023 survey asked, “Do you know anyone or any organization you can consult with when you have physical or mental problems?” A total of 5,289 participants (17.3%) answered “No.”

3-3 Conclusions

According to the survey results, the percentage of children likely to experience emotional or behavioral problems, as measured by the SDQ, has improved to nearly the same level as high-risk children in previous studies. One possible reason for this improvement is the increase in the number of children who did not experience the disaster, but continuous monitoring is necessary.

For the general population (ages 16 and older), physical activity habits improved slightly, possibly due to fewer disruptions to daily life caused by the COVID-19 pandemic. Regarding problem drinking, a slight decrease was observed among men, while a slight increase was noted among women. In terms of overall mental health, as measured by the K6 scale, the proportion of high-risk individuals improved slightly compared to FY2022. However, this proportion remains higher than that of the general population who did not experience the disaster, and the trend of higher K6 rates among younger individuals and those residing outside the prefecture persists. Regarding the health effects of radiation, approximately 80% of residents in FY2023 responded that the health effects of radiation on future generations are "low" or "very low," and the trend of decreasing proportions of residents concerned about this issue continues.

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 mental and physical health management and we offer support to those judged to need counseling or support regarding their mental health or lifestyle habits, to ascertain their circumstances, to provide advice for improvements, and to connect them to health or medical facilities.

4-1 Coverage of support

Out of those who responded to the FY2023 Mental Health and Lifestyle Survey, those who were judged to need counseling or support by telephone or mail were covered as support candidates.

Tabulation in this report covers those who responded by October 31, 2024, and to whom we provided support by December 31, 2024.

4-2 Individual result reports

Individual result reports were sent in July and September to those who responded by August 31, 2024, to help guide their understanding of mental health and lifestyle issues and better manage their health.

Table 2 shows the numbers and contents of the result report.

Table 2: FY2023 Number of individual result reports sent out

Type of survey sheet	Number of notices sent	Contents
For children ages 0 - 3	219	Height, weight, fitness habit (children aged 2 or older)
For children ages 4 - 6	216	Height, weight, dietary habits, fitness habit, bedtime, and mental and behavioral stress reaction (SDQ score)*1
For elementary school students	644	
For junior high school students	580	
For adults	31,120	Body mass index (BMI)*2, dietary habits, fitness habit, sleep, and mental stress reaction (K6 score)*3

*1 Strengths and Difficulties Questionnaire, a mental health and behavioral screening scale for children

*2 Body mass index, calculated based on height and weight as written in the survey forms

*3 Psychological distress scale, which screens for general mental illnesses such as depression and anxiety

In the 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.

4-3 Criteria to identify those in need of support and methods of providing support

A. Criteria to assess the need for support

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

Table 3: FY2023 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	Remarks / Free comment
Selection criteria	Criteria I	1) SDQ: 20 or higher	Having worries concerning growth and having no person or organization to consult with.	The urgency level should be judged by an expert.
	Criteria II	3) SDQ: 16 or higher		

Table 4: FY2023 criteria to assess the need for support regarding personal issues for adults

		Mental health	Physical health	Sleep disorder	Mental disorder	Smoking and drinking	Free comment
Selection criteria	Criteria I	1) K6: 13 points or higher	1) With hypertension or diabetes but not seeing a doctor, and (i) with BMI of 27.5 or higher or (ii) not having taken health check for a year.				The urgency level should be judged by an expert.
	Criteria II	2) K6: 10 points or higher	2) Falling under 1) above, but (i) and (ii) are not applicable	Having no mental disorder, and being very unsatisfied with sleep.	Having mental disorder, but not seeing a doctor, or making no reply to the relevant question		
	Criteria III		3) Other than 1) and 2) above, with BMI higher than 25, and not having taken health checks for a year			CAGE score 2 points or higher	

* Smoking cessation calls for smokers

B. Methods of providing support

(i) Support for those meeting Criteria I

For those who met Criteria I, our “Mental Health Support Team” 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 recommended further examination at health/medical facilities when necessary (hereafter “telephone counseling”).

(ii) Support for those meeting Criteria II

For those who met Criteria II, we sent reply-paid postcards to confirm their intention whether or not to receive telephone counseling. Telephone counseling was provided to either those who expressed their intention to receive support or those who were judged to need support based on the content of their replies.

For those having any problems with “physical and mental health” and “sleep disorders,” we also enclosed and sent “The Mental Health and Lifestyle Habits Self-Support Book” that we created, along with the results report.

(iii) Support for those meeting Criteria III

For those who met Criteria III, we sent “The Mental Health and Lifestyle Habits Self-Support Book.”

5. Summary of Results of Post-Survey Support

5-1 Telephone counseling

A. Support for issues concerning children

(i) Number of support candidates and recipients

Figure 33 shows the number of children eligible for support under Criteria I and II, as well as the number of support providers. Note that most telephone support was provided to the parents/guardians of eligible children. The ratio of telephone support providers to respondents decreased from 5.4% in FY2022 to 4.1%. Similarly, the ratio of telephone support providers to recipients decreased from 73.8% in FY2022 to 70.1%.

Tables 5 and 6 show the breakdown of telephone support providers by gender and residential location at the time of the survey.

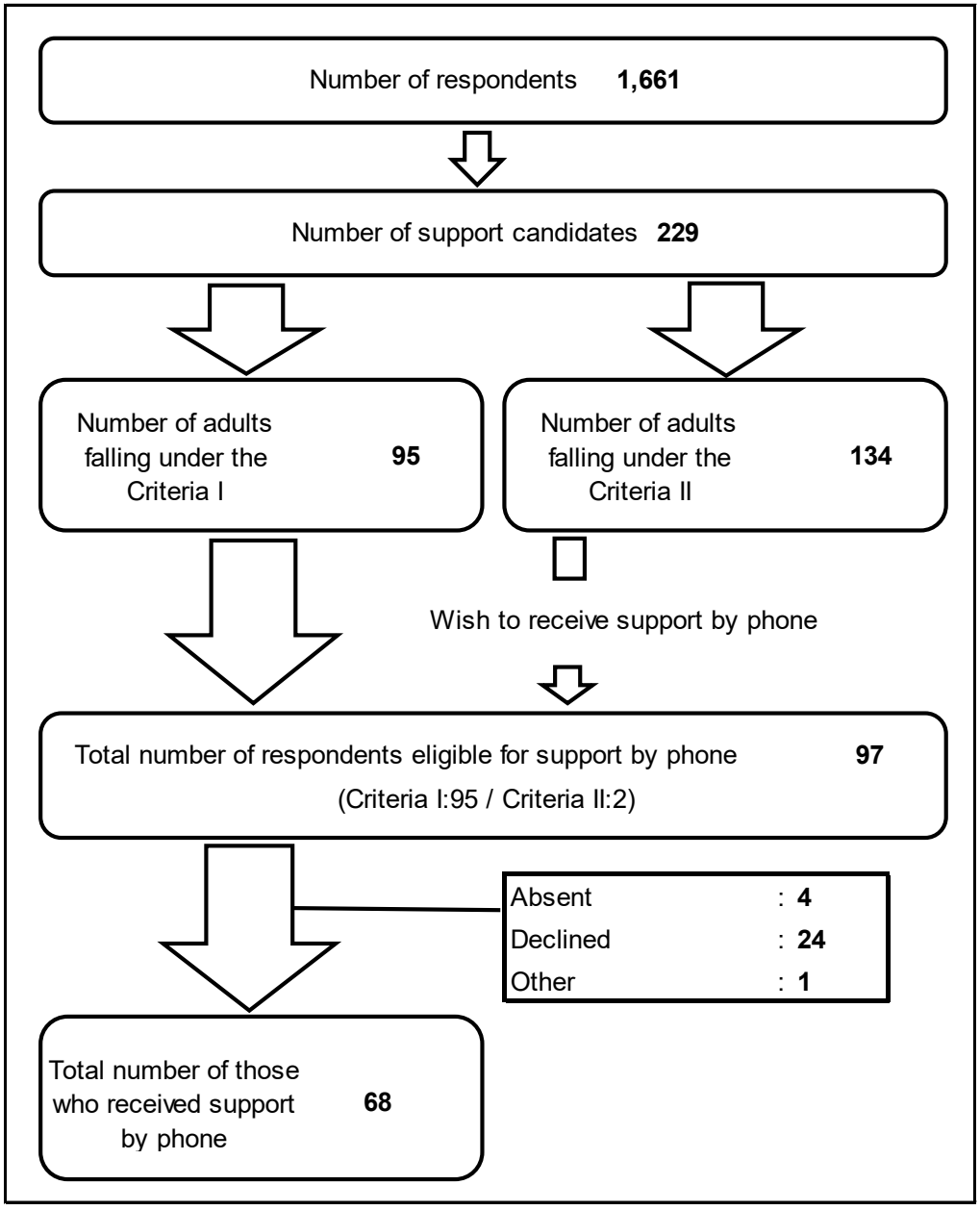


Figure 33: FY2023 Numbers of support candidates and recipients for issues regarding children

Table 5: FY2023 Support recipients by gender (children)

Classification	Boys		Girls		Total
Overall	38	(55.9%)	30	(44.1%)	68
Ages 0-3	4	(44.4%)	5	(55.6%)	9
Ages 4-6	4	(66.7%)	2	(33.3%)	6
Elementary school students	12	(60.0%)	8	(40.0%)	20
Junior high school students	18	(54.5%)	15	(45.5%)	33

Table 6: FY2023 Support recipients by place of residence (children)

Classification	Fukushima prefecture		Outside the prefecture		Total
Overall	56	(82.4%)	12	(17.6%)	68
Ages 0-3	8	(88.9%)	1	(11.1%)	9
Ages 4-6	6	(100.0%)	0	(0.0%)	6
Elementary school students	18	(90.0%)	2	(10.0%)	20
Junior high school students	24	(72.7%)	9	(27.3%)	33

B Results of Support

The Mental Health Support Team made phone calls to responders (mostly parents or guardians) and asked about current issues, based on survey responses. Table 7 shows the children's issues identified through telephone counseling. Table 8 shows the specific counseling contents for FY2023.

Table 7: Telephone counseling contents (children)

Persons / %

FY2012	FY2015	FY2020	FY2021	FY2022	FY2023
Anxiety caused by the disaster, radiation, or exposure	School life related issues	School life related issues	School life related issues	School life related issues	School life related issues
147 (23.6%)	54 (21.6%)	25 (26.3%)	38 (35.5%)	35 (29.7%)	22 (32.4%)
School life related issues	Physical health	Daily life	Behavioral issues (anger, irritation, or violence)	Physical health	Daily life
136人 (21.8%)	15 (6.0%)	18 (18.9%)	15 (14.0%)	15 (12.7%)	9 (13.2%)
Physical health	Sleep	Behavioral issues (anger, irritation, or violence)	Daily life	Daily life	Physical health
102 (16.4%)	9 (3.6%)	12 (12.6%)	14 (13.1%)	13 (11.0%)	6 (8.8%)
Behavioral issues (anger, irritation, or violence)	Behavioral issues (anger, irritation, or violence)	Sleep	Anxiety over the future	Behavioral issues (anger, irritation, or violence)	Sleep
90 (14.4%)	8 (3.2%)	9 (9.5%)	9 (8.4%)	11 (9.3%)	6 (8.8%)
Depression	Dietary habit	Physical health Dietary habit	Sleep	Sleep	Concerns about the future
83 (13.3%)	4 (1.6%)	6 each (6.3%)	8 (7.5%)	8 (6.8%)	5 (7.4%)

*The data for FY2011 is not included because the tabulation method was different from other years. Therefore, Table 7 starts from FY2012.

*Contents of the total consultation cases.

Table 8: FY2023 Details of telephone counseling topics (children)

School life related issue	(Elementary school students) ・Class changes in the spring cause emotional instability ・Received a developmental disorder diagnosis and became more stable after being placed in a support class (Junior high school students) ・Often forget to hand in printouts and other assignments
Daily life	(Ages 0-3) ・Potty training doesn't go smoothly (Elementary and junior high school students) ・Game addiction
Physical health	(Ages 4-6, Elementary school students) ・Tendency to be careless, resulting in frequent injuries (Elementary school students) ・Mood swings, sometimes causing them to skip school (Junior high school students) ・Frequent headaches due to anxiety about entrance exams
Sleep	(Elementary school students) ・Tendency to skip school and stay up late (Elementary and junior high school students) ・Unable to stop watching videos at night, resulting in late bedtimes
Concerns about the future	(Ages 4-6) ・Worried about making friends when entering elementary school (Elementary school students) ・Lack of concentration and is worried about keeping up with others
Others	(Ages 4-6) ・Sensitive to the earthquakes (Elementary school students) ・Has lost appetite and cries alone due to the shock of losing a family member

Telephone counseling included listening, medical consultation recommendations, lifestyle guidance, and psychoeducation. Table 9 shows the situation at the time of initial telephone counseling. Because of telephone counseling, the reasons for continuing the support were the child's condition (both physical and mental), school maladjustment, and the guardian's condition (both physical and mental).

As a follow-up support, we sent written information about medical institutions (1 person).

Table 9: FY2023 Status of the initial telephone counseling

Persons (%)

Classification	Continuous support needed	One time support	Details unknown	Support declined	Total
Overall	7 (10.3%)	51 (75.0%)	6 (8.8%)	4 (5.9%)	68
Ages 0-3	1 (11.1%)	4 (44.4%)	4 (44.4%)	0 (0.0%)	9
Ages 4-6	1 (16.7%)	5 (83.3%)	0 (0.0%)	0 (0.0%)	6
Elementary school students	3 (15.0%)	15 (75.0%)	1 (5.0%)	1 (5.0%)	20
Junior high school students	2 (6.1%)	27 (81.8%)	1 (3.0%)	3 (9.1%)	33

・Continuous support needed:
Those who were judged to need continuous support, including those with poor physical conditions, gravely affected by the disaster, unable to adapt to society or school, experiencing isolation, or having other ongoing concerns. Continued support includes recommending consultations with specialists at healthcare/medical facilities and providing their information to other support organizations.

・One-time support:
Those judged to be self-sufficient because they had seen some improvement in their physical condition or living environment, or were already in contact with support resources.

・Details unknown:
No details were obtained (for various reasons).

・Support declined:
Those counseled who turned down offers of support.

B. Support for adults

(i) Number of support candidates and recipients

Figure 34 shows the number of support candidates and recipients based on Criteria I and II. The percentage of respondents who received telephone support to the total number of respondents was 6.2%, which was a slight decrease from 6.7% in FY2022. The percentage of respondents who received telephone support as a percentage of the total number of people eligible for support was 76.3%, a decrease from 77.7% in FY2022.

Table 10 shows the distribution of support recipients by gender and age groups. Table 11 shows the proportion of support recipients in total responses. Table 12 indicates support recipients by location of residence at the time of the survey.

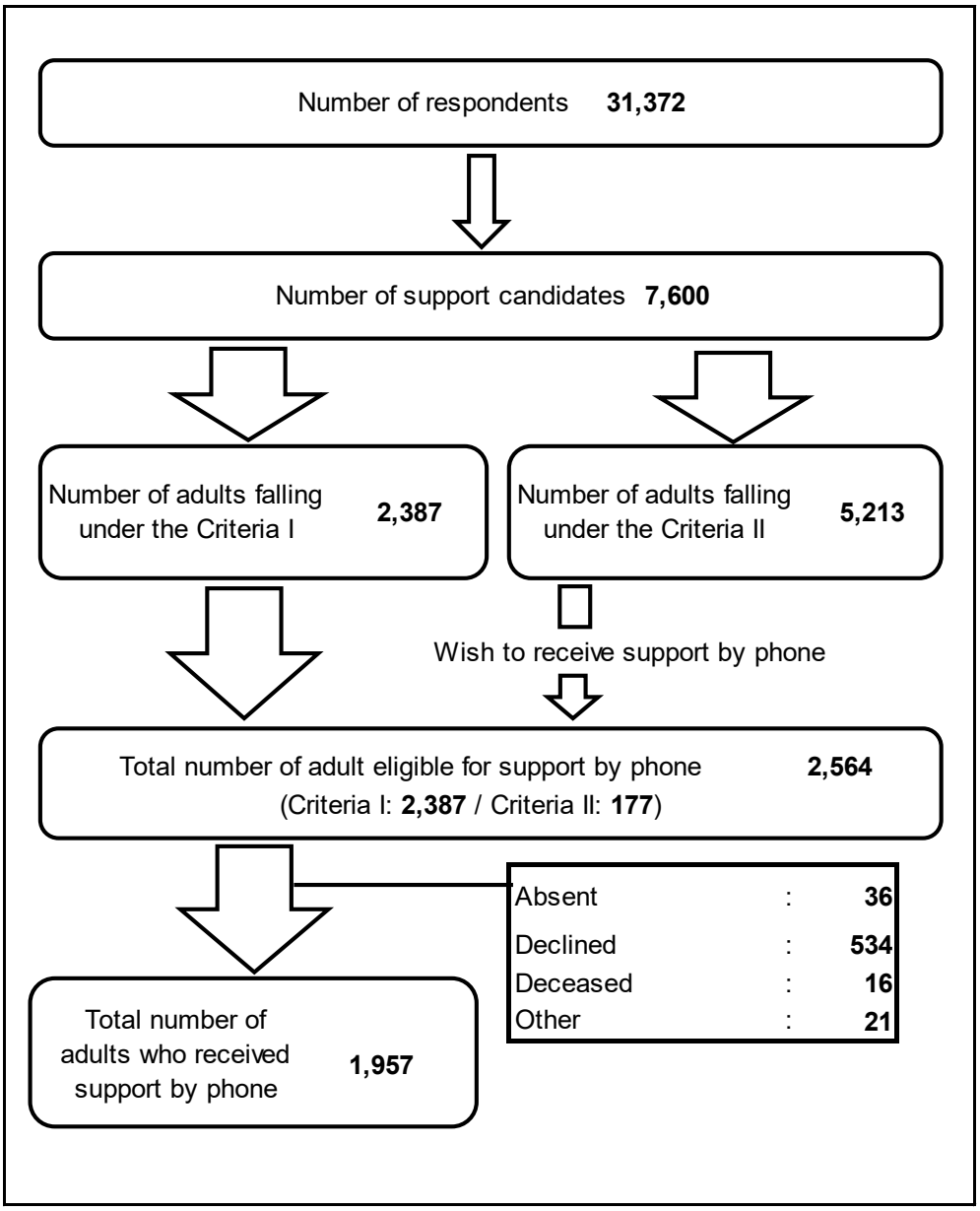


Figure 34: FY2023 number of support candidates and recipients for personal issues of adults

Table 10: FY2023 telephone support recipients by gender (adult)

Classification	16 - 39	40 - 64	65 and older	Total
Overall	251 (12.8%)	630 (32.2%)	1,076 (55.0%)	1,957
Mental Health Survey				
Male	87 (12.7%)	244 (35.7%)	352 (51.5%)	683
Female	128 (14.3%)	254 (28.3%)	515 (57.4%)	897
Life Style Survey				
Male	27 (10.7%)	88 (34.8%)	138 (54.5%)	253
Female	9 (7.3%)	44 (35.5%)	71 (57.3%)	124

Table 11: FY2023 telephone support recipients by age group (adult)

Number of respondents	16 - 39 3,794	40-64 8,283	65 and older 19,295	Total 31,372
Those who received the support	251	630	1,076	1,957
(%)	(6.6%)	(7.6%)	(5.6%)	(6.2%)

Table 12: FY2023 support recipients by the place of residence at the time of the survey (adult)

Classification	Fukushima prefecture		Outside the prefecture		Total
Overall	1,590	(81.2%)	367	(18.8%)	1,957
Mental Health Survey	1,276	(80.8%)	304	(19.2%)	1,580
Life Style Survey	314	(83.3%)	63	(16.7%)	377

(ii) Results of Support

Based on the survey responses, the Mental Health Support Team provided telephone counseling and inquired about current issues. Table 13 shows the topics of telephone counseling. Table 14 shows the details of the FY2023.

Table 13: Contents of the telephone support topics (adult)

FY2012	FY2015	FY2020	FY2021	FY2022	FY2023
Physical health 2,761 (46.1%)	Physical health 1,145 (44.6%)	Physical health 866 (44.0%)	Physical health 1,233 (48.1%)	Physical health 1,086 (46.6%)	Physical health 831 (42.5%)
Sleep 2,349 (39.2%)	Sleep 798 (31.1%)	Sleep 583 (29.6%)	Sleep 680 (26.5%)	Sleep 551 (23.6%)	Sleep 436 (22.3%)
Depression 1,417 (23.7%)	Depression 342 (13.3%)	Depression 296 (15.0%)	Depression 451 (17.6%)	Depression 371 (15.9%)	Depression 268 (13.7%)
Family relationships 1,058 (17.7%)	Dietary habits 236 (9.2%)	Dietary habits 249 (12.7%)	Exercise habit 333 (13.0%)	Exercise habit 293 (12.6%)	Exercise habit 243 (12.4%)
Living environment 1,049 (17.5%)	Anxiety over the future 235 (9.2%)	Exercise habits 245 (12.4%)	Dietary habits 272 (10.6%)	Dietary habits 270 (11.6%)	Dietary habits 238 (12.2%)

* FY2011 is not included because the tabulation method was different from that for other years; the table starts with FY2012

*Contents of the total consultation cases.

Table 14: FY2023 detailed contents of the telephone support (adult)

Physical health	・Have high blood pressure and want to lose weight, but I don't know how. ・Have back and knee pain, which makes it difficult to care for my family. ・Have been feeling tired from work-related stress.
Sleep	・Able to fall asleep easily with medication, but often wakes up in the middle of the night. ・Wake up every 2-3 hours. ・Anable to feel sufficient sleep and feel sleepy during the day.
Depression	・Visited to a psychosomatic medicine clinic because of depression. ・Feel reluctant to go out and have no desire to do anything. ・Struggle with workplace relationships and feel down.
Exercise habits	・Do radio calisthenics at home. ・Stopped going to the gym after the COVID-19 pandemic and am now physically inactive. ・Move around at work, but do not exercise outside of work.
Dietary habits	・Have diabetes and want to know what to watch out for in my diet. ・Tends to overeat or binge eating when stressed. ・Tend to eat out or get a takeout lunch box a lot due to a busy work schedule.
Others	・ Watching news about the Noto Peninsula earthquake on TV triggers memories of the 3.11 disaster, causing palpitations and feelings of depression, so temporarily avoiding media coverage ・After the 3.11 Disaster, I moved to an area with no prior connections, and I felt lonely due to my lack of acquaintances.

Telephone support included encouraging medical visits, providing lifestyle guidance, and offering psychoeducation. Table 15 shows the initial situation at the first telephone support session. The primary reasons for ongoing support were physical health concerns (87 persons) and mental health (86 individuals).

For further actions taken after the support, there were 3 cases in which we shared information with municipalities and the Fukushima Center for Disaster Mental Health, and sent referral forms to see a registered physician.

Table 15: FY2023 results of the first telephone support for personal issues of adults

Classification	Continuous support needed		One time support		Details unknown		Support declined		Total
Overall	171	(8.7%)	1,737	(88.8%)	20	(1.0%)	29	(1.5%)	1,957
Mental Health Survey	160	(10.1%)	1,377	(87.2%)	17	(1.1%)	26	(1.6%)	1,580
Life Style Survey	11	(2.9%)	360	(95.5%)	3	(0.8%)	3	(0.8%)	377

・Continuous support needed

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

・ One-time support:

Those for whom some improvements were seen in their physical conditions or living environment, and/or they were already in contact with support resources.

・Details unknown: No details were obtained (for various reasons).

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

5-2 Support by sending information brochures

For 1,656 persons (physical and mental health: 789, drinking problems: 867) who met Criteria III, we have sent “The Mental Health and Lifestyle Habits Self-Support Book.”

5-3 Consultation by incoming call

During the support period in FY2023, there were 798 incoming calls to the "KOKOKARA CHOUSA Dial." The breakdown of incoming calls (934 in total) was as follows: 432 calls were returned calls from support candidates who were not available at the time of telephone support, 152 were consultations, 272 were inquiries about the survey, and 78 were for other reasons.

Regarding inquiries about the survey, most of them pertained to changes in basic information or instructions for completing the survey, the same as in FY2022, consistent with the previous year. Additionally, there were incoming calls for consultation throughout the year, regarding personal health and/or family matters, as well as relationships at work and among friends.

5-4 Conclusions

In terms of support for children, the percentage of respondents who received telephone support was 4.1%, decreased from 5.4% in FY2022. The topics of most concern were “school-related issues,” “daily life and habits,” and “physical health,” almost the same as in FY2022. Based on the results of the initial telephone support, 7 persons (10.3%) were judged to need “continuous support” (versus 16 persons (13.6%) in FY2022).

In adult support, the percentage of people who received telephone support was 6.2% of the total number of respondents, which was a decrease from 6.7% in FY2022. The topics that received the most calls were “physical health,” “sleep,” and “depression,” which was similar to FY2022. Among those who were judged to need “continuous support” based on the results of the initial telephone support, 160 were for mental health telephone support and 11 were for lifestyle habit telephone support, for a total of 171 (8.7%) (versus 176 persons (7.6%) in FY2022).

In both the children and adults support programs, when it was judged that support should be continued or when the person in question requested it, we provided ongoing support and confirmation of their situation by telephone, as well as introducing them to social resources. In cases where we could not reach them and provide telephone support, for example, we sent them the “The Mental Health and Lifestyle Self-Support Book” created by our center, to encourage them to check their own physical and mental health, and also provided information on the “KOKOKARA CHOUSA Dial” and various consultation services.

6. FY2023 Mental Health and Lifestyle Survey

6-1 Ages 0 to 3

			Persons		Persons	Percentage
Response method	(Valid responses:	218)	・Paper		102	46.8%
			・Online		116	53.2%
Gender	(Valid responses:	218)	・Boys		108	49.5%
(Average age: 1.9 years old)			・Girls		110	50.5%
Residential location at the time of survey	(Valid responses:	218)	・Fukushima prefecture		211	96.8%
			・Outside the prefecture		7	3.2%
Q1 Health condition	(Valid responses:	218)	・Very good		116	53.2%
			・Good		72	33.0%
			・Fair		28	12.8%
			・Unsatisfactory		2	0.9%
			・Very unsatisfactory		0	0.0%
Q2 Height and weight						
Height Boys	Age 1	(Valid responses:	31)	Average height	76.9 cm	
	Age 2	(Valid responses:	31)	Average height	86.7 cm	
	Age 3	(Valid responses:	40)	Average height	96.1 cm	
Girls	Age 1	(Valid responses:	38)	Average height	76.9 cm	
	Age 2	(Valid responses:	29)	Average height	86.4 cm	
	Age 3	(Valid responses:	40)	Average height	93.6 cm	
weight Boys	Age 1	(Valid responses:	34)	Average weight	10.2 kg	
	Age 2	(Valid responses:	32)	Average weight	12.2 kg	
	Age 3	(Valid responses:	40)	Average weight	14.6 kg	
Girls	Age 1	(Valid responses:	39)	Average weight	9.9 kg	
	Age 2	(Valid responses:	30)	Average weight	11.8 kg	
	Age 3	(Valid responses:	40)	Average weight	14.4 kg	
Q3 Frequency of exercising	(Valid responses:	131)	・Almost everyday		87	66.4%
			・2-4 times a week		26	19.8%
			・Once a week		15	11.5%
			・Rarely		3	2.3%
Q4 Loss of confidence in child-rearing	(Valid responses:	218)	・Yes		36	16.5%
			・No		99	45.4%
			・Neither yes nor no		83	38.1%
Q5 Have concerns about child-rearing	(Valid responses:	218)	・Yes		35	16.1%
			・No		144	66.1%
			・Neither yes nor no		39	17.9%
Q6 Availability of consultation resource	(Valid responses:	218)				
Have someone to consult with about child rearing?			・Yes		207	95.0%
			・No (Have no one or organization to consult)		11	5.0%
Q7 Influence of the COVID-19 pandemic	(Valid responses:	218)	・Not at all		128	58.7%
Did the COVID-19 affect your daily life?			・Not much		37	17.0%
			・To some extent		43	19.7%
			・Very much		10	4.6%

6-2 Ages 4 to 6

			Persons			Persons	Percentage
Response method		(Valid responses:	216)	・Paper		118	54.6%
				・Online		98	45.4%
Gender		(Valid responses:	216)	・Boys		110	50.9%
(Average age: 4.9 years old)				・Girls		106	49.1%
Residential location at the time of survey		(Valid responses:	216)	・Fukushima prefecture		206	95.4%
				・Outside the prefecture		10	4.6%
Q1 Health condition		(Valid responses:	216)	・Very good		106	49.1%
				・Good		82	38.0%
				・Fair		27	12.5%
				・Unsatisfactory		1	0.5%
				・Very unsatisfactory		0	0.0%
Q2 Height and weight							
Height Boys	Age 4	(Valid responses:	34)	Average height		102.4 cm	
	Age 5	(Valid responses:	44)	Average height		110.7 cm	
	Age 6	(Valid responses:	31)	Average height		115.2 cm	
Girls	Age 4	(Valid responses:	34)	Average height		99.5 cm	
	Age 5	(Valid responses:	31)	Average height		106.4 cm	
	Age 6	(Valid responses:	39)	Average height		115.2 cm	
Weight Boys	Age 4	(Valid responses:	34)	Average weight		16.6 kg	
	Age 5	(Valid responses:	44)	Average weight		19.6 kg	
	Age 6	(Valid responses:	32)	Average weight		20.8 kg	
Girls	Age 4	(Valid responses:	34)	Average weight		15.3 kg	
	Age 5	(Valid responses:	32)	Average weight		17.6 kg	
	Age 6	(Valid responses:	39)	Average weight		20.4 kg	
Q3 Frequency of exercising		(Valid responses:	216)	・Almost everyday		130	60.2%
				・2-4 times a week		61	28.2%
				・Once a week		20	9.3%
				・Rarely		5	2.3%
Q4 Child's emotion and behavior (SDQ)							
1) SDQ		(Valid responses:	216)	・Average score		8.8 点	
		(Valid responses:	110)	・Average score (Boys)		9.4 点	
		(Valid responses:	106)	・Average score (Girls)		8.2 点	
				・≥ 16 points		21	9.7%
					(Boys)	11	10.0%
					(Girls)	10	9.4%
		(Valid responses:	206)	(Fukushima prefecture)		20	9.7%
		(Valid responses:	10)	(Outside the prefecture)		1	10.0%
2) Developmental/psychological proble		(Valid responses:	215)	Yes		28	13.0%
				No		187	87.0%
Q5 Availability of consultation resources		(Valid responses:	215)				
Do you have someone to consult with about child rearing?				・Yes		208	96.7%
				・No (Have no one or organization to consult)		7	3.3%
Q6 Influence of the COVID-19 pandemic		(Valid responses:	213)	Not at all		103	48.4%
Is the COVID-19 affecting your daily life?				Not much		52	24.4%
				To some extent		52	24.4%
				Very much		6	2.8%

