

Report on the Basic Survey (Radiation Dose Estimates)

1. Summary of Survey

1.1 Purpose

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

1.2 Survey Population

- (1) Those who were registered residents of Fukushima Prefecture from March 11 to July 1, 2011.
- (2) Those who lived or stayed in Fukushima without being registered as residents and who commuted to Fukushima from outside for work, school, or other reasons (hereinafter, “Temporary Residents”). We have 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 population of Fukushima Prefecture, was 27.7% (569,438 of 2,055,236) as of March 31, 2023.

Among the respondents, 75,441 (*1) answered with the simplified questionnaire.

The number of responses received from April 1, 2022 to March 31, 2023 (FY2022) was 59 with the original questionnaire, and 191 with the simplified one.

Table 1 Response rate to the Basic Survey

As of March 31, 2023		
Survey Population	2,055,236	Response Rate
Original questionnaire	493,997	24.0%
Simplified questionnaire	75,441	3.7%
Total Responses	569,438	27.7%

(*1) The number of submissions using the simplified questionnaire is subject to change, because we may need to ask some respondents who used the simplified questionnaire to resubmit using the original questionnaire, based on the content of their simplified questionnaire responses.

Table 2 shows the response rate for each age group.

Table 2 Response rate by age group

As of March 31, 2023								
Age group	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60-	Total
Response Rate	46.8%	36.3%	18.2%	24.9%	22.5%	23.0%	27.9%	27.7%

2.2 Radiation Dose Estimates

Out of 569,438 total responses, 555,318 are considered valid. Others have incomplete or invalid answers, from which movements and/or location history are inadequately documented for dose estimation (*2). Among valid responses, 555,216 dose estimates have been completed, and results have been reported to 555,028 respondents (Table 3) *3.

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

As of March 31, 2023

Region	Survey population a	Responses b	Response rate c=b/a	Valid Response d	Valid response rate e=d/a	Estimation completed f	Completion rate g=f/d	Result notified h	Notification rate i=h/d
Kenpoku	504,015	152,481	30.3%	149,558	29.7%	149,553	100.0%	149,501	100.0%
Kenchu	557,176	137,295	24.6%	134,196	24.1%	134,169	100.0%	134,157	100.0%
Kennan	152,225	35,643	23.4%	34,833	22.9%	34,825	100.0%	34,815	99.9%
Aizu	267,198	58,431	21.9%	56,229	21.0%	56,208	100.0%	56,199	99.9%
Minamiaizu	30,788	6,428	20.9%	6,121	19.9%	6,121	100.0%	6,120	100.0%
Soso	195,594	90,281	46.2%	87,571	44.8%	87,566	100.0%	87,474	99.9%
Iwaki	348,240	88,879	25.5%	86,810	24.9%	86,774	100.0%	86,762	99.9%
Total	2,055,236	569,438	27.7%	555,318	27.0%	555,216	100.0%	555,028	99.9%

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.

Percentages are rounded to one decimal place

(*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 the 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 were visiting or staying in Fukushima Prefecture at the time of the accident (see Table 4).

Table 4 Summary of temporary residents' response status

As of March 31, 2023

Questionnaire sent a	Responses b	Response rate c=b/a	Valid responses d	Valid response rate e=d/a	Estimation completed f	Completion rate g=f/d	Result notified h	Notification rate i=h/d
4,178	2,171	52.0%	2,161	51.7%	2,161	100.0%	2,161	100.0%

3. Results of Radiation Dose Estimates

Table 5 shows a breakdown of completed dose estimates from Table 3, excluding those with estimation periods less than four months. Radiation doses for a total of 476,476 residents have been estimated to date. Results for 467,256 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, 2023

As of March 31, 2022																			
Effective dose (mSv)	Total	Excluding radiation workers				Summary by region excluding radiation workers													
						Kenpoku (*4)		Kenchu		Kennan		Aizu		Minamiaizu		Soso (*5)		Iwaki	
< 1	296,555	290,823	62.2%	93.8%	99.8%	24,987	20.0%	58,602	51.5%	26,430	88.2%	46,300	99.3%	4,987	99.3%	55,909	77.3%	73,608	99.1%
< 2	149,998	147,648	31.6%			83,963	67.0%	46,476	40.8%	3,516	11.7%	311	0.7%	37	0.7%	12,708	17.6%	637	0.9%
< 3	26,182	25,808	5.5%	5.8%		15,740	12.6%	8,304	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%	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%	0.0%	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	—	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	476,476	467,256	100.0%	100.0%	100.0%	125,235	100%	113,821	100%	29,964	100%	46,638	100%	5,024	100%	72,293	100%	74,281	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

*Percentages are rounded to one decimal place

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

*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 mSv¹⁾, we concluded that radiation doses estimated so far are unlikely to cause adverse effects on health, although this conclusion is based on external radiation doses estimated only for the first four months following the accident.

Reference

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

5. Questionnaire Response Guidance Sessions

In FY2022, we held a total of 25 response guidance sessions at Thyroid Ultrasound Examination venues in 7 regions in the prefecture as follows.

- | | |
|--------------------------|---|
| First half of the year: | 11 times between July 24, 2022 and August 19, 2022 |
| Second half of the year: | 14 times between December 18, 2022 and March 27, 2023 |

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 the Call Center. In addition, information leaflets about the Basic Survey are available at municipal offices.

Response rates to the Basic Survey by municipality

As of March 31, 2023

Region & Municipalities		Survey population a	Total responses b	Response rate c=b/a	Valid responses d	Valid response rate e=d/a	Dose estimated f	Completed rate g=f/d	Results sent h	Notified rate i=h/d	Remarks
Kenpoku	Fukushima	295,632	94,065	31.8%	92,555	31.3%	92,550	100.0%	92,518	100.0%	
	Nihonmatsu	60,854	16,936	27.8%	16,571	27.2%	16,571	100.0%	16,569	100.0%	
	Date	67,574	18,321	27.1%	17,856	26.4%	17,856	100.0%	17,844	99.9%	
	Motomiya	31,759	9,116	28.7%	8,947	28.2%	8,947	100.0%	8,946	100.0%	
	Koori	13,207	3,886	29.4%	3,777	28.6%	3,777	100.0%	3,777	100.0%	
	Kunimi	10,316	3,030	29.4%	2,942	28.5%	2,942	100.0%	2,942	100.0%	
	Kawamata	15,883	5,190	32.7%	5,017	31.6%	5,017	100.0%	5,012	99.9%	
	Otama	8,790	1,937	22.0%	1,893	21.5%	1,893	100.0%	1,893	100.0%	
	Total	504,015	152,481	30.3%	149,558	29.7%	149,553	100.0%	149,501	100.0%	
Kenchu	Koriyama	339,671	87,406	25.7%	85,639	25.2%	85,622	100.0%	85,617	100.0%	
	Sukagawa	80,156	17,339	21.6%	16,903	21.1%	16,896	100.0%	16,896	100.0%	
	Tamura	41,723	10,587	25.4%	10,223	24.5%	10,221	100.0%	10,218	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	4,251	24.3%	4,147	23.7%	4,147	100.0%	4,147	100.0%	
	Tamakawa	7,333	1,511	20.6%	1,463	20.0%	1,463	100.0%	1,462	99.9%	
	Hirata	7,053	1,667	23.6%	1,611	22.8%	1,611	100.0%	1,611	100.0%	
	Asakawa	7,163	1,532	21.4%	1,497	20.9%	1,497	100.0%	1,496	99.9%	
	Furudono	6,321	1,326	21.0%	1,291	20.4%	1,291	100.0%	1,291	100.0%	
	Miharu	18,989	4,881	25.7%	4,785	25.2%	4,784	100.0%	4,783	100.0%	
	Ono	11,700	2,612	22.3%	2,548	21.8%	2,548	100.0%	2,547	100.0%	
	Total	557,176	137,295	24.6%	134,196	24.1%	134,169	100.0%	134,157	100.0%	
Kennan	Shirakawa	65,427	16,225	24.8%	15,893	24.3%	15,888	100.0%	15,884	99.9%	
	Nishigo	20,088	5,081	25.3%	4,964	24.7%	4,964	100.0%	4,963	100.0%	
	Izumizaki	6,931	1,444	20.8%	1,405	20.3%	1,405	100.0%	1,404	99.9%	
	Nakajima	5,306	1,025	19.3%	1,000	18.8%	1,000	100.0%	1,000	100.0%	
	Yabuki	18,341	4,140	22.6%	4,034	22.0%	4,034	100.0%	4,033	100.0%	
	Tanagura	15,384	3,076	20.0%	3,011	19.6%	3,009	99.9%	3,009	99.9%	
	Yamatsuri	6,491	1,485	22.9%	1,438	22.2%	1,438	100.0%	1,436	99.9%	
	Hanawa	10,061	2,341	23.3%	2,290	22.8%	2,289	100.0%	2,288	99.9%	
	Samegawa	4,196	826	19.7%	798	19.0%	798	100.0%	798	100.0%	
	Total	152,225	35,643	23.4%	34,833	22.9%	34,825	100.0%	34,815	99.9%	
Aizu	Aizuwakamatsu	127,814	29,872	23.4%	28,897	22.6%	28,882	99.9%	28,881	99.9%	
	Kitakata	53,199	11,150	21.0%	10,722	20.2%	10,721	100.0%	10,716	99.9%	
	Kitashiobara	3,276	613	18.7%	590	18.0%	588	99.7%	588	99.7%	
	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%	3,539	100.0%	3,538	99.9%	
	Aizubange	17,881	3,329	18.6%	3,185	17.8%	3,184	100.0%	3,184	100.0%	
	Yugawa	3,513	745	21.2%	712	20.3%	712	100.0%	712	100.0%	
	Yanaizu	4,077	734	18.0%	702	17.2%	702	100.0%	702	100.0%	
	Mishima	2,029	375	18.5%	341	16.8%	341	100.0%	341	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	4,696	20.1%	4,498	19.2%	4,497	100.0%	4,496	100.0%	
	Total	267,198	58,431	21.9%	56,229	21.0%	56,208	100.0%	56,199	99.9%	
Minamiaizu	Shimogo	6,649	1,260	19.0%	1,202	18.1%	1,202	100.0%	1,202	100.0%	
	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	3,872	20.9%	3,694	20.0%	3,694	100.0%	3,693	100.0%	
	Total	30,788	6,428	20.9%	6,121	19.9%	6,121	100.0%	6,120	100.0%	
Soso	Soma	37,365	13,331	35.7%	12,824	34.3%	12,823	100.0%	12,804	99.8%	
	Minamisoma	70,013	30,314	43.3%	29,514	42.2%	29,513	100.0%	29,492	99.9%	
	Hirono	5,165	2,239	43.3%	2,149	41.6%	2,146	99.9%	2,144	99.8%	
	Naraha	7,963	4,191	52.6%	4,033	50.6%	4,033	100.0%	4,025	99.8%	
	Tomioka	15,749	8,642	54.9%	8,426	53.5%	8,426	100.0%	8,417	99.9%	
	Kawauchi	2,996	1,543	51.5%	1,489	49.7%	1,489	100.0%	1,489	100.0%	
	Okuma	11,473	6,092	53.1%	5,868	51.1%	5,868	100.0%	5,867	100.0%	
	Futaba	7,051	3,953	56.1%	3,853	54.6%	3,853	100.0%	3,846	99.8%	
	Namie	21,334	12,994	60.9%	12,700	59.5%	12,700	100.0%	12,685	99.9%	
	Katsurao	1,541	825	53.5%	768	49.8%	768	100.0%	768	100.0%	
	Shinchi	8,356	2,711	32.4%	2,612	31.3%	2,612	100.0%	2,609	99.9%	
	Iitate	6,588	3,446	52.3%	3,335	50.6%	3,335	100.0%	3,328	99.8%	
	Total	195,594	90,281	46.2%	87,571	44.8%	87,566	100.0%	87,474	99.9%	
Iwaki	Iwaki	348,240	88,879	25.5%	86,810	24.9%	86,774	100.0%	86,762	99.9%	
計		2,055,236	569,438	27.7%	555,318	27.0%	555,216	100.0%	555,028	99.9%	