6-3 Elementary school students

			Persons		Persons	Percentage
Response method		(Valid responses:	644)	・Paper	330	51.2%
				・Online	314	48.8%
Gender		(Valid responses:	644)	・Boys	338	52.5%
(Average age: 9.6 years old)				・Girls	306	47.5%
Residential location at the time of survey		(Valid responses:	644)	・Fukushima prefecture	574	89.1%
				・Outside the prefecture	70	10.9%
Q1 Health condition		(Valid responses:	638)	・Very good	257	40.3%
				・Good	226	35.4%
				・Fair	151	23.7%
				・Unsatisfactory	3	0.5%
				・Very unsatisfactory	1	0.2%
Q2 Height and weight						
Height	Boys	Grade 1	(Valid responses: 49)	Average height	121.0 cm	
		Grade 2	(Valid responses: 53)	Average height	127.0 cm	
		Grade 3	(Valid responses: 52)	Average height	134.3 cm	
		Grade 4	(Valid responses: 44)	Average height	140.2 cm	
		Grade 5	(Valid responses: 41)	Average height	144.0 cm	
		Grade 6	(Valid responses: 90)	Average height	152.1 cm	
	Girls	Grade 1	(Valid responses: 43)	Average height	121.8 cm	
		Grade 2	(Valid responses: 41)	Average height	126.8 cm	
		Grade 3	(Valid responses: 53)	Average height	132.8 cm	
		Grade 4	(Valid responses: 48)	Average height	139.2 cm	
		Grade 5	(Valid responses: 35)	Average height	147.3 cm	
		Grade 6	(Valid responses: 77)	Average height	151.2 cm	
Weight	Boys	Grade 1	(Valid responses: 53)	Average weight	23.2 kg	
		Grade 2	(Valid responses: 54)	Average weight	28.3 kg	
		Grade 3	(Valid responses: 52)	Average weight	33.3 kg	
		Grade 4	(Valid responses: 44)	Average weight	37.2 kg	
		Grade 5	(Valid responses: 41)	Average weight	40.5 kg	
		Grade 6	(Valid responses: 89)	Average weight	44.8 kg	
	Girls	Grade 1	(Valid responses: 43)	Average weight	23.5 kg	
		Grade 2	(Valid responses: 41)	Average weight	26.9 kg	
		Grade 3	(Valid responses: 52)	Average weight	30.7 kg	
		Grade 4	(Valid responses: 47)	Average weight	35.9 kg	
		Grade 5	(Valid responses: 34)	Average weight	42.5 kg	
		Grade 6	(Valid responses: 77)	Average weight	42.6 kg	
Q3 Frequency of exercising		(Valid responses:	642)	・Almost everyday	75	11.7%
				・2-4 times a week	189	29.4%
				・Once a week	157	24.5%
				・Rarely	221	34.4%
Q4 Child's emotion and behavior (SDQ)						
1) SDQ		(Valid responses:	642)	Average score	8.3 点	
		(Valid responses:	337)	Average score (Boys)	9.0 点	
		(Valid responses:	305)	Average score (Girls)	7.6 点	
				・≥ 16 points	69	10.7%
				(Boys)	49	14.5%
				(Girls)	20	6.6%
		(Valid responses:	572)	(Fukushima prefecture)	63	11.0%
		(Valid responses:	70)	(Outside the prefecture)	6	8.6%
2) Developmental/psychological proble		(Valid responses:	640)	・Yes	107	16.7%
				・No	533	83.3%
Q5 Availability of consultation resources		(Valid responses:	639)			
Do you have someone to consult with about child rearing?				・Yes	608	95.1%
				・No (Have no one or organization to consult)	31	4.9%
Q6 Influence of the COVID-19 pandemic		(Valid responses:	636)	Not at all	349	54.9%
Is the COVID-19 affecting your daily life?				Not much	128	20.1%
				To some extent	142	22.3%
				Very much	17	2.7%

6-4 Junior high school students

			Persons)		Persons	Percentage
Response method		(Valid responses:	581)	・Paper	321	55.2%
				・Online	260	44.8%
Gender		(Valid responses:	581)	・Boys	288	49.6%
(Average age: 13.9 years old)				・Girls	293	50.4%
Residential location at the time of survey		(Valid responses:	581)	・Fukushima prefecture	447	76.9%
				・Outside the prefecture	134	23.1%
Q1 Health condition		(Valid responses:	423)	・Very good	141	33.3%
				・Good	133	31.4%
				・Fair	137	32.4%
				・Unsatisfactory	12	2.8%
				・Very unsatisfactory	0	0.0%
Q2 Height and weight						
Height	Boys	1年生	(Valid responses: 63)	Average height	159.6 cm	
		2年生	(Valid responses: 57)	Average height	166.8 cm	
		3年生	(Valid responses: 78)	Average height	168.0 cm	
	Girls	1年生	(Valid responses: 68)	Average height	154.0 cm	
		2年生	(Valid responses: 87)	Average height	156.3 cm	
		3年生	(Valid responses: 69)	Average height	155.9 cm	
Weight	Boys	1年生	(Valid responses: 62)	Average weight	50.6 kg	
		2年生	(Valid responses: 56)	Average weight	56.5 kg	
		3年生	(Valid responses: 78)	Average weight	59.2 kg	
	Girl	1年生	(Valid responses: 67)	Average weight	44.8 kg	
		2年生	(Valid responses: 84)	Average weight	49.4 kg	
		3年生	(Valid responses: 67)	Average weight	52.1 kg	
Q3 Frequency of exercising		(Valid responses:	423)	・Almost everyday	138	32.6%
				・2-4 times a week	104	24.6%
				・Once a week	39	9.2%
				・Rarely	142	33.6%
Q4 Influence of the COVID-19 pandemic		(Valid responses:	423)	・Not at all	121	28.6%
Is the COVID-19 affecting your daily life?				・Not much	157	37.1%
(From the perspective of the respondents)				・To some extent	131	31.0%
				・Very much	14	3.3%
Q4 Child's emotion and behavior (SDQ)						
1) SDQ		(有効回答	580)	Average score	8.1 点	
		(有効回答	288)	Average score (Boys)	7.9 点	
		(有効回答	292)	Average score (Girls)	8.2 点	
				・≥ 16 points	49	8.4%
				(Boys)	21	7.3%
				(Girls)	28	9.6%
		(Valid responses:	446)	(Fukushima prefecture)	35	7.8%
		(Valid responses:	134)	(Outside the prefecture)	14	10.4%
2) Developmental/psychological problems		(Valid responses:	575)	Yes	88	15.3%
				No	487	84.7%
Q5 Availability of consultation resources		(Valid responses:	576)			
Do you have someone to consult with about child rearing?				・Yes	535	92.9%
				・No	41	7.1%
				(Have no one or organization to consult)		
Q4 Influence of the COVID-19 pandemic		(Valid responses:	576)	・Not at all	283	49.1%
Is the COVID-19 affecting your daily life?				・Not much	146	25.3%
(From the perspective of the parents/gordians)				・To some extent	136	23.6%
				・Very much	11	1.9%

6-5 Adults

			Persons			Persons	Percentage
Response method		(Valid responses:	31,257)	・Paper		24,165	77.3%
				・Online		7,092	22.7%
Gender		(Valid responses:	31,257)	・Male		14,845	47.5%
(Average age 64.4 years old)				・Female		16,412	52.5%
Residential location at the time of survey		(Valid responses:	31,257)	・Fukushima prefecture		26,779	85.7%
				・Outside the prefecture		4,478	14.3%
Q1 Health condition		(Valid responses:	28,559)	・Very good		1,827	6.4%
				・Good		6,562	23.0%
				・Fair		16,456	57.6%
				・Unsatisfactory		3,414	12.0%
				・Very unsatisfactory		300	1.1%
	Ages 16 - 39	(Valid responses:	3,285)	・Very good		668	20.3%
				・Good		1,037	31.6%
				・Fair		1,364	41.5%
				・Unsatisfactory		190	5.8%
				・Very unsatisfactory		26	0.8%
	Ages 40 - 64	(Valid responses:	7,843)	・Very good		577	7.4%
				・Good		2,063	26.3%
				・Fair		4,278	54.5%
				・Unsatisfactory		843	10.7%
				・Very unsatisfactory		82	1.0%
	65 and older	(Valid responses:	17,431)	・Very good		582	3.3%
				・Good		3,462	19.9%
				・Fair		10,814	62.0%
				・Unsatisfactory		2,381	13.7%
				・Very unsatisfactory		192	1.1%
Q2 Height and weight							
身長	Height	Male	(Valid responses: 14,656)		Average height	166.5 cm	
		Female	(Valid responses: 16,069)		Average height	153.6 cm	
	Weight	Male	(Valid responses: 14,671)		Average weight	67.1 kg	
		Female	(Valid responses: 16,078)		Average weight	54.4 kg	
	BMI	Male	(Valid responses: 14,603)		Average BMI	24.1 kg/m^2	
		Female	(Valid responses: 15,963)		Average BMI	23.0 kg/m^2	
Q3 Past Medical history							
1) Hypertension (or high blood pressure)		(Valid responses:	30,326)	・No		15,989	52.7%
				・Yes		14,337	47.3%
					(Currently under treatment)	12,931	90.9%
					(Not under treatment)	1,294	9.1%
2) Diabetes (or uncontrolled blood sugar)		(Valid responses:	29,777)	・No		24,433	82.1%
				・Yes		5,344	17.9%
					(Currently under treatment)	4,887	92.4%
					(Not under treatment)	403	7.6%
3) Mental disorder		(Valid responses:	29,785)	・No		26,839	90.1%
				・Yes		2,946	9.9%
					(Currently under treatment)	2,115	73.3%
					(Currently not under treatment as symptoms have improved)	478	16.6%
					(Not under treatment)	292	10.1%
4) Health check history for the past year		(Valid responses:	30,391)	・Yes		23,124	76.1%
				・No		7,267	23.9%

		Persons		Persons	Percentage
Q4 Sleeping habits	(Valid responses:	28,437)	・Sufficient	10,783	37.9%
(Sleep satisfaction level)			・Slightly Sufficient	13,725	48.3%
			・Very insufficient	3,452	12.1%
			・Greatly insufficient	477	1.7%
Q5 Frequency of exercising	(Valid responses:	30,828)	・Almost everyday	5,352	17.4%
			・2-4 times a week	8,184	26.5%
			・Once a week	5,789	18.8%
			・Rarely	11,503	37.3%
Fukushima prefecture	(Valid responses:	26,396)	・Almost everyday	4,676	17.7%
			・2-4 times a week	6,999	26.5%
			・Once a week	4,980	18.9%
			・Rarely	9,741	36.9%
Outside the prefecture	(Valid responses:	4,432)	・Almost everyday	676	15.3%
			・2-4 times a week	1,185	26.7%
			・Once a week	809	18.3%
			・Rarely	1,762	39.8%
Q6 Living conditions					
1) Current place of residence	(Valid responses:	30,919)	・Fukushima prefecture	26,186	84.7%
			・Outside the prefecture	4,733	15.3%
2) Do you currently live alone?	(Valid responses:	30,877)	・Yes	5,750	18.6%
			・No	25,127	81.4%
2) Do you currently work?	(Valid responses:	30,791)	・Yes (have work/under employment)	12,555	40.8%
			・No (incl. students, homemakers, etc.)	18,236	59.2%
Q7 Smoking	(Valid responses:	29,685)	・Never smoked	17,020	57.3%
			・Quit	8,685	29.3%
			・Yes	3,980	13.4%
	(Valid responses:	14,266)	(Male)	3,038	21.3%
	(Valid responses:	15,419)	(Female)	942	6.1%

		Persons		Persons	Percentage
Q8 Alcohol					
1) Drinking habit	(Valid responses:	29,471)	・No, or rarely	15,992	54.3%
			・I quit	1,509	5.1%
			・Yes (Once a month or more)	11,970	40.6%
2) Experiences related to alcohol					
1. Have you ever felt the necessity of cut back on drinking?			・No	8,180	72.6%
	(Valid responses:	11,264)	・Yes	3,084	27.4%
2.Have you ever felt offended because others accused you of drinking ?			・No	10,514	93.7%
	(Valid responses:	11,225)	・Yes	711	6.3%
3. Have you felt guilty about drinking ?			・No	10,098	90.0%
	(Valid responses:	11,217)	・Yes	1,119	10.0%
4. Have you ever had another drink in the morning to cure a hangover?			・No	10,620	94.7%
	(Valid responses:	11,216)	・Yes	596	5.3%
	(Valid responses:	11,172)	・CAGE2点以上	1,298	11.6%
	(Valid responses:	7,698)	(Male)	1,073	13.9%
	(Valid responses:	3,474)	(Female)	225	6.5%
Male	(Valid responses:	525)	(Ages 20 - 39)	80	15.2%
	(Valid responses:	2,303)	(Ages 40 - 64)	386	16.8%
	(Valid responses:	4,870)	(65 snd older)	607	12.5%
Female	(Valid responses:	590)	(Ages 20 - 39)	46	7.8%
	(Valid responses:	1,404)	(Ages 40 - 64)	123	8.8%
	(Valid responses:	1,480)	(65 snd older)	56	3.8%
Male	(Valid responses:	6,666)	(Fukushima prefecture)	924	13.9%
	(Valid responses:	1,032)	(Outside the prefecture)	149	14.4%
Female	(Valid responses:	2,826)	(Fukushima prefecture)	171	6.1%
	(Valid responses:	648)	(Outside the prefecture)	54	8.3%
Q9 General mental health status: Kessler psychological distress scale (K6)					
	(Valid responses:	27,185)	Average score	4.0 点	
	(Valid responses:	13,000)	Average score (Male)	3.8 点	
	(Valid responses:	14,185)	Average score (Female)	4.3 点	
			・≥ 13 points	1,461	5.4%
	(Valid responses:	13,000)	(Male)	628	4.8%
	(Valid responses:	14,185)	(Female)	833	5.9%
	(Valid responses:	3,273)	(Ages 20 - 39)	279	8.5%
	(Valid responses:	7,762)	(Ages 40 - 64)	570	7.3%
	(Valid responses:	16,150)	(65 snd older)	612	3.8%
	(Valid responses:	23,206)	(Fukushima prefecture)	1,153	5.0%
	(Valid responses:	3,979)	(Outside the prefecture)	308	7.7%

		Persons		Persons	Percentage
Q10 Influence of the COVID-19 pandemic					
Impact on daily life	(Valid responses	29,944)	・Not at all	13,523	45.2%
			・Not much	8,476	28.3%
			・To some extent	6,695	22.4%
			・Very much	1,250	4.2%
Male	(Valid responses	14,332)	・Not at all	6,570	45.8%
			・Not much	4,029	28.1%
			・To some extent	3,130	21.8%
			・Very much	603	4.2%
Female	(Valid responses	15,612)	・Not at all	6,953	44.5%
			・Not much	4,447	28.5%
			・To some extent	3,565	22.8%
			・Very much	647	4.1%
Ages 16 - 39	(Valid responses	3,753)	・Not at all	2,152	57.3%
			・Not much	721	19.2%
			・To some extent	715	19.1%
			・Very much	165	4.4%
Ages 40 - 64	(Valid responses	8,147)	・Not at all	3,637	44.6%
			・Not much	1,980	24.3%
			・To some extent	2,056	25.2%
			・Very much	474	5.8%
65 and older	(Valid responses	18,044)	・Not at all	7,734	42.9%
			・Not much	5,775	32.0%
			・To some extent	3,924	21.7%
			・Very much	611	3.4%
K6 13点以上	(Valid responses	19,338)	・Not at all / Not much	651	3.4%
	(Valid responses	6,935)	・To some extent / Very much	708	10.2%
Interfering event during COVID-19 pandemic			・Deterioration of health status	5,135	-
*Multiple answers allowed			・Deterioration of a family member's health status	4,146	-
			・Nursing care for a family member	1,646	-
			・Got divorced/separated from the partner	143	-
			・Started living apart from the family	370	-
			・Death of a family member	1,011	-
			・Death of a loved one other than family members	1,668	-
			・Started working or changed jobs	363	-
			・Lost a job	255	-
			・Retired or quit a job	303	-
			・Worsening financial conditions	3,003	-
			・Increased interpersonal problems	958	-
			・Other significant event	1,110	-

			Persons	Percentage
Q11 Risk perception of radiation health effects				
1) Risk perception of radiation health effects (Valid responses: 27,861)				
How will current radiation exposure affect future generations?		・Very low	8,189	29.4%
		・Low	14,181	50.9%
		・High	4,642	16.7%
		・Very high	849	3.0%
	Fukushima prefecture (Valid responses: 23,841)	・Very low	7,079	29.7%
		・Low	12,313	51.6%
		・High	3,807	16.0%
		・Very high	642	2.7%
	Outside the prefecture (Valid responses: 4,020)	・Very low	1,110	27.6%
		・Low	1,868	46.5%
		・High	835	20.8%
		・Very high	207	5.1%
2) Interference with daily life (Valid responses: 28,100)		・Frequently	487	1.7%
In the past month, how often have you had trouble with daily life		・Sometimes	1,672	6.0%
because of radiation concerns?		・Rarely	3,638	12.9%
		・Never	22,303	79.4%
Q12 Availability of consultation resources (Valid responses: 30,585)		・Yes	25,296	82.7%
Do you have someone to consult with or		・No	5,289	17.3%
talk about you mental/physical problems		(Have no one or organization to consult)		

FY2025 Mental Health and Lifestyle Survey (*KOKOKARA Survey*) on the Fukushima Health Management Survey Implementation Plan (Draft)

1 Purpose

To monitor changes in mental health and lifestyle, a questionnaire survey will be conducted and support will be provided by telephone, etc., to respondents who are considered to be in need. Effective support will be provided in cooperation with municipalities and other institutions.

2 Eligible Persons

- Those who were registered as residents in the area (*) from March 11, 2011, to April 1, 2012 (even after moving out of the area)
- Those who were registered as residents in the area (*) as of April 1, 2025
- In addition to the above, those deemed necessary, based on the results of the Basic Survey

Number of eligible persons: 207,232 (as of July 1, 2025)

*Covered areas: Municipalities designated as evacuation zones in 2011

Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village, Minamisoma City, Tamura City, Kawamata Town, and part of Date City (areas where evacuation is recommended)

3 Implementation Plan

The same detailed survey will be conducted as was conducted from FY2011 to FY2020.

3-1 Survey method

a. Questionnaire: Answers by the respondents or their guardians (self-administered)

Survey Classification

Classification	Eligible persons	Remarks
0-3 years old	Those born between April 2, 2022, and April 1, 2025	Answered by Parent/Guardian
4 to 6 years old	Those born between April 2, 2019, and April 1, 2022	Answered by Parent/Guardian
Elementary school students	Those born between April 2, 2013, and April 1, 2019	Answered by Parent/Guardian
Junior high school students	Those born between April 2, 2010, and April 1, 2013	Parent/Guardian (partially by themselves)
General	Those born before April 1, 2010	Themselves

b. Date of survey: Sent sequentially from the end of January 2026
c. Method of survey response: By mail or online (PC, smartphone, etc.)
d. Incentive: A free ballpoint pen will be enclosed with the survey questionnaire.

3-2 Main survey items
a. Current mental and physical health status
b. Lifestyle habits (diet, sleep, exercise, smoking, drinking, etc.)
c. Current living conditions ("General")

4 Support efforts

4-1 The responses will be evaluated and analyzed by doctors and other professionals of Fukushima Medical University (hereinafter referred to as "FMU"). If it is determined that consultation and support are necessary from a mental health and lifestyle perspective, the *KOKOKARA Health Support Team*, consisting of professionals such as certified psychologists, public health nurses, etc., will provide telephone support.

4-2 If it is determined through telephone support that a doctor's consultation is necessary, the team will refer the patient to a registered doctor (**) at a medical institution in the prefecture (**Refer to "About Registered Doctors"). In cases where continuous support is necessary, the team will consider and provide necessary support in cooperation with the respective municipality.

4-3 If the registered doctor determines that further mental health care is necessary, FMU and/or other institutions will respond to the request.

4-4 If the *KOKOKARA Health Support Team* receives a consultation on radiation, follow-up with a relevant specialist is recommended. The radiation health consultation team, consisting of FMU faculty members, will respond to the request. Additionally, in cases where a direct examination is required during health consultations related to the effects of radiation, consider responding with doctors or other professionals.

4-5 "Personal Results Notification" will be sent to the survey respondents, and information will be provided to help them understand their mental health and lifestyle status, as well as to assist in their health management.

In addition, at the time of the survey information and results notification, a dedicated telephone support line for the Mental and Lifestyle Survey (*KOKOKARA Survey*), set up and managed by FMU,

will be announced, and consultation services for mental and physical health will be provided for residents. The center will also provide information on various consultation services for mental health issues, emotional distress, anxiety, loneliness, alcohol, family problems, and child rearing. In addition, the prefectural government will provide information on how to use the *Fukushima Kenmin App*, an application for smartphones developed by Fukushima Prefecture, to encourage residents to take a personal interest in their own health and improve their lifestyle habits through the use of the application.

** About registered physicians

If, based on the Mental Health and Lifestyle Survey, it is determined that consultation with a psychiatrist, pediatrician, or other specialist is necessary, appropriately registered doctors provide the consultation.

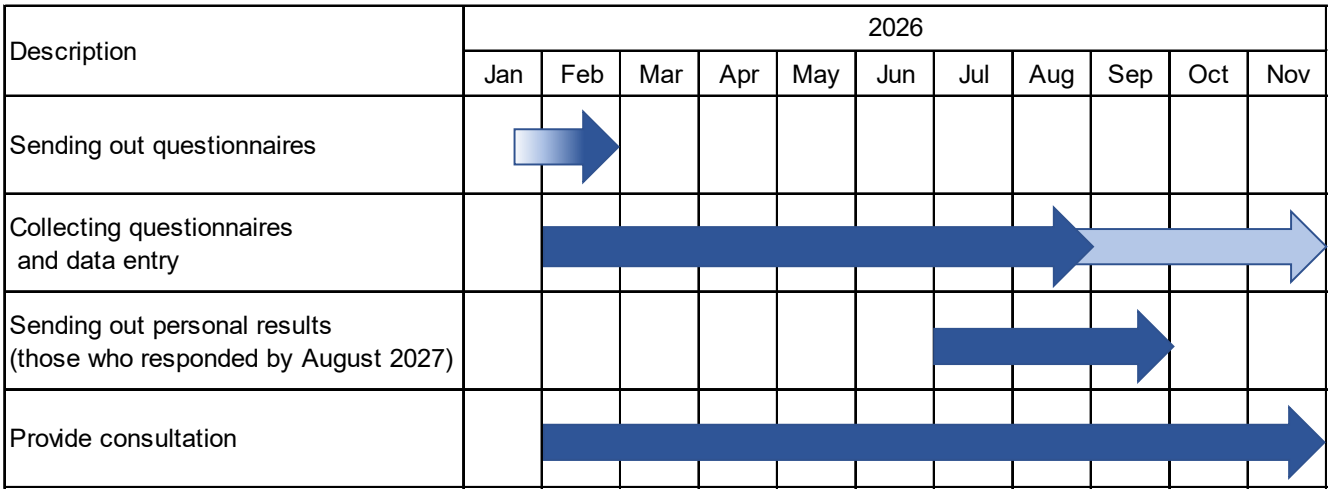
<Credentials and conditions required for registration>

Conditions include that the doctors must have completed a training course organized by or accredited by FMU or a recognized credentialing authority.

<Number of registrations>

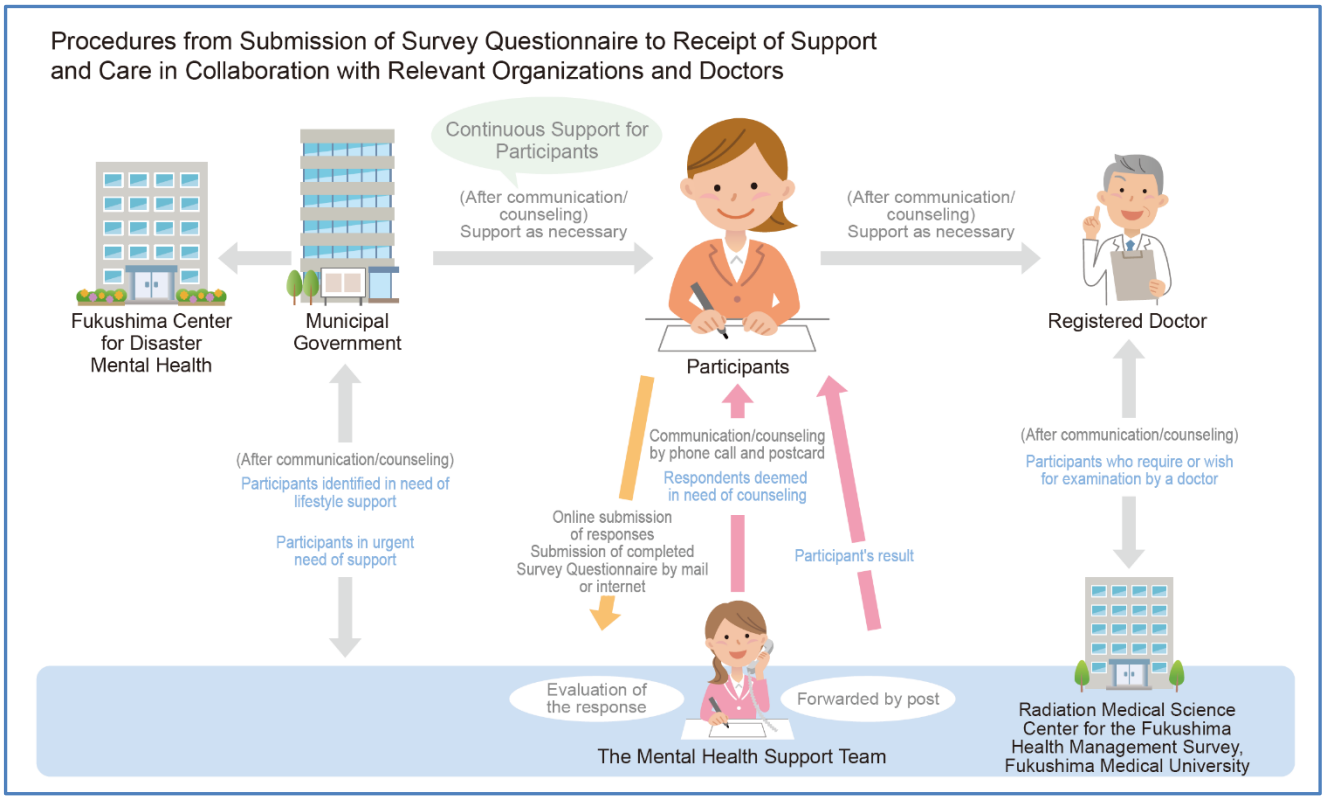
112 doctors (76 medical institutions) (as of July 1, 2025)

5 Schedule (Draft)



6 Process flow of the survey and support

The figure below shows the process flow of the Survey and the support



7 Reference

The methods used in the Mental Health and Lifestyle Survey (*KOKOKARA Survey*) are described below.

Descriptions	Measurement tool	How each tool operates	Examples (questions or descriptions)
Depression or the degree of anxiety (general mental health)	K6	- The respondents are asked to answer how often they felt depressed or anxious in the past 30 days for each of the six items related to mood swings and anxiety. - The questions are for those aged 16 years and older [general]. -The scores of the six items related to mood disorder and anxiety are evaluated to determine whether or not they interfere with the daily life of the respondents. - If the score is 13 or more, the possibility of a mood or anxiety disorder is considered to be present.	- Did you feel irritable? - Do you feel hopeless?
Drinking	CAGE	- Respondents were asked to answer either "Yes" or "No" to four items related to their drinking habits in the past 30 days. -The questions are for those aged 20 and older. - The questions assess whether the respondents have experienced problematic drinking behavior. - A score of 2 or more points indicates the possibility of high-risk drinking.	- Have you ever felt the need to reduce drinking? - Have you ever been bothered by others' criticism of your drinking?
Children's Mental Health	SDQ	- The respondents are asked to indicate the degree to which each of the 25 items relates to their children's emotional and behavioral status over the past six months. - The questions are for children aged 4 to 15 (4-6 years old, elementary school students, and junior high school students). - The scores of the respondents are used to determine whether or not they need professional support. - Scores of 16 or higher are considered to indicate the need for specialized support.	(Answered by parents/guardians) -Sensitive to other people's feelings. -Restless. -Cannot stay still.
Traumatic Reaction	PCL-4	- Respondents are asked to answer four questions about problems or complaints (trauma reactions) that sometimes arise from their disaster experiences, and to indicate how often each occurred in the past 30 days. - The questions are for those aged 16 and older. -The questions assess the severity of trauma reactions. - A score of 12 or higher indicates the possibility of PTSD.	-Respondents repeatedly recall disturbing memories and images of the stressful experience. - The body and mind react when the stressful experience is recalled for some reason.

FY2025 Fukushima Health Management Survey
Mental Health and Lifestyle Survey
(*KOKOKARA* Survey)
(for ages 16 and older)

Fukushima Medical University,
Fukushima Prefecture

Thank you for your participation in this Survey

A To respond online via the internet, please use the two-dimensional code on the right ➡

B To respond using this form, please fill it out below.

⬇ ＊ Please choose response methods A or B.

Online response is also available

Please fill in the fields below and put a check ✔ in the box □ that applies.

Date of Entry: (MM/DD/YY)	Respondent: 1☐ Self 2☐ Representative (Relationship)
Name	Gender: 1☐ Male 2☐ Female
Date of birth: (MM/DD/YY)	
Parent/Guardian Signature (If the participant is under 18 years old, please provide the guardian's signature and information in the consent to this survey.) (Signature of parent/guardian) _____ Relationship to the participant: 1☐ Mother 2☐ Father 3☐ Grandparent 4☐ Other ( ) Parent/guardian's date of birth: (MM/D/YY)	
(Change of mailing address) *Results notifications will also be sent to the above address. If you wish to change your address, please fill in this field. Postal Code Address:	
Contact information Please provide a number that is easy to reach during the daytime, as our support team may contact you. Telephone number: _____	

Please answer the following questions.

Q1. How is your current health condition? (check one)

1□ Very Good 2□ Good 3□ Normal 4□ Poor 5□ Very bad

Q2. Please tell us about your current height and weight.

Height cm Weight kg

Q3. Have you ever been <u>diagnosed by a doctor</u> as having any of the following diseases?

1) Hypertension (or high blood pressure)

1□ No 2□ Yes → Are you currently under medical care? 1□ Yes 2□ No

2) Diabetes (or high blood sugar)

1□ No 2□ Yes → Are you currently under medical care? 1□ Yes 2□ No

3) Dyslipidemia (high LDL cholesterol or triglycerides, or low HDL cholesterol)

1□ No 2□ Yes → Are you currently under medical care? 1□ Yes 2□ No

4) Mental conditions
(as diagnosed by a doctor, e.g., depression, sleep disorder, panic disorder, schizophrenia, etc.)

1□ No 2□ Yes →
Are you currently under medical care?
1□ Yes
2□ No, because I am currently improving
3□ No

5) Cancer (including leukemia and lymphoma)

1□ No 2□ Yes → What type(s) of cancer? (Please list all.)
_____ _____ _____

6) Stroke

1□ No 2□ Yes →
What type of stroke? (Multiple answers allowed)
1□ Cerebral stroke
(cerebral embolus, cerebral thrombosis)
2□ Cerebral hemorrhage 3□Subarachnoid hemorrhage
4□ Other ( ) 5□ Not sure

7) Heart disease

1□ No 2□ Yes →
What type of heart disease? (Multiple answers allowed)
1□ Myocardial infarction 2□ Angina pectoris
3□ Arrhythmia
4□ Other ( ) 5□ Not sure

8) Chronic hepatitis

$_1$☐ No $_2$☐ Yes → What type of chronic hepatitis? (Multiple answers allowed)
$_1$☐ Hepatitis B $_2$☐ Hepatitis C
$_3$☐ Other ( )

9) Pneumonia (in the last 10 years or so)

$_1$☐ No $_2$☐ Yes

10) Bone fracture (after the age of 50)

$_1$☐ No $_2$☐ Yes

11) Thyroid disease

$_1$☐ No $_2$☐ Yes → What is the type of thyroid disease?
$_1$☐ Hyperthyroidism (Graves' disease)
$_2$☐ Hypothyroidism
$_3$☐ Other ( )

12) Have you had any medical checkups (physical examinations or health checkups) or comprehensive physical examinations in the past year?

$_1$☐ No $_2$☐ Yes

Q4. Questions about your daily life.

1) For each of the following activities, please indicate whether or not you can do them by yourself.

	Activities of daily living	Yes, can do by myself	No, can't do by myself
1	Eating without assistance (not including preparation)	$_1$☐	$_2$☐
2	Changing clothes without assistance	$_1$☐	$_2$☐
3	Using the toilet without assistance	$_1$☐	$_2$☐
4	Shopping for daily necessities	$_1$☐	$_2$☐

2) Do you participate in recreational activities (karaoke, gate ball games, etc.) or community work (festivals, etc.)? (check one)

$_1$☐ Never or rarely $_2$☐ Sometimes ☐ Often

Q5 Questions about your sleeping habits.

1) During the past month, how much sleep (including naps) have you had on average per day? About _____ hours _____ minutes

2) During the past month, have you been satisfied with the quality of your sleep (regardless of how long you sleep)? (check one)

1□ Satisfied 2□ Slightly dissatisfied 3□ Fairly dissatisfied 4□ Very dissatisfied or no sleep at all

3) Have you experienced any of the following at least 3 times a week?

		Yes	Never
1	Taking a long time to fall asleep after getting into bed at night	1□	2□
2	Waking up in the middle of the night	1□	2□
3	Waking up earlier than planned, and not going back to sleep.	1□	2□
4	Lack of adequate sleep time	1□	2□
5	Feeling depressed during the day	1□	2□
6	Decreased physical and mental activity during the day	1□	2□
7	Daytime sleepiness	1□	2□

Please answer questions 6-7 below,
only if you are 20 years old and older.
If you are under 20 years old, please go to Q8.

Q6 Do you smoke (including e-cigarettes)? (check one)

1□ Never smoked → Please go to Q7.

2□ I quit → Please go to Q7.

3□ I smoke → If you smoke, please answer the following questions.

Smoking history [ ] years

Average number of cigarettes per day. [ ]

Q7 Questions about alcohol consumption.

1) Do you drink alcohol? (check one)

1□ No, I don't drink (or less than once in a month → Go to Q8.

2□ Quit → Go to Q8.

3□ Yes, I drink more than once in a month → Go to 2).

2) How often do you drink? [ ] Days every week or so

3) How much alcohol do you drink per day on drinking days?

Converted to *Sake**,

per day [ ] Gou

(Example: 1.5 Gou 1．5)

*Reference: Conversion table for 1 Gou of Japanese sake

Beer/Happoshu	1 medium bottle	500 mL
Chuhai 5 %	Large size can	500 mL
Shochu 25 %	1 glass	100 mL
Whisky	2 single glasses	60 mL
Wine	2 glasses	240 mL

4） Looking back over the past 30 days, please answer the following

		No	Yes
1	Have you ever felt the need to reduce your alcohol consumption?	1☐	2☐
2	Have you ever been bothered by others criticizing your drinking?	1☐	2☐
3	Have you ever felt bad or sorry about your drinking?	1☐	2☐
4	Have you ever had a drink in the morning to calm your nerves or cure a hangover?	1☐	2☐

Q8. Questions about your eating habits.

1) About your current eating habits, how often do you eat (drink) breakfast and the following foods (beverages to drink)? (check one)

Frequency of eating (drinking) / Type of food and/or drink	Not at all	Less than once a week	1-2 times a week	3-4 times a week	5-6 times a week	Every day
Breakfast	0□	1□	2□	3□	4□	5□
Eating out	0□	1□	2□	3□	4□	5□
Prepared foods such as ready-made meals and *"BENTO"* boxes (including instant foods)	0□	1□	2□	3□	4□	5□

Rice		0□	1□	2□	3□	4□	5□
Bread		0□	1□	2□	3□	4□	5□
Fish dishes (sashimi, grilled fish, boiled fish, fried fish, etc.)		0□	1□	2□	3□	4□	5□
Meat	Chicken	0□	1□	2□	3□	4□	5□
	Beef, pork	0□	1□	2□	3□	4□	5□
	Ham, sausage	0□	1□	2□	3□	4□	5□
Vegetables	Green vegetables (spinach, komatsuna, chives, etc.)	0□	1□	2□	3□	4□	5□
	Red and yellow vegetables (tomatoes, carrots, pumpkins, etc.)	0□	1□	2□	3□	4□	5□
	Light-colored vegetables (Chinese cabbage, cabbage, radish, etc.)	0□	1□	2□	3□	4□	5□
	Vegetable juice	0□	1□	2□	3□	4□	5□
Fruits	Fruits	0□	1□	2□	3□	4□	5□
	Fruit juice	0□	1□	2□	3□	4□	5□
Soy beans	Natto	0□	1□	2□	3□	4□	5□
	Miso soup	0□	1□	2□	3□	4□	5□
	Tofu dishes	0□	1□	2□	3□	4□	5□
	Cooked beans	0□	1□	2□	3□	4□	5□
Milk		0□	1□	2□	3□	4□	5□
Soy milk		0□	1□	2□	3□	4□	5□
Yogurt, lactic acid beverages		0□	1□	2□	3□	4□	5□

2) Please put a check ✓ in the box(es) □ that apply regarding your diet in the last month. (check one)

2-1) Compared to others, how fast do you eat? ..... 1□ Fast 2□Average 3□Slow
2-2) Do you eat between meals or at night almost every day?..... 1□ Yes 2□ No
2-3) Do you eat dinner within 2 hours of bedtime 3 or more times a week?..... 1□ Yes 2□ No

Q9. Do you exercise regularly? (check one)

1☐ Almost every day 2☐ 2-4 times a week

3☐ About once a week 4☐ Rarely

Q10. In your daily life, how often do you laugh out loud? (check one)

1☐ Almost every day 2☐ About 1-5 times a week

3☐ About 1-3 times a month 4☐ Rarely

Q11. In the <u>past few days</u>, have you been sick or injured or had any other physical problems (subjective symptoms)?

1☐ Yes 2☐ No

What kind of symptoms? Please put a check ✓ in the box(es) □ that apply.

1 ☐ Joint pain in hands and feet	2 ☐ Loss of appetite	3 ☐ Headache
4 ☐ Vertigo	5 ☐ Palpitations	6 ☐ Shortness of breath
7 ☐ Cough or phlegm	8 ☐ Wheezing	9 ☐ Diarrhea
10 ☐ Constipation	11 ☐ Loss of appetite	12 ☐ Stomachache
13 ☐ Pain or bleeding from hemorrhoids	14 ☐ Toothache	15 ☐ Swelling and bleeding of gums
16 ☐ Problems chewing	17 ☐ Itching (e.g., eczema, athlete's foot)	18 ☐ Backache
19 ☐ Urinary incontinence	20 ☐ Swollen or lethargic feet	21 ☐ Painful urination
22 ☐ Injury (cuts or burns etc.)	23 ☐ Irregular/painful periods	24 ☐ Fracture, sprain or dislocation
25 ☐ Other ( )		

Q12. In the past 30 days, how often did you experience any of the following?
Please circle the number that applies.

		Never	Rarely	Sometimes	Often	Always
1	Did you feel nervous?	0	1	2	3	4
2	Did you feel hopeless?	0	1	2	3	4
3	Did you feel fidgety or restless?	0	1	2	3	4
4	Did you feel down and depressed?	0	1	2	3	4
5	Did you feel tired of doing anything?	0	1	2	3	4
6	Did you feel you were worthless?	0	1	2	3	4
7	Did these problems ever interfere with your daily life?	0	1	2	3	4

Q13. Questions about the 3.11 disaster.

1) Please check all that apply to your experience of the Great East Japan Earthquake.

1□ Earthquake 2□ Tsunami 3□ Nuclear power plant accident → Please go to 2).

4□ None of the above → Please skip to Q14.

2) Questions about your experience of the 3.11 disaster, as mentioned in 1)
The following questions are designed to ask about stressful experiences you have had.
The questions are a list of problems or complaints that sometimes occur in response to stressful experiences.
Please read each item carefully and circle a number to indicate how much you were bothered by that problem during the past month.

		A	B	C	D	E
1	I repeatedly recall disturbing memories or images of the stressful experience(s).	1	2	3	4	5
2	My body reacts when I recall stressful experiences (shortness of breath, sweating, etc.).	1	2	3	4	5
3	I avoid certain activities or situations because they remind me of that stressful experience.	1	2	3	4	5
4	I cannot concentrate on things.	1	2	3	4	5

A: Not at all B: Slightly C: Moderately D: Quite a lot E: Very much

Q14. Questions about your current living situation.

1) We would like to ask you about your current residence.

1-1) Please answer the following questions about your current residence. (check one)

1□ In Fukushima Pref. 2 □ Outside Fukushima Prefecture

1-2) Please check all that apply to your current residence.

1□ Own house 2□ Rented house/apartment 3□ Public housing

4□ Reconstruction (disaster) public 5□ Relatives' house 6□ Other ( )

2) Please answer the following questions about your evacuation experience due to the Great East Japan Earthquake. (check one)

1□ Evacuated → Please go to 3).

2□Not evacuated 3□ Moved in after the disaster → Please go to 4).

3) What are your current plans for returning to your pre-disaster municipality? (check one)

1□ Already living in pre-disaster municipality 2□ Want to return (including plans)

3□ Cannot make a decision yet 4□ Decided not to return

4) How many people, including yourself, are currently living with you?

( ) persons

5) What is your current work status? (check one)

1□ Full-time / self-employed 2□ Part-time

3□ Unemployed (including students and housewives/househusbands)

6) How do you think about your current living situation from an economic point of view? (check one)

1□ Struggling 2□ Slightly struggling 3□ Normal

4□ Somewhat comfortable 5□ Comfortable

Q15. Questions about your connections with people in your current life.

For each of the following questions, please check ✓ each box □ that applies.

(persons)

	A: 0 **B**:1 **C**:2 **D**:3 to 4 **E**:5 to 8 **F**: more than 9	**A**	**B**	**C**	**D**	**E**	**F**
1	How many relatives or siblings do you see or hear from at least once a month?	0□	1□	2□	3□	4□	5□
2	How many friends do you see or keep in touch with at least once a month?	0□	1□	2□	3□	4□	5□
3	How many relatives or siblings do you feel comfortable talking to, even about personal matters?	0□	1□	2□	3□	4□	5□
4	How many friends do you feel comfortable talking to, even about personal matters?	0□	1□	2□	3□	4□	5□
5	How many relatives or siblings feel close enough to ask for help?	0□	1□	2□	3□	4□	5□
6	How many friends feel close enough to ask for help?	0□	1□	2□	3□	4□	5□

Q16. Questions about the area/community where you currently live.

Please circle one number that best fits each statement.

	See options below	A	B	C	D	E
1	People in this area/community help each other.	1	2	3	4	5
2	People in this area/community are trustworthy.	1	2	3	4	5
3	People in this area/community greet each other.	1	2	3	4	5
4	People in this area/community work together to solve problems when they arise.	1	2	3	4	5

A: I strongly think so B: I think so C: Not sure
D: I don't think so E: I don't think so at all

Q17. Questions about your thoughts on the effects of radiation.

It is said that in the case of a disaster caused by something like radiation, which we cannot sense with our five senses, how we perceive possible health risks will greatly affect our mental health.

1) How do you feel (think) about the effects of radiation on your health? Please circle the number that best fits your perception.

	A: Very unlikely B: Low possibility C: High possibility D: Very likely	A	B	C	D
1	How likely do you think it is that the radiation exposure you are currently receiving will cause health problems (such as cancer) later in life?	1	2	3	4
2	How much do you think that current radiation exposure will affect the health of future generations (your children and grandchildren, etc.)?	1	2	3	4

2) During the past month, how often have you found difficulties in your daily life due to concerns about radiation? (check one)

1□ Often 2□ Sometimes 3□ Rarely 4□ Never

Q18. Do you have a person or organization you can go to when you're having mental or physical problems?

1□ Yes 2□ No, there is no one or organization I can consult.

If yes, please check all boxes that apply.

1□ Family/relatives
2□ Friend/acquaintance
3□ Colleague/supervisor
4□ Municipal consultation offices (municipal health centers, health centers, etc.)
5□ Prefectural consultation offices (prefectural health centers, health and welfare offices, etc.)
6□ Mental Health Welfare Center
7□ Fukushima Center for Disaster Mental Health
8□ Visiting nursing and care service organizations
9□ Specialty institutions such as for psychosomatic medicine, psychiatry, neurology, and mental health
10□ Medical institutions other than the above
(general internal medicine, surgery, ophthalmology, otolaryngology, orthopedics, OBG, etc.)
11□ Religious organizations (shrines, temples, churches, etc.)
12□ Other ( )

＊ The following questions are intended to ask for information related to your health and lifestyle, and are not intended to invade your privacy. Please answer as much as you feel comfortable with.

Q19. Question about your educational background. (check one)

1□ Elementary or junior high school　2□ High school

3□ Vocational school/junior college　4□ University (4-year) / graduate school

Please write below if you have any comments about your health, concerns, or opinions about the survey. We will use this information as a reference for future health care and surveys.

This is the end of the questionnaire for men. Please return the form in the self-addressed envelope. Thank you for your cooperation. For women, please proceed to the next page.

Please answer the following questions only if you are female.

Q20. We would like to ask about your menstruation.

1) Please tell us about your current menstruation. If you checked "Currently menstruating," please check the box that applies to whether your menstruation is steady or irregular.

1☐ Currently menstruating (☐Steady ☐Irregular)
2☐ Menopause (including surgical menopause)
3☐ Currently not menstruating due to pregnancy or postpartum
4☐ Currently not menstruating for other reasons

5☐ Never menstruated before → Please proceed to Q21.

Age of menarche ☐

2) If you answered "menopause" in 1), please answer the following questions.
*Menopause: No menstruation for more than 1 year since your last period

(1) What was your age at menopause? ☐

(2) What was the reason for your menopause?

1☐ Natural menopause
2☐ Menopause due to treatment (removal of ovaries or uterus, radiation therapy, chemotherapy, etc.)
3☐ Other (.....)

Q21. Have you ever given birth?

1☐ Yes 2☐ No

This concludes the questionnaire.
Please return the form in the self-addressed envelope.
Thank you very much for your cooperation.

For further information, please contact
KOKOKARA Survey Telephone Consultation
Fukushima Medical University, Fukushima Medical University
Radiation Medical Science Center for the Fukushima Health Management Survey
Phone: 024-549-5170 (9:00 - 17:00 except Saturdays, Sundays, national holidays)

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

As of March 31, 2025

1. Summary

1.1 Purpose

To monitor the long-term health of children, we are continuing the Full-Scale Survey (sixth-round survey), following the Preliminary Baseline Survey for initial assessment of thyroid glands, and prior Full-Scale Surveys (second, third, fourth, and fifth-round surveys) to continuously assess the status of thyroid glands.

1.2 Eligible persons

All Fukushima residents who were approximately 18 years old or younger at the time of the earthquake (those born between April 2, 1992, and April 1, 2012).

1.3 Implementation Period

FY2023 and FY2024, starting in April 2023:

1.3-1 For those 18 years old or younger

The examination was carried out for 2 years: FY2023 and FY2024.

1.3-2 For those 19 years old or older

The examination was conducted on an age-group basis (i.e., school grade).

FY2023: those born between FY2000 and FY2003

FY2024: those born in FY2004

1.3-3 For those 25 years old or older

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

FY2023: those born in FY1993 and FY1998

FY2024: those born in FY1994 and FY1999

These survey results will be reported separately.

1.4 Implementing Organizations (number of medical facilities with agreements for the implementation of thyroid examinations as of March 31, 2025)

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

1.4-1 Primary examination facilities

In Fukushima Prefecture	84 medical facilities
Outside Fukushima Prefecture	156 medical facilities

1.4-2 Confirmatory examination facilities

In Fukushima Prefecture	7 medical facilities, including FMU
Outside Fukushima Prefecture	44 medical facilities

1.5 Methods

1.5-1 Primary examination

Ultrasonography of the thyroid gland.

Assessments are made by specialists based on the following criteria:

- Grade A

A1: No nodules/cysts

A2: Nodules ≤ 5.0 mm or cysts ≤ 20.0 mm

- Grade B

B: Nodules ≥ 5.1 mm or cysts ≥ 20.1 mm

Some A2 results may be re-classified as B results when clinically indicated.

-Grade C

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

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood and urine tests, and fine needle aspiration cytology (FNAC) if needed for those with B or C test results.

Priority is given to those in urgent clinical need. A medical follow-up may be recommended based on confirmatory exam results.

1.5-3 Flow chart

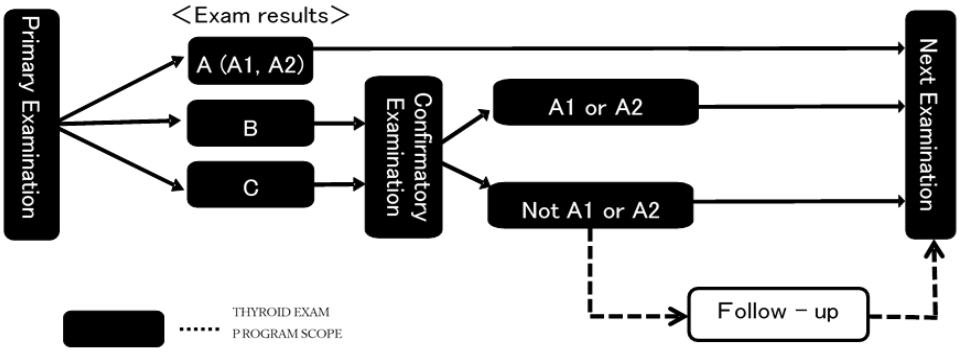


Figure 1: Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2023 and FY2024 are as follows:

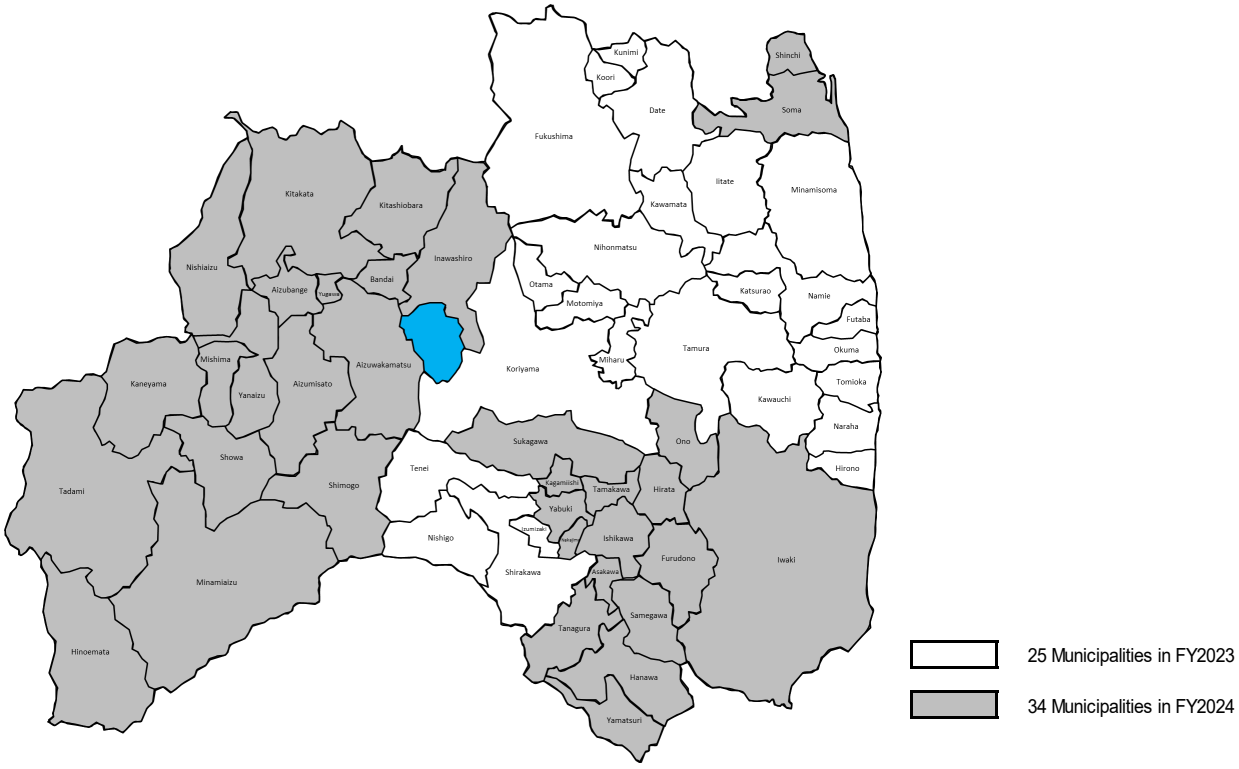


Figure 2: Municipalities covered for primary examinations in FY2023 and FY2024

2. Results as of March 31, 2025

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was completed for 68,921 participants (32.5%) by March 31, 2025. (Refer to Appendix 1 for the status by municipalities in Fukushima, and Appendix 2 for by prefectures outside Fukushima.)

The results of 68,439 examinees (99.3%) have been finalized, and individual reports have been sent to them. (Refer to Appendix 3 for the primary examination results by the municipality.)

Of these, 18,346 (26.8%) had Grade A1 results, 49,123 (71.8%) had Grade A2, 970 (1.4%) had Grade B, and none had Grade C.

Table 1: Progress and results of the primary examination

	Eligible persons	Participants (persons)		Those who participated outside Fukushima	Participants with finalized results (persons)									
							Details by grade (%)							
							A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	(b/a)		c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
FY2023	121,817	41,716	(34.2)	3,107	41,630	(99.8)	11,193	(26.9)	29,876	(71.8)	561	(1.3)	0	(0.0)
FY2024	90,112	27,205	(30.2)	1,361	26,809	(98.5)	7,153	(26.7)	19,247	(71.8)	409	(1.5)	0	(0.0)
Total	211,929	68,921	(32.5)	4,468	68,439	(99.3)	18,346	(26.8)	49,123	(71.8)	970	(1.4)	0	(0.0)

Table 2: Number and proportion of participants with nodules/cysts. (See Appendix 4 for details)

	Participants with finalized results	Participants with nodules / cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
FY2023	41,630	557	(1.3)	274	(0.7)	4	(0.0)	30,203	(72.6)
FY2024	26,809	406	(1.5)	203	(0.8)	3	(0.0)	19,467	(72.6)
Total	68,439	963	(1.4)	477	(0.7)	7	(0.0)	49,670	(72.6)

- 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 FY1999) are excluded. The results of examinations at 5-year intervals (Age 25 and Age 30 Surveys) will be reported separately.
- Examinations for those born in FY1993 (approx. 22,000) and FY1998 (approx. 21,000) took place in FY2023. Examinations for those born in FY1994 (approx. 22,000) and FY1999 (approx. 20,000) were carried out in FY2024.

2.1-2 Participation rate by age group

Table 3 shows the participation rate for each age group as of April 1 of each fiscal year.

Table 3: Participation rates by age group

			Total	Age group		
FY2023	Age group*			11 years old	12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	121,817	8,422	58,640	54,755
	Participants	(b)	41,716	5,189	33,149	3,378
	Participation rate (%)	(b/a)	34.2	61.6	56.5	6.2
FY2024	Age group*				12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	90,112		41,674	48,438
	Participants	(b)	27,205		23,531	3,674
	Participation rate (%)	(b/a)	30.2		56.5	7.6
Total	Eligible persons	(a)	211,929	8,422	100,314	103,193
	Participants	(b)	68,921	5,189	56,680	7,052
	Participation rate (%)	(b/a)	32.5	61.6	56.5	6.8

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

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

Table 4 compares the results of the two Full-Scale Surveys (fifth- and sixth-round surveys).

Among 61,015 participants (sum of *1) with Grade A1 and A2 results in the fifth-round survey, 60,559 (sum of *2, 99.3%) had Grade A results, and 456 (sum of *3, 0.7%) had Grade B results in the sixth-round survey.

Among 501 participants with Grade B results in the fifth-round survey, 110 (sum of *4, 22.0%) had Grade A results, and 391 (78.0%) had Grade B results in the sixth-round survey.

Table 4: Comparison of the fifth- and sixth-round surveys

			Results of the fifth-round survey*	Results of the sixth-round survey**			
				A		B	C
			a (%)	A1 b (b/a)	A2 c (c/a)	d (d/a)	e (e/a)
Results of the fifth-round survey	A	A1	16,735 *1 (100.0)	12,027 *2 (71.9)	4,629 *2 (27.7)	79 *3 (0.5)	0 (0.0)
		A2	44,280 *1 (100.0)	4,325 *2 (9.8)	39,578 *2 (89.4)	377 *3 (0.9)	0 (0.0)
	B		501 (100.0)	10 *4 (2.0)	100 *4 (20.0)	391 (78.0)	0 (0.0)
	C		0 0.0	0 0.0	0 0.0	0 0.0	0 (0.0)
	Did not participate		6,923 (100.0)	1,984 (28.7)	4,816 (69.6)	123 (1.8)	0 (0.0)
Total			68,439 (100.0)	18,346 (26.8)	49,123 (71.8)	970 (1.4)	0 (0.0)

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

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By March 31, 2025, of 970 eligible persons, 670 (69.1%) had participated in the confirmatory examination, and 608 (90.7%) had completed the entire procedure.

Of those 608 participants, 47 (A1: 1, A2: 46) (7.7%) were confirmed to meet A1 or A2 diagnostic criteria by primary examination standards (including those with other thyroid conditions). After the detailed examination, 561(92.3%) were confirmed to be outside the A1 or A2 criteria.

Table 5: Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (persons)		Those with finalized results (persons)									
			Participation Rate (%)		Determination rate (%)	A1		A2		Other than A1 or A2			
												FNAC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
FY2023	561	451	(80.4)	423	(93.8)	1	(0.2)	33	(7.8)	389	(92.0)	24	(6.2)
FY2024	409	219	(53.5)	185	(84.5)	0	(0.0)	13	(7.0)	172	(93.0)	10	(5.8)
Total	970	670	(69.1)	608	(90.7)	1	(0.2)	46	(7.6)	561	(92.3)	34	(6.1)

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

Among those who underwent FNAC, 15 participants were diagnosed with lesions malignant or suspicious for malignancy: 4 were male and 11 were female. Participants' ages at the confirmatory examination ranged from 12 to 21 years (mean age: 17.3 ± 3.0 years). The tumor diameters were from 8.2 mm to 20.1 mm (mean tumor diameter: 13.4 ± 3.5 mm).

Of these 15 participants, 8 had Grade A (A1:2, A2:6), 3 had Grade B results in the fifth-round survey, and the remaining 4 did not participate. Among 6 participants with Grade A2, 5 met nodule criteria, and 1 met both cyst and nodule criteria.

Table 6: Results of FNAC

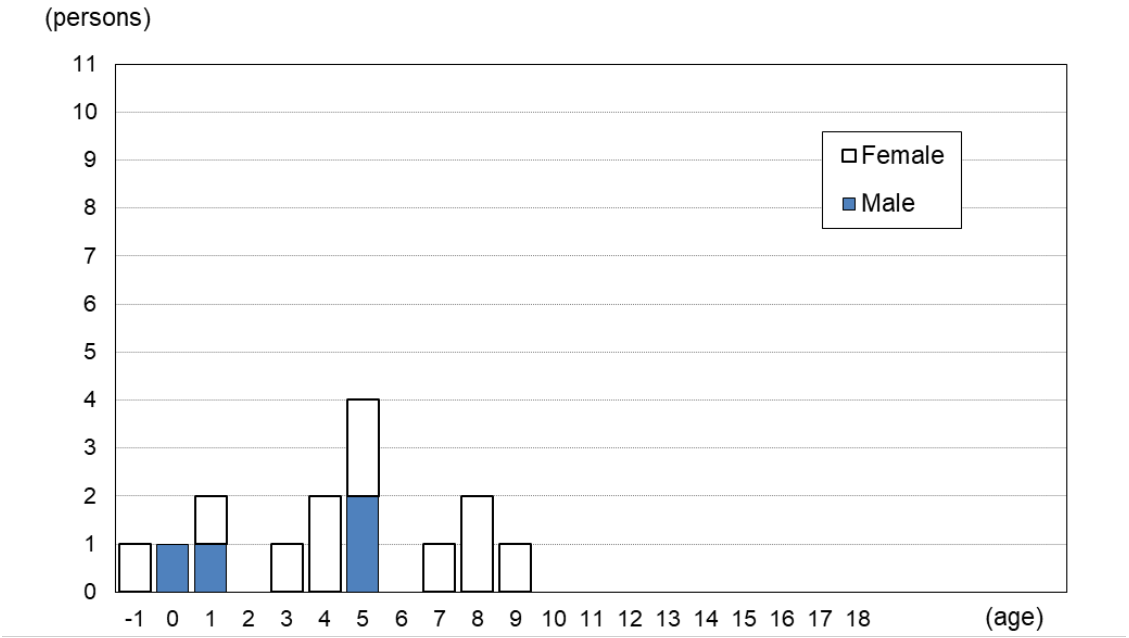
(After mean age and mean tumor size, numbers in parentheses indicate ranges.)

1. FY2023: Those referred to confirmatory examination at the sixth-round survey
   - Malignant or suspicious for malignancy: 12*
   - Male to female ratio: 4:8
2. FY2024: Those referred to confirmatory examination at the sixth-round survey
   - Malignant or suspicious for malignancy: 3*
   - Male to female ratio: 0:3
3. Total
   - Malignant or suspicious for malignancy: 15*
   - Male to female ratio: 4:11
   - Mean age ± SD (min-max) 17.3 ± 3.0 (12–21)
     4.3 ± 2.9 (0–9) at the time of the earthquake
   - Mean tumor size ± SD (min-max) 13.4 ± 3.5 mm (8.2–20.1 mm)

*Refer to Appendix 5 for surgical cases

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

Figure 3 shows the age distribution of 15 people with malignant or suspected malignant nodules based on their age as of March 11, 2011. The age distribution based on their age at the time of confirmatory examination is in Figure 4.



Note: Those aged between 11 and 18 at the time of the disaster are not included in the sixth-round survey participants.
The horizontal axis begins at -1, including those born between April 2, 2011, and April 1, 2012.
*Those born between March 12 and April 1, 2011, are included in age 0.

Figure 3: Age distributions as of March 11, 2011

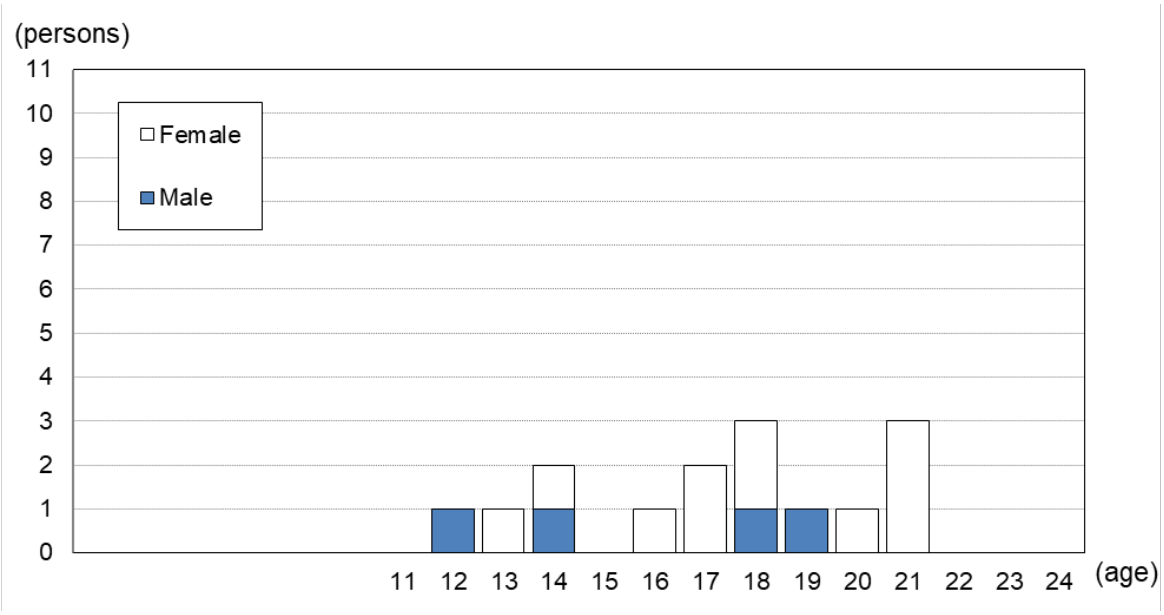


Figure 4: Age distributions as of the date of confirmatory examination

2.2-4 Basic Survey results for cases deemed malignant or suspicious for malignancy by FNAC

Of those 15 people with malignant or suspicious findings, 12 (80.0%) had participated in the Basic Survey (for external radiation exposure dose estimation), and all 12 received their results. The highest effective dose documented was 1.9 mSv.

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

Effective dose (mSv)	Age at the time of the earthquake									
	0–5		6–10		11–15		16–18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	1	3	0	2	0	0	0	0	1	5
< 2	2	2	0	2	0	0	0	0	2	4
< 5	0	0	0	0	0	0	0	0	0	0
< 10	0	0	0	0	0	0	0	0	0	0
< 20	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	3	5	0	4	0	0	0	0	3	9

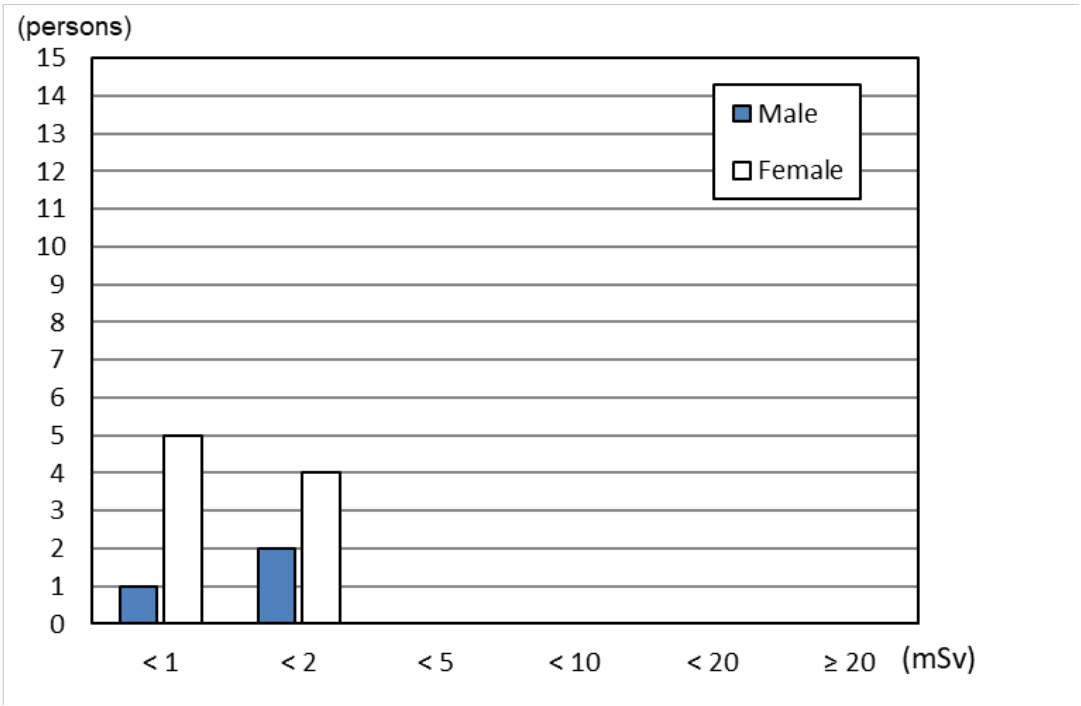


Figure 5: Effective dose distribution of the Basic Survey participants

2.2-5 Blood test 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 : 15	1.2 ± 0.2 (6.7%)	3.5 ± 0.5 (20.0%)	1.5 ± 0.6 (0.0%)	32.3 ± 34.4 (40.0%)	20.0%	26.7%
Other : 515	1.2 ± 0.2 (5.0%)	3.6 ± 0.5 (8.3%)	1.3 ± 1.2 (9.9%)	29.4 ± 143.2 (14.6%)	7.4%	10.3%

Table 9: Urinary iodine test results [8]

(μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious : 10	88	135	285	476	757
Other : 212	39	117	199	357	5,521

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 or Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference intervals vary according to age.
8) Due to the temporary suspension of reagents, the urinary iodine tests had been suspended from March 8, 2024, to January 19, 2025, but resumed on January 20, 2025.