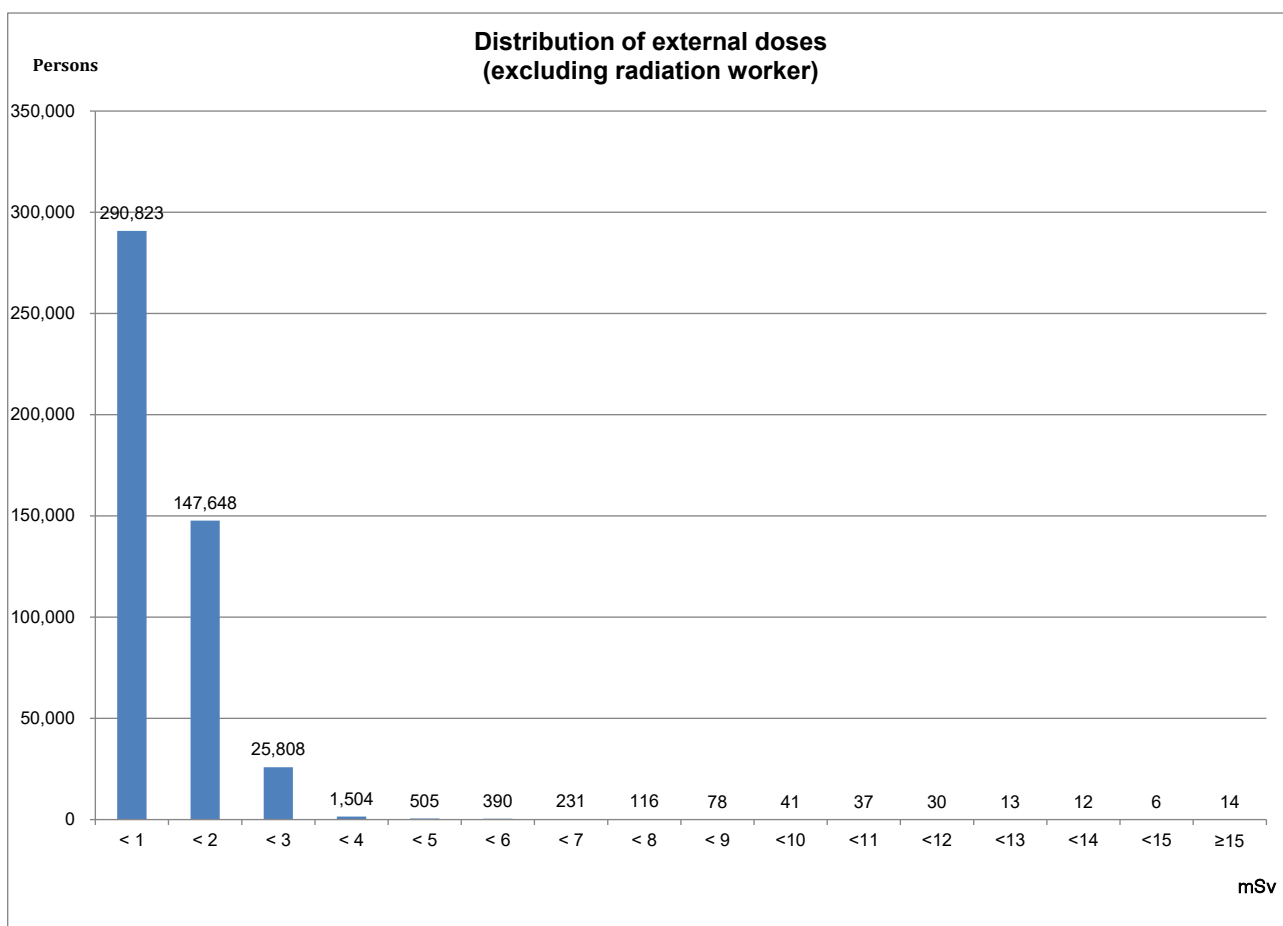
*Percentages have been rounded and may not total to 100%.

Distribution of estimated external doses by region

As of March 31, 2023

Estimated dose (mSv)	Total	Excluding radiation worker	Breakdown by region							Proportion(%)		
			Kenpoku	Kenchu	Kennan	Aizu	Minami aizu	Soso	Iwaki			
< 1	296,555	290,823	24,987	58,602	26,430	46,300	4,987	55,909	73,608	62.2%	93.8%	99.8%
< 2	149,998	147,648	83,963	46,476	3,516	311	37	12,708	637	31.6%		
< 3	26,182	25,808	15,740	8,304	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%	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%	
<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%	0.0%
≥15	323	14	0	0	0	0	0	14	0	0.0%	0.0%	
Total	476,476	467,256	125,235	113,821	29,964	46,638	5,024	72,293	74,281	100.0%	100.0%	100.0%
Max	66	25	11	10	2.6	6.0	1.9	25	5.9			
Mean Value	0.9	0.8	1.4	1.0	0.6	0.2	0.1	0.7	0.3			
Median	0.6	0.6	1.4	0.9	0.5	0.2	0.1	0.5	0.3			

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



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

As of March 31, 2023

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

Estimated Dose (mSv)	Age at the time of the disaster (years)									Total
	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 -	
< 1	48,472	45,476	21,436	34,478	28,817	32,914	36,338	25,736	17,156	290,823
< 2	23,131	21,941	10,179	18,380	16,725	18,560	19,499	12,294	6,939	147,648
< 3	6,513	4,311	1,143	2,353	2,252	2,975	3,425	1,996	840	25,808
< 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	78,412	71,968	32,929	55,489	48,128	55,000	59,779	40,431	25,120	467,256

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

As of March 31, 2023

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

Estimated dose (mSv)	By gender				Total	Proportion (%)
	Male	Proportion (%)	Female	Proportion (%)		
< 1	129,682	60.6	161,141	63.6	290,823	62.2%
< 2	68,400	32.0	79,248	31.3	147,648	31.6%
< 3	14,017	6.6	11,791	4.7	25,808	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	213,869	100.0	253,387	100.0	467,256	100.0%

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

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

As of March 31, 2023

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

Region	Municipality	Mean dose	Estimated cumulative doses)																計
			< 1	< 2	< 3	< 4	< 5	< 6	< 7	< 8	< 9	< 10	< 11	< 12	< 13	< 14	< 15	≥ 15	
Kenpoku	Fukushima	1.4	16,207	52,699	9,410	151	13	10	4	0	0	0	0	0	0	0	0	0	78,494
	Nihonmatsu	1.6	1,318	8,678	3,538	91	1	0	0	0	0	0	0	0	0	0	0	0	13,626
	Date	1.3	4,396	9,102	1,135	147	8	2	3	1	1	0	0	0	0	0	0	0	14,795
	Motomiya	1.5	746	5,464	1,261	24	1	0	0	0	0	0	0	0	0	0	0	0	7,496
	Koori	1.3	315	2,754	66	2	0	1	0	0	0	0	0	0	0	0	0	0	3,138
	Kunimi	1.0	968	1,437	12	0	0	0	0	0	0	0	0	0	0	0	0	0	2,417
	Kawamata	1.2	643	2,754	185	56	17	6	3	0	0	0	0	1	0	0	0	0	3,665
	Otama	1.3	394	1,075	133	2	0	0	0	0	0	0	0	0	0	0	0	0	1,604
Subtotal		1.4	24,987	83,963	15,740	473	40	19	10	1	1	0	0	1	0	0	0	0	125,235
Kenchu	Koriyama	1.3	24,083	40,878	7,849	419	5	3	1	0	0	0	0	0	0	0	0	0	73,238
	Sukagawa	0.7	10,883	3,226	338	4	0	0	0	0	0	0	0	0	0	0	0	0	14,451
	Tamura	0.4	7,699	684	24	3	0	0	0	0	0	0	0	0	0	0	0	0	8,410
	Kagamiishi	0.5	2,372	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	3,209	39	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3,250
	Tamakawa	0.3	1,185	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1,207
	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	1,235	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,250
	Furudono	0.3	1,074	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1,090
	Miharu	0.7	3,128	817	24	2	0	0	0	0	0	0	1	0	0	0	0	0	3,972
	Ono	0.3	2,028	83	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2,113
Subtotal		1.0	58,602	46,476	8,304	429	5	3	1	0	0	0	1	0	0	0	0	0	113,821
Kennan	Shirakawa	0.7	12,513	1,282	9	0	0	0	0	0	0	0	0	0	0	0	0	0	13,804
	Nishigo	0.9	2,250	2,046	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4,299
	Izumizaki	0.4	1,164	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,186
	Nakajima	0.4	845	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	859
	Yabuki	0.4	3,393	83	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3,477
	Tanagura	0.4	2,571	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,602
	Yamatsuri	0.1	1,160	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,169
	Hanawa	0.2	1,879	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,902
	Samegawa	0.3	655	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	666
	Subtotal	0.6	26,430	3,516	18	0	0	0	0	0	0	0	0	0	0	0	0	0	29,964
Aizu	Aizuwakamatsu	0.2	23,885	160	13	0	0	0	1	0	0	0	0	0	0	0	0	0	24,059
	Kitakata	0.3	8,980	56	3	1	0	0	0	0	0	0	0	0	0	0	0	0	9,040
	Kitashiobara	0.4	479	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	483
	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	2,862	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,896
	Aizubange	0.3	2,679	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,694
	Yugawa	0.4	608	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	612
	Yanaizu	0.2	558	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	563
	Mishima	0.2	248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
	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	3,669	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3,695
	Subtotal	0.2	46,300	311	25	1	0	0	1	0	0	0	0	0	0	0	0	0	46,638
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
	Minami-aizu	0.1	3,028	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,055
Subtotal		0.1	4,987	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,024
Soso	Soma	0.6	10,041	467	87	20	5	0	0	0	0	2	0	0	0	0	0	0	10,622
	Minamisoma	0.7	19,143	6,228	514	99	35	3	7	4	1	0	0	1	0	0	0	0	26,035
	Hirono	0.3	1,839	59	2	0	0	0	1	0	1	0	0	0	0	0	0	0	1,902
	Naraha	0.3	3,403	131	13	2	0	1	1	0	0	0	0	0	0	0	0	0	3,551
	Tomiooka	0.5	5,835	1,104	100	18	3	2	1	3	2	0	0	1	0	0	0	0	7,069
	Kawauchi	0.6	963	350	16	1	0	1	1	1	0	0	0	0	0	0	0	0	1,333
	Okuma	0.8	3,374	1,284	112	17	6	4	4	3	0	2	2	1	0	4	0	1	4,814
	Futaba	0.6	2,676	468	77	19	6	4	3	6	2	1	0	2	0	0	0	1	3,265
	Namie	0.8	5,767	2,118	383	68	40	17	12	13	9	6	11	7	5	4	3	8	8,471
	Katsurao	0.7	502	162	24	4	0	1	0	0	0	0	0	0	0	0	0	0	693
	Shinchi	0.5	2,180	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,200
	Iitate	4.0	186	317	363	349	364	334	189	85	62	30	23	17	8	4	3	4	2,338
Subtotal		0.7	55,909	12,708	1,691	597	459	367	219	115	77	41	36	29	13	12	6	14	72,293
Iwaki	Iwaki	0.3	73,608	637	30	4	1	1	0	0	0	0	0	0	0	0	0	0	74,281
Total (A)		0.8	290,823	147,648	25,808	1,504	505	390	231	116	78	41	37	30	13	12	6	14	467,256
Proportion (%)			62.2%	31.6%	5.5%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
			93.8%		5.8%			0.2%		0.1%		0.0%		0.0%		0.0%		0.0%	100.0%
					99.8%				0.2%					0.0%				0.0%	100.0%
Temporary visitors (B)			1,589	283	18	2	0	0	0	0	0	0	0	0	0	0	0	1	1,893
Total (A) + (B)			292,412	147,931	25,826	1,506	505	390	231	116	78	41	37	30	13	12	6	15	469,149

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

Report on the Results of Mental Health and Lifestyle Survey for FY2021

1. Purpose

The Great East Japan Earthquake of March 11, 2011, subsequent accident at the Fukushima Daiichi Nuclear Power Plant, and life under prolonged evacuation have caused great anxiety and psychological distress among Fukushima residents. Objectives of the Mental Health and Lifestyle Survey are to properly assess our residents' physical, psychological, and lifestyle conditions and to provide them with appropriate care along with social support.

2. Methods

(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, 2021
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met

The total number of eligible persons: 196,569 (as of October 31, 2022)

Ages 0–3 Survey: born from April 2, 2018 to April 1, 2021	2,499 people
Ages 4–6 Survey: born from April 2, 2015 to April 1, 2018	3,217 people
Elementary School Students Survey: born from April 2, 2009 to April 1, 2015	8,077 people
Junior High School Students Survey: born from April 2, 2006 to April 1, 2009	5,116 people
Adults Survey: born on April 1, 2006 or before	177,660 people

* Covered areas: Municipalities that were designated as evacuation zones by 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) Methods

A. Survey sheets

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

The 2021 questionnaire reflects 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, and 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 from January 28, 2022.

C. Method of answering

Responses were returned either by post or online.

(Online responses were accepted from the day when the survey sheets were delivered to April 30, 2022.)