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 explanations of 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 2023; as of March 31, 2025, all 1,563 participants (100%) have visited these consultation booths.

3.2 Outreach programs (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.

Between April 2023 (the start of FY2023) and March 31, 2025, we delivered 13 on-location sessions (5 at elementary schools, 6 at junior high schools, and 2 at high schools) for 1,257 students. In total, 16,950 people have participated since the start of these sessions.

3.3 Support for Confirmatory Examination Participants

A support team has been established within Fukushima Medical University to offer mental health support to those undergoing the confirmatory (secondary) examination to address their concerns and anxiety, as well as to answer questions and provide guidance via web consultation. Since the start of the sixth-round survey, 259 participants (91 males and 168 females) have received support as of March 31, 2025. The total number of support sessions, including telephone counseling, was 398. Of these, 259 (65.1%) received support during their first examination, and 139 (34.9%) during subsequent examinations.

For those who proceed 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, 2025

	Number of eligible persons	Participants (persons)		Participation rate(%)	Number of participants and participation rate by age group[2)]			Participants living outside Fukushima	%
	a	b	Participated outside Fukushima[1)]	b/a	11	12–17	18–24	c[3)]	c/b
Municipalities surveyed in FY2023									
Kawamata	1,282	400	10	31.2	29 7.3	331 82.8	40 10.0	13	3.3
Namie	2,063	548	98	26.6	29 5.3	391 71.4	128 23.4	108	19.7
Iitate	620	185	6	29.8	10 5.4	142 76.8	33 17.8	6	3.2
Minamisoma	7,561	2,082	304	27.5	163 7.8	1,571 75.5	348 16.7	330	15.9
Date	6,096	2,321	90	38.1	201 8.7	1,791 77.2	329 14.2	92	4.0
Tamura	3,783	1,306	34	34.5	108 8.3	1,029 78.8	169 12.9	30	2.3
Hirono	538	168	10	31.2	10 6.0	124 73.8	34 20.2	11	6.5
Naraha	766	212	17	27.7	4 1.9	157 74.1	51 24.1	19	9.0
Tomioka	1,640	434	60	26.5	17 3.9	317 73.0	100 23.0	53	12.2
Kawauchi	192	58	2	30.2	1 1.7	42 72.4	15 25.9	3	5.2
Okuma	1,521	424	69	27.9	14 3.3	316 74.5	94 22.2	71	16.7
Futaba	718	138	18	19.2	4 2.9	104 75.4	30 21.7	18	13.0
Katsurao	126	34	2	27.0	3 8.8	22 64.7	9 26.5	3	8.8
Fukushima	31,364	11,195	843	35.7	666 5.9	9,024 80.6	1,505 13.4	846	7.6
Nihonmatsu	5,779	2,083	95	36.0	167 8.0	1,686 80.9	230 11.0	100	4.8
Motomiya	3,566	1,253	46	35.1	105 8.4	979 78.1	169 13.5	41	3.3
Otama	951	403	5	42.4	28 6.9	321 79.7	54 13.4	6	1.5
Koriyama	38,694	13,267	1,156	34.3	282 2.1	10,921 82.3	2,064 15.6	1,125	8.5
Koori	1,139	480	20	42.1	48 10.0	354 73.8	78 16.3	21	4.4
Kunimi	827	293	11	35.4	16 5.5	227 77.5	50 17.1	8	2.7
Tenei	621	194	7	31.2	9 4.6	155 79.9	30 15.5	6	3.1
Shirakawa	7,161	2,641	142	36.9	120 4.5	2,129 80.6	392 14.8	133	5.0
Nishigo	2,410	843	41	35.0	36 4.3	692 82.1	115 13.6	35	4.2
Izumizaki	759	222	4	29.2	7 3.2	189 85.1	26 11.7	2	0.9
Miharu	1,640	532	17	32.4	18 3.4	434 81.6	80 15.0	17	3.2
Subtotal	121,817	41,716	3,107	34.2	2,095 5.0	33,448 80.2	6,173 14.8	3,097	7.4

*1) The number of participants who received the examination at facilities outside Fukushima (as of February 28, 2025).

*2) Split cells show the number of participants above the corresponding percentage.

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

・Age groups are based on participants' age at the Full-Scale Survey (sixth-round survey). This applies to other tables hereafter.

	Number of eligible persons	Participants (persons)	Participated outside Fukushima[1]	Participation rate(%)	Number of participants and participation rate by age group[2]			Participants living outside Fukushima	%
	a	b		b/a	11	12–17	18–24	c[3]	c/b
Municipalities surveyed in FY2024									
Iwaki	35,488	11,299	730	31.8	18 0.2	8,672 76.8	2,609 23.1	635	5.6
Sukagawa	8,982	2,822	114	31.4	7 0.2	2,283 80.9	532 18.9	95	3.4
Soma	4,020	1,002	96	24.9	9 0.9	805 80.3	188 18.8	95	9.5
Kagamiishi	1,550	501	16	32.3	0 0.0	413 82.4	88 17.6	14	2.8
Shinchi	827	249	16	30.1	1 0.4	183 73.5	65 26.1	16	6.4
Nakajima	586	153	0	26.1	0 0.0	136 88.9	17 11.1	1	0.7
Yabuki	1,975	613	19	31.0	2 0.3	505 82.4	106 17.3	12	2.0
Ishikawa	1,535	493	12	32.1	2 0.4	416 84.4	75 15.2	11	2.2
Yamatsuri	564	199	13	35.3	0 0.0	166 83.4	33 16.6	7	3.5
Asakawa	768	231	11	30.1	0 0.0	187 81.0	44 19.0	9	3.9
Hirata	692	225	5	32.5	0 0.0	192 85.3	33 14.7	4	1.8
Tanagura	1,707	541	18	31.7	2 0.4	458 84.7	81 15.0	11	2.0
Hanawa	866	248	14	28.6	1 0.4	204 82.3	43 17.3	8	3.2
Samegawa	385	119	1	30.9	1 0.8	106 89.1	12 10.1	2	1.7
Ono	1,044	309	6	29.6	1 0.3	263 85.1	45 14.6	4	1.3
Tamakawa	774	209	6	27.0	1 0.5	167 79.9	41 19.6	0	0.0
Furudono	571	212	8	37.1	0 0.0	168 79.2	44 20.8	4	1.9
Hinoemata	58	5	0	8.6	0 0.0	5 100.0	0 0.0	0	0.0
Minamiaizu	1,483	373	9	25.2	0 0.0	328 87.9	45 12.1	6	1.6
Kaneyama	90	27	0	30.0	0 0.0	21 77.8	6 22.2	0	0.0
Showa	89	22	1	24.7	0 0.0	20 90.9	2 9.1	1	4.5
Mishima	106	27	0	25.5	0 0.0	21 77.8	6 22.2	0	0.0
Shimogo	527	115	2	21.8	0 0.0	101 87.8	14 12.2	3	2.6
Kitakata	4,942	1,379	34	27.9	2 0.1	1,173 85.1	204 14.8	28	2.0
Nishiaizu	491	127	5	25.9	0 0.0	109 85.8	18 14.2	3	2.4
Tadami	401	119	4	29.7	1 0.8	103 86.6	15 12.6	3	2.5
Inawashiro	1,467	428	16	29.2	1 0.2	358 83.6	69 16.1	12	2.8
Bandai	357	110	5	30.8	0 0.0	88 80.0	22 20.0	6	5.5
Kitashiobara	324	106	2	32.7	0 0.0	92 86.8	14 13.2	3	2.8
Aizumisato	1,953	579	11	29.6	0 0.0	479 82.7	100 17.3	8	1.4
Aizubange	1,671	470	12	28.1	2 0.4	389 82.8	79 16.8	8	1.7
Yanaizu	326	89	0	27.3	0 0.0	82 92.1	7 7.9	0	0.0
Aizuwakamatsu	13,118	3,676	173	28.0	8 0.2	2,982 81.1	686 18.7	159	4.3
Yugawa	375	128	2	34.1	0 0.0	98 76.6	30 23.4	2	1.6
Subtotal	90,112	27,205	1,361	30.2	59 0.2	21,773 80.0	5,373 19.8	1,170	4.3
Total	211,929	68,921	4,468	32.5	2,154 3.1	55,221 80.1	11,546 16.8	4,267	6.2

Appendix 2: Implementation status of the TUE primary examination by prefecture

As of February 28. 2025

Prefecture	Number of medical facilities	Participants (persons)
Hokkaido	7	**113**
Aomori	3	**56**
Iwate	4	**101**
Miyagi	2	**1,087**
Akita	1	**77**
Yamagata	3	**172**
Ibaraki	6	**246**
Tochigi	9	**329**
Gunma	2	**67**
Saitama	5	**235**
Chiba	5	**124**
Tokyo	23	**797**
Kanagawa	9	**291**
Niigata	3	**163**
Toyama	2	**10**
Ishikawa	2	**6**

Prefecture	Number of medical facilities	Participants (persons)
Fukui	1	**12**
Yamanashi	2	**37**
Nagano	4	**67**
Gifu	2	**16**
Shizuoka	3	**44**
Aichi	6	**84**
Mie	1	**9**
Shiga	1	**7**
Kyoto	4	**21**
Osaka	10	**60**
Hyogo	3	**53**
Nara	4	**13**
Wakayama	1	**2**
Tottori	1	**0**
Shimane	1	**4**
Okayama	3	**25**

Prefecture	Number of medical facilities	Participants (persons)
Hiroshima	1	**14**
Yamaguchi	1	**5**
Tokushima	1	**5**
Kagawa	1	**6**
Ehime	3	**11**
Kochi	2	**8**
Fukuoka	4	**28**
Saga	1	**2**
Nagasaki	3	**12**
Kumamoto	1	**11**
Oita	1	**13**
Miyazaki	1	**9**
Kagoshima	2	**3**
Okinawa	1	**13**
Total	156	**4,468**

The number of participants examined at medical facilities outside Fukushima Prefecture.

Appendix 3: TUE primary examination results by the municipality

As of March 31, 2025

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)				Percentage (%)		Percentage (%)	
			A		B	C				
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in FY2023										
Kawamata	400	400	95	298	7	0	7	3	0	303
		100.0	23.8	74.5	1.8	0.0	1.8	0.8	0.0	75.8
Namie	548	541	153	381	7	0	6	8	1	382
		98.7	28.3	70.4	1.3	0.0	1.1	1.5	0.2	70.6
Iitate	185	184	45	136	3	0	3	0	0	139
		99.5	24.5	73.9	1.6	0.0	1.6	0.0	0.0	75.5
Minamisoma	2,082	2,079	543	1,503	33	0	33	12	0	1,524
		99.9	26.1	72.3	1.6	0.0	1.6	0.6	0.0	73.3
Date	2,321	2,317	580	1,709	28	0	28	21	0	1,724
		99.8	25.0	73.8	1.2	0.0	1.2	0.9	0.0	74.4
Tamura	1,306	1,304	364	925	15	0	15	8	0	933
		99.8	27.9	70.9	1.2	0.0	1.2	0.6	0.0	71.5
Hirono	168	167	51	112	4	0	4	1	0	114
		99.4	30.5	67.1	2.4	0.0	2.4	0.6	0.0	68.3
Naraha	212	206	53	151	2	0	2	2	0	150
		97.2	25.7	73.3	1.0	0.0	1.0	1.0	0.0	72.8
Tomioka	434	430	114	311	5	0	5	4	0	316
		99.1	26.5	72.3	1.2	0.0	1.2	0.9	0.0	73.5
Kawauchi	58	57	17	39	1	0	1	0	0	40
		98.3	29.8	68.4	1.8	0.0	1.8	0.0	0.0	70.2
Okuma	424	423	122	292	9	0	9	4	0	296
		99.8	28.8	69.0	2.1	0.0	2.1	0.9	0.0	70.0
Futaba	138	138	38	100	0	0	0	1	0	99
		100.0	27.5	72.5	0.0	0.0	0.0	0.7	0.0	71.7
Katsurao	34	34	8	26	0	0	0	0	0	26
		100.0	23.5	76.5	0.0	0.0	0.0	0.0	0.0	76.5
Fukushima	11,195	11,173	3,060	7,966	147	0	145	64	2	8,048
		99.8	27.4	71.3	1.3	0.0	1.3	0.6	0.0	72.0
Nihonmatsu	2,083	2,081	629	1,424	28	0	28	10	0	1,445
		99.9	30.2	68.4	1.3	0.0	1.3	0.5	0.0	69.4
Motomiya	1,253	1,252	355	882	15	0	15	6	0	890
		99.9	28.4	70.4	1.2	0.0	1.2	0.5	0.0	71.1
Otama	403	403	112	280	11	0	11	2	0	286
		100.0	27.8	69.5	2.7	0.0	2.7	0.5	0.0	71.0
Koriyama	13,267	13,239	3,495	9,567	177	0	176	81	1	9,680
		99.8	26.4	72.3	1.3	0.0	1.3	0.6	0.0	73.1
Koori	480	480	133	339	8	0	8	4	0	344
		100.0	27.7	70.6	1.7	0.0	1.7	0.8	0.0	71.7
Kunimi	293	293	90	193	10	0	10	2	0	199
		100.0	30.7	65.9	3.4	0.0	3.4	0.7	0.0	67.9
Tenei	194	194	44	148	2	0	2	2	0	149
		100.0	22.7	76.3	1.0	0.0	1.0	1.0	0.0	76.8
Shirakawa	2,641	2,639	661	1,946	32	0	32	22	0	1,958
		99.9	25.0	73.7	1.2	0.0	1.2	0.8	0.0	74.2
Nishigo	843	842	232	600	10	0	10	9	0	607
		99.9	27.6	71.3	1.2	0.0	1.2	1.1	0.0	72.1
Izumizaki	222	222	62	157	3	0	3	2	0	159
		100.0	27.9	70.7	1.4	0.0	1.4	0.9	0.0	71.6
Miharu	532	532	137	391	4	0	4	6	0	392
		100.0	25.8	73.5	0.8	0.0	0.8	1.1	0.0	73.7
Subtotal	41,716	41,630	11,193	29,876	561	0	557	274	4	30,203
		99.8	26.9	71.8	1.3	0.0	1.3	0.7	0.0	72.6

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)							
			A		B	C	Percentage (%)		Percentage (%)	
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in FY2024										
Iwaki	11,299	11,070	3,061	7,842	167	0	166	78	1	7,928
		98.0	27.7	70.8	1.5	0.0	1.5	0.7	0.0	71.6
Sukagawa	2,822	2,793	737	2,002	54	0	54	16	0	2,036
		99.0	26.4	71.7	1.9	0.0	1.9	0.6	0.0	72.9
Soma	1,002	991	262	711	18	0	18	12	0	720
		98.9	26.4	71.7	1.8	0.0	1.8	1.2	0.0	72.7
Kagamiishi	501	496	124	368	4	0	4	0	0	372
		99.0	25.0	74.2	0.8	0.0	0.8	0.0	0.0	75.0
Shinchi	249	247	67	173	7	0	7	2	0	176
		99.2	27.1	70.0	2.8	0.0	2.8	0.8	0.0	71.3
Nakajima	153	150	43	107	0	0	0	1	0	107
		98.0	28.7	71.3	0.0	0.0	0.0	0.7	0.0	71.3
Yabuki	613	607	170	428	9	0	9	3	0	433
		99.0	28.0	70.5	1.5	0.0	1.5	0.5	0.0	71.3
Ishikawa	493	488	121	357	10	0	9	6	1	361
		99.0	24.8	73.2	2.0	0.0	1.8	1.2	0.2	74.0
Yamatsuri	199	196	46	149	1	0	1	4	0	150
		98.5	23.5	76.0	0.5	0.0	0.5	2.0	0.0	76.5
Asakawa	231	228	60	165	3	0	3	1	0	167
		98.7	26.3	72.4	1.3	0.0	1.3	0.4	0.0	73.2
Hirata	225	225	54	166	5	0	5	3	0	170
		100.0	24.0	73.8	2.2	0.0	2.2	1.3	0.0	75.6
Tanagura	541	535	133	394	8	0	8	4	0	400
		98.9	24.9	73.6	1.5	0.0	1.5	0.7	0.0	74.8
Hanawa	248	247	72	173	2	0	2	5	0	173
		99.6	29.1	70.0	0.8	0.0	0.8	2.0	0.0	70.0
Samegawa	119	118	37	79	2	0	2	1	0	81
		99.2	31.4	66.9	1.7	0.0	1.7	0.8	0.0	68.6
Ono	309	303	74	223	6	0	6	2	0	227
		98.1	24.4	73.6	2.0	0.0	2.0	0.7	0.0	74.9
Tamakawa	209	207	60	143	4	0	4	2	0	145
		99.0	29.0	69.1	1.9	0.0	1.9	1.0	0.0	70.0
Furudono	212	209	56	149	4	0	4	1	0	152
		98.6	26.8	71.3	1.9	0.0	1.9	0.5	0.0	72.7
Hinoemata	5	5	2	3	0	0	0	1	0	3
		100.0	40.0	60.0	0.0	0.0	0.0	20.0	0.0	60.0
Minamiaizu	373	366	105	255	6	0	6	3	0	260
		98.1	28.7	69.7	1.6	0.0	1.6	0.8	0.0	71.0
Kaneyama	27	27	8	19	0	0	0	0	0	19
		100.0	29.6	70.4	0.0	0.0	0.0	0.0	0.0	70.4
Showa	22	22	9	13	0	0	0	0	0	13
		100.0	40.9	59.1	0.0	0.0	0.0	0.0	0.0	59.1
Mishima	27	27	4	23	0	0	0	0	0	23
		100.0	14.8	85.2	0.0	0.0	0.0	0.0	0.0	85.2
Shimogo	115	114	33	80	1	0	1	1	0	79
		99.1	28.9	70.2	0.9	0.0	0.9	0.9	0.0	69.3
Kitakata	1,379	1,368	338	1,014	16	0	16	14	0	1,014
		99.2	24.7	74.1	1.2	0.0	1.2	1.0	0.0	74.1
Nishiaizu	127	127	20	105	2	0	2	1	0	107
		100.0	15.7	82.7	1.6	0.0	1.6	0.8	0.0	84.3
Tadami	119	119	23	93	3	0	3	2	0	94
		100.0	19.3	78.2	2.5	0.0	2.5	1.7	0.0	79.0
Inawashiro	428	426	129	291	6	0	5	1	1	293
		99.5	30.3	68.3	1.4	0.0	1.2	0.2	0.2	68.8
Bandai	110	110	29	80	1	0	1	1	0	80
		100.0	26.4	72.7	0.9	0.0	0.9	0.9	0.0	72.7
Kitashiobara	106	105	22	82	1	0	1	1	0	82
		99.1	21.0	78.1	1.0	0.0	1.0	1.0	0.0	78.1
Aizumisato	579	568	164	398	6	0	6	6	0	401
		98.1	28.9	70.1	1.1	0.0	1.1	1.1	0.0	70.6
Aizubange	470	466	122	332	12	0	12	6	0	340
		99.1	26.2	71.2	2.6	0.0	2.6	1.3	0.0	73.0
Yanaizu	89	87	27	60	0	0	0	0	0	60
		97.8	31.0	69.0	0.0	0.0	0.0	0.0	0.0	69.0
Aizuwakamatsu	3,676	3,635	896	2,693	46	0	46	25	0	2,719
		98.9	24.6	74.1	1.3	0.0	1.3	0.7	0.0	74.8
Yugawa	128	127	45	77	5	0	5	0	0	82
		99.2	35.4	60.6	3.9	0.0	3.9	0.0	0.0	64.6
Subtotal	27,205	26,809	7,153	19,247	409	0	406	203	3	19,467
		98.5	26.7	71.8	1.5	0.0	1.5	0.8	0.0	72.6
Total	68,921	68,439	18,346	49,123	970	0	963	477	7	49,670
		99.3	26.8	71.8	1.4	0.0	1.4	0.7	0.0	72.6

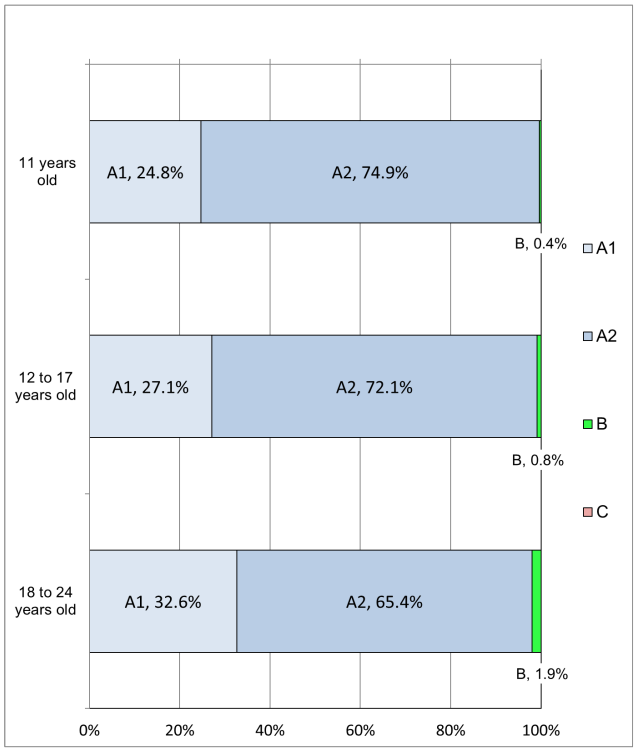
Appendix 4-1: TUE examination results by age and gender

As of March 31, 2025

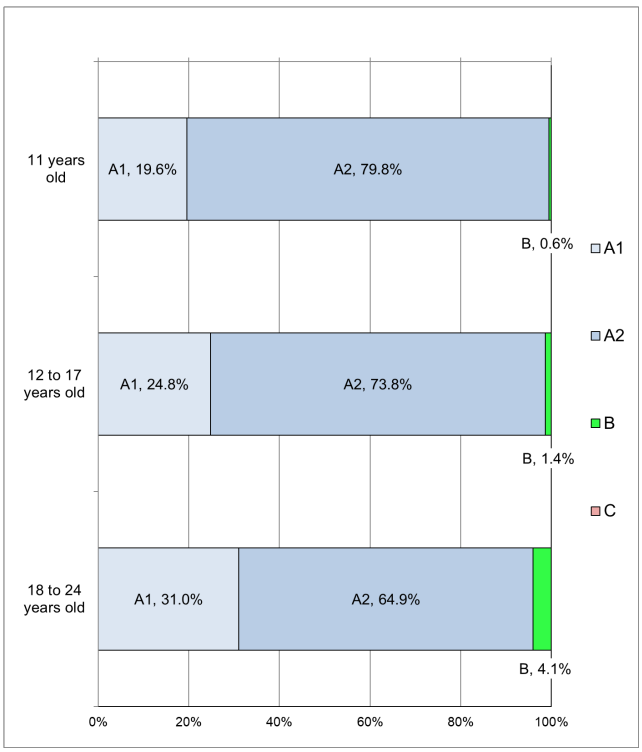
(persons)

Result / Gender / Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
11 years old	278	202	480	841	823	1,664	4	6	10	0	0	0	1,123	1,031	2,154
12 to 17 years old	7,633	6,641	14,274	20,299	19,789	40,088	233	375	608	0	0	0	28,165	26,805	54,970
18 to 24 years old	1,651	1,941	3,592	3,308	4,063	7,371	98	254	352	0	0	0	5,057	6,258	11,315
Total	9,562	8,784	18,346	24,448	24,675	49,123	335	635	970	0	0	0	34,345	34,094	68,439

Results by age group (Male)



Results by age group (Female)

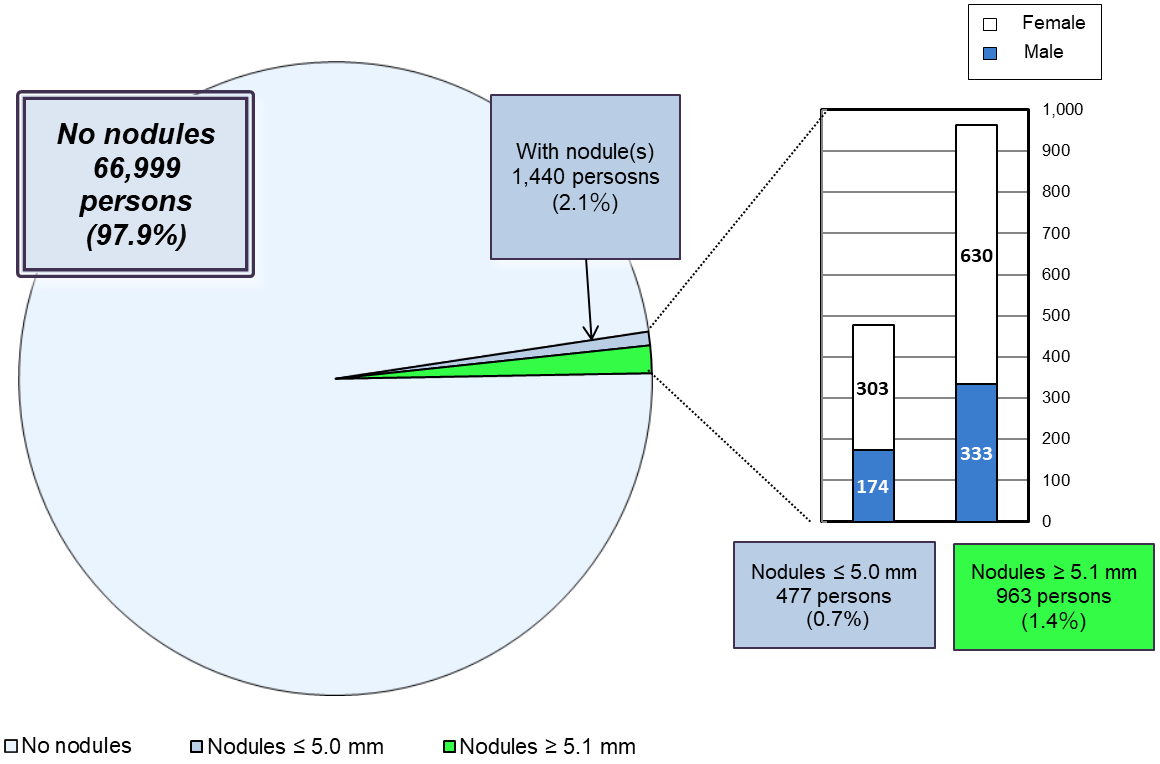


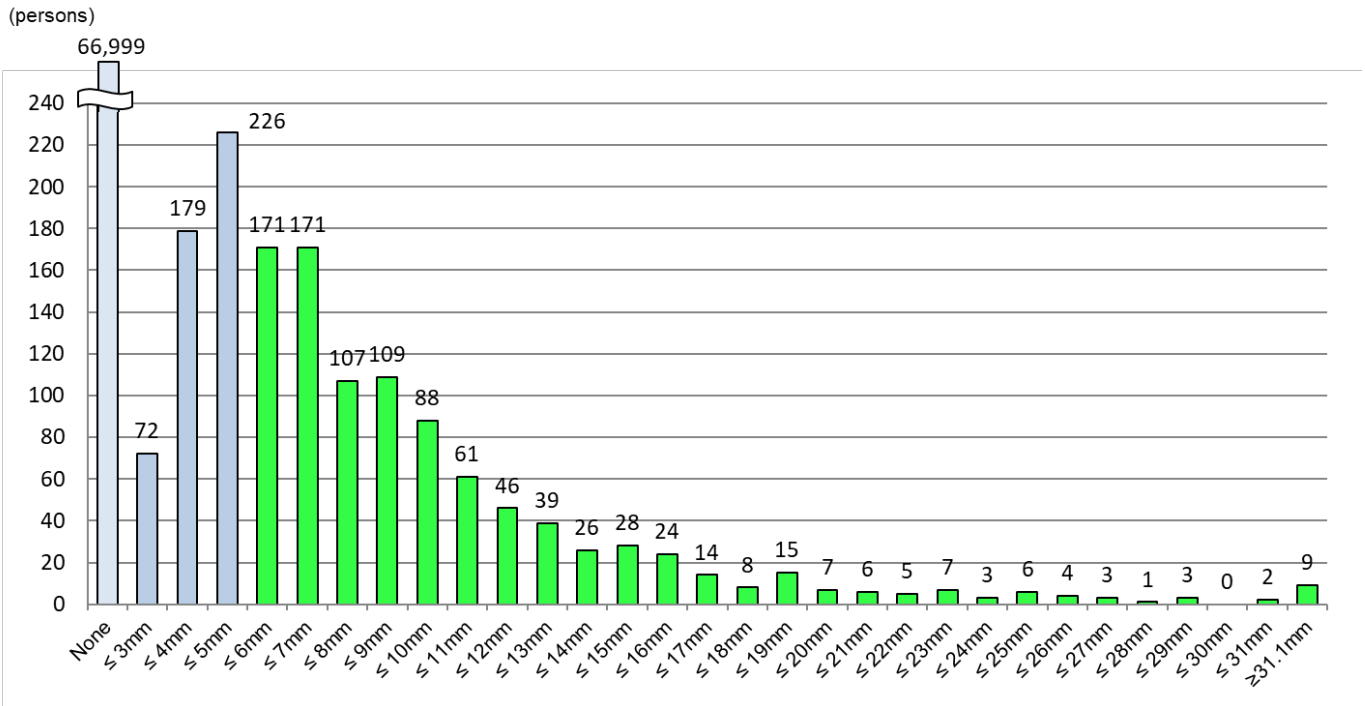
Appendix 4-2: Nodule characteristics

(persons)

As of March31, 2025

Nodule size	Total	Male	Female	Grade	
None	66,999	33,838	33,161	A1	97.9%
≤ 3.0mm	72	31	41	A2	0.7%
3.1–5.0mm	405	143	262		
5.1–10.0mm	646	242	404	B	1.4%
10.1–15.0mm	200	59	141		
15.1–20.0mm	68	20	48		
20.1–25.0mm	27	8	19		
≥ 25.1mm	22	4	18		
Total	68,439	34,345	34,094		