(3) Data tabulation period

Responses received from the start of the FY2021 through October 31, 2022 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 in tabulation results are rounded, and therefore may not add up to exactly 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, excluding questions about ‘COVID-19 Influences on daily lives’, and this year’s results are indicated in their respective graphs and figures. For the past 10 years of results, please refer to Mental Health and Lifestyle Survey documentation (ML-1) of the “45th Fukushima Prefectural Oversight Committee Meeting.”

(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 FY2021 are as indicated in Table 1 and Figure 1.

The percentages of online responses in FY2021 were 35.0% for those aged 0 to 3, 35.8% for those aged 4 to 6, 31.2% for elementary school students, and 29.5% for junior high school students; these were the highest numbers ever.

Table 1. FY2021 Number of total responses and valid responses (response rates)

Age group	Respondents	Response Rate	Valid responses	Response Rate
0-3	446	(17.8)	446	(17.8)
4-6	482	(15.0)	481	(15.0)
Elementary school students	1,304	(16.1)	1,300	(16.1)
Junior high school students	760	(14.9)	760	(14.9)
Total	2,992	(15.8)	2,987	(15.8)

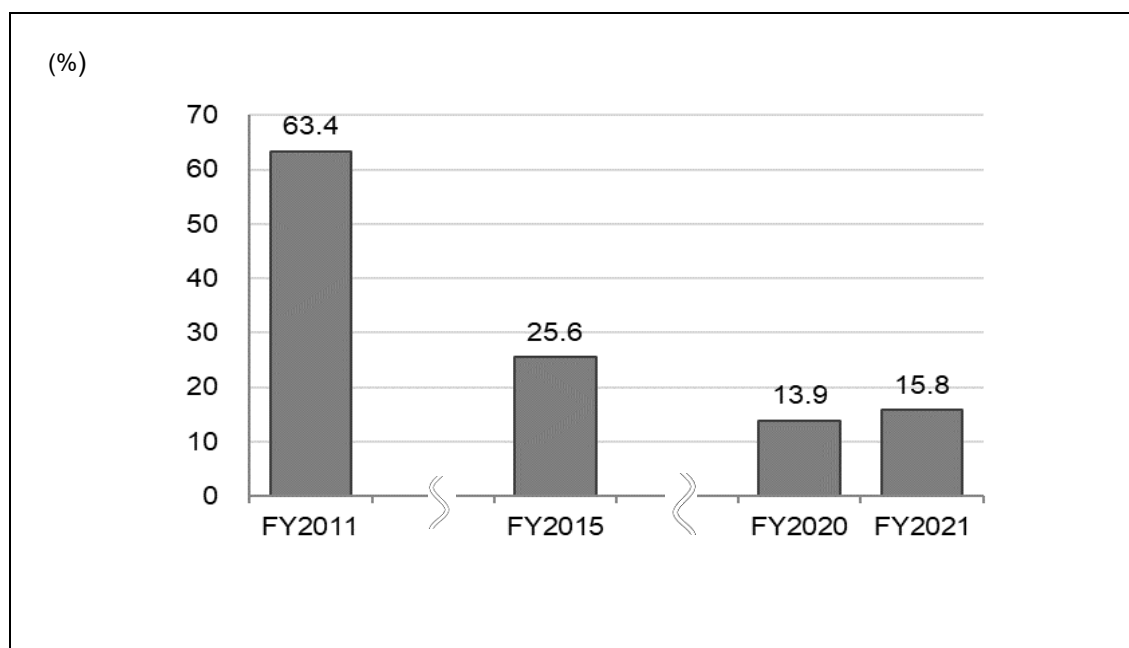


Figure 1. Changes in response rates for the children’s surveys

B. Frequency of daily exercise

In the FY2021 survey, “Rarely” was the response of 3.9% in ages 2-3, 5.4% in ages 4-6, 36.5% of elementary school students, and 32.6% of junior high school students (see Figure 2 – 5).

According to a national survey on school children conducted in FY2021*¹, the proportions of those who exercise for less than 60 minutes per week (excluding PE classes at school) were 8.8% of elementary school boys and 14.4% of elementary school girls, 7.8% of junior high school boys and 18.1% of junior high school girls. Although these results are not directly comparable to the results of our survey, they are worthy of attention and action.

*1 Sports Agency “FY2021 National Survey on Physical Fitness, Athletic Performance and Exercise Habits” Chapter 1. Summary of the Survey Results,
https://www.mext.go.jp/sports/content/20211216-spt_sseisaku02-000019583_1.pdf

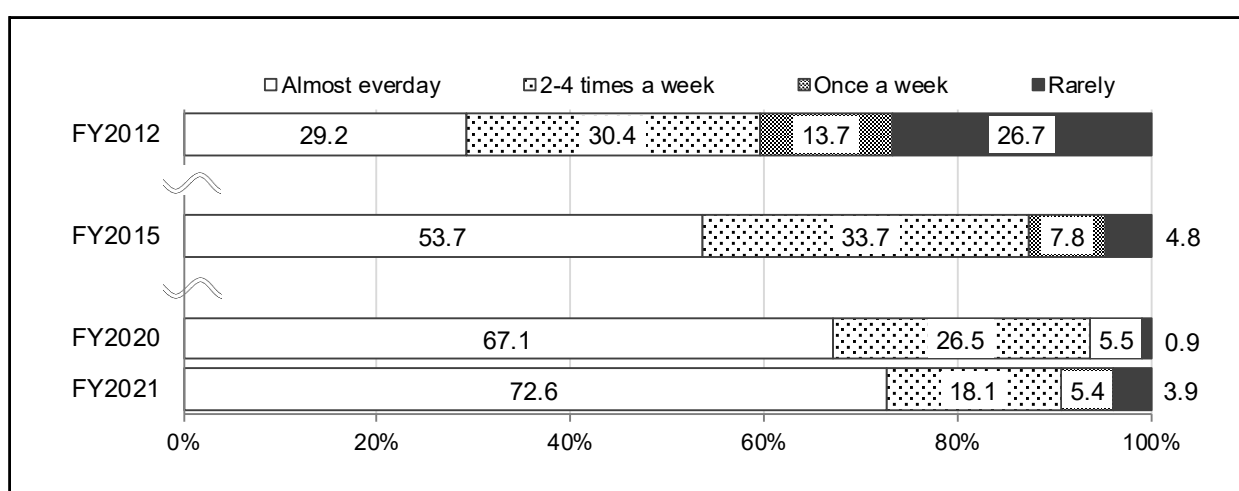


Figure 2. Changes in frequency of exercise: ages 2–3

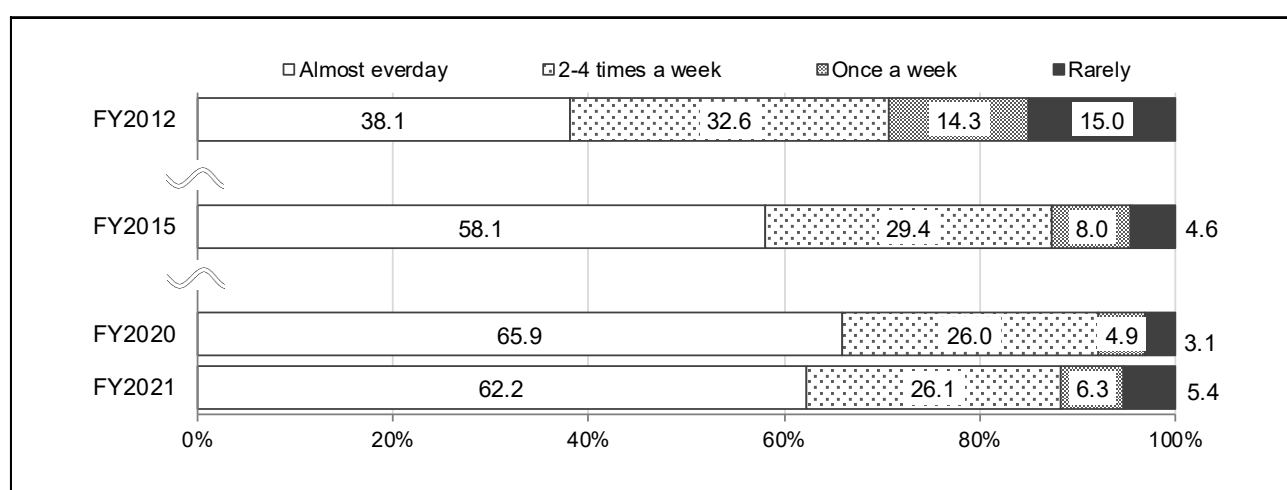


Figure .3. Changes in frequency of exercise: ages 4–6

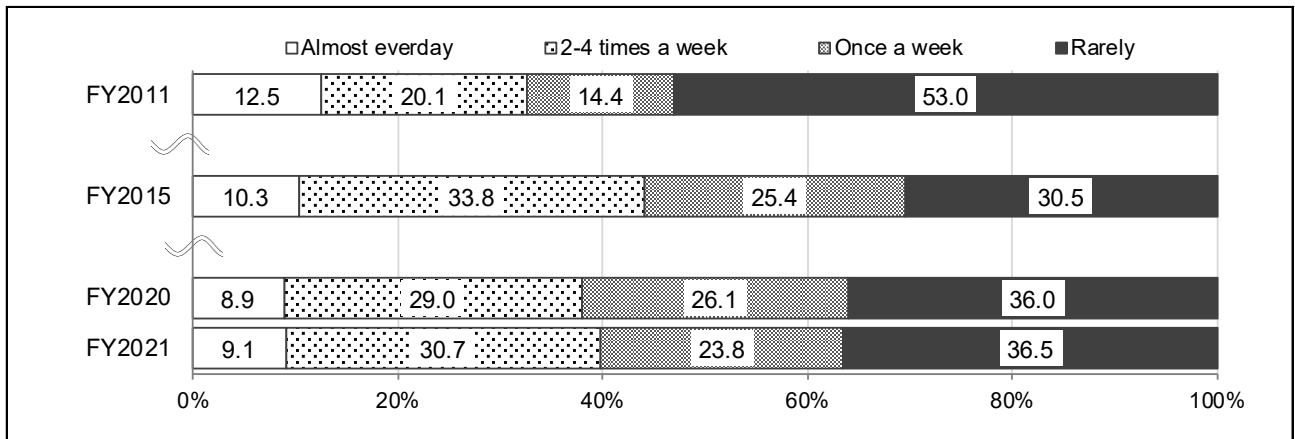


Figure. 4 Changes in frequency of exercise: elementary school students

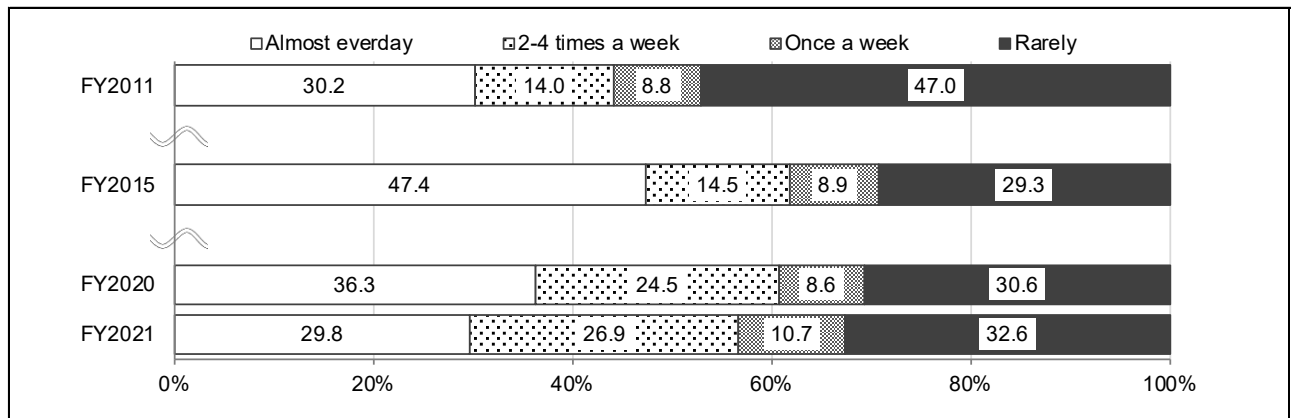


Figure. 5 Changes in frequency of exercise: junior high school students

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 FY2021, the proportion of children with high-risk scores (SDQ score of 16 or higher) showing certain problematic behavior was 6.9% for children aged 4 to 6, 8.0% for elementary school children, 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 Fukushima children with high-risk scores was higher for all age groups in FY2011, especially among children aged 4 to 6 (24.4%). The percentage declined thereafter for all age groups, with some leveling from FY2019 through FY2021, where percentages stayed about the same as prior studies (Figure 6). A comparison of boys and girls showed that high-risk scores were generally higher among boys than girls, and this is consistent with prior results (Figure 7–9). By residential location at the time of the survey (both in and outside Fukushima prefecture), the proportion of those with high-risk scores were higher among those living in Fukushima among children under elementary school age, and higher among junior high school students those living outside the prefecture (Figure 10).