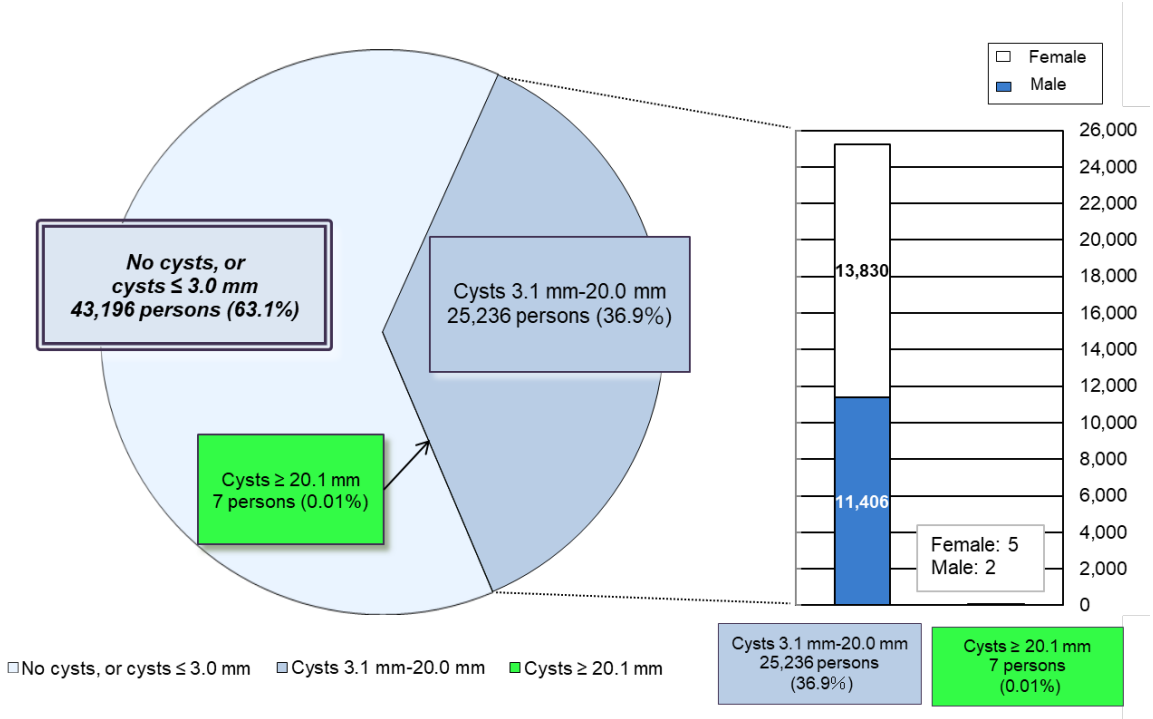


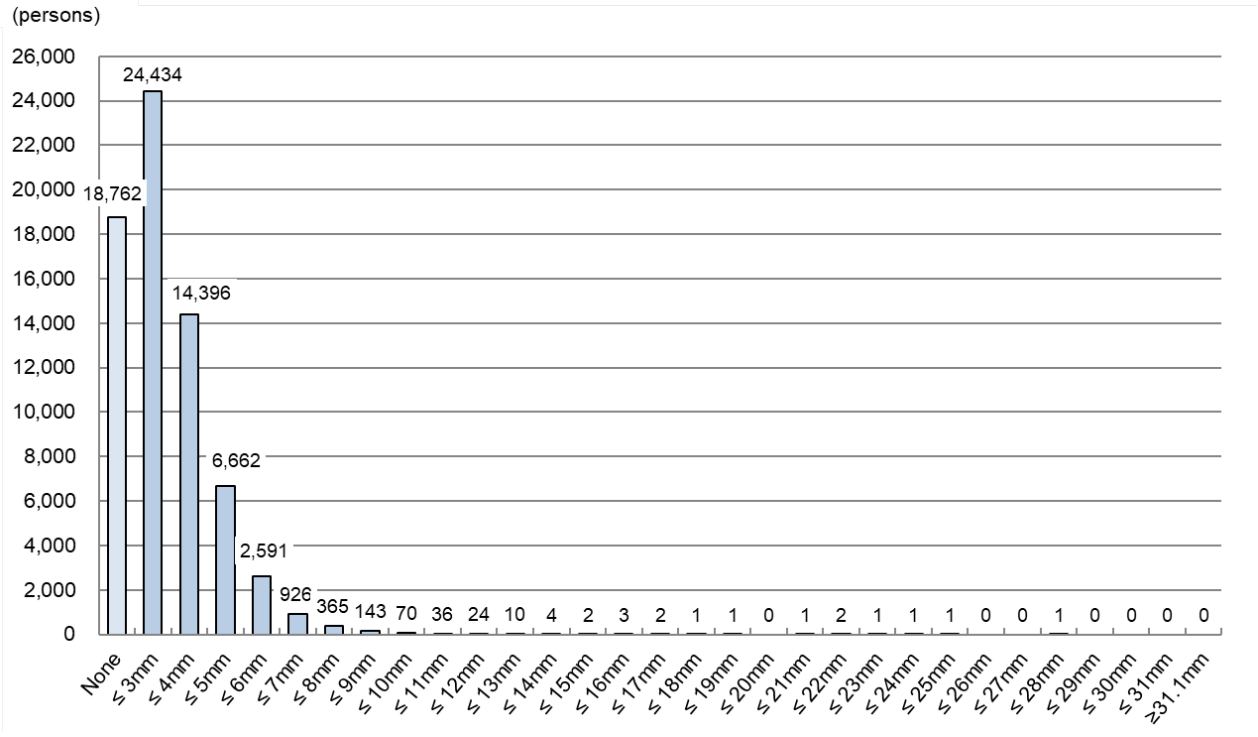
Appendix 4-3: Cyst characteristics

As of March 31, 2025

(persons)

Cyst size	Total	Male	Female	Grade	
None	18,762	9,719	9,043	A1	63.1%
≤ 3.0mm	24,434	13,218	11,216	A2	36.9%
3.1–5.0mm	21,058	9,877	11,181		
5.1–10.0mm	4,095	1,511	2,584		
10.1–15.0mm	76	16	60		
15.1–20.0mm	7	2	5		
20.1–25.0mm	6	2	4	B	0.01%
≥ 25.1mm	1	0	1		
Total	68,439	34,345	34,094		





Appendix 5: Surgical cases for malignancy or suspicion of malignancy

For TUE (the sixth-round full-scale survey)	
Malignant or suspicious for malignancy:	15 (surgical cases: 12, papillary thyroid carcinomas: 12)

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

As of March 31, 2025

1. Summary

1.1 Eligible Persons

Among Fukushima residents 18 years old or younger at the time of the disaster (those 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 Fukushima Prefecture, are invited to receive a thyroid ultrasound examination (TUE).

This report includes the Survey status of those born from FY1992 to FY1999 (those born between April 2, 1992, and April 1, 2000)

1.2 Implementation Period

The Survey for Age 25 (hereinafter “Age 25 Survey”) started in FY2017 for those who turned 25 years old during each fiscal year. Suppose residents are unable to receive the examination in the year they turn 25. In that case, they are entitled to one any time through the fiscal year before the year they turn 30 (see Figure 1 for the implementation schedule of the Age 25 Survey).

Year of exam / Birth year of examinees	FY2017 Age	FY2018 Age	FY2019 Age	FY2020 Age	FY2021 Age	FY2022 Age	FY2023 Age	FY2024 Age
FY1992	25★	26	27	28	29	30★	31	32
FY1993	24	25★	26	27	28	29	30★	31
FY1994	23	24	25★	26	27	28	29	30★
FY1995	22	23	24	25★	26	27	28	29
FY1996	21	22	23	24	25★	26	27	28
FY1997	20	21	22	23	24	25★	26	27
FY1998	19	20	21	22	23	24	25★	26
FY1999	18	19	20	21	22	23	24	25★

・The 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 ★.

Figure 1: Implementation schedule for the Age 25 Survey

2. Overview of Age 25 Survey as of March 31, 2025

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 (those born between FY1992 and FY1999), and 13,840 persons (8.1%) participated. (See Appendix 1 and Appendix 2 for implementation status by areas in Fukushima and outside Fukushima Prefecture, respectively.)

The results for 13,775 participants (99.5%) have been finalized, and individual reports have been sent to them. (See Appendix 3 for details by area.)

Of these, 5,823 (42.3%) had Grade A1 results, 7,180 (52.1%) had Grade A2, 772 (5.6%) had Grade B, and none had Grade C.

Table 1: Progress and results of the primary examination

	Eligible persons	Participants (persons)			Participants with finalized results (persons)									
			Participation rate (%)	Those who participated outside Fukushima		Judgment rate (%)	Details by grade (%)							
							A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	(b/a)		c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
Born in FY1992	22,650	2,343	(10.3)	770	2,343	(100.0)	980	(41.8)	1,258	(53.7)	105	(4.5)	0	(0.0)
Born in FY1993	21,888	2,348	(10.7)	858	2,348	(100.0)	1,069	(45.5)	1,160	(49.4)	119	(5.1)	0	(0.0)
Born in FY1994	22,093	1,974	(8.9)	757	1,974	(100.0)	832	(42.1)	1,035	(52.4)	107	(5.4)	0	(0.0)
Born in FY1995	21,056	2,092	(9.9)	771	2,080	(99.4)	866	(41.6)	1,084	(52.1)	130	(6.3)	0	(0.0)
Born in FY1996	21,019	1,870	(8.9)	676	1,860	(99.5)	774	(41.6)	967	(52.0)	119	(6.4)	0	(0.0)
Born in FY1997	20,299	1,414	(7.0)	526	1,407	(99.5)	580	(41.2)	744	(52.9)	83	(5.9)	0	(0.0)
Born in FY1998	20,838	917	(4.4)	332	911	(99.3)	366	(40.2)	489	(53.7)	56	(6.1)	0	(0.0)
Born in FY1999	20,113	882	(4.4)	329	852	(96.6)	356	(41.8)	443	(52.0)	53	(6.2)	0	(0.0)
Total	169,956	13,840	(8.1)	5,019	13,775	(99.5)	5,823	(42.3)	7,180	(52.1)	772	(5.6)	0	(0.0)

Table 2: Numbers and percentages of participants with nodules/cysts (see Appendix 4 for details)

	Participants with finalized results (persons)	Participants with nodules / cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
Born in FY1992	2,343	104	(4.4)	53	(2.3)	1	(0.0)	1,305	(55.7)
Born in FY1993	2,348	119	(5.1)	42	(1.8)	0	(0.0)	1,209	(51.5)
Born in FY1994	1,974	107	(5.4)	39	(2.0)	0	(0.0)	1,094	(55.4)
Born in FY1995	2,080	128	(6.2)	38	(1.8)	2	(0.1)	1,141	(54.9)
Born in FY1996	1,860	118	(6.3)	37	(2.0)	1	(0.1)	1,017	(54.7)
Born in FY1997	1,407	82	(5.8)	21	(1.5)	1	(0.1)	785	(55.8)
Born in FY1998	911	55	(6.0)	20	(2.2)	1	(0.1)	512	(56.2)
Born in FY1999	852	53	(6.2)	25	(2.9)	0	(0.0)	472	(55.4)
Total	13,775	766	(5.6)	275	(2.0)	6	(0.0)	7,535	(54.7)

・Percentages are rounded to a lower decimal place. This applies to other tables as well.
・The numbers and results of the Age 25 Survey participants are and will be presented by birth year (fiscal year), not by survey year. Moving forward, respective participants will be added and reported for each fiscal year.

2.1-2 Comparison with previous examination results

Table 3 compares the results of the Age 25 Survey and the previous survey.

Among 7,385 participants (sum of *1) with Grade A1 or A2 results in the previous survey, 7,192 (sum of *2, 97.4%) had Grade A1 or A2 results, and 193 (sum of *3, 2.6%) had Grade B results in the Age 25 Survey.

Among 263 participants with Grade B results in the previous survey, 61 (sum of *4, 23.2%) had Grade A (A1 or A2) results, and 202 (76.8%) had Grade B results in the Age 25 Survey.

Table 3: Comparison with the previous Survey results

			Results of the previous survey*	Results of the Age 25 survey**			
				A		B	C
				A1	A2		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the previous survey	A	A1	2,979 *1 (100.0)	2,407 *2 (80.8)	544 *2 (18.3)	28 *3 (0.9)	0 (0.0)
		A2	4,406 *1 (100.0)	732 *2 (16.6)	3,509 *2 (79.6)	165 *3 (3.7)	0 (0.0)
	B		263 (100.0)	7 *4 (2.7)	54 *4 (20.5)	202 (76.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		5,275 (100.0)	2,321 (44.0)	2,630 (49.9)	324 (6.1)	0 (0.0)
Total			12,923 (100.0)	5,467 (42.3)	6,737 (52.1)	719 (5.6)	0 (0.0)

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

** Results of the Age 25 Survey participants diagnosed for each grade in the previous survey. The lower figures are proportions (%).

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of those 719 eligible persons, 604 (84.0%) participated, of whom 592 (98.0%) completed the entire process of the confirmatory examination.

Of the 592 participants, 46 (7.8%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1: 6, A2: 40) (including those with other thyroid conditions). The remaining 546 (92.2%) were confirmed to be out of the A1/A2 criteria.

Table 4: Progress of the Confirmatory Examination

	Those referred to confirmatory exams (persons)	Participants (persons)		Those with finalized results (%)									
			Participation Rate (%)	Judgment rate (%)		A1		A2		Other than A1 or A2			
												FANC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
Those born in FY1992	105	88	(83.8)	85	(96.6)	0	(0.0)	4	(4.7)	81	(95.3)	8	(9.9)
Those born in FY1993	119	104	(87.4)	104	(100.0)	1	(1.0)	9	(8.7)	94	(90.4)	10	(10.6)
Those born in FY1994	107	87	(81.3)	86	(98.9)	2	(2.3)	8	(9.3)	76	(88.4)	7	(9.2)
Those born in FY1995	130	116	(89.2)	113	(97.4)	0	(0.0)	4	(3.5)	109	(96.5)	12	(11.0)
Those born in FY1996	119	103	(86.6)	103	(100.0)	2	(1.9)	7	(6.8)	94	(91.3)	11	(11.7)
Those born in FY1997	83	68	(81.9)	66	(97.1)	0	(0.0)	7	(10.6)	59	(89.4)	5	(8.5)
Those born in FY1998	56	38	(67.9)	35	(92.1)	1	(2.9)	1	(2.9)	33	(94.3)	1	(3.0)
Total	719	604	(84.0)	592	(98.0)	6	(1.0)	40	(6.8)	546	(92.2)	54	(9.9)

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

Among those who underwent FNAC, 26 were classified as malignant or suspicious for malignancy: 4 were male and 22 were female. Participants' age at the time of the confirmatory examination ranged from 24 to 29 years (mean age: 25.7 ± 1.2 years). The minimum and maximum tumor diameters were 5.3 mm and 49.9 mm (mean tumor diameter: 13.7 ± 10.0 mm).

Of these 26 participants, 6 had Grade A results (A1: 1, A2: 5), and 5 had Grade B results in the previous survey. The remaining 15 people did not participate in the previous survey. Of those 5 participants with Grade A2 results, 2 were with nodules and 3 were with cysts

Table 5. Results of FNAC

(After mean age and mean tumor size, numbers in parentheses indicate ranges.)

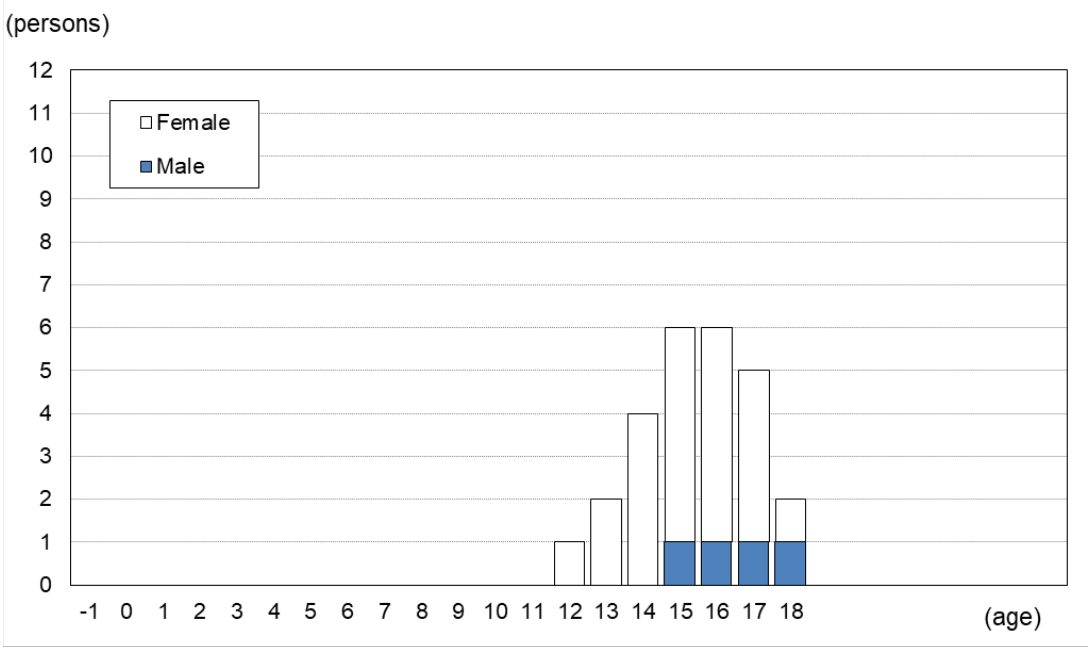
Among those who underwent the Age 25 Survey:

- Malignant or suspicious for malignancy: 26*
- Male to female ratio: 4:22
- Mean age ± SD (min-max): 25.7 ± 1.2 (24–29),
  15.4 ± 1.6 (12–18) at the time of the earthquake
- Mean tumor size ± SD (min-max): 13.7 ± 10.0 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 distribution of those 26 people with malignant or suspicious nodules based on their age as of March 11, 2011, is per Figure 2, and age distribution based on their age at the time of confirmatory examination is per Figure 3.



*-1 – 10 are not included in the Age 25 Survey for those born between FY1992 and FY1998.
Age -1 covers those born between April 2, 2011, and April 1, 2012.
Those who were born between March 12, 2011, and April 1, 2011, are included as age 0.

Figure 2: Age as of March 11, 2011

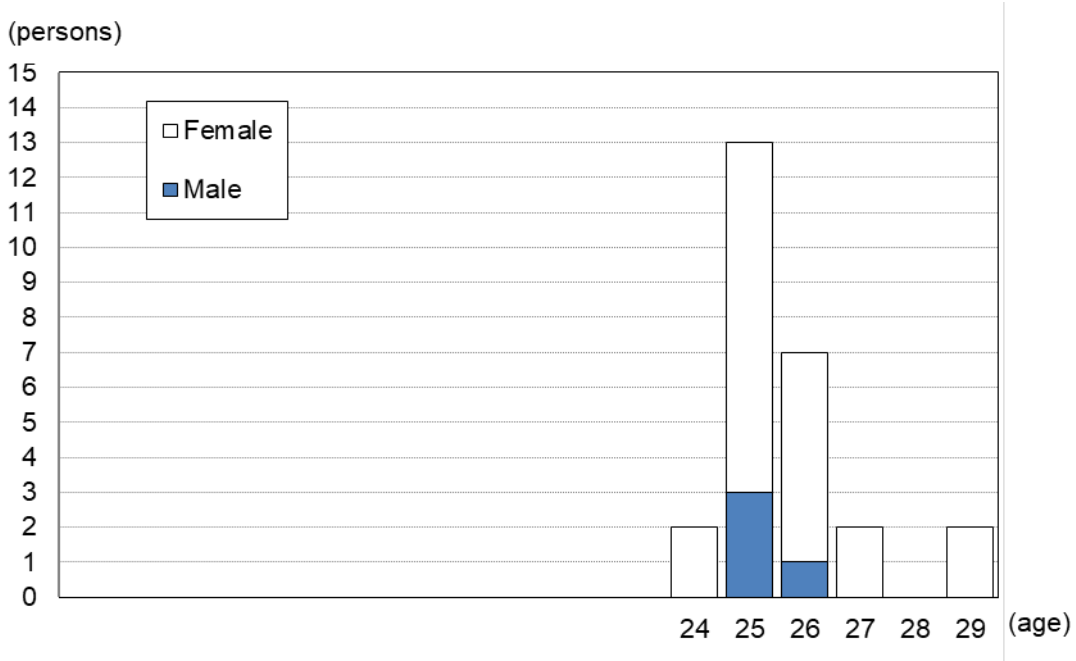


Figure 3: Age at the time of confirmatory examination

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

Of the 26 people with malignant or suspicious nodules, 15 (57.7%) had participated in the Basic Survey (for external radiation dose estimation), and all 15 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	5	1	4	1	9
< 2	0	0	0	0	1	2	1	1	2	3
< 5	0	0	0	0	0	0	0	0	0	0
< 10	0	0	0	0	0	0	0	0	0	0
< 20	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	7	2	5	3	12

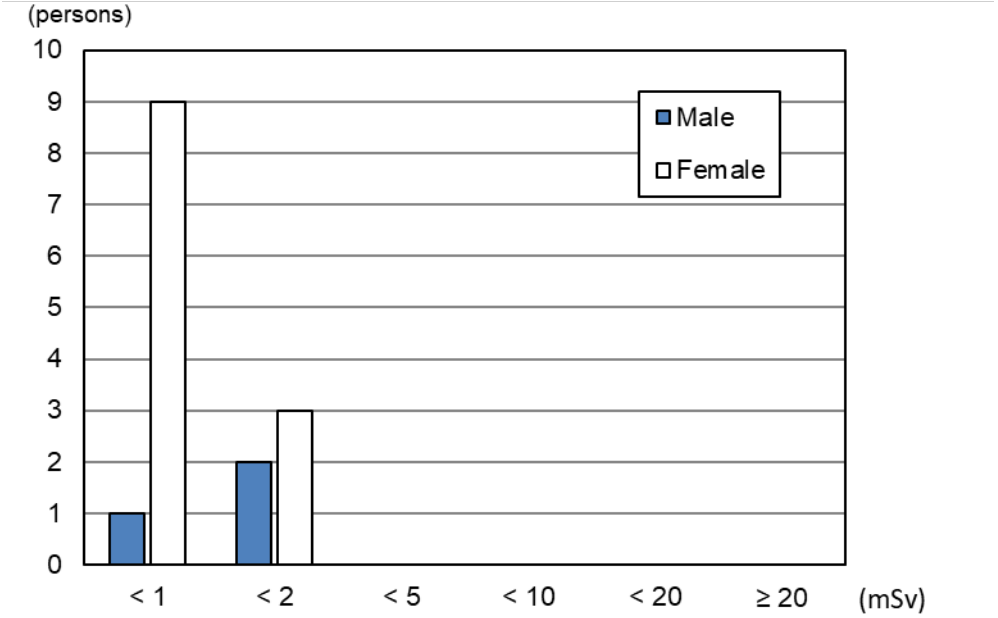


Figure 4: Effective doses of the Basic Survey participants

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 : 26	1.2 ± 0.1 (3.8%)	3.3 ± 0.4 (7.7%)	1.6 ± 1.5 (19.2%)	34.9±35.8 (38.5%)	15.4%	15.4%
Other : 568	1.2 ± 0.2 (7.0%)	3.3 ± 0.4 (7.6%)	1.2 ± 0.7 (7.2%)	70.5±543.6 (20.6%)	11.1%	10.6%

Table 8: Urinary iodine test results [8]

（μg/day）

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious : 24	65	101	171	280	953
Other : 502	29	120	185	347	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 or 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.
8) Due to the temporary suspension of reagents, the urinary iodine tests had been suspended from March 8, 2024, to January 19, 2025, but resumed on January 20, 2025.

3 Mental Health Care

3.1 Support for Primary Examination Participants

Since April 2017, medical doctors have offered person-to-person explanations of examination results, showing ultrasound images in private consultation booths at examination venues in public facilities. As of March 31, 2025, of those 1,344 participants, 1,343 (99.9%) visited these consultation booths.

3.2 Support for Confirmatory Examination Participants

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

Since the start of the Age 25 survey, 154 participants (33 males and 121 females) have received support as of March 31, 2025. The total number of support sessions was 294. Of these, 154 sessions (52.4%) occurred during participants' first examinations, and 140 (47.6%) took place at subsequent examinations.

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

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Appendix 1: Implementation status of the Age 25 Survey by area

As of March 31, 2025

	Eligible persons	Participants (persons)		Participation rate (%)	Participants living outside the prefecture (persons)	Proportion of participants living outside the prefecture (%)
			Those who participated outside Fukushima [1]			
	a	b		b/a	c[2]	c/b
Number of eligible persons for Age 25 Survey (Those born in from FY1992 to FY1999)						
13 municipalities[3]	22,536	1,913	724	8.5	720	37.6
Nakadori[4]	90,614	7,545	2,701	8.3	2,407	31.9
Hamadori[5]	32,748	3,045	1,117	9.3	1,034	34.0
Aizu[6]	24,058	1,337	477	5.6	448	33.5
Total	169,956	13,840	5,019	8.1	4,609	33.3

1) The number of those who received examinations at medical facilities outside the prefecture (as of February 28, 2025)
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 by prefecture

As of February 28, 2025

Prefecture	No. of medical facilities	Participants (persons)
Hokkaido	7	**77**
Aomori	3	**20**
Iwate	4	**61**
Miyagi	2	**495**
Akita	1	**19**
Yamagata	3	**61**
Ibaraki	6	**222**
Tochigi	9	**225**
Gunma	2	**51**
Saitama	5	**282**
Chiba	5	**224**
Tokyo	23	**1,982**
Kanagawa	9	**438**
Niigata	3	**81**
Toyama	2	**8**
Ishikawa	2	**6**

Prefecture	No. of medical facilities	Participants (persons)
Fukui	1	**4**
Yamanashi	2	**13**
Nagano	4	**28**
Gifu	2	**6**
Shizuoka	3	**48**
Aichi	6	**81**
Mie	1	**4**
Shiga	1	**9**
Kyoto	4	**36**
Osaka	10	**75**
Hyogo	3	**34**
Nara	4	**3**
Wakayama	1	**6**
Tottori	1	**3**
Shimane	1	**1**
Okayama	3	**9**

Prefecture	No. of medical facilities	Participants (persons)
Hiroshima	1	**17**
Yamaguchi	1	**2**
Tokushima	1	**3**
Kagawa	1	**2**
Ehime	3	**3**
Kochi	2	**2**
Fukuoka	4	**25**
Saga	1	**1**
Nagasaki	3	**2**
Kumamoto	1	**6**
Oita	1	**3**
Miyazaki	1	**3**
Kagoshima	2	**2**
Okinawa	1	**7**
Total	**156**	**4,690**

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

Appendix 3: Primary Survey results by area

As of March 31, 2025

	Number of participants (persons)	Those with finalized results (persons)	Number of participants by final result (persons) Details by grade (%)				Those with nodules (persons) (%)		Those with cysts (persons) (%)	
	a	b b/a (%)	A		B	C	≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
			A1	A2						
Number of eligible persons for Age 25 Survey (Those born in from FY1992 to FY1999)										
13 municipalities 1)	1,913	1,911	816	988	107	0	106	38	1	1,034
		99.9	42.7	51.7	5.6	0.0	5.5	2.0	0.1	54.1
Nakadori 2)	7,545	7,507	3,179	3,927	401	0	399	146	2	4,119
		99.5	42.3	52.3	5.3	0.0	5.3	1.9	0.0	54.9
Hamadorl 3)	3,045	3,023	1,294	1,558	171	0	170	58	1	1,627
		99.3	42.8	51.5	5.7	0.0	5.6	1.9	0.0	53.8
Aizu 4)	1,337	1,334	534	707	93	0	91	33	2	755
		99.8	40.0	53.0	7.0	0.0	6.8	2.5	0.1	56.6
Total	13,840	13,775	5,823	7,180	772	0	766	275	6	7,535
		99.5	42.3	52.1	5.6	0.0	5.6	2.0	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, 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
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

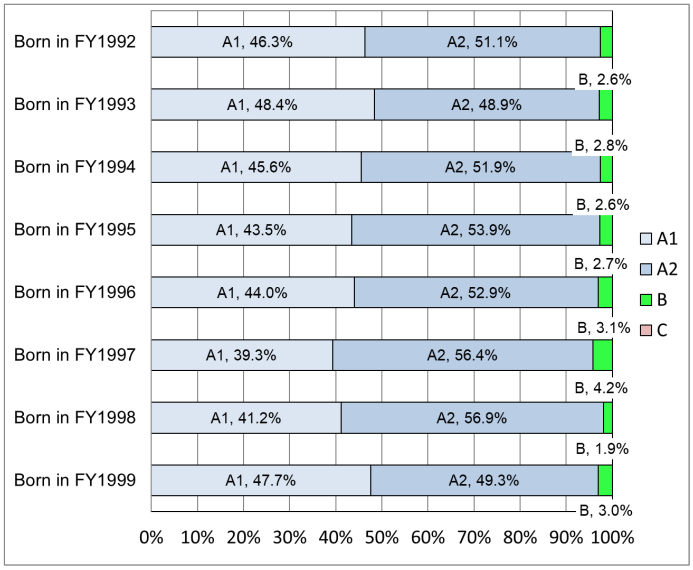
Appendix 4-1: Summary for participants with finalized results, by gender

As of March 31, 2025

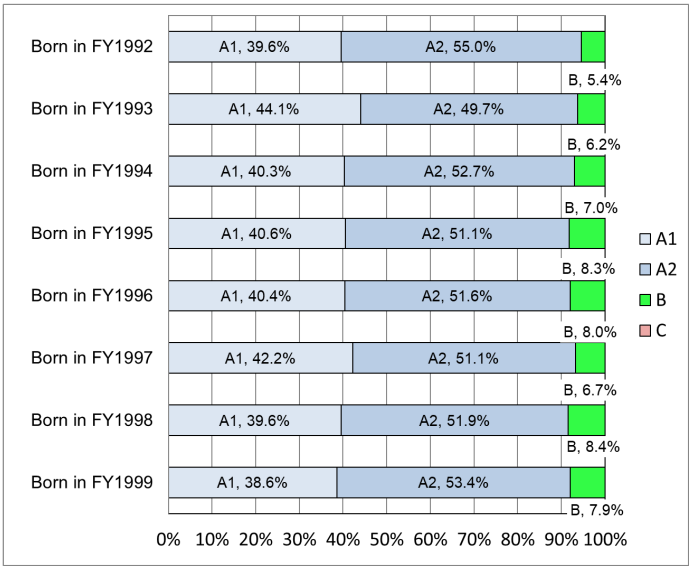
(persons)

Grade / Gender / 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	360	620	980	397	861	1,258	20	85	105	0	0	0	777	1,566	2,343
Those born in FY1993	383	686	1,069	387	773	1,160	22	97	119	0	0	0	792	1,556	2,348
Those born in FY1994	318	514	832	362	673	1,035	18	89	107	0	0	0	698	1,276	1,974
Those born in FY1995	326	540	866	404	680	1,084	20	110	130	0	0	0	750	1,330	2,080
Those born in FY1996	270	504	774	324	643	967	19	100	119	0	0	0	613	1,247	1,860
Those born in FY1997	186	394	580	267	477	744	20	63	83	0	0	0	473	934	1,407
Those born in FY1998	131	235	366	181	308	489	6	50	56	0	0	0	318	593	911
Those born in FY1999	142	214	356	147	296	443	9	44	53	0	0	0	298	554	852
Total	2,116	3,707	5,823	2,469	4,711	7,180	134	638	772	0	0	0	4,719	9,056	13,775

Examination results by age group (Male)



Examination results by age group (Female)