[About SDQ]

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

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

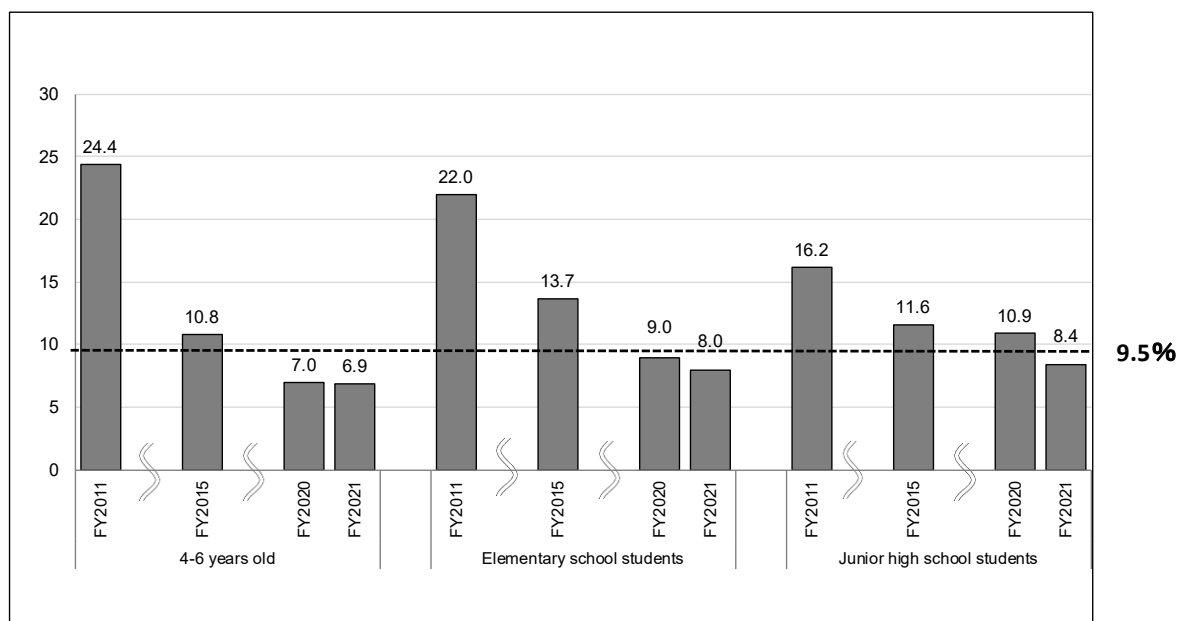


Figure 6. Changes in the proportion of those scoring 16 points or higher in SDQ: all age groups

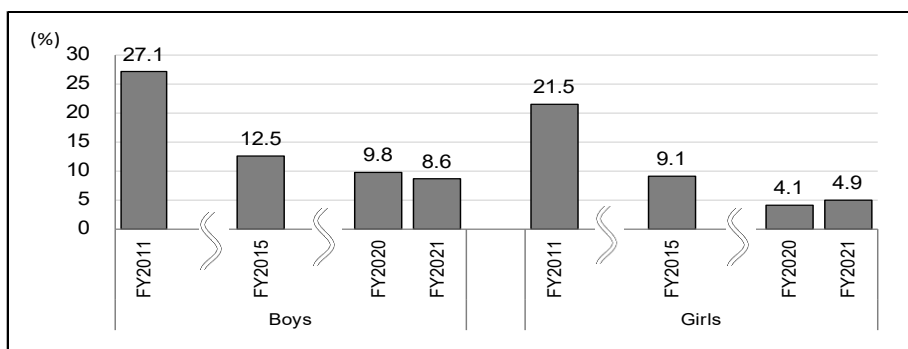


Figure 7. Changes in the proportion of those scoring 16 points or higher in SDQ: ages 4–6

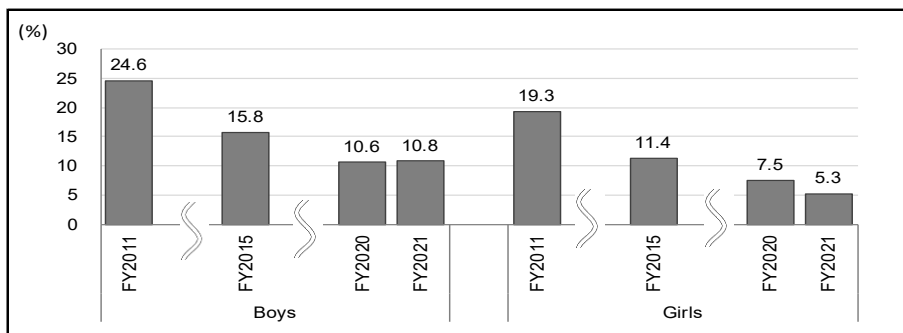


Figure 8. Changes in the proportion of those scoring 16 points or higher in SDQ: elementary school students

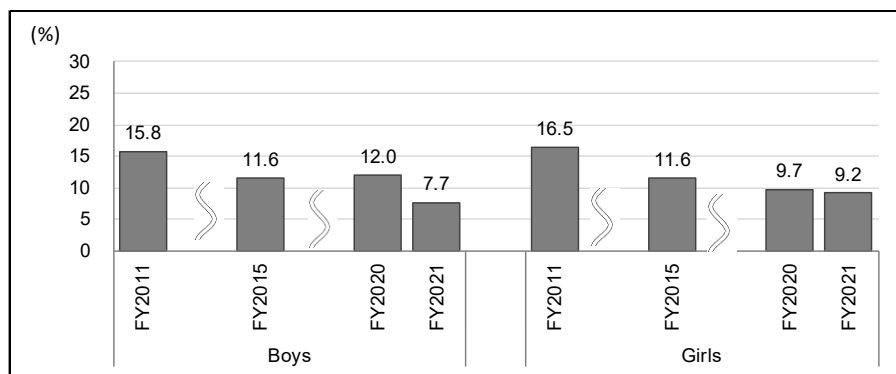


Figure 9. Changes in the proportion of those scoring 16 points or higher in SDQ: junior high school students

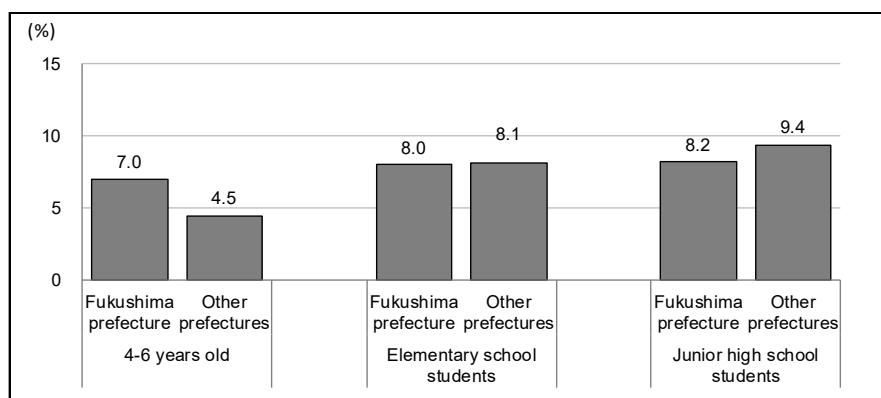


Figure 10. Changes in proportion of those scoring 16 points or higher in SDQ, by the location of residence at the time of the survey.

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

In the FY2021 survey, those who responded that that COVID-19 exerted influence on their daily life "To some extent" or "Significantly" accounted for 57.5% of those aged 0 to 3, 64.3% of those aged 4 to 6, 67.1% of elementary school students, 60.1% of junior high school students themselves and 63.3% of the guardians of junior high school students (*). Generally, the percentage of children affected was higher than the previous year (Figure 11).

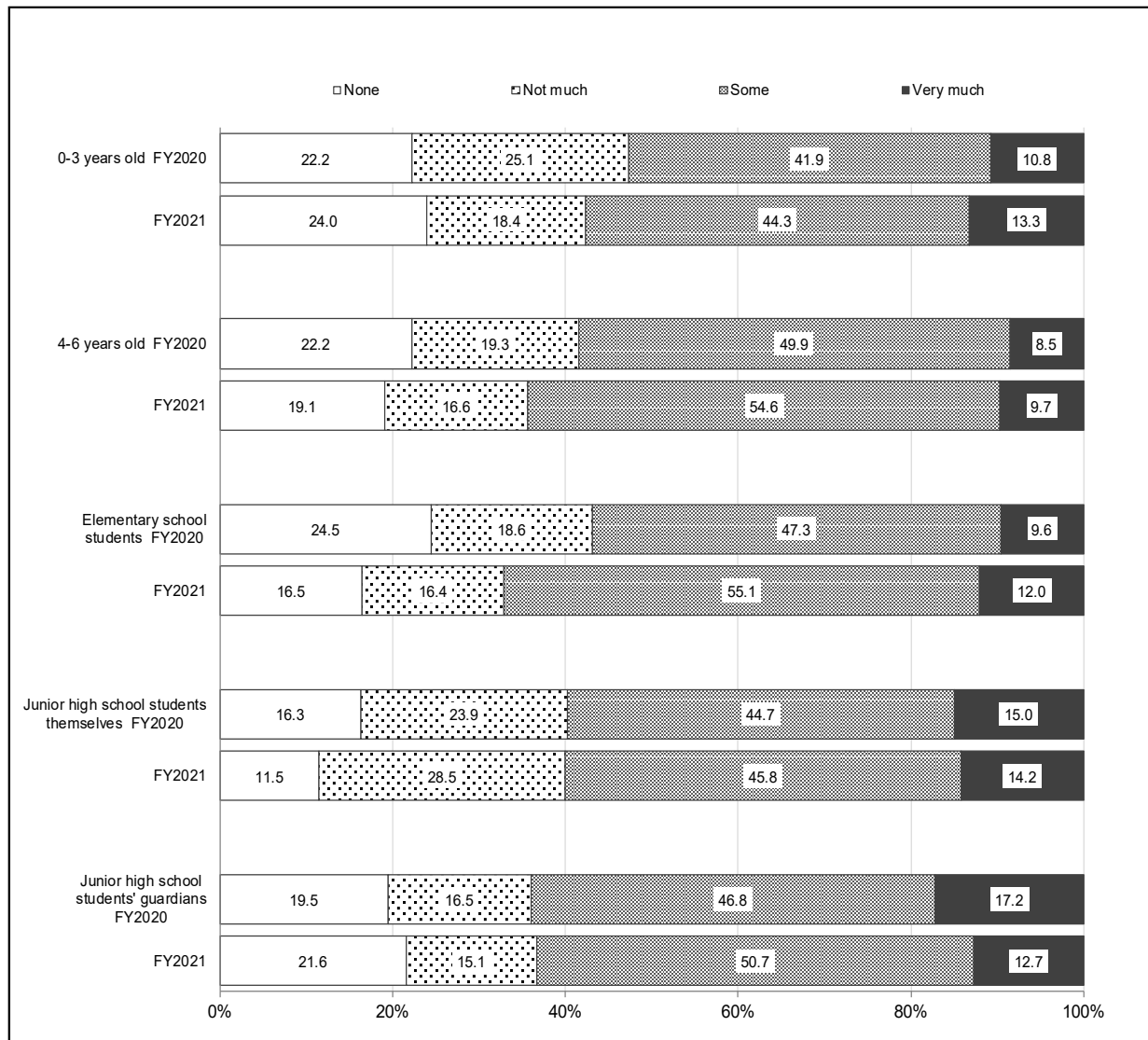


Figure 11. Influence on daily life by COVID-19 epidemic

*From the standpoint of parents/guardians

(2) Results of the Adults' Survey (aged 16 or older)

A. Number of respondents (response rate)

In the FY2021 survey, the number of adult (aged 16 or older) respondents (response rate) was 37,891 people (21.3%), and the number of those who made valid responses (valid response rate) was 37,762 people (21.3%) (Figure 12). By age group, the number of respondents (response rate) was 5,182 people (10.5%) for those aged 16 to 39, 10,848 people (17.4%) for those aged 40 to 64, and 21,861 people (33.3%) for those aged 65 or older (Figure 13). An online response system was introduced in FY2016, and the percentage of online responses was the highest ever in FY2021, at 16.1%.

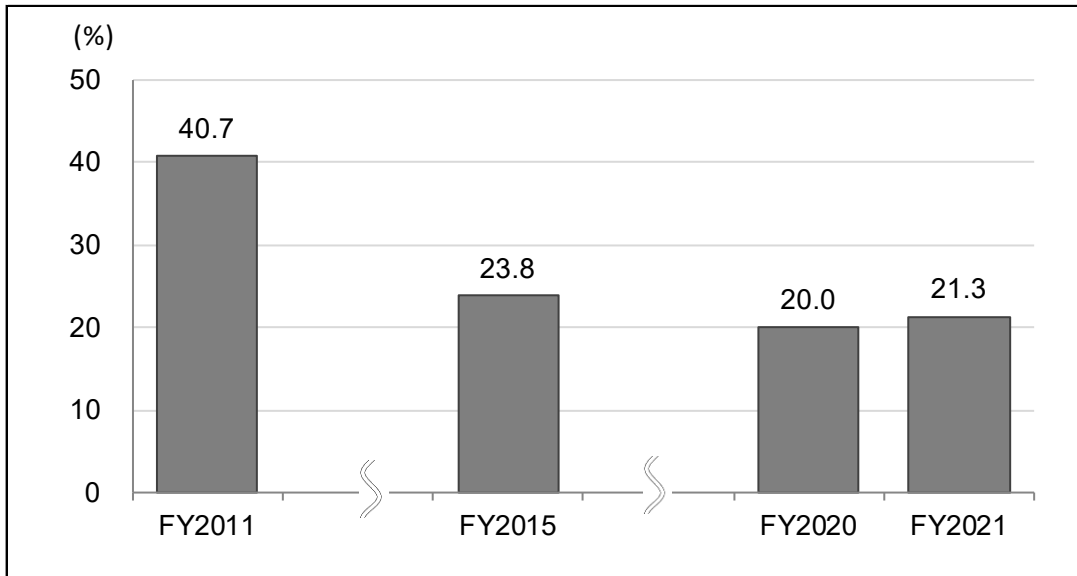


Figure 12. Changes in the response rates in the Adults Survey

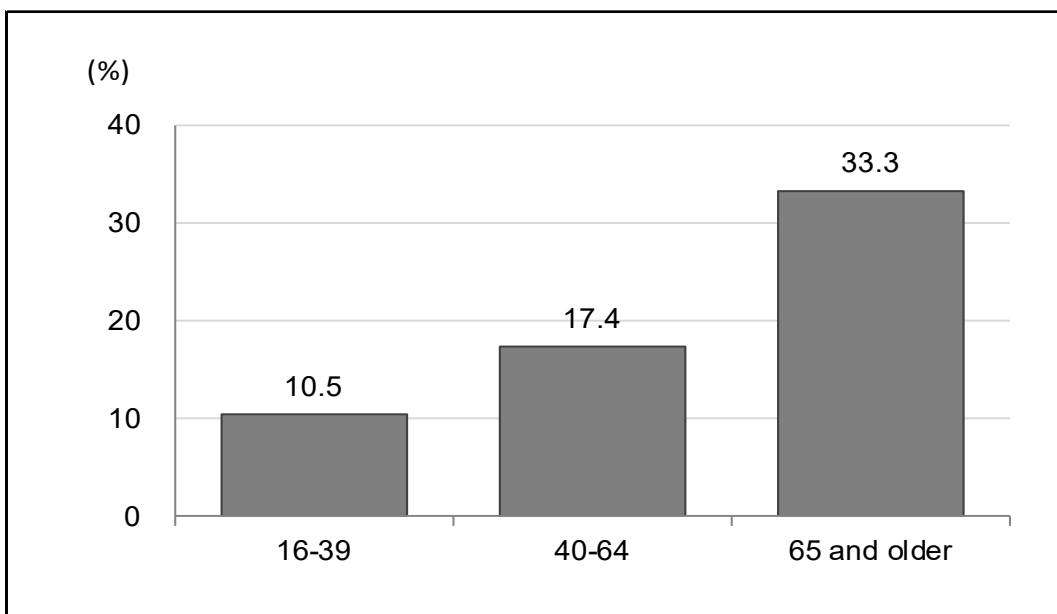


Figure 13. Response rates in the FY2021 Adults Survey, by age group

B. Subjective health condition

Regarding self-reported health conditions in FY2021, "Very good" or "Good" answers reached 29.9%, continuing a gradually increasing trend (Figure 14). When looked at by age group, the proportion of those who answered "Very good" or "Good" was higher in younger generations: 22.8% in age 65 or older, and 52.7% in age 39 or younger (Figure 15).

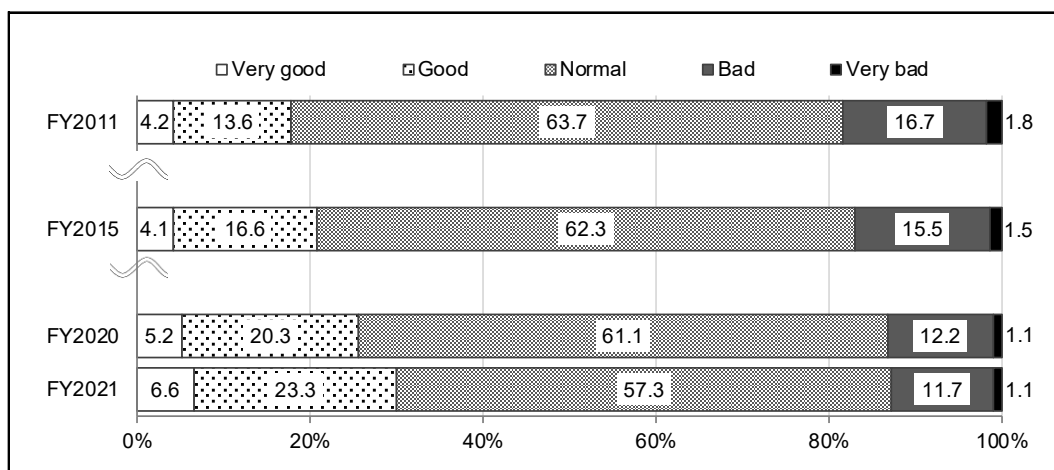


Figure 14. Changes in subjective health condition

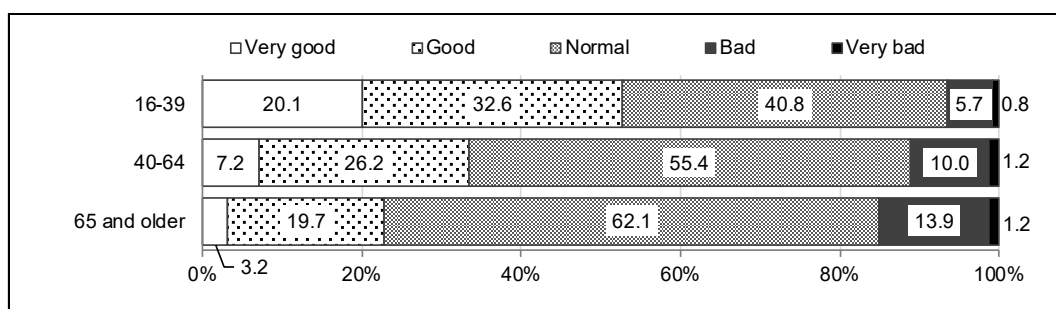


Figure 15. Subjective health condition by age group in the FY2021 Adults Survey

C. Sufficiency of sleep

38.6% of the respondents answered "Sufficient" in the FY2021 survey. Conversely, the proportion of those who answered "Very insufficient" or "Greatly insufficient or couldn't get any sleep" was 13.9% (Figure 16).

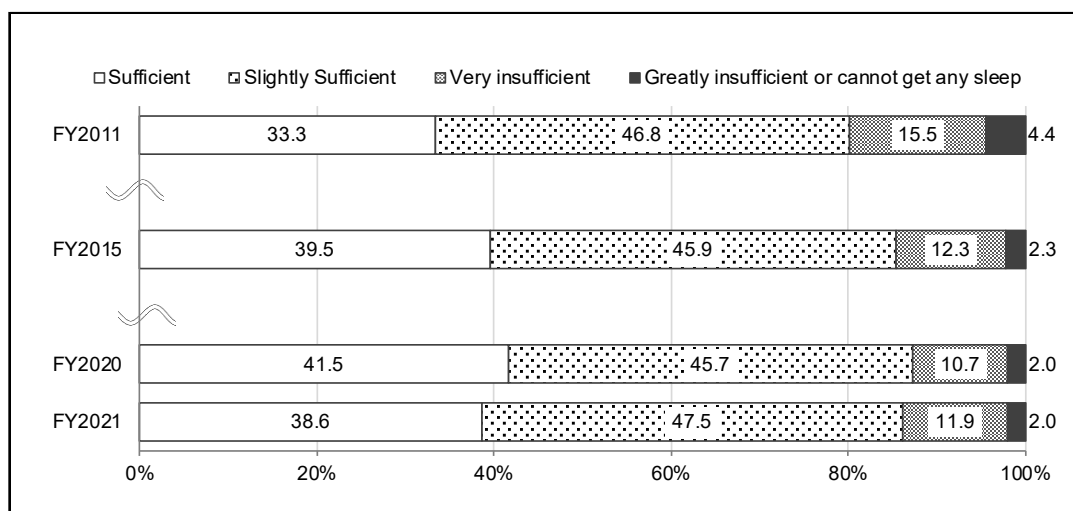


Figure 16. Changes in the degree of sleep sufficiency in adults

D. Frequency of exercise

The exercise frequency of “Almost everyday” and “2-4 times a week” improved gradually, reaching 41.1% in FY2021 survey (Figure 17). A national survey (*3) showed 40.6% for those who exercise more than 2 days a week, although not be directly comparable with our survey because of differences in participants’ age and other attributes, indicates that exercise habits of Fukushima residents 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 exercise more frequently than those living outside the prefecture (Figure 18).

*3 FY2019 National Health and Nutrition Survey, Ministry of Health, Labour and Welfare

<https://www.mhlw.go.jp/content/000711007.pdf>

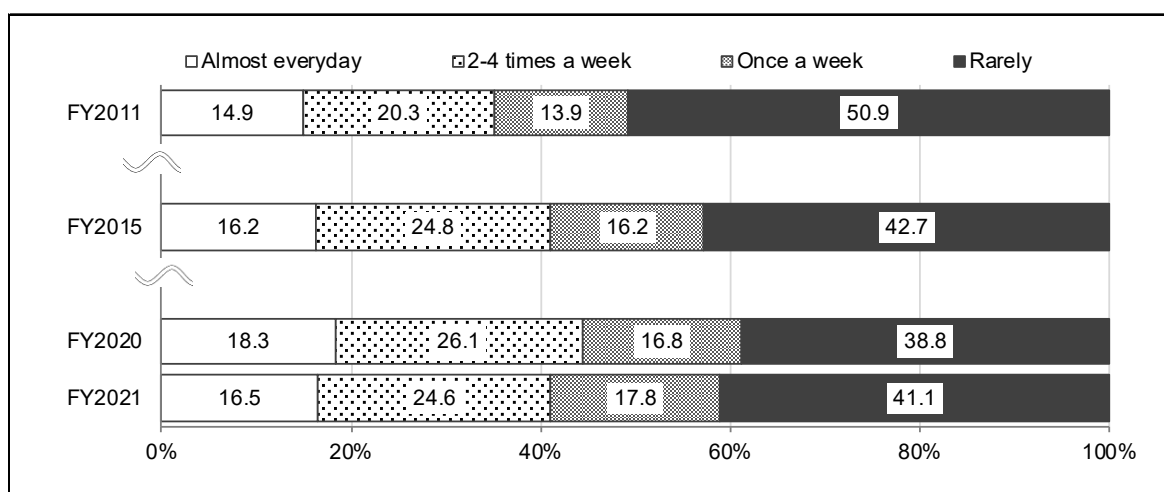


Figure 17. Changes in the frequency of exercise in adults

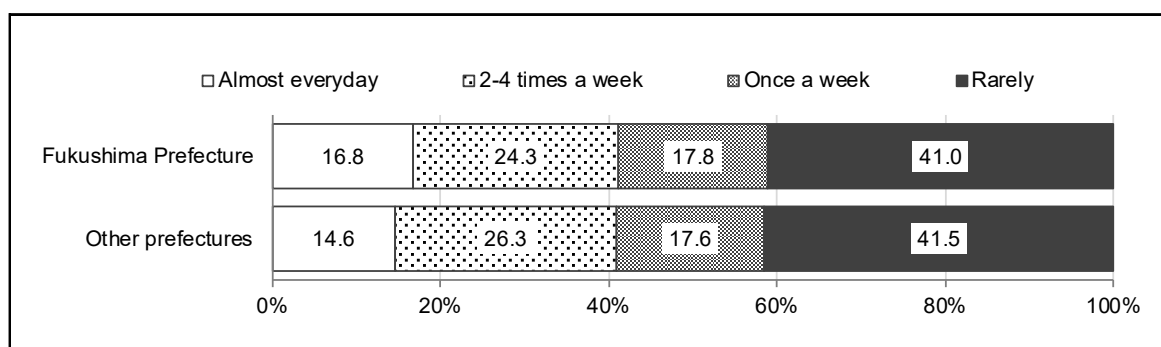


Figure 18. Frequency of exercise by location of residence at the time of the survey (in Fukushima or other prefectures) in the FY2021 Adults Survey

E. Prevalence of smoking

In FY2021 survey, the proportion of smokers was 23.1% in males and 6.8% in females, and overall ratio was 14.5%. It had been showing a downward trend, but the proportion in FY2021 was higher than the previous year. It is still high compared with the “Healthy Japan 21 (Phase 2)” goal of 12%, so further efforts are warranted.