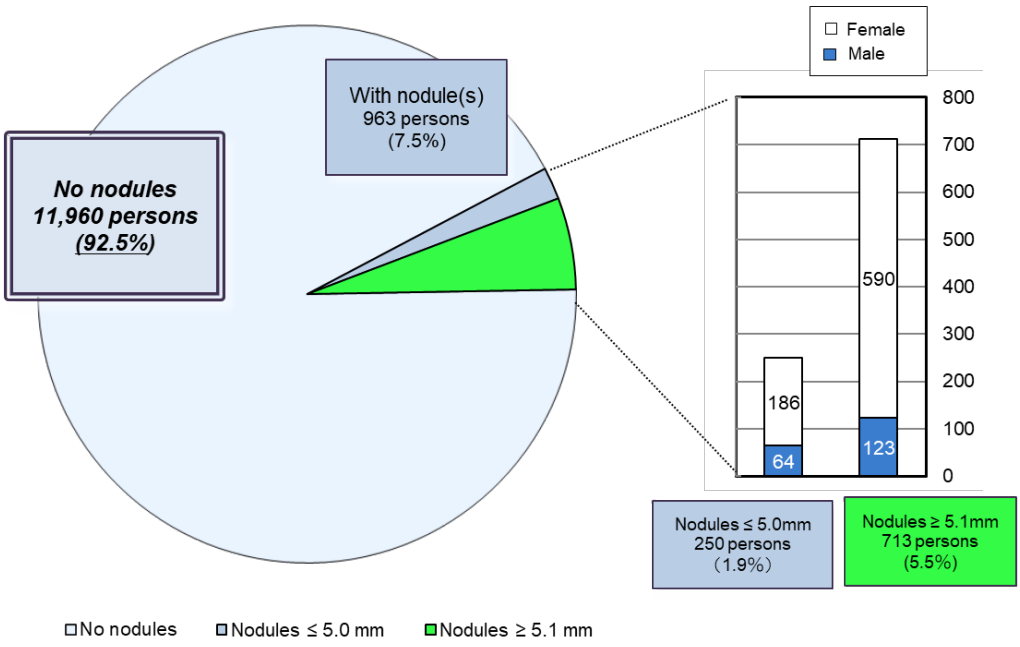


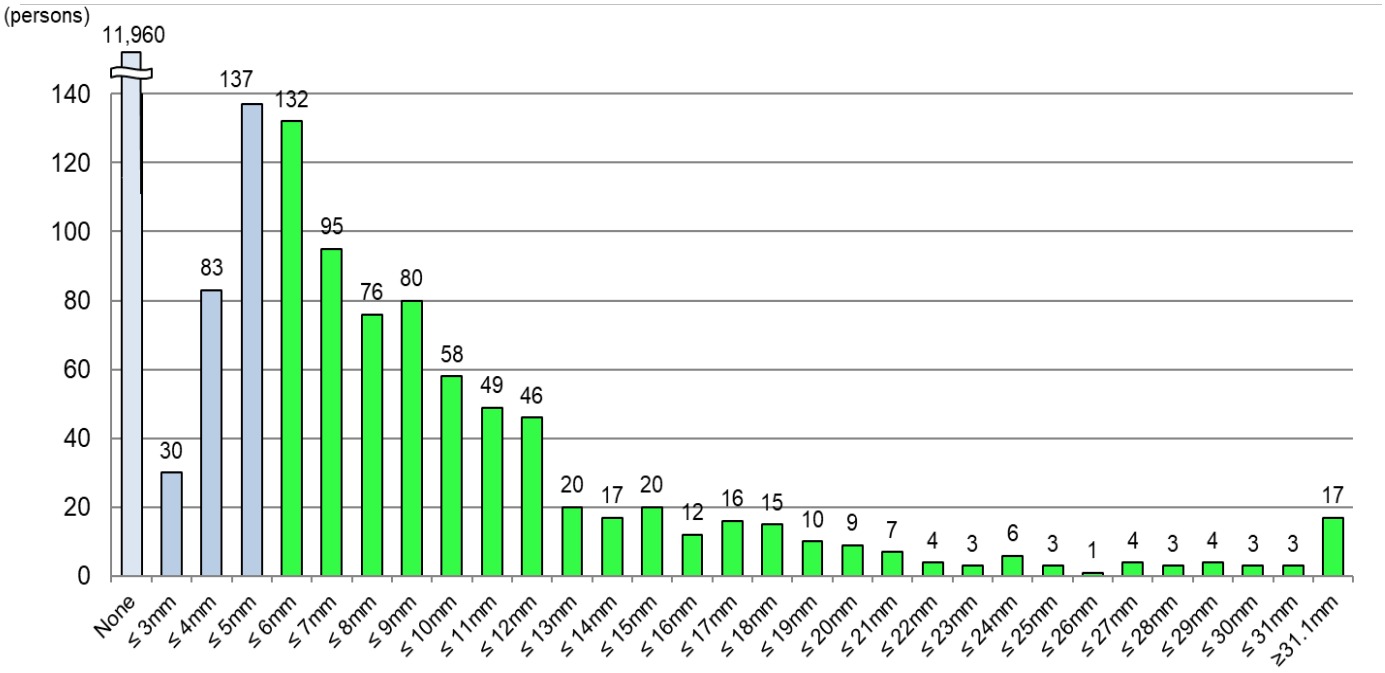
Appendix 4-2: Nodule characteristics

As of March 31, 2025

(persons)

Nodule size	Total	Male	Female	Grade	
None	11,960	4,234	7,726	A1	92.5%
≤ 3.0mm	30	8	22	A2	1.9%
3.1–5.0mm	220	56	164		
5.1–10.0mm	441	79	362	B	5.5%
10.1–15.0mm	152	30	122		
15.1–20.0mm	62	8	54		
20.1–25.0mm	23	3	20		
≥ 25.1mm	35	3	32		
Total	12,923	4,421	8,502		



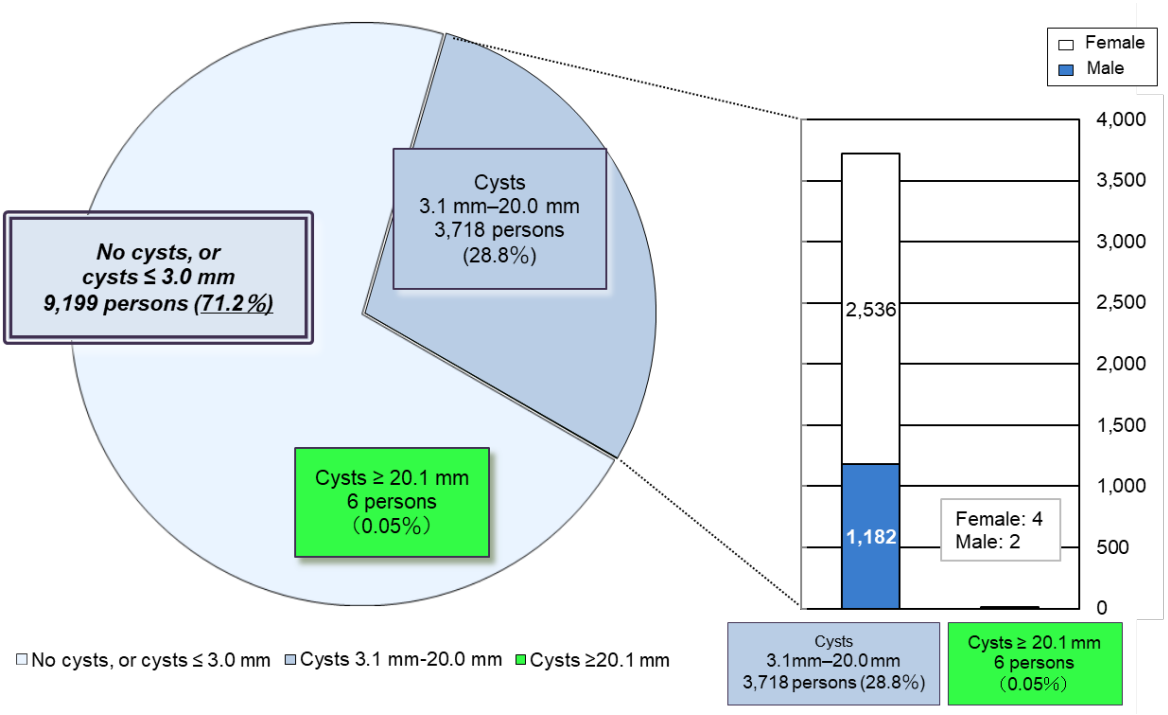


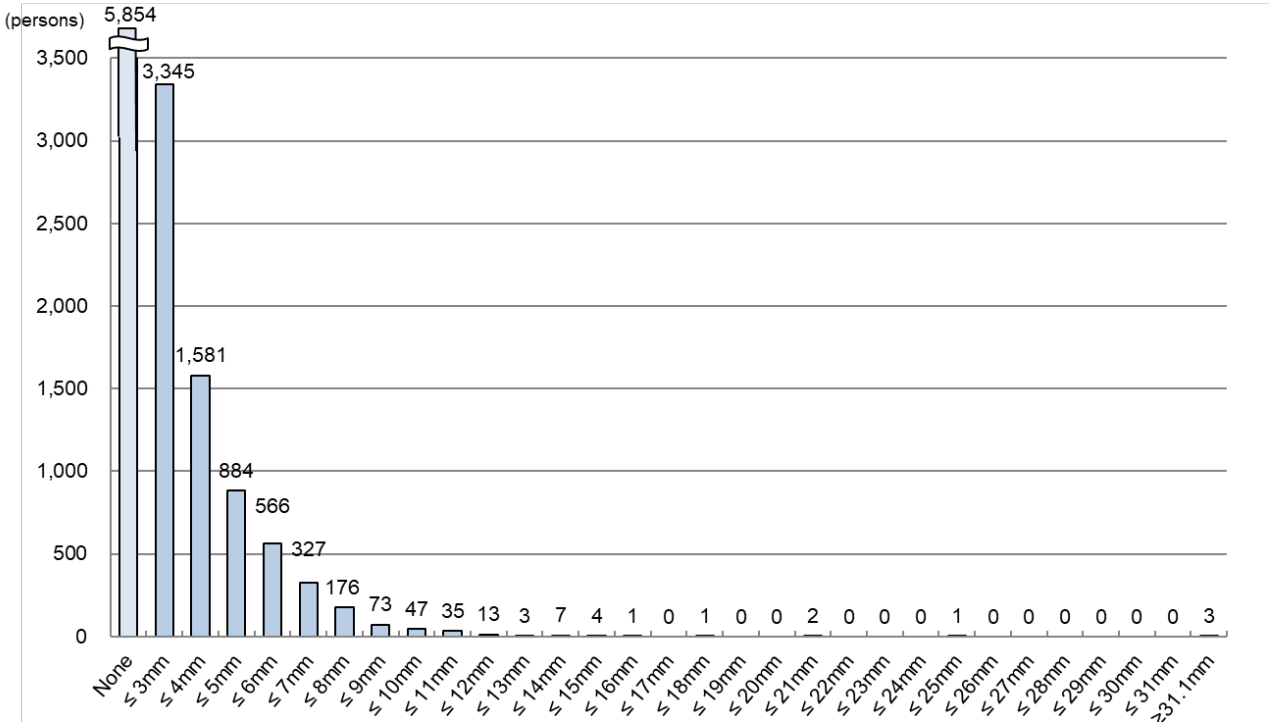
Appendix 4-3: Cyst characteristics

As of March 31, 2025

(persons)

Cyst size	Total	Male	Female	Grade	
None	5,854	2,054	3,800	A1	71.2%
≤ 3.0mm	3,345	1,183	2,162	A2	28.8%
3.1–5.0mm	2,465	838	1,627		
5.1–10.0mm	1,189	332	857		
10.1–15.0mm	62	11	51		
15.1–20.0mm	2	1	1		
20.1–25.0mm	3	0	3	B	0.05%
≥ 25.1mm	3	2	1		
Total	12,923	4,421	8,502		





Appendix 5 Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 25 Survey:

- Malignant or suspicious for malignancy 26
  - Surgical cases 19
  - Papillary thyroid carcinomas 18
  - Follicular thyroid carcinomas 1

Report on the TUE Full-Scale Survey (Survey for Age 30)

As of March 31, 2025

1. Summary

1.1 Eligible Persons

Among Fukushima residents 18 years old or younger at the time of the disaster (those born between April 2, 1992, and April 1, 2012), those who turn 30 years old during each fiscal year are invited to receive a thyroid ultrasound examination (TUE).

This report summarizes the results for those born from FY1992 to FY1994 (born between April 2, 1992, and April 1, 1995).

1.2 Implementation Period

The Survey for Age 30 (hereinafter “Age 30 Survey”) started in FY2022 for those who turn 30 years old during each fiscal year. Suppose residents cannot receive the examination in the year when they turn 30. In that case, they are entitled to one any time through the fiscal year before the year they turn 35 (see Figure 1 for the implementation schedule of the Age 30 Survey).

Year of exam / Birth year of examinees	FY2022 Age	FY2023 Age	FY2024 Age	FY2025 Age	FY2026 Age	FY2027 Age	FY2028 Age
FY1992	30★	31	32	33	34	35★	36
FY1993	29	30★	31	32	33	34	35★
FY1994	28	29	30★	31	32	33	34

・The examinations are offered to those who turn 30 years old in each fiscal year.
・Invitations for the examination will be sent to those who turn age 30 in the fiscal year marked with ★.

Figure 1: Implementation Schedule for the Age 30 Survey

2. Overview of Age 30 Survey as of March 31, 2025

2.1 Results of the Primary Examination

2.1-1 Implementation status

Primary examinations for the Age 30 Survey started in April 2022 for those who turned 30 years old (those born in FY1992 and FY1994), of whom 4,193 (6.3%) participated. (See Appendix 1 and Appendix 2 for implementation status by area and implementation status outside Fukushima Prefecture, respectively.)

The results for 4,054 (96.7%) participants have been finalized, and individual reports have been sent to them. (See Appendix 3 for The Survey results by area.)

Of these, 1,761 (43.4%) had Grade A1 results, 1,938 (47.8%) had Grade A2, 355 (8.8%) had Grade B, and none had Grade C.

Table 1: Progress and results of the primary examination

	Eligible persons	Participants (persons)			Participants with finalized results (persons)									
							Details by grade (%)							
			Participation rate (%)	Those who participated outside Fukushima		Judgment rate (%)	A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	(b/a)		c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
Born in FY1992	22,625	1,640	(7.2)	605	1,627	(99.2)	723	(44.4)	759	(46.7)	145	(8.9)	0	(0.0)
Born in FY1993	21,864	1,448	(6.6)	584	1,430	(98.8)	593	(41.5)	711	(49.7)	126	(8.8)	0	(0.0)
Born in FY1994	22,053	1,105	(5.0)	411	997	(90.2)	445	(44.6)	468	(46.9)	84	(8.4)	0	(0.0)
Total	66,542	4,193	(6.3)	1,600	4,054	(96.7)	1,761	(43.4)	1,938	(47.8)	355	(8.8)	0	(0.0)

Table 2: Number and percentage of participants with nodules/cysts (see Appendix 4 for details)

	Participants with finalized results (persons)	Participants with nodules / cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
Born in FY1992	1,627	144	(8.9)	64	(3.9)	1	(0.1)	827	(50.8)
Born in FY1993	1,430	126	(8.8)	56	(3.9)	0	(0.0)	746	(52.2)
Born in FY1994	997	84	(8.4)	37	(3.7)	0	(0.0)	515	(51.7)
Total	4,054	354	(8.7)	157	(3.9)	1	(0.0)	2,088	(51.5)

・Percentages are rounded to a lower decimal place. This applies to other tables as well.
・The number and results of the Age 30 Survey participants are, and will be, presented by birth year (fiscal year), not by survey year.

2.1-2 Comparison with previous examination results

Table 3 compares the results of the Age 30 Survey and the Age 25 Survey.

Among 1,691 participants (sum of *1) with Grade A1 or A2 results in the Age 25 Survey, 1,609 (sum of *2, 95.2%) had Grade A1 or A2 results, and 82 (sum of *3, 4.8%) had Grade B results in the Age 30 Survey.

Among 89 participants with Grade B results in the Age 25 survey, 18 (sum of *4, 20.2%) had Grade A (A1 or A2) results, and 71 (79.8%) had Grade B results in the Age 30 Survey.

Table 3: Comparison with the Age 25 Survey results

			Results of the Age 25 survey*	Results of the Age 30 survey**			
				A		B	C
				A1	A2		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the Age 25 survey	A	A1	707 *1 (100.0)	557 *2 (78.8)	132 *2 (18.7)	18 *3 (2.5)	0 (0.0)
		A2	984 *1 (100.0)	183 *2 (18.6)	737 *2 (74.9)	64 *3 (6.5)	0 (0.0)
	B		89 (100.0)	4 *4 (4.5)	14 *4 (15.7)	71 (79.8)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		1,277 (100.0)	572 (44.8)	587 (46.0)	118 (9.2)	0 (0.0)
Total			3,057 (100.0)	1,316 (43.0)	1,470 (48.1)	271 (8.9)	0 (0.0)

* Results of the Age 25 Survey participants with finalized results.

** Results of the Age 30 Survey participants diagnosed for each grade in the Age 25 Survey. The lower figures are their proportion (%).

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 271 eligible persons, 229 (84.5%) participated, of whom 218 (95.2%) completed the entire process of the confirmatory examination.

Of the aforementioned 218 participants, 18 (8.3%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1:4, A2:14) (including those with other thyroid conditions). The remaining 200 (91.7%) were confirmed to be out of the A1/A2 criteria.

Table 4: Progress of the Confirmatory Examination

	Those referred to confirmatory exams (persons)	Participants (persons)		Those with finalized results (%)									
			Participation Rate (%)	Judgment rate (%)		A1		A2		Other than A1 or A2			
												FANC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
Those born in FY1992	145	123	(84.8)	120	(97.6)	1	(0.8)	7	(5.8)	112	(93.3)	17	(15.2)
Those born in FY1993	126	106	(84.1)	98	(92.5)	3	(3.1)	7	(7.1)	88	(89.8)	6	(6.8)
Total	271	229	(84.5)	218	(95.2)	4	(1.8)	14	(6.4)	200	(91.7)	23	(11.5)

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

Among those who underwent FNAC, 9 participants (male: 1, female: 8) were classified as malignant or suspicious for malignancy. Participants' age at the confirmatory examination ranged from 29 to 31 years (mean age: 30.0 ± 0.5 years), and the minimum and maximum tumor diameters were 9.8 mm and 19.0 mm (mean tumor diameter: 13.1 ± 3.7 mm).

Of these 9 participants, 4 had a Grade A result (A1:1, A2:3), 1 had a Grade B result in the Age 25 Survey, and 4 did not participate in the Age 25 Survey. Among the 3 participants with A2, 1 met the nodule criteria and 2 met the cyst criteria.

Table 5. Results of FNAC

(The numbers in the parentheses indicate the ranges of mean age and mean tumor size.)

Among those who underwent the Age 30 Survey:

- Malignant or suspicious for malignancy: 9*
- Male to female ratio: 1:8
- Mean age ± SD (min-max): 30.0 ± 0.5 (29–31),
  17.6 ± 0.7 (16–18) at the time of the earthquake
- Mean tumor size ± SD (min-max): 13.1 ± 3.7 mm (9.8–19.0 mm)

*Appendix 5 shows surgery cases.

3 Mental Health Care

3.1 Support for Primary Examination Participants

At examination venues, we set up consultation booths where our medical doctors offer consultation and explain examination results using ultrasonographic images. As of March 31, 2025, all 543 examinees (100%) have visited the booths.

3.2 Support for Confirmatory Examination Participants

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

Since the start of the Age 30 Survey, 60 participants (14 males and 46 females) have received support as of March 31, 2025. The number of support sessions provided was 111 in total. Of these, 60 sessions (54.1%) were offered at the participants' first examination, and 51 (45.9%) at subsequent examinations.

For those who proceed 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 Age 30 Survey, by area

As of March 31, 2025

	Eligible persons	Participants (persons)		Participation rate (%)	Participants living outside the prefecture (persons)	Proportion of participants living outside the prefecture (%)
	a	b	Those who participated outside Fukushima [1)]	b/a	c[2)]	c/b
Number of eligible persons for Age 30 Survey (Those born from FY1992 to FY1994)						
13 municipalities[3)]	8,997	597	212	6.6	217	36.3
Nakadori[4)]	35,213	2,341	886	6.6	857	36.6
Hamadori[5)]	12,758	848	348	6.6	348	41.0
Aizu[6)]	9,574	407	154	4.3	152	37.3
Total	66,542	4,193	1,600	6.3	1,574	37.5

1) The number of those who received examinations at medical facilities outside the prefecture (as of February 28, 2025)
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, by prefecture

As of February 28, 2025

Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)
Hokkaido	7	**14**	Fukui	1	**1**	Hiroshima	1	**2**
Aomori	3	**8**	Yamanashi	2	**5**	Yamaguchi	1	**1**
Iwate	4	**9**	Nagano	4	**11**	Tokushima	1	**1**
Miyagi	2	**127**	Gifu	2	**1**	Kagawa	1	**1**
Akita	1	**4**	Shizuoka	3	**4**	Ehime	3	**1**
Yamagata	3	**18**	Aichi	6	**24**	Kochi	2	**1**
Ibaraki	6	**67**	Mie	1	**1**	Fukuoka	4	**5**
Tochigi	9	**51**	Shiga	1	**2**	Saga	1	**3**
Gunma	2	**19**	Kyoto	4	**7**	Nagasaki	3	**1**
Saitama	5	**80**	Osaka	10	**24**	Kumamoto	1	**2**
Chiba	5	**45**	Hyogo	3	**4**	Oita	1	**0**
Tokyo	23	**527**	Nara	4	**2**	Miyazaki	1	**1**
Kanagawa	9	**93**	Wakayama	1	**1**	Kagoshima	2	**0**
Niigata	3	**11**	Tottori	1	**2**	Okinawa	1	**2**
Toyama	2	**0**	Shimane	1	**0**			
Ishikawa	2	**1**	Okayama	3	**5**	**Total**	**156**	**1,189**

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

Appendix 3: Primary Survey results, by area

As of March 31, 2025

	Number of participants (persons)	Those with finalized results (persons)	Number of participants by final result (persons) Details by grade (%)				Those with nodules (persons) (%)		Those with cysts (persons) (%)	
	a	b	A		B	C	≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
		b/a (%)	A1	A2						
Number of eligible persons (Those born from FY1992 to FY1994)										
13 municipalities 1)	597	581	280	247	54	0	54	23	0	276
		97.3	48.2	42.5	9.3	0.0	9.3	4.0	0.0	47.5
Nakadori 2)	2,341	2,269	943	1,121	205	0	204	98	1	1,207
		96.9	41.6	49.4	9.0	0.0	9.0	4.3	0.0	53.2
Hamadorl 3)	848	815	377	373	65	0	65	25	0	394
		96.1	46.3	45.8	8.0	0.0	8.0	3.1	0.0	48.3
Aizu 4)	407	389	161	197	31	0	31	11	0	211
		95.6	41.4	50.6	8.0	0.0	8.0	2.8	0.0	54.2
Total	4,193	4,054	1,761	1,938	355	0	354	157	1	2,088
		96.7	43.4	47.8	8.8	0.0	8.7	3.9	0.0	51.5

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, 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

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

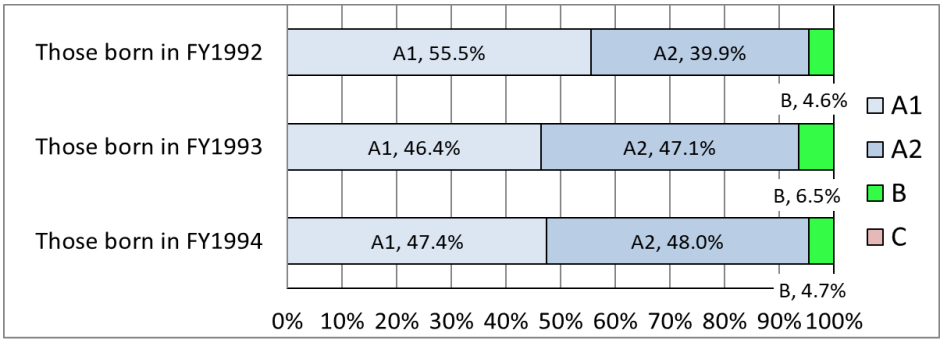
Appendix 4.1: Summary for participants with finalized results, by gender

As of March 31, 2025

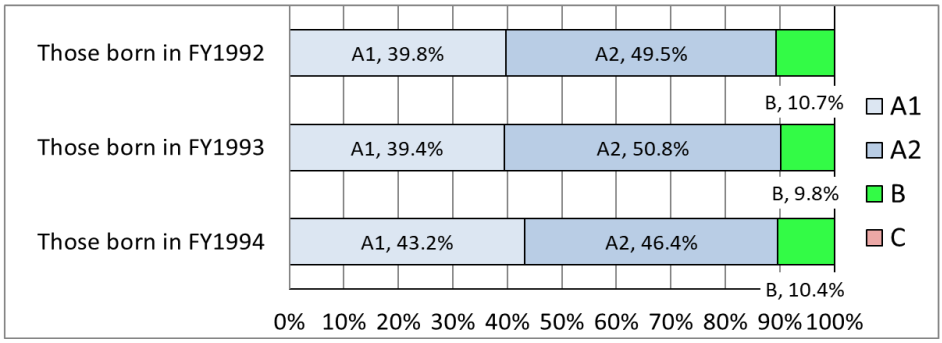
(persons)

Grade / Gender / 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	267	456	723	192	567	759	22	123	145	0	0	0	481	1,146	1,627
Those born in FY1993	194	399	593	197	514	711	27	99	126	0	0	0	418	1,012	1,430
Those born in FY1994	163	282	445	165	303	468	16	68	84	0	0	0	344	653	997
Total	624	1,137	1,761	554	1,384	1,938	65	290	355	0	0	0	1,243	2,811	4,054

Examination results by age group (Male)



Examination results by age group (Female)

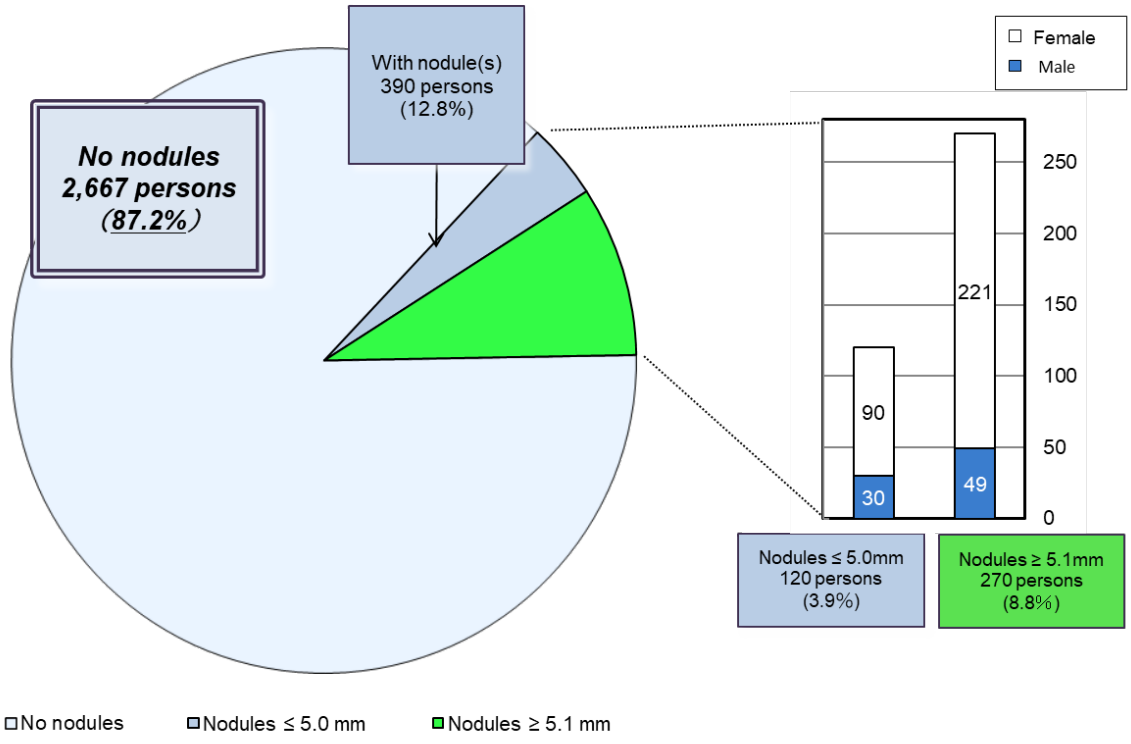


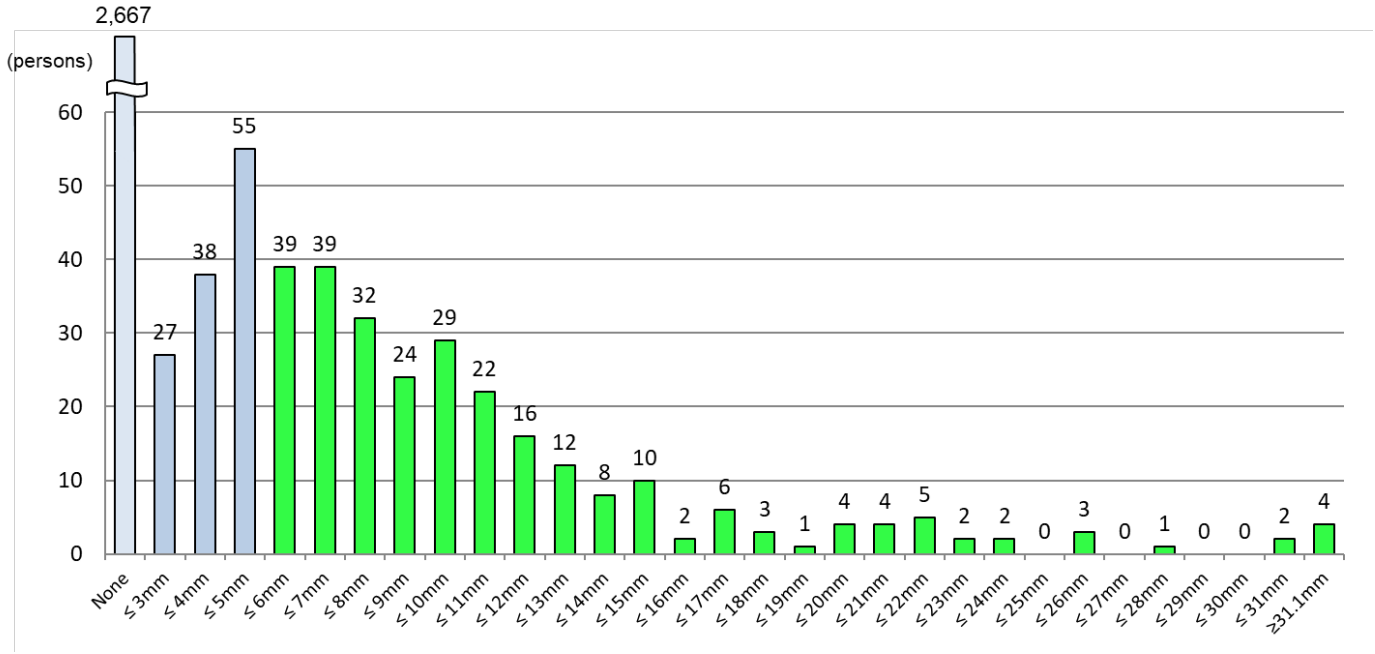
Appendix 4.2: Nodule characteristics

As of March 31, 2025

(persons)

Nodule size	Total	Male	Female	Grade	
None	2,667	820	1,847	A1	87.2%
≤ 3.0mm	27	7	20	A2	3.9%
3.1–5.0mm	93	23	70		
5.1–10.0mm	163	34	129	B	8.8%
10.1–15.0mm	68	7	61		
15.1–20.0mm	16	4	12		
20.1–25.0mm	13	1	12		
≥ 25.1mm	10	3	7		
Total	3,057	899	2,158		



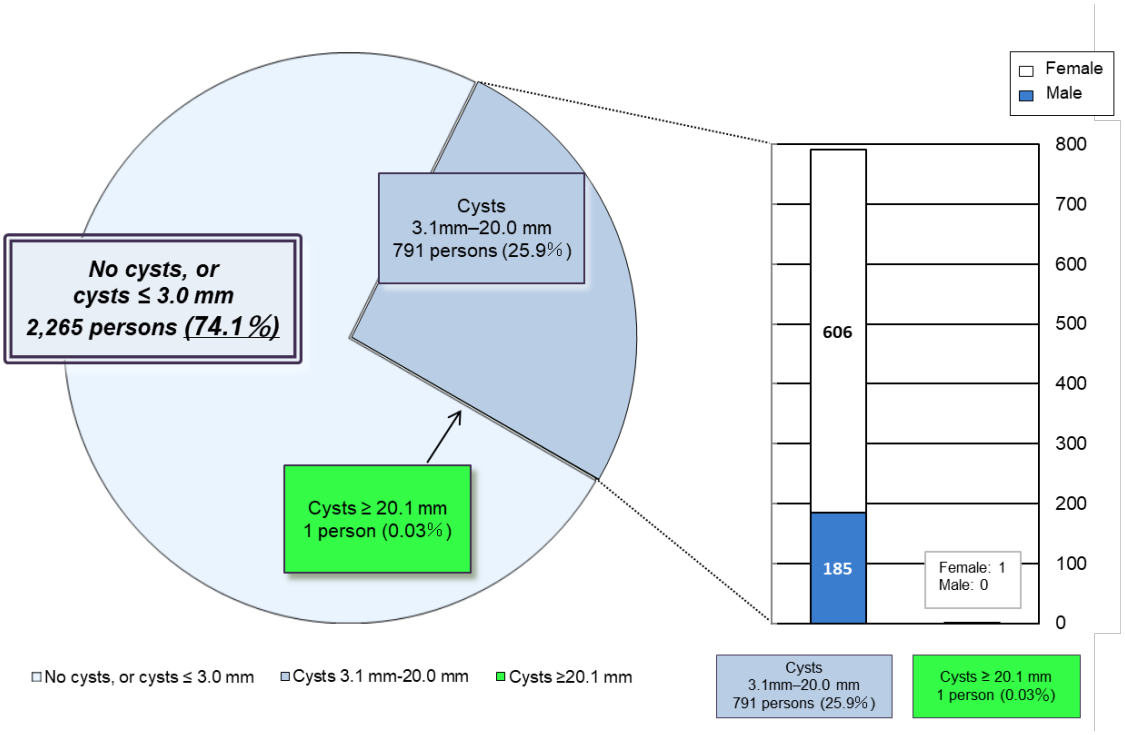


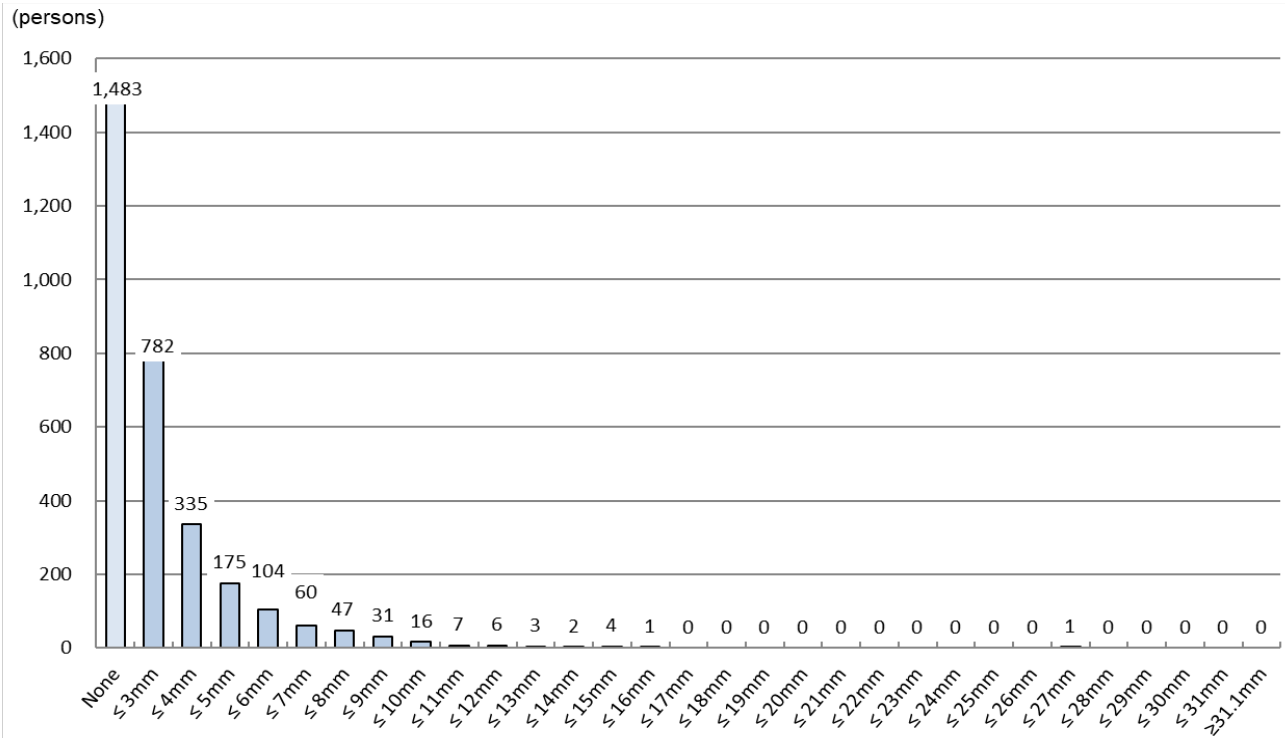
Appendix 4.3: Cyst characteristics

As of March 31, 2025

(persons)

Cyst size	Total	Male	Female	Grade	
None	1,483	499	984	A1	74.1%
≤ 3.0mm	782	215	567	A2	25.9%
3.1–5.0mm	510	129	381		
5.1–10.0mm	258	55	203		
10.1–15.0mm	22	1	21		
15.1–20.0mm	1	0	1		
20.1–25.0mm	0	0	0	B	0.03%
≥ 25.1mm	1	0	1		
Total	3,057	899	2,158		





Appendix 5: Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 30 Survey:

- Malignant or suspicious for malignancy 9
  - Surgical cases 4
  - Papillary thyroid carcinomas 4

Implementation Status of the Fukushima Health Management Survey Thyroid Ultrasound Examination Support Project

July 25, 2025
Citizens Healthcare Survey Division
Fukushima Prefecture

1. Overview of the Program

1-1 Purpose

• Provide financial relief for economic burdens incurred as a result of Thyroid Ultrasound Examination findings and follow-up.