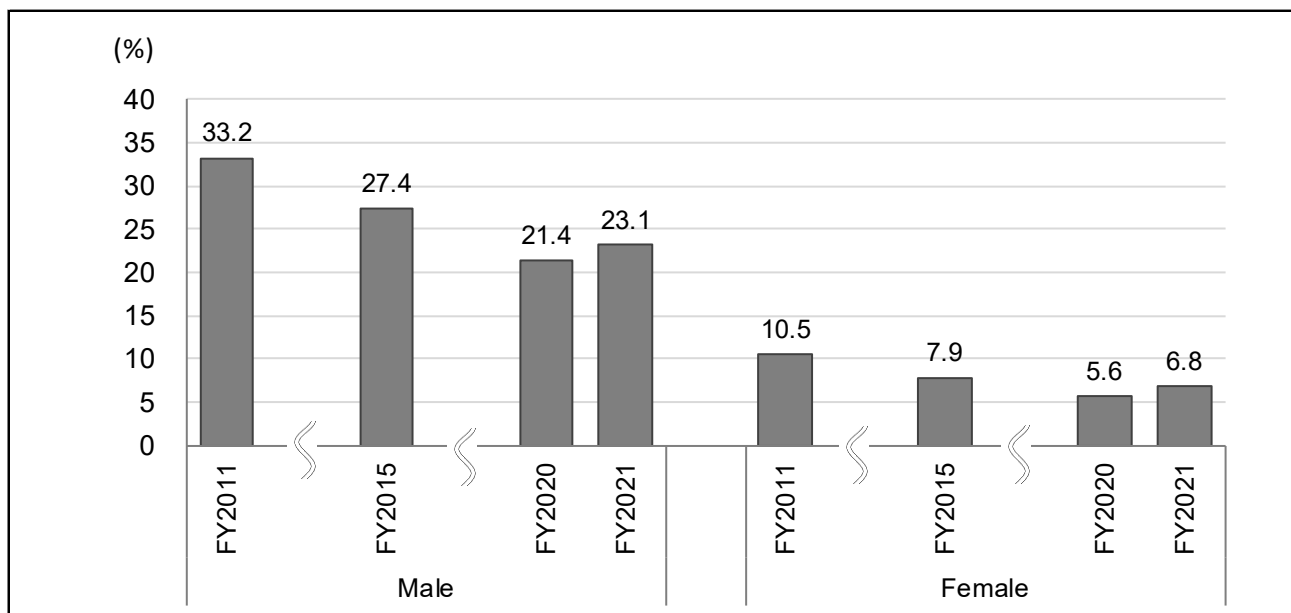


Figure 19. Changes in prevalence of smoking, by gender

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

Problematic drinking behaviors were examined using the CAGE questionnaire (with a cutoff value of 2 points based on previous studies). In the FY2021 survey, the proportion of those with high-risk scores (CAGE score of 2 points or higher) was 14.5% in males and 6.6% in females, part of a downward trend for both (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.

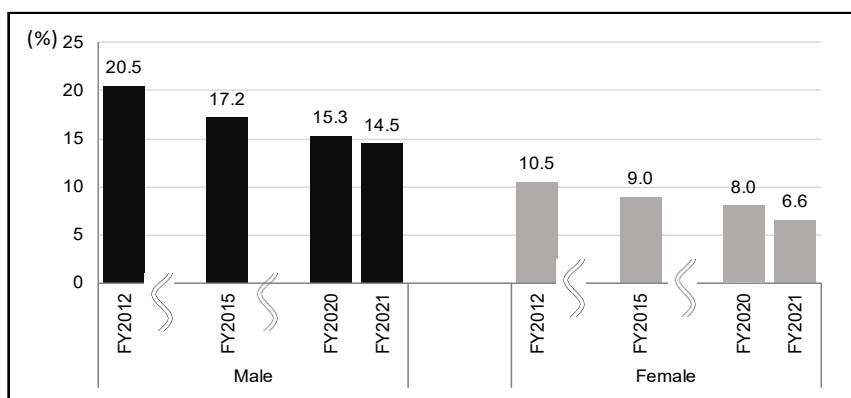


Figure 20. Changes in proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE), by gender

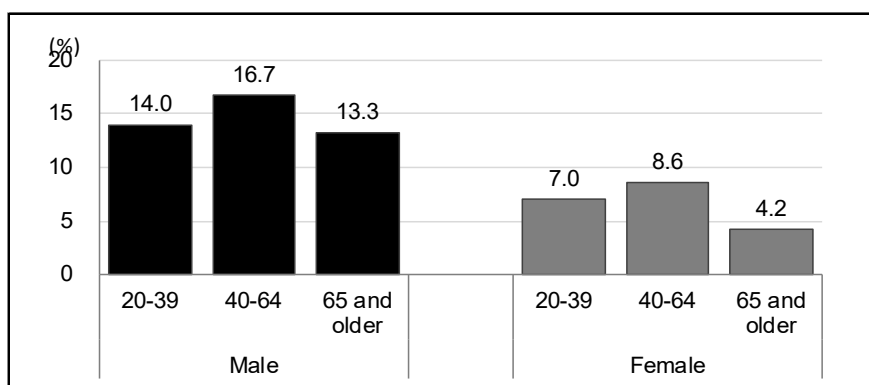


Figure 21. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2021 Survey, by age group and by gender

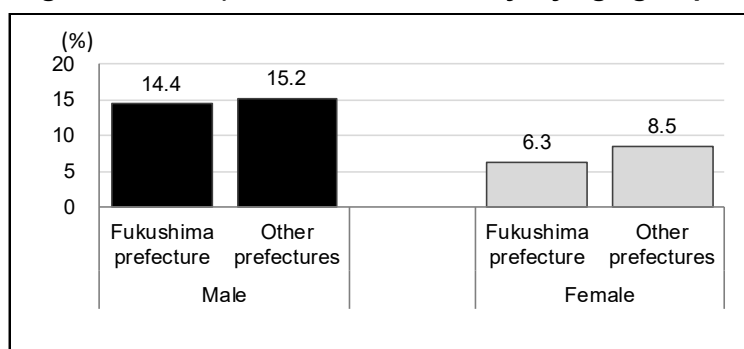


Figure 22. Proportion of those disclosing evidence of problematic drinking (2 points or higher in CAGE) in the FY2021 Survey, by residential location and by gender

G. Proportion of those judged to be needed 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 FY2021 survey, the proportion of those with high-risk scores (K6 score of 13 points or higher) for mood disorder or anxiety disorder was 6.1% overall (Figure 23). In FY2011, the proportion of those with high-risk scores was quite high, at 14.6%, and declined substantially, but it has turned upward in FY2021. However, the percentage is still high in Fukushima compared to a result of 3% shown in a previous study covering members of the public who were not affected by the disaster. (*4) By gender, the percentage was higher in females (6.8%) than in males (5.3%) (Figure 24). The comparison by age group showed that the percentage was higher among young people than among older people (Figure 25). The comparison by residential location at the time of the survey (in or outside Fukushima prefecture) showed that 5.7% of those living in the prefecture, versus 8.3% 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. 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 FY2006 Health and Labor Science Research Grant (for research projects on advanced utilization of statistical information).

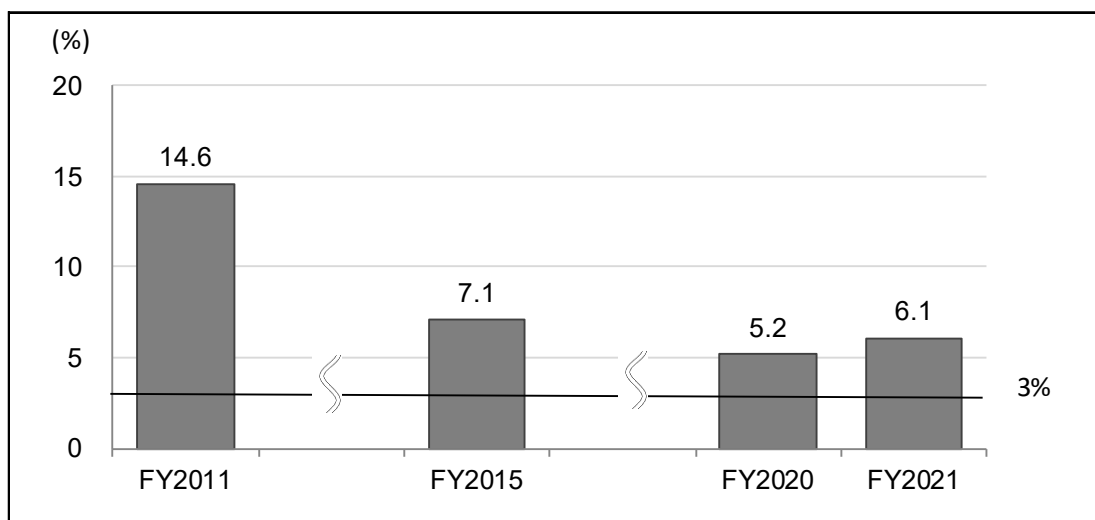


Figure 23. Changes in the proportion of those scoring 13 or higher on K6

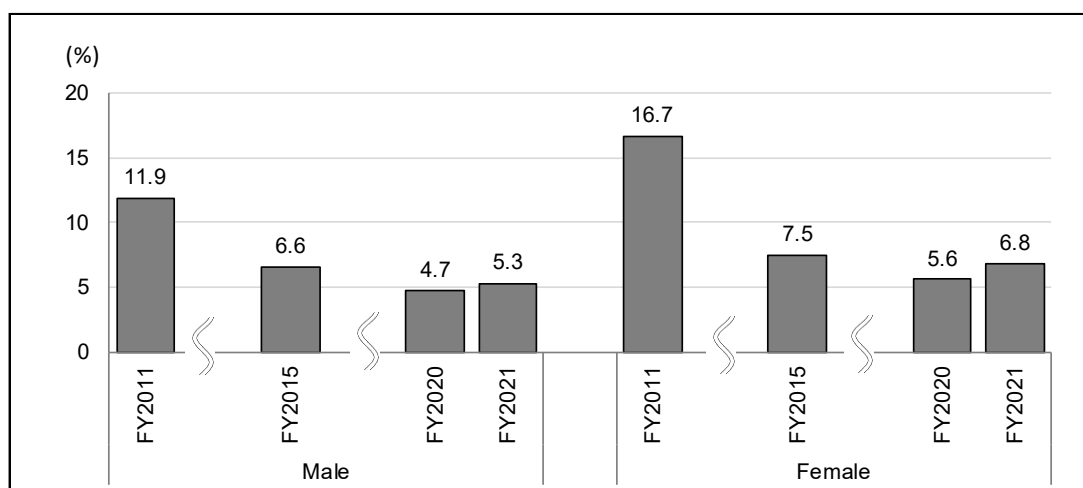


Figure 24. Changes in the proportion of those scoring 13 points or higher on K6, by gender

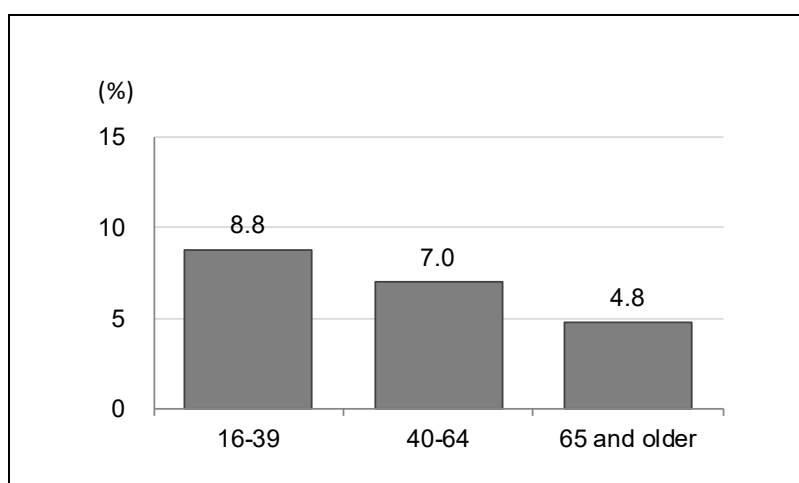


Figure 25. Proportion of those scoring 13 points or higher on K6 in the FY2021 Survey, by age group

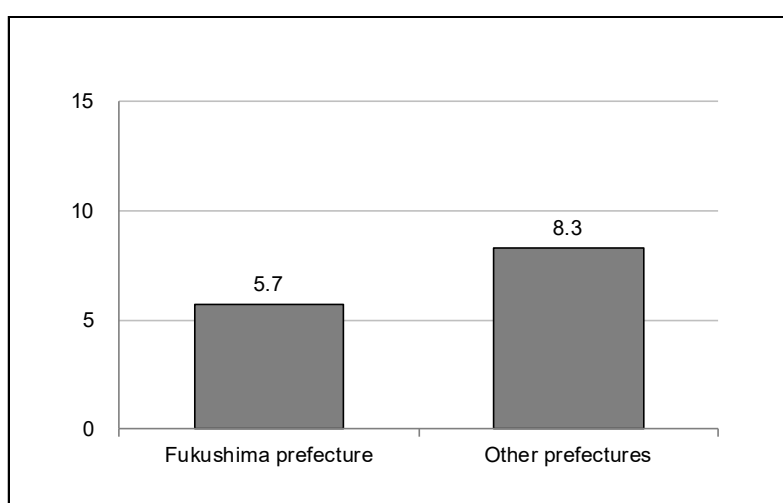


Figure 26. Proportion of those scoring 13 points or higher on K6 in the FY2021 Survey, by location of residence at the time of the survey

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

In the FY2021 survey, those who responded that COVID-19 exerted influence on their daily life "Significantly" or "To some extent" (the affected group) accounted for 41.6%, and there was no substantial change from FY2020 survey, when the first COVID-19 influence question was introduced (Figure 27). By gender, the affected group accounted for 40.7% among males and a slightly higher 42.4% among females (Figure 28). By age group, the affected group accounted for 38.0% among those aged 16 to 39, 42.8% among those aged 40 to 64, and 41.9% among those aged 65 or 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 at all affected or were scarcely 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, as in the FY2020 survey.

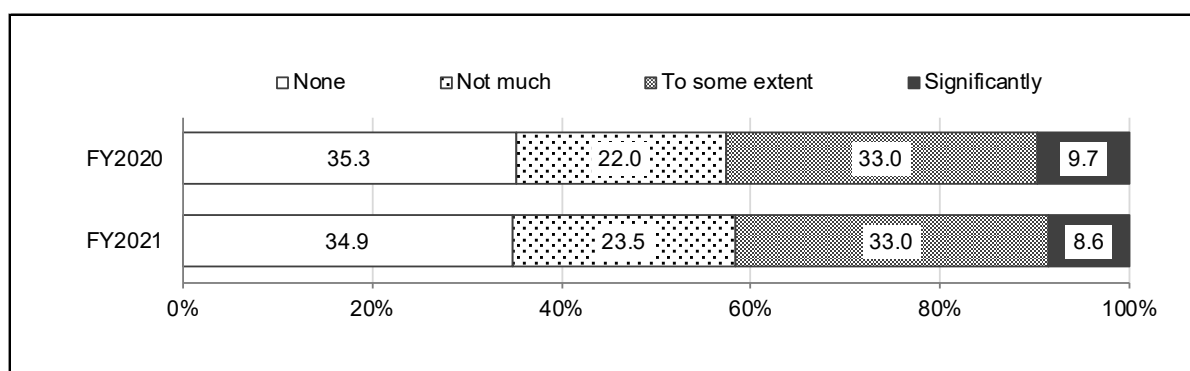


Figure 27. Influence on daily life due to the spread of COVID-19: Overall

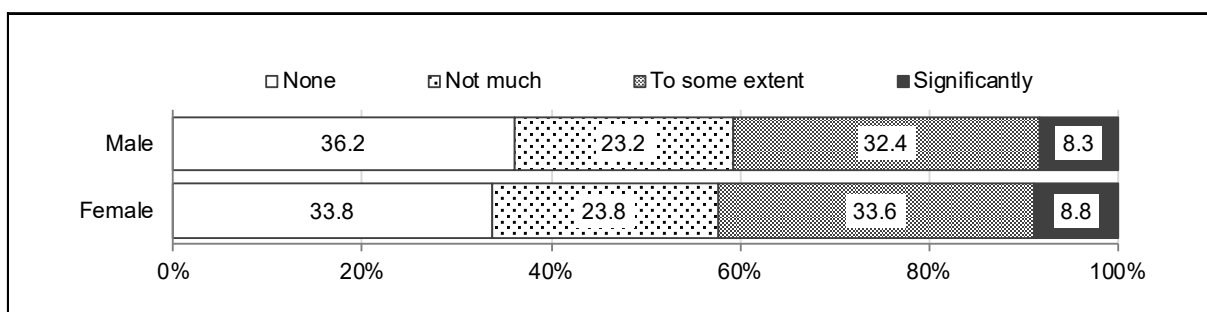


Figure 28. FY2021 Influence on daily life due to the spread of COVID-19: By gender

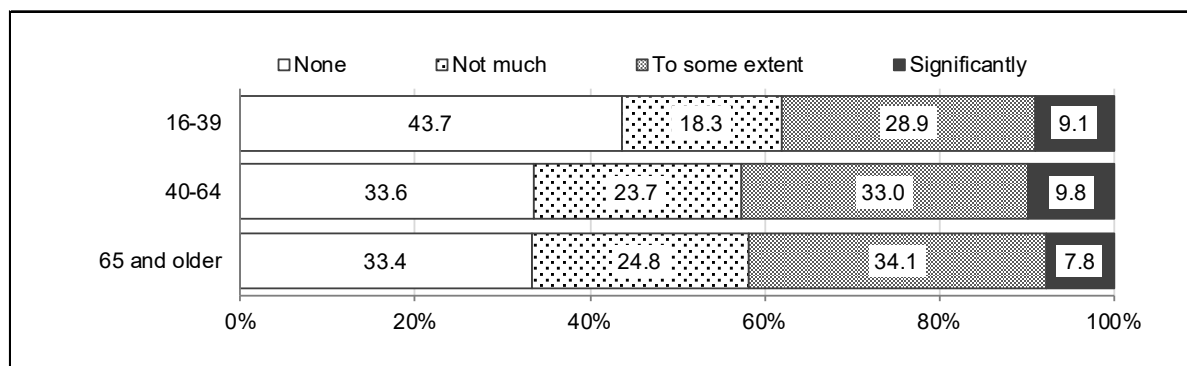


Figure 29. FY2021 Influence on daily life due to the spread of COVID-19: By age group

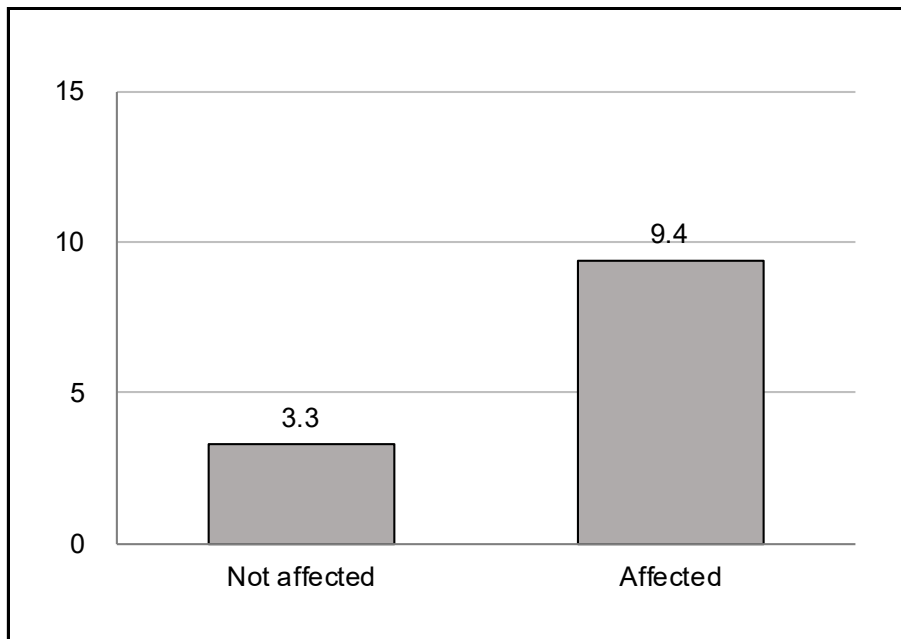


Figure 30. FY2021 Percentage of those scoring 13 points or higher on K6 by level of influence on daily life due to the spread of COVID-19

I. Risk perception of health effects of radiation

Regarding possible effects on the next generation, 24.3% responded that they think effects on the next generation are likely to occur (“Possibilities are high” and “Possibilities are very high” combined) in the FY2021 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 of prefecture (Figure 32).

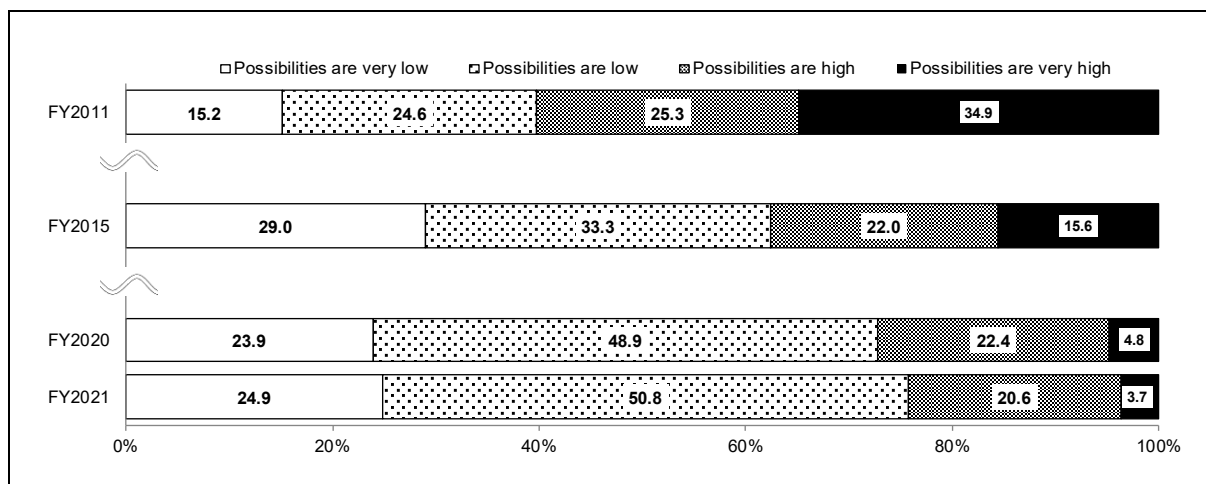


Figure 31. Changes in proportion of risk perception of radiation effects to the next generation (Risk perception)

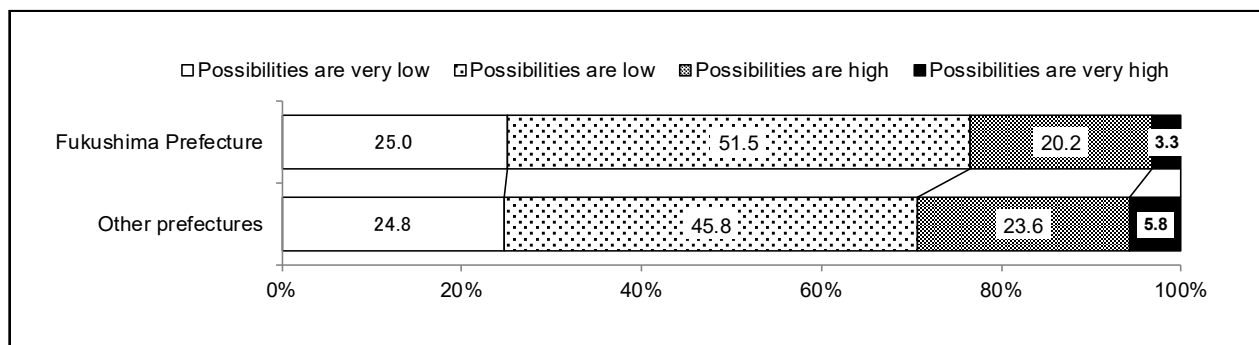


Figure 32. FY2021 Changes in proportion of risk perception of radiation effects on the next generation, by location of residence at the time of the survey (Risk perception)

J. Availability of consultation resources

The FY2021 survey asked, “Do you know anyone or any organization you can consult with when you have physical or mental problems?” A total of 6,947 participants (18.8%) answered “No” versus 10.6 % in the previous year.