• Utilize medical information related to insurance-covered medical care as foundational data for the Fukushima Health Management Survey to promote the maintenance and improvement of residents' health in the future. (This project started in July 2015.)

1-2 Project Description

• Provide financial support to eligible recipients.

• Utilize information regarding treatment following thyroid examinations conducted as part of the Fukushima Health Management Survey for eligible recipients to promote the maintenance and improvement of the health of all prefectural residents.

1-3 Eligible Recipients

Individuals who meet the eligibility criteria for Thyroid Ultrasound Examination (TUE), who have previously undergone TUE, and are currently receiving medical treatment for thyroid nodules or other thyroid abnormalities (nodular lesions) at any medical institution under a health insurance scheme

(Excluded individuals are those already receiving full medical expense support through other public programs, such as the Child Medical Expense Assistance Program, social welfare recipients, or residents from the Difficult-to-Return Zone with partial or full exemptions.)

1-4 Eligible Expenses

A. Medical expenses for insurance-covered treatment related to thyroid nodules or other thyroid abnormalities (actual copayment amount).

B. Expenses incurred for documentation fees for medical records or for issuing household registration certificates in connection with the application for support funds.

2. Implementation Status

Implementation status from the start of the program (July 10, 2015) to the end of March 2025 (based on information submitted for this program).

2-1 Grant disbursement status

A. Total number of cases supported: 1,057 cases total

FY2015	121
FY2016	104
FY2017	88
FY2018	85
FY2019	101
FY2020	104
FY2021	83
FY2022	102
FY2023	123
FY2024	146

B. Total number of people supported: 507 persons

Male	161
Female	346

C. Ages at the time of disbursement: 15 to 32 years old

(Ages at the time of the 3.11 disaster: 1–18 years old)

E. Locations of grant recipients at the time of the 3.11 disaster

Hamadori	89
Nakadori	313
Aizu	48
Evacuation zones*	57

*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

2-2 Surgical case status

A. Total number of grants disbursed (including surgery cases): 243

(actual number of persons 234)

FY2015	42
FY2016	25
FY2017	16
FY2018	19
FY2019	21
FY2020	27
FY2021	17
FY2022	22
FY2023	34
FY2024	20

B. Gender of grant recipients

Male	81
Female	153

C. Ages at the time of the disbursement: 16 to 31 years old

(Ages at the time of the 3.11 disaster: 5–18 years old)

E. Pathological diagnosis results

(a) Thyroid cancer total: 205

Papillary carcinoma	197
Poorly differentiated carcinoma	1
Follicular carcinoma	7

(b) Other than thyroid cancer: 29 cases (including follicular adenoma, etc.)

Report of the 25th Meeting of the Thyroid Examination Evaluation Subcommittee

Date and Time: Friday, July 4, 2025, 14:00 - 15:30
Location: SUGITSUMA KAIKAN, 4th-floor meeting room, BOTAN * Both on-site and online
Attendees: 7 subcommittee members
Agenda

1. Summary of results of the Full-scale Survey (up to the Fifth-round Survey)

Based on the opinions of committee members, discussions were held using finalized summary results up to the Fifth-round Survey (as of December 31, 2024) prepared by Fukushima Medical University.

1-1 To examine the association between estimated thyroid absorbed doses from the UNSCEAR 2020 report and the cumulative detection rate of malignant or suspected malignant lesions up to the fifth Full-Scale Survey, excluding the Preliminary Baseline Survey, an analysis was conducted based on estimated thyroid absorbed doses (quartiles analysis).

In all analyses adjusted for multiple confounding factors such as sex, age, and year of examination, no consistent relationship (dose-effect relationship) was observed to indicate that the detection rate increased with increasing radiation dose.

＜ **Major opinions of committee members**＞

- It is noteworthy that the absence of a dose-effect relationship was reaffirmed, even in analyses with more participants than in past analyses.

1-2 To compare detection rates from national data with those of Fukushima Prefecture, we examined annual trends in detection rates using national cancer registry data. When aggregated by age group, we confirmed that Fukushima Prefecture had higher rates compared to the national average, among ages 10 to 14 and ages 20 to 24 years, indicating that generations might be affected by their participation in the Thyroid Ultrasound Examination (TUE) program.

Additionally, we considered characteristics such as progression and detection history of cases registered in both TUE and cancer registries, as well as cases registered only in cancer registries.

＜ **Major opinions of committee members**＞

- To verify the harvest effect of TUE, it will be necessary to confirm this over the medium to long term, using birth cohorts.

1-3 To verify temporal changes in screening effects, we graphed the cumulative detection rates by age at the time of detection, categorized by age groups at the time of the disaster. There were no significant changes in trends compared to the previous report (as of September 30, 2024); the detection rate was higher in older age groups, regardless of whether cases were from the Preliminary Baseline Survey or only in the cancer registry.

1-4 To examine the association between individual estimated radiation exposure doses and the detection of malignant or suspected malignant lesions, a case-control study within the cohort was conducted.

There were no significant changes in trends or other findings compared to the previous report (as of September 30, 2024). When limited to a region of Hamadori[*1] where cases were

detected by TUE, an association was observed at 10 mSv or higher.

Additionally, in an analysis that included cases registered only in the cancer registry — to increase the number of subjects and enhance statistical detectability — the association diminished.

*1 Three municipalities in Hamadori (Iwaki City, Soma City, and Shinchi Town) that do not have evacuation zones within.

＜ **Major opinions of committee members**＞

- Regarding the interpretation of analysis results limited to Hamadori, it is necessary to confirm trends in parallel with case cohort studies using methods such as Kaplan-Meier.

1-5 From the perspective of observing the cumulative detection rate of malignant or suspicious for malignancy cases over time using the person-year method, we conducted an analysis using the Kaplan-Meier method, which is primarily used for survival time analysis.

There were no significant changes in trends from the previous report (as of September 30, 2024). In the case-control study, no such association was observed in the analysis limited to the Hamadori region, despite a previously reported significant association.

＜ **Major opinions of committee members**＞

- It is important to note that the points to consider (for bias) vary depending on the analytical method used, and the results should be confirmed accordingly.

2. Summary of the Subcommittee's Discussion on the Results from the Preliminary Baseline Survey (First) to the Fifth Round Full-scale Survey

Based on previous deliberations, the committee presented and discussed a draft report summarizing their opinions on the results up to the Fifth Full-scale Survey (conducted from FY2011 to FY2022). The report was approved to be presented and reported at the 56th Oversight Committee Meeting.

< Major opinions of the members of the subcommittee >

- As in previous summary reports, no association between thyroid cancer and radiation exposure has been identified at this time. This can be reported in the next subcommittee summary.

Thyroid Ultrasound Examination Results Summary

Examinations / Items		**Preliminary Examination** (The 1st-round survey)	**Full-scale Survey 1** (The 2nd-round survey)	**Full-scale Survey 2** (The 3st round survey)	**Full-scale Survey 3** (The 4th-round survey)	**Full-scale Survey 4** (The 5th-round survey)	**Full-scale Survey 5** (The 6th-round survey)	**Age 25 Survey**	**Age 30 Survey**
		2011-2013	2014-2015	2016-2017	2018-2019	2020-2022	2023-2024	Starting from 2017	Starting from 2022
Eligible persons		367,637	381,237	336,667	294,228	252,936	211,912	149,843	44,489
Participation Rate		81.7%	71.0%	64.7%	62.3%	45.1%	30.1%	8.6%	6.7%
Results	A1	51.5%	40.2%	35.1%	33.6%	28.8%	26.9%	42.3%	42.8%
	A2	47.8%	59.0%	64.2%	65.6%	70.0%	71.6%	52.2%	48.2%
	B	0.8%	0.8%	0.7%	0.8%	1.2%	1.5%	5.5%	9.0%
	C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		As of March 31, 2018	As of March 31, 2021	As of March 31, 2021	As of June 30, 2022	As of December 31, 2024	As of December 31, 2024	As of September 30, 2024	As of September 30, 2024

Summary of Results for the Thyroid Ultrasound Examination from the Preliminary Baseline Survey and Full-scale Surveys (through the Fifth-round Survey)

July 2025
Thyroid Examination Evaluation Subcommittee,
Fukushima Prefectural Oversight Committee
for the Fukushima Health Management Survey

The Thyroid Examination Evaluation Subcommittee of the Fukushima Prefectural Oversight Committee for the Fukushima Health Management Survey (hereinafter referred to as the "Evaluation Subcommittee") evaluated Preliminary Baseline Survey results. The "Interim Summary on the Thyroid Ultrasound Examination" concluded in March 2015 that "the results are unlikely to be attributed to radiation exposure."

After evaluating results from the first Full-scale Survey (Second-round Survey), the Evaluation Subcommittee produced a "Summary Report of the Evaluation Subcommittee on the Results of the Full-Scale Survey (Second-round Survey)" (hereinafter called the "Second Summary") in June 2019. In this Second Summary, an analysis was performed using provisional age- and municipality-specific UNSCEAR estimated thyroid absorbed doses to examine the relationship between dose and thyroid cancer detection rates. The results showed that no consistent relationship (dose-effect relationship) was observed, such as increased detection rates with higher doses. Therefore, it was concluded that "at this point, no association has been identified between thyroid cancer detected in the Thyroid Ultrasound Examination (Second-round Survey) and radiation exposure."

After evaluating results from the Preliminary Baseline Survey and Full-scale Surveys (through the Fourth-round Survey), a "Summary of Results from the Preliminary Baseline Survey to the Full-scale Survey (Fourth-round Survey)" (hereinafter referred to as the "Summary to the Fourth-round Survey") was reported in July 2023. In this Summary of the Fourth-round Survey, based on perspectives outlined in the Second Summary, the committee conducted analyses using accumulated examination results, regional and national cancer registry data, and analyses using more detailed thyroid radiation dose estimates. Based on these analyses, which were considered the best available at the time, no consistent relationship (dose-effect relationship) was observed between increased radiation exposure and increased detection rates. Therefore, it was concluded that "no association between thyroid cancer and radiation exposure was identified from the Preliminary Baseline Survey to the Fourth-round Full-scale Survey."

At the 49th Fukushima Prefectural Oversight Committee for the Fukushima Health Management Survey (hereinafter referred to as the "Oversight Committee") meeting held on November 24, 2023, it was agreed to convene an Evaluation Subcommittee to continue analyzing and evaluating the results of Thyroid Ultrasound Examinations and conducting analyses utilizing regional and national cancer registry data.

In response, the 22nd Evaluation Subcommittee Meeting was held on March 22, 2024, and through four deliberations up to the 25th Evaluation Subcommittee Meeting on July 4, 2025, subcommittee members reviewed the analysis methods and procedures proposed in the Summary to the Fourth-round Survey, taking into account the opinions of subcommittee members regarding future analyses and other matters presented at the 22nd Evaluation Subcommittee Meeting. In addition to the analyses used in the Summary to the Fourth-round Survey, including confirmation of the detection history in cancer registry data and temporal

analysis of cumulative detection rates using the concept of observation years, which had not been previously employed, the Evaluation Subcommittee conducted multi-dimensional and multi-layered analyses.

Based on discussions to date, the Evaluation Subcommittee presents the following views on results from the Preliminary Baseline Examination to the Full-scale Survey (Fifth-round Full-scale Survey) (hereinafter referred to as "Fifth-round Survey"), as well as future issues for consideration.

1. Scope of this summary

Similar to the summary report up to the Fourth-round Survey, this analysis utilizes examination results and cancer registry data from the Preliminary Baseline Survey to the Fifth-round Full-scale Survey to assess the cancer detection status of consenting Survey participants. The examinations and other procedures included in this summary are as follows:

1-1 Thyroid Ultrasound Examinations covered

Examination Category	Examination Year
Preliminary Baseline Survey	FY2011 - FY2013
Full-scale Survey (Second-round Survey)	FY2014 - FY2015
Full-scale Survey (Third-round Survey) (Including Age 25 Survey (for those born in FY1992)	FY2016 - FY2017
Full-scale Survey (Fourth-round Survey) (Including Age 25 Survey (for those born in FY1993 and FY1994)	FY2018 - FY2019
Full-scale Survey (Fifth-round Survey) (Including Age 25 Survey (for those born in FY1995 to FY1997) and Age 30 Survey (for those born in FY1992)) *Due to measures to prevent COVID-19 infection, the examination schedule was changed from two to three years.	FY2020 - FY2022

1-2 Analysis utilizing regional and national cancer registry data

(Hereafter, “cancer registry” refers collectively to both.)

Thyroid cancers (256 cases) in the regional cancer registry of Fukushima Prefecture from 2012 to 2015, and in the national cancer registry from 2016 to 2019, were matched with THYROID ULTRASOUND EXAMINATION cases where fine-needle aspiration cytology (FNAC) was performed by the end of December 2019 for cases where malignant or suspected malignant lesions were detected in the Fourth-round Survey (241 cases). This showed that 47 only appeared as cancer registry cases. Additionally, the number of days between FNAC in cases detected through Thyroid Ultrasound Examination and the diagnosis date in cancer registry cases was less than 180 days in over 90% of cases.

When comparing the stage of cancer progression, 21 intraepithelial or localized lesions (44.7%) only appeared as cancer registry cases, while 75 cases (35.9%) were also recorded as Thyroid Ultrasound Examination cases. This indicates that cases only recorded in the cancer registry were more likely to have undergone surgery for less advanced stages.

When comparing the circumstances of detection among cases recorded only in the cancer registry, "under observation for other diseases, other, or unknown" accounted for 34 cases (72.3%), while among cases also recorded in the Thyroid Ultrasound Examination, "cancer screening, health checkup, or complete medical checkups" accounted for 201 cases (96.2%). It should be noted that even among cases recorded only in the cancer registry, there was a high likelihood that they had a history of at least one Thyroid Ultrasound Examination through the Fukushima Health Management Survey, were transferred to insurance-covered medical care during follow-up after the examination, and were subsequently registered as "under observation for other diseases, other, or unknown."

By confirming the number of days between FNAC in cases detected through Thyroid Ultrasound Examination and a diagnosis date recorded in the cancer registry, as well as the detection history and participation history in the Thyroid Ultrasound Examination, it can be said that the validity of combining cases registered only in the cancer registry for analysis is ensured. Among the cases registered only in the cancer registry, those for which radiation exposure doses could be estimated were included in the analyses described in the following sections: "2-2 Analysis using estimated individual radiation exposure doses" and "3 Results of temporal analysis of cumulative detection rates."

Furthermore, because of the aging of participants in the Thyroid Ultrasound Examination, a decline in participation is expected. Therefore, it is important to continue analyzing cancer registry data to accurately identify subjects and maintain statistical detection capabilities.

2. Results of epidemiological analysis

2-1 Analysis using estimated exposure doses by region

As with the "Summary to the Fourth-round Survey," to analyze accumulated examination results, we tracked individuals who: had undergone the Preliminary Baseline Survey, were not diagnosed with malignancy or suspicion of malignancy, and who underwent the Second to Fifth-round surveys. Among them, we looked for any association between the detection rate of newly diagnosed cases of malignancy or suspicion of malignancy and radiation exposure doses.

For radiation exposure doses, we utilized age-specific and municipality-specific estimated thyroid absorbed doses published in the UNSCEAR 2020/2021 report, as done for the "Summary to the Fourth-round Survey." However, there are several issues with relying on

these age- and municipality-specific estimated doses, including that they do not account for evacuation behaviors, leading to larger discrepancies compared to individual estimated radiation doses. Additionally, it is unclear whether the cases of malignancy or suspicion of malignancy identified through examinations are influenced by radiation exposure or regional differences within municipalities. On the other hand, the subjects in the analysis described in "2-2 Analysis using estimated individual exposure doses" are limited to those who completed the behavioral record questionnaire in the Basic Survey, which accounts for about half of the total population. Therefore, it is important to note that, to maintain a sufficient number of subjects for analysis, it is necessary to use the age- and municipality-specific estimated thyroid absorbed doses despite these limitations.

After adjusting for confounding factors that may influence detection rates, such as gender, age, examination year, and examination interval, the analysis found no consistent dose-response relationship between radiation exposure and the detection of malignant or suspicious lesions in any of the analyses.

2-2 Analysis using estimated individual exposure doses

Similar to the "Summary to the Fourth-round Survey," we examined the relationship between estimated individual radiation exposure doses and findings of malignancy or suspicion of malignancy in cases detected through Thyroid Ultrasound Examination and cases registered solely in the cancer registry. Our analysis focused on individuals with behavioral records from the Basic Survey, and it was conducted as a case-control study within the cohort.

Regarding radiation exposure doses, as in the "Summary to the Fourth-round Survey," we used combined values of estimated internal and external exposure doses, based on realistic inhalation exposure estimates. These estimates were derived from comparing a radionuclide concentration database generated through atmospheric dispersion simulation with behavioral record data from the Basic Survey, as well as estimates of oral exposure doses from tap water consumption. Note that these individual estimated exposure doses were also used in a Kaplan-Meier analysis detailed in the subsequent section, "3. Results of temporal analysis of cumulative detection rates."

As confounding factors, gender, age, examination year, and examination patterns were analyzed using multiple matching models. Regarding adjustments for these factors, it is important to note that in the "Summary to the Fourth-round Survey," regional variations in the examination year, participation rate, and implementation rate of FNAC, as well as their fluctuations, were found to be associated with dose, and it was suggested that these factors could not be adequately controlled in analyses not limited to specific regions. Based on these findings, although the number of cases was small, we also conducted an analysis limited to evacuation areas or three Hamadori municipalities not designated as evacuation areas, where the estimated individual radiation exposures ranged widely from less than 3 mSv to 10 mSv or more, to avoid the influence of the examination year and implementation status at the regional level, as in the "Summary to the Fourth-round Survey."

In an analysis limited to cases detected by Thyroid Ultrasound Examination without regional limitations, a relationship (dose-effect relationship) between an increase in radiation exposure doses and an increase in detection rates was suggested, although it was not statistically significant. In the analysis limited to evacuation areas, there was no trend toward an increase in detection rates with increasing radiation exposure doses. On the other hand, in the analysis limited to Hamadori, a significant relationship was observed between radiation exposures of 10 mSv or more and detection rates compared to those of 3 mSv or less. In

addition, an analysis was conducted to increase statistical detectability by adding cases registered only in the cancer registry and increasing the number of subjects analyzed, and in the analysis, not limited to specific regions, the trend of an increase in the detection rate with increasing radiation exposure was weaker than in the analysis limited to cases detected by Thyroid Ultrasound Examinations. Similarly, in the analysis limited to Hamadori, this relationship was also weakened.

Based on these analyses, no consistent relationship (dose-effect relationship) was observed between radiation exposure and thyroid cancer detected in the Preliminary Baseline Survey to the Fifth-round Full-scale Survey, nor in cases registered only in the cancer registry up to 2019.

3. Results of temporal analysis of cumulative detection rates

It has been approximately 12 years since examinations began, and the follow-up period has become longer. In addition to complementing the aforementioned epidemiological analyses, a temporal analysis of cumulative detection rates was conducted.

The following specific methods were employed:

-Confirmation of cumulative detection rates by age group at the time of the disaster, using the concept of person-years of observation.

-Confirmation of cumulative detection rates by subject characteristics such as gender and estimated radiation exposure using the Kaplan-Meier method, which is primarily used in survival time analyses.

In the Chernobyl nuclear accident, there was a significant increase in childhood thyroid cancer. Within 4–5 years after the accident, the number of cases started to rise, reaching more than ten times the original rate by 10 years later. According to the Fourth-round Survey summary, it is crucial to closely monitor the health of those who were infants at the time of the accident. However, when cumulative detection rates were examined by age group at the time of the nuclear accident, no increase in cumulative detection rates was observed among those aged four years or younger at the time of the 3.11 disaster. This suggests that the trend differs from what was seen after the Chernobyl nuclear power plant accident, which was linked to radiation exposure.

In addition, a region-specific analysis was conducted in Hamadori in the aforementioned case-control study, where a significant association was observed. Estimated radiation doses were analyzed using the Kaplan-Meier method, and no significant relationship was found in either the analysis of cases detected by Thyroid Ultrasound Examination alone or in an analysis that included cases found only in the cancer registry.

Furthermore, in a sensitivity analysis that excluded cases detected by the Preliminary Baseline Survey, the upward trend in detection rates became more gradual, suggesting that high participation in confirmatory examinations and FNAC may have influenced cumulative detection rates.

4. Summary

4-1 Summary of previous analyses

As stated in sections 2 and 3 above, no consistent relationship (dose-effect relationship) was observed between radiation exposure dose and the detection of malignant or suspected malignant lesions from the Preliminary Baseline Survey to the Fifth-round Survey, regardless of the analysis method used.

Consequently, the Preliminary Baseline Survey to the Fifth-round Survey did not reveal any association between thyroid cancer and radiation exposure.

This conclusion is clearer than the Summary up to the Fourth-round Survey, as it incorporates additional analyses that were not included in the previous summary. These additional analyses include a more comprehensive and multi-layered analysis that confirmed the detection history of cases registered only in the cancer registry and included a temporal analysis of cumulative detection rates.

However, region-specific analyses in case-control studies may not be consistent due to factors such as the possibility of a small number of participants. Therefore, it is important to base judgments on the results of ongoing follow-up analyses.

4-2 Detected thyroid cancer (including suspected cases)

In the summary up to the Fourth-round Survey, it was stated that "the results of the detailed ultrasound examinations conducted on a broad population of asymptomatic individuals may reflect either an overdiagnosis of cancers that do not threaten life expectancy or cause symptoms, or the early detection of cancers that may cause symptoms in the future, or both," and "At present, it is impossible to determine the relative proportions of these effects, and further retrospective verification by specialized academic societies is necessary." This assessment remains unchanged at this time.

In addition, the rise in detection rates becomes more gradual when analyzing cases that were not detected in previous surveys. Furthermore, there is a significant increase in detection rates in the Age 25 and Age 30 Surveys. These results suggest that the Survey itself affects detection rates.

4-3 Future examinations and information dissemination to residents

No consistent association between thyroid cancer and radiation exposure was observed from the Preliminary Baseline Survey to the Fifth-round Survey. Given the trend in cumulative detection rates, the overall low radiation exposure levels, and the fact that the detection rate among children aged 10 years or younger at the time of the disaster did not exceed the detection rate among those who were 15 years or older at the time of the disaster, it is likely that the characteristics of the increase in childhood thyroid cancer due to radiation exposure differ from those observed in the Chernobyl nuclear accident. This can be confirmed more definitively by analyzing the results of ongoing Full-scale Surveys (e.g., the Seventh-round Survey) and increasing the number of participants analyzed.

Furthermore, the Thyroid Ultrasound Examination is conducted according to the preference of residents who wish to undergo the examination to monitor children's long-term health. In a survey conducted by Fukushima Prefecture in fiscal year 2023, residents' intentions regarding examination participation were also confirmed. Given these intentions, it is important to continue providing opportunities for examinations. To appropriately respect the intentions and opinions of residents, it is necessary to continue conducting surveys.

Conversely, the Summary up to the Fourth-round Survey was summarized as follows: "In addition to the advantages of examinations, such as peace of mind and improved quality of life, there are also potential disadvantages, such as physical and mental burdens caused by examinations, or the possibility of diagnosing and treating cancers that may not cause symptoms or death in the future. Therefore, it is important to obtain the understanding and consent of the participants while ensuring their voluntary participation." This point is reiterated once again. Ensuring the voluntary nature of this process requires effective dissemination of pertinent information. This includes not only informing the public about the advantages and

disadvantages of examinations, but also communicating the evaluations and insights gained from this summary, so that residents can make informed decisions based on sufficient information.

Taking into account the findings and public awareness obtained through this survey, the methods for conducting the examinations should continue to be discussed by the Oversight Committee.

*Refer to the Appendix for the analysis results.

Appendix

The 25th Thyroid Evaluation Subcommittee Meeting (July 4, 2025) Document 2

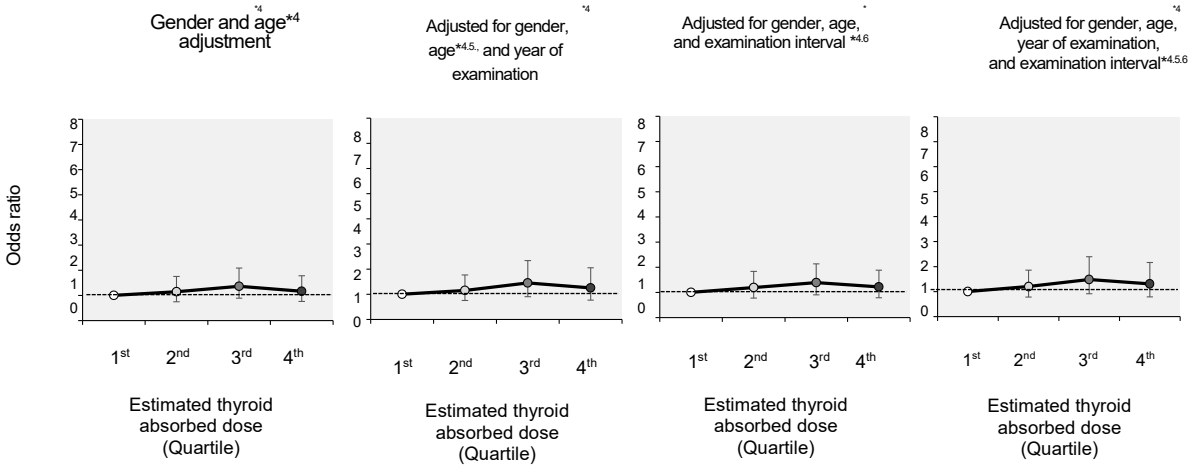
UNSCEAR 2020 Estimated thyroid absorbed dose and the association with the detection rate of malignant or suspected malignant lesions in the Full-scale Survey (cumulation of the Full-scale Survey)

Table 1 Association between UNSCEAR 2020 estimated thyroid absorbed dose [*1] and the detection rate of malignant or suspicious for malignancy findings in Full-scale Survey [*2] (cumulation of the Full-scale Survey)

	First quartile 0.5–2.6 mGy	Second quartile 2.7–4.3 mGy	Third quartile 4.5–7.0 mGy	Fourth quartile 7.0–15.0 mGy
Female (%)	50.5	50.2	49.2	49.7
examination interval: Age at time of disaster (mean age)	8.4	9.3	6.7	7.8
Examination interval *4(%)				
Less than 4 years	33.2	26.4	18.1	17.8
4 years or more but less than 5 years	5.7	13.8	8.4	12.3
5 years or more but less than 6 years	24.3	7.9	11.8	5.0
6 years or more but less than 7 years	4.8	19.2	13.0	19.4
7 years or more	32.0	32.7	48.7	45.5
Number of malignant or suspicious for malignancy cases (persons)	34	58	58	57
Detection rate (per 100,000 people)	71.3	88.8	81.5	78.3
Detection rate (per 100,000 person-years *5)	12.8	15.4	12.2	12.0

*1: UNSCEAR 2020 Report, Annex A, ATTACHMENT A-14, Table A-14.1 (age 15 and older at the time of the disaster), Table A-14.2 (age 6 to 14 at the time of the disaster), Table A-14.3 (age under 6 at the time of the disaster) estimated average total thyroid absorbed dose (total; mean) and ATTACHMENT A-18, Table A-18.4 (for those aged 15 years and older at the time of the disaster), Table A-18.5 (for those aged 6 to 14 years at the time of the disaster), and Table A-18.6 (for those under 6 years of age at the time of the disaster). When multiple estimated doses are presented for the same municipality, the weighted average value based on the utilization rate of evacuation scenarios indicated in previous studies (Sci Rep. 2020, Ohba et al.) indicates the proportion of evacuation scenarios used, and the weighted average value based on that proportion was used. For Kawauchi Village, where no values were provided, the values for Koriyama City were used. After applying the municipal-level exposure doses to individuals, the entire population eligible for thyroid examinations was classified into quartiles based on exposure doses. Note that the thyroid absorbed dose in the UNSCEAR 2020 report is the sum of external exposure doses in the first year after the accident plus thyroid absorbed doses from food (including tap water) plus inhalation exposure dose (mGy).
*2: Any of the Full-scale Surveys from the Second-round to the Fifth-round Survey.
*3: Among residents within the prefecture at the time of the disaster who underwent the Preliminary Baseline Survey and were not diagnosed with malignancy or suspicion of malignancy. Among these, those who underwent any of the Full-scale Surveys from the second round to the fifth round were included in the analysis.
*4: The interval between the date of the Preliminary Baseline Survey and the date of the most recent survey. However, for those diagnosed with malignancy or suspicion of malignancy, the interval is calculated from the date of the examination where the diagnosis was made.
*5: Person-years are calculated based on the examination interval [*4].
*Based on data as of December 31, 2024.

Figure 1: Odds ratio*3 of malignancy or suspicion of malignancy diagnosed in a Full-scale Survey*2 among all subjects classified, based on UNSCEAR 2020 estimated thyroid absorbed dose *1(vertical lines indicate 95% confidence intervals)



*1: According to the UNSCEAR 2020 Report, Annex A, ATTACHMENT A-14, Table A-14.1 (for individuals aged 15 and older at the time of the disaster), Table A-14.2 (for those aged 6 to 14), and Table A-14.3 (for those under 6), the estimated average total thyroid absorbed dose (mean) is provided. Additionally, ATTACHMENT A-18, Tables A-18.4 (for those aged 15 and older), A-18.5 (for those aged 6 to 14), and A-18.6 (for children under 6) present similar data. When multiple estimated doses are available for the same municipality, a weighted average based on the evacuation scenario utilization rates from previous studies (Sci Rep. 2020, Ohba et al.) is used, reflecting the proportion of each scenario. In the case of Kawauchi Village, where no specific values were provided, data from Koriyama City was used. After adjusting for municipal-level exposure doses, the entire population eligible for thyroid examinations was divided into quartiles according to their exposure levels. It is important to note that in the UNSCEAR 2020 report, the thyroid absorbed dose is calculated as the sum of external doses in the first year after the accident, doses from food (including tap water), and inhalation exposure (mGy).

*2: Any of the Full-scale Surveys from the Second-round to the Fifth-round Survey.

*3: The odds ratio was calculated using logistic regression analysis with the first quartile group as the reference group.

*4: Age adjustment used the age at the time of the disaster as a continuous variable.

*5: For adjusting the examination year, three categories are used: undergoing the Second-round Full-scale Survey in FY2014, undergoing examination in 2015 or later, or not being examined. Note that the examination year for the Full-scale Survey (Third- to Fifth-round Survey) is not used because it is strongly correlated with the examination year of the Second-round Survey.

*6: For adjusting the examination interval, the interval from the date of the primary examination of the Preliminary Baseline Survey to the date of the primary examination of the most recent examination (the Fourth-round and Fifth-round Surveys) is one of the following five: less than 4 years, 4 years or more but less than 5 years, 5 years or more but less than 6 years, 6 years or more but less than 7 years, and 7 years or more. However, for participants diagnosed with malignancy or suspicion of malignancy, the interval is defined as the period from the primary examination date on which the diagnosis was made.

The 25th Thyroid Evaluation Subcommittee Meeting (July 4, 2025) Document 5

Consideration of possible association between individual internal and external radiation exposure doses and malignancy or suspicion of malignancy detected in a cohort-based case-control study

Table Matching model used in the cohort-based case-control study

Number	Gender & birth year	Examination Year *1	Pattern *2	Cancer Registry cases (cases not registered in TUE*3)	Remarks
Thyroid Ultrsound Examination cases only					
5-1	○	Only at the examination, when detected/diagnosed.	Only at the examination, when detected/diagnosed.	Excluded	Matching model 1
5-2	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Excluded	Matching Model 2
5-3	○	All examinations prior to detection	All examinations prior to detection	Excluded	Matching model 3
5-4	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Excluded	Matching Model 2 (Evacuation zone + Hamadori)
5-5	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Excluded	Matching Model 2 (Evacuation zone only)
5-6	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Excluded	Matching Model 2 (Hamadori only)
Thyroid Ultrsound Examination cases and cancer registry cases					
5-7	○	Only at the examination, when detected/diagnosed.	Only at the examination, when detected/diagnosed.	Included	Matching model 1
5-8	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Included	Matching Model 2
5-9	○	All examinations prior to detection	All examinations prior to detection	Included	Matching model 3
5-10	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Included	Matching Model 2 (Evacuation zone + Hamadori)
5-11	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Included	Matching Model 2 (Evacuation zone only)
5-12	○	Only at the examination, when detected/diagnosed.	Last two examinations prior to detection	Included	Matching Model 2 (Hamadori only)

*1 (Thyroid Ultrasound Examination cases): Matched cases where both cases in each pair were diagnosed as malignant (including suspicious for malignancy cases) during the examination round, including the year of the primary examination.

(Cases only in the cancer registry): Matched based on whether the individual underwent the primary examination in the year of thyroid cancer diagnosis (Year X) and the previous year (Year X-1) (*).

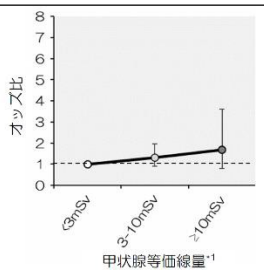
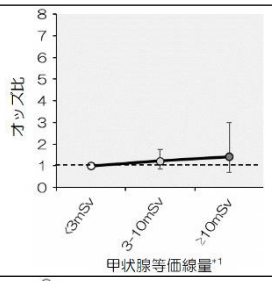
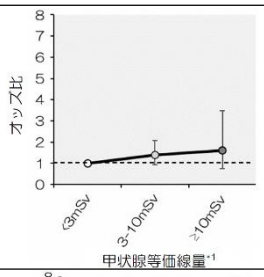
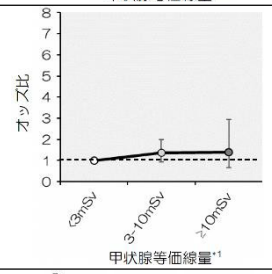
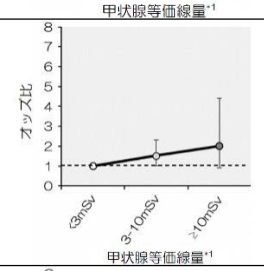
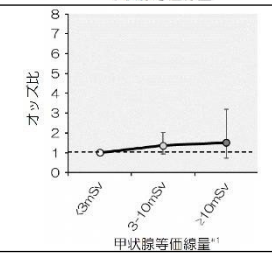
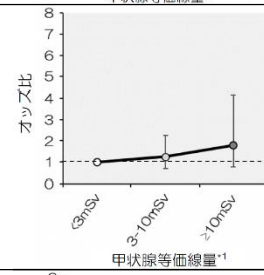
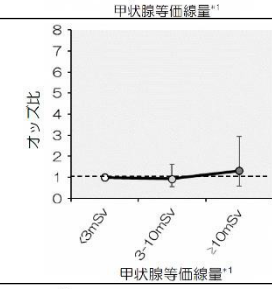
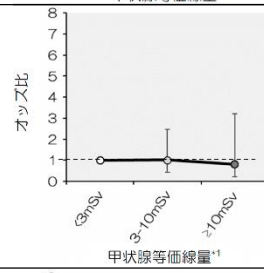
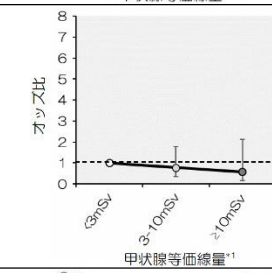
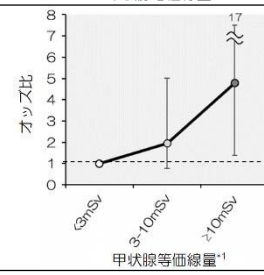
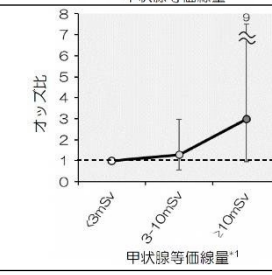
*Example: For a case where the primary examination of the Third-round Full-scale Survey was the only examination received in Year X, and the participant was diagnosed with cancer not by TUE and registered in the cancer registry in the same year, the control was matched with a participant who received an examination in Year X and did not receive an examination in Year X-1.

*2 Matched based on whether the primary examination was conducted (year of examination not specified) at each examination (including Age 25 Survey, for those born from FY1992 to FY1997, and Age 30 Survey, for those born in FY1992). However, for cancer registry cases, "examination when detected" refers to the examination conducted in the year of primary examination when the participant was diagnosed with thyroid cancer.

*3 TUE: Thyroid Ultrasound Examination of the Fukushima Health Management Survey

The 25th Thyroid Evaluation Subcommittee Meeting (July 4, 2025) Reference 2

Matching model and region-specific odds ratios in the cohort-based case-control study

	TUE cases only	TUE cases, and cancer registry cases
Matching model 1		
Matching model 2		
Matching model 3		
Matching model 2 (Evacuation zone + Hamadori)		
Matching model 2 (Evacuation zone only)		
Matching model 2 (Hamadori only)		

*Excerpted from Document 5-1 to 5-12 of the 25th Thyroid Examination Evaluation Subcommittee Meeting
*TUE: Thyroid Ultrasound Examination of the Fukushima Health Management Survey

The 25th Thyroid Evaluation Subcommittee Meeting (July 4, 2025) Document 4-2

Cumulative detection rate by age at the time of detection (by age group at the time of the disaster)

Cases registered only in the cancer registry and participated in the Thyroid Ultrasound examination

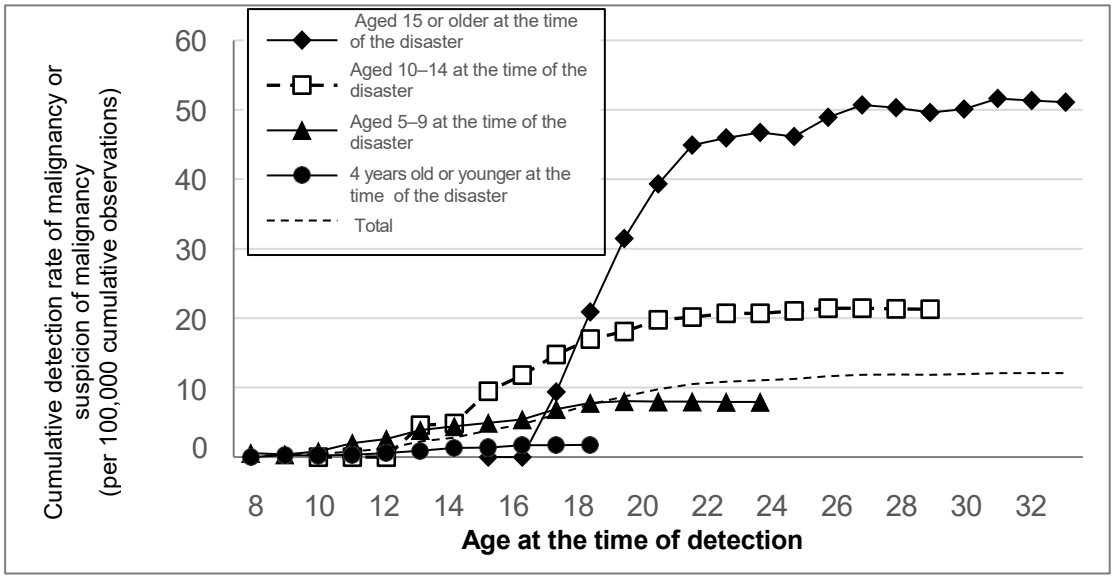


Figure 4-2-1 Cumulative detection rate of cases detected through the Preliminary Baseline Survey and Full-scale Surveys, and cases registered only in the cancer registry*1 per 100,000 cumulative observations (persons)

*1: Cancer registry cases with a diagnosis year from 2011 to 2019

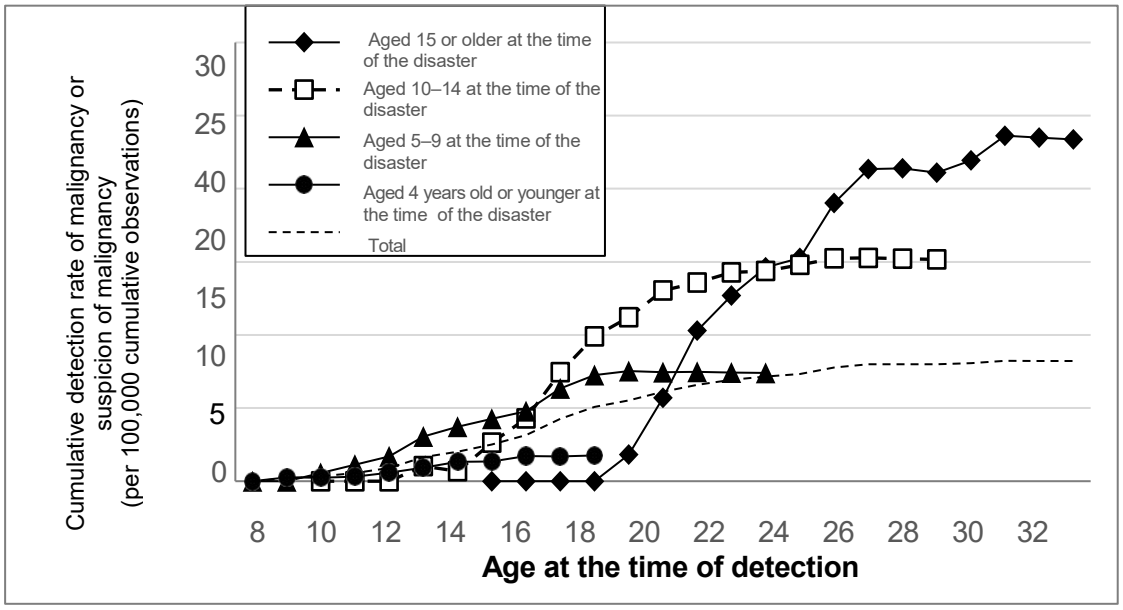


Figure 4-2-2 Cumulative detection rate of cases detected through Thyroid Ultrasound Examination Full-scale Surveys, and cases registered only in the cancer registry *2 per 100,000 cumulative observations (persons)

*2: Cancer registry cases with a diagnosis year from 2014 to 2019

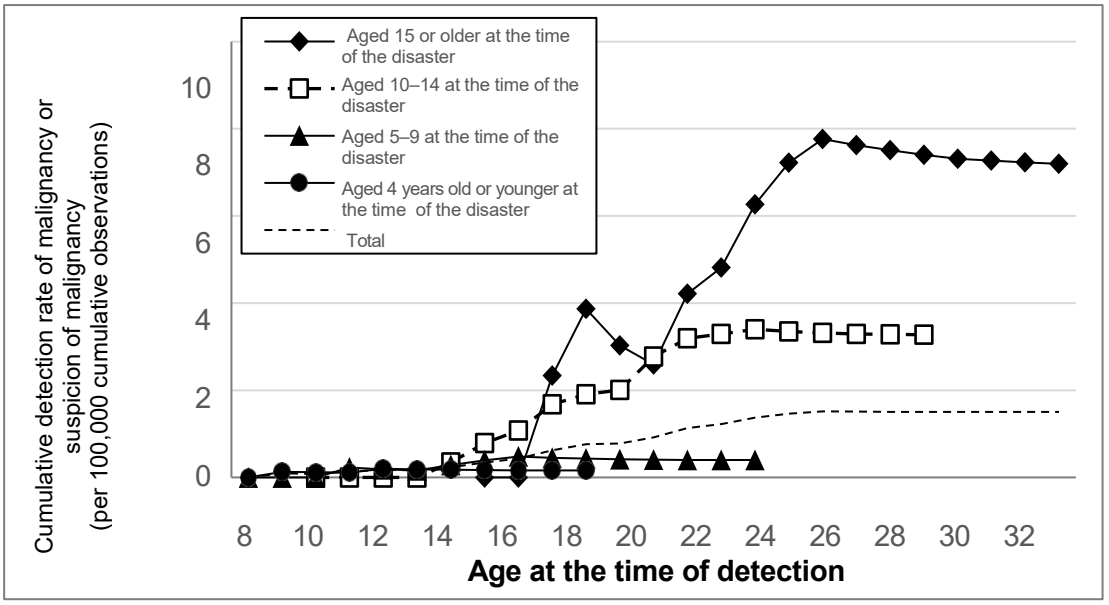


Figure 4-2-3 Cumulative detection rate of cases only in the cancer registry [*3] per 100,000 cumulative observations (persons)

*3: History of participation in Thyroid Ultrasound Examination is not considered.

* In calculating the detection rate of malignant and suspicious for malignancy cases, the numerator is the total number of cases detected up to the respective age, and the denominator is the cumulative total of the number of individuals observed at each age (in one-year increments) up to the age at which the detection rate is calculated. Note that the end date of observation is determined by the following order of priority.

I. Date entered as "cancer diagnosis" in the cancer registry or the date of confirmatory examination of Thyroid Ultrasound Examination for indicating malignancy (including suspected cases) (priority given to the date of cancer registry)
II. Data cutoff date (December 31, 2024, but only for those who underwent the Fifth-round Survey or concurrent Age 25 and Age 30 Surveys)
III. Final examination date (the date of the primary examination, the date of the confirmatory examination, or the date of the FNAC)

∗This data was created and processed independently based on information provided under the Law Concerning the Promotion of Cancer Registration, etc.

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Cumulative detection rate of malignancy or suspicion of malignancy (Kaplan-Meier method: categorized by residential area at the time of disaster and thyroid equivalent dose into three zones)

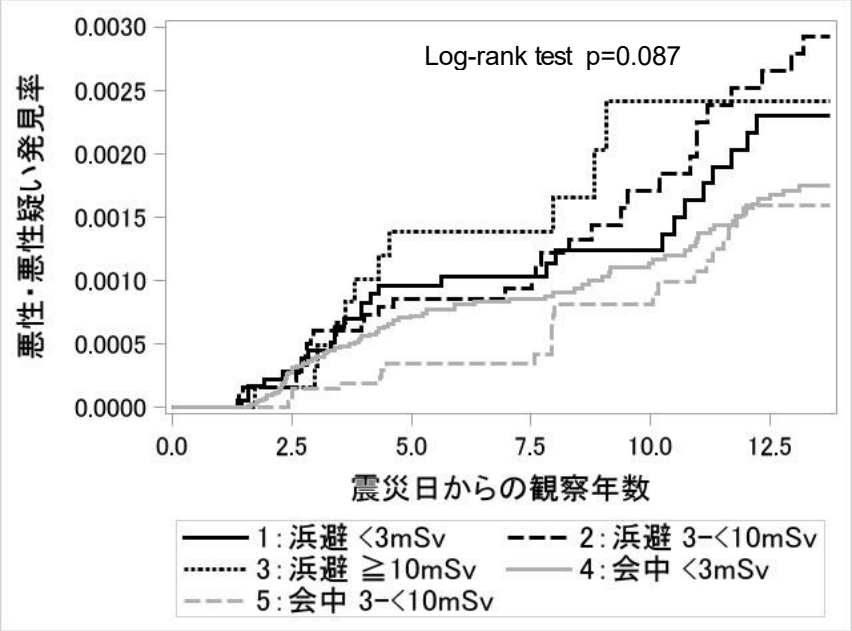

Figure 6-4-1 Cases detected in the Preliminary Baseline Survey and Full-scale Surveys (excluding cases registered only in the cancer registry)

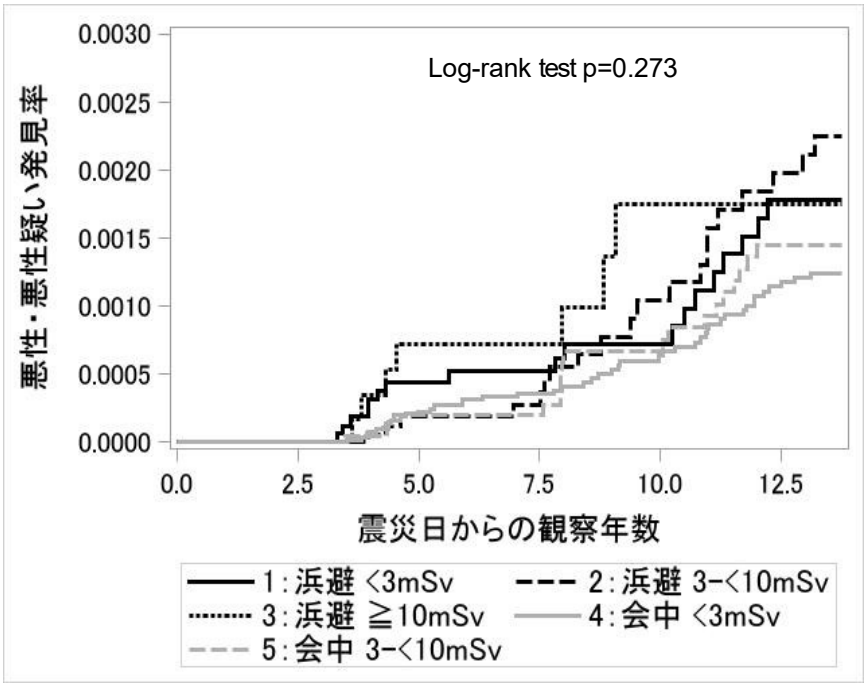

Figure 6-4-2 Cases detected in the Full-scale Surveys (excluding cases registered only in the cancer registry)

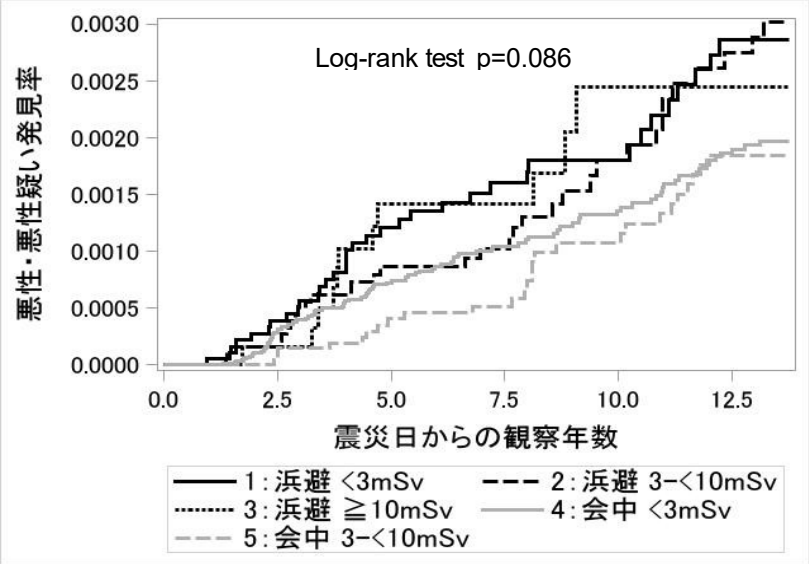

Figure 6-4-3 Cases detected in the Preliminary Baseline Survey, Full-scale Surveys, and cases registered only in the cancer registry [*1]

*1: Cancer registry cases diagnosed between 2011 and 2019

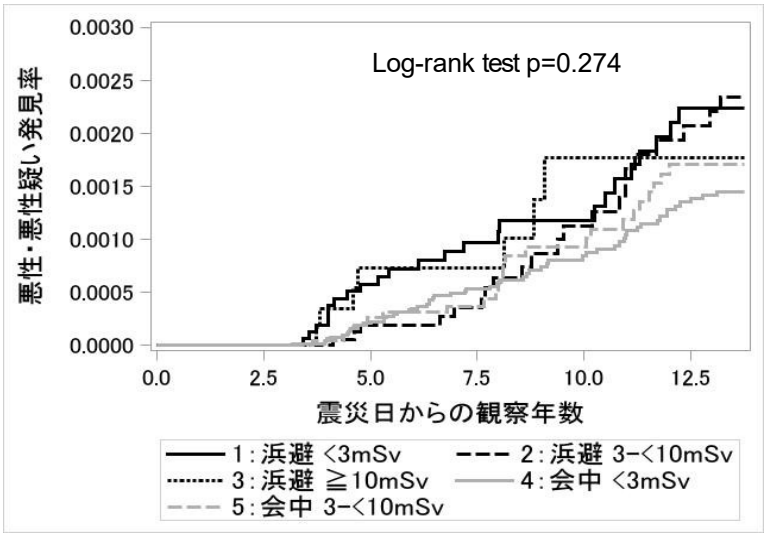

Figure 6-4-4 Cases detected in Full-scale Surveys and cases registered only in the cancer registry [*2]

*2: Cancer registry cases with a diagnosis year from 2014 to 2019

***** *浜避*: Hamadori+Evacuation Area (13 municipalities), *会中*: Aizu+Nakadori

* When calculating the detection rate of malignant or suspicious for malignancy cases, the end date of observation was determined as the earliest of the following dates:
  - I. The date of FNAC conducted during the examination round in which a malignant (including suspected malignant) diagnosis was made
  - II. (2) Data cutoff date (December 31, 2024, but only for participants who underwent the Fifth-round Survey or concurrent Age 25 or Age 30 Surveys)
  - III. (3) Final examination date (either the date of the primary examination, the date of the confirmatory examination, or the date of FNAC)

* The information was provided based on the Act on the Promotion of Cancer Registration, etc., and was created and processed independently.

*Thyroid equivalent dose is the sum of internal and external exposure doses (thyroid equivalent dose in mSv). Internal exposure dose is calculated with the thyroid equivalent dose from tap water during the 14 days following the accident and the thyroid equivalent dose from inhalation exposure based on the detailed behavior records from March 12 to March 25, 2011.

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Cumulative detection rate of malignancy or suspicion of malignancy (Kaplan-Meier method: three thyroid equivalent dose categories in the Hamadori)

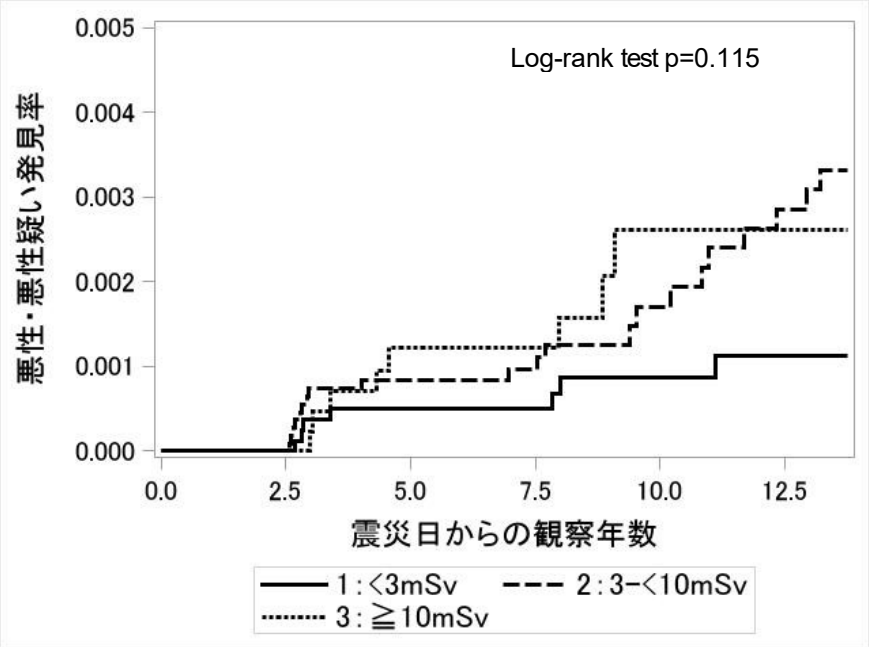

Figure 6-5-1 Cases detected by Preliminary Baseline Survey and Full-scale Surveys (excluding cases registered only in the cancer registry)

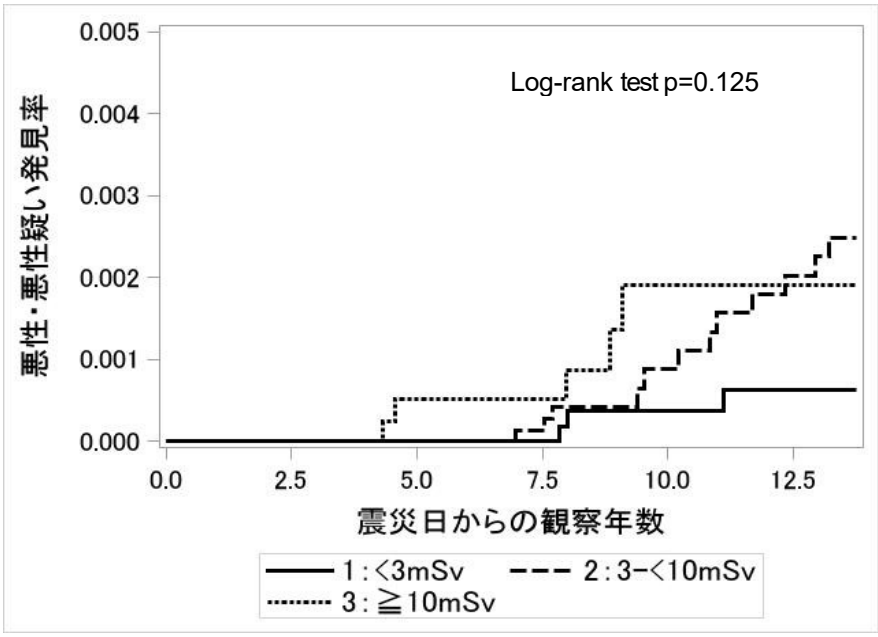

Figure 6-5-2 Cases detected by Full-scale Surveys (excluding cases registered only in the cancer registry)

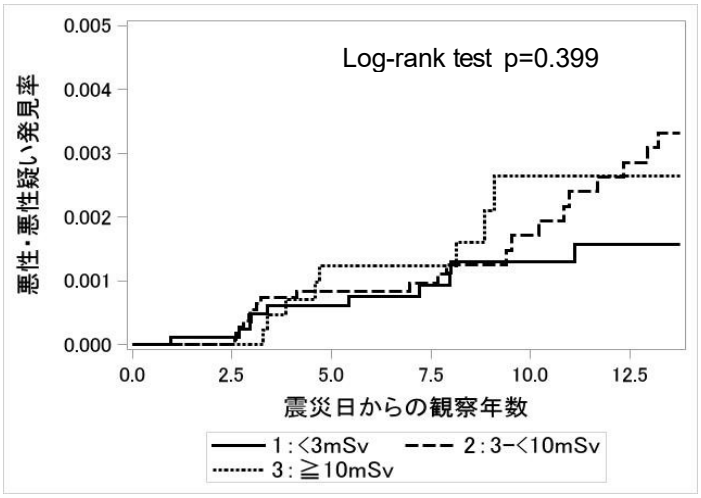

Figure 6-5-3 Cases detected by Preliminary Baseline Survey, Full-scale Surveys, and cases registered only in the cancer registry *1

*1: Cancer registry cases diagnosed between 2011 and 2019

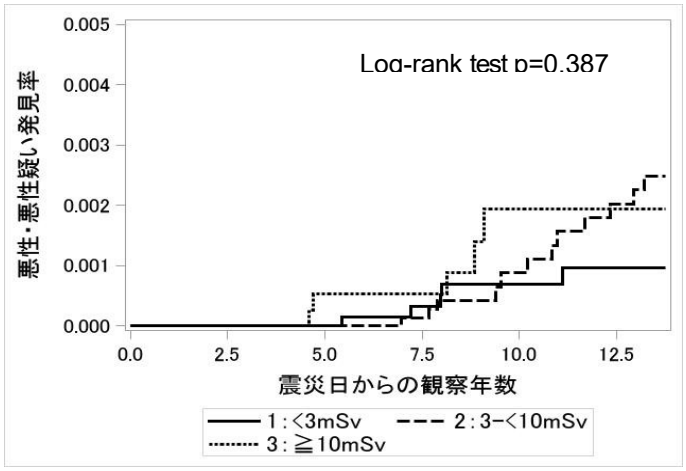

Figure 6-5-4 Cases detected by Full-scale Surveys and cases registered only in the cancer registry *2

*2: Cancer registry cases with a diagnosis year from 2014 to 2019

* In calculating the detection rate of malignant and suspicious for malignancy cases, the end date of observation was determined as the earliest of the following dates:

I. The date of FNAC performed during the examination round where a malignant (including suspected) diagnosis was made
II. (2) Data cutoff date (December 31, 2024, but only for those who underwent the Fifth-round Survey or the concurrent Age 25 or Age 30 Survey)
III. (3) Final examination date (either the date of the primary examination, the date of the secondary examination, or the date of cytology)

* The information was provided based on the Act on the Promotion of Cancer Registration, etc., and was created and processed independently.

*Thyroid equivalent dose is the sum of internal and external exposure doses (thyroid equivalent dose in mSv). Internal exposure dose is calculated with the thyroid equivalent dose from tap water during the 14 days following the accident and the thyroid equivalent dose from inhalation exposure based on the detailed behavior records from March 12 to March 25, 2011, and the external exposure was calculated by multiplying the dose evaluated in the Basic Survey (effective dose) by a thyroid equivalent dose correction factor of 1.1.