(3) Conclusions

To reduce the burden on respondents, the survey was conducted with significantly fewer questionnaire items, and the response rate, which had been declining every year, rose slightly.

As for children (ages 15 and under), there was a slight improvement in exercise habits for those ages 2 to 3 years, but no improvement was seen for those ages 4 to 6 years and older, possibly due to the coronavirus pandemic. The proportion of children affected by the pandemic generally increased in terms of disruption to their daily lives. On the other hand, there has been a trend toward year-to-year improvement in children's emotional and behavioral (SDQ) status. One reason for the improvement may be that more than 10 years have passed since the earthquake, and the number of children who have not experienced the disaster has increased.

As for the general population (ages 16 and older), no improvement was seen in sleep status, exercise habits, smoking, or overall mental health (K6) this year, which had been improving year by year. Overall mental health worsened by about 1 point from the previous year, and in fact, residents whose lives were disturbed by the COVID-19 pandemic were significantly worse off than those whose lives were not disturbed, suggesting an important impact of pandemic. In addition, the same tendency for poor overall mental health among young people and those living outside the prefecture that had been observed previously was also observed in FY2021. The percentage of smokers increased slightly, possibly due to the inclusion of electronic cigarettes in the question about smoking from FY2021. As for where to consult, the number of respondents who answered, "There is no person or organization I can consult" increased compared to the previous year. The format of the question on where to consult had been changed to omit examples.

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 provided support to those who were judged to need counseling or support regarding their mental health or lifestyle habits, with the aim of ascertaining their circumstances, providing advice for improvements, and connecting them to health or medical facilities.

(1) Coverage of support

Out of those who responded to the FY2021 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, 2022, and to which we provided support by December 31, 2022.

(2) Individual result reports

Individual result reports were sent in July and September to those who responded by August 31, 2022, to help guide their understanding of mental health and lifestyle issues and better manage their own health.

Table 2. FY2021 Number of individual result reports sent out

Type of survey sheet	Number of notices sent	Contents
For children ages 0 - 3	446	Height, weight, dietary habits (children aged 1 or older), fitness habit(children aged 2 or older), and bedtime
For children ages 4 - 6	481	Height, weight, dietary habits, fitness habit, bedtime, and mental and behavioral stress reaction (SDQ score)*1
For elementary school students	1,302	
For junior high school students	757	
For adults	37,661	Body mass index (BMI)*2, dietary habits, fitness habit, sleep, and mental stress reaction (K6 score)*3

*1 Strength 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 result reports for children, standard height and weight by age in months as of the day of filling in the survey form were provided for reference.

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

A. Criteria to assess the need for support

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

Table 3. FY2021 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.	Consultation by expert
	Criteria II	3) SDQ: 16 or higher		The urgency level should be judged by an expert.

Table 4. FY2021 criteria to assess the need for support regarding personal issues for adults

		Mental health	Medical control	Sleep disorder	Mental disorder	Smoking and drinking	Free comment
Selection criteria	Criteria I	1) K6: 13 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, and not having taken health check 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 advised further examination at health/medical facilities when necessary (hereafter “telephone counseling”).

(ii) Support for those meeting Criteria II

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

(iii) Support for those meeting Criteria III

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

5. Summary of Results of Post-Survey Support

(1) Telephone counseling

A. Support for issues concerning children

(A) Number of support candidates and recipients

The numbers of support candidates and recipients based on Criteria I and II are shown in Figure 33, and Tables 5 and 6 show the number of support recipients by age group and gender

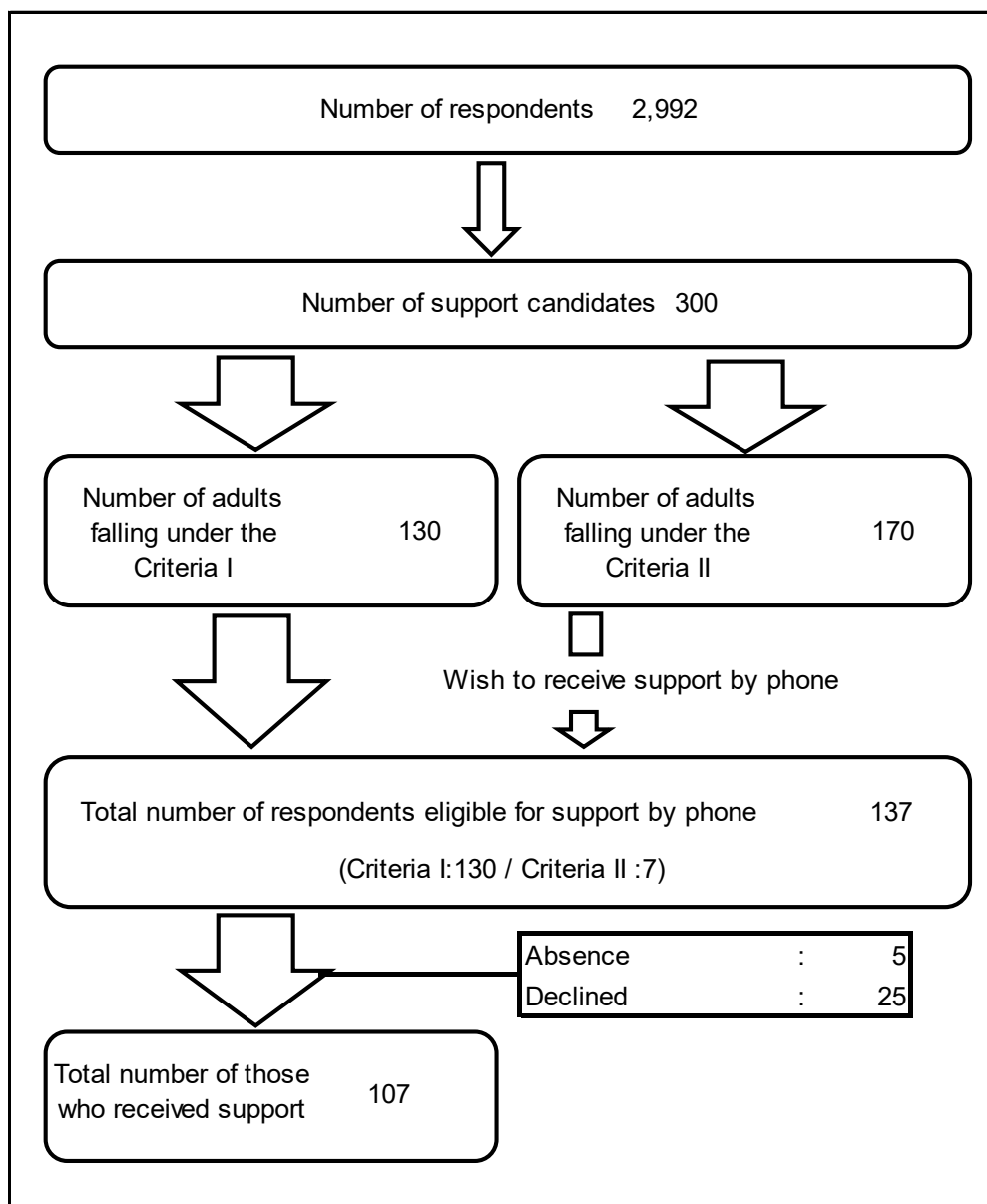


Figure 33. FY2021 Numbers of support candidates and recipients for issues regarding children

Table 5. FY2021 Support recipients by gender (children)

Classification	Boys	Girls	Total
Overall	54 (50.5%)	53 (49.5%)	107
Ages 0-3	8 (61.5%)	5 (38.5%)	13
Ages 4-6	3 (42.9%)	4 (57.1%)	7
Elementary school students	26 (52.0%)	24 (48.0%)	50
Junior high school students	17 (45.9%)	20 (54.1%)	37

Table 6. FY2021 Support recipients by place of residence (children)

Classification	Fukushima prefecture	Outside Fukushima	Total
Overall	91 (85.0%)	16 (15.0%)	107
Ages 0-3	12 (92.3%)	1 (7.7%)	13
Ages 4-6	7 (100.0%)	0 (0.0%)	7
Elementary school students	44 (88.0%)	6 (12.0%)	50
Junior high school students	28 (75.7%)	9 (24.3%)	37

(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 issues identified through telephone counseling for FY2012, FY2015, FY2020 and FY2021, akin to other tables and figures, and Table 8 shows the specific counselling contents for FY2021.

Table 7. Telephone counselling contents (children)

Persons / %

FY2012	FY2015	FY2020	FY2021
Anxiety caused by the disaster, radiation or exposure 147 (23.6%)	School life related issues 54 (21.6%)	School life related issues 25 (26.3%)	School life related issues 38人 (35.5%)
School life related issues 136人 (21.8%)	Physical health 15 (6.0%)	Daily life 18 (18.9%)	Behavioral issues (anger, Irritation, or violence) 15 (14.0%)
Physical health 102 (16.4%)	Sleep 9 (3.6%)	Behavioral issues (anger, Irritation, or violence) 12 (12.6%)	Daily life 14 (13.1%)
Behavioral issues (anger, Irritation, or violence) 90 (14.4%)	Behavioral issues (anger, Irritation, or violence) 8 (3.2%)	Sleep 9 (9.5%)	Anxiety over the future 9 (8.4%)
Depression 83 (13.3%)	Dietary habit 4 (1.6%)	Physical health Dietary habit 6 each (6.3%)	Sleep 8 (7.5%)

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

Table 8. FY2021 Details of telephone counselling (children)

School life related issue	(Ages 4-6) Hard to concentrate and not be able to do what other preschoolers are doing. (Elementary school students) Have difficulty to respond truancy. (Junior high school students) Complain of headache or abdominal pain in the morning and miss many days of school.
Behavioral issues (anger, Irritation, or violence)	(Ages 0-3) Get frustrated, making strange noises or banging their own heads against the wall. (Elementary school students) Beating or lashing out at family members. (Junior high school students) Use abusive language with family and friends.
Daily life	(Ages 0-3) Want to make finger sucking stopped. (Ages 4-6, Elementary school students , Junior high school students) Game addiction. (Junior high school students) Unable to leave the house unless accompanied by family members with anthropophobia.
Anxiety over the future	(Ages 4-6) Have worries for slow language development. (Elementary school students) Worries about the future of a child with a developmental disability. (Junior high school students) Worries about continuing education because the child does not study at all.
Sleep	(Elementary school students) Truancy problems and day and night is reversed. (Junior high school students) Waking up in the middle of the night or early in the morning.
Others	(Ages 4-6) Childcare burden became heavier because of the limitation at preschools by COVID-19 pandemic. (Junior high school students) Depressed because of the school trip was cancelled due to COVID-19 pandemic.

The telephone counselling included listening, medical consultation recommendations, lifestyle guidance, and psychoeducation. Table 9 shows the situation at the time of initial telephone counselling. Because of telephone counselling, 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).

In FY2021, there were no cases that required information sharing with outside agencies or institutions.

Table 9. FY2021 Status of the initial telephone counselling

Persons (%)

Classification	Continuous support needed	One time support	Details unknown	Support declined	Total
Overall	12 (11.2%)	89 (83.2%)	4 (3.7%)	2 (1.9%)	107
Ages 0-3	0 (0.0%)	12 (92.3%)	1 (7.7%)	0 (0.0%)	13
Ages 4-6	1 (14.3%)	6 (85.7%)	0 (0.0%)	0 (0.0%)	7
Elementary school students	7 (14.0%)	40 (80.0%)	1 (2.0%)	2 (4.0%)	50
Junior high school students	4 (10.8%)	31 (83.8%)	2 (5.4%)	0 (0.0%)	37

- 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 consultation with specialists at healthcare/medical facilities and providing their information to other support organizations.

- One time support:

Those judged as being able to take care of themselves as some improvements were seen in their physical conditions or living environment or they were already in contact with support resources.

- Details unknown:

No details were obtained (for various reasons).

- Support declined:

Those who were counselled turned down offers of support.

B. Support for adults

(A) Number of support candidates and recipients

Figure 34 shows the numbers of support candidates and recipients based on Criteria I and II and support recipients.

Table 10 shows the distribution of support recipients by gender and by age group. 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. Table 13 shows support recipients in all responses by location of residence (in or outside the prefecture) at the time of the survey.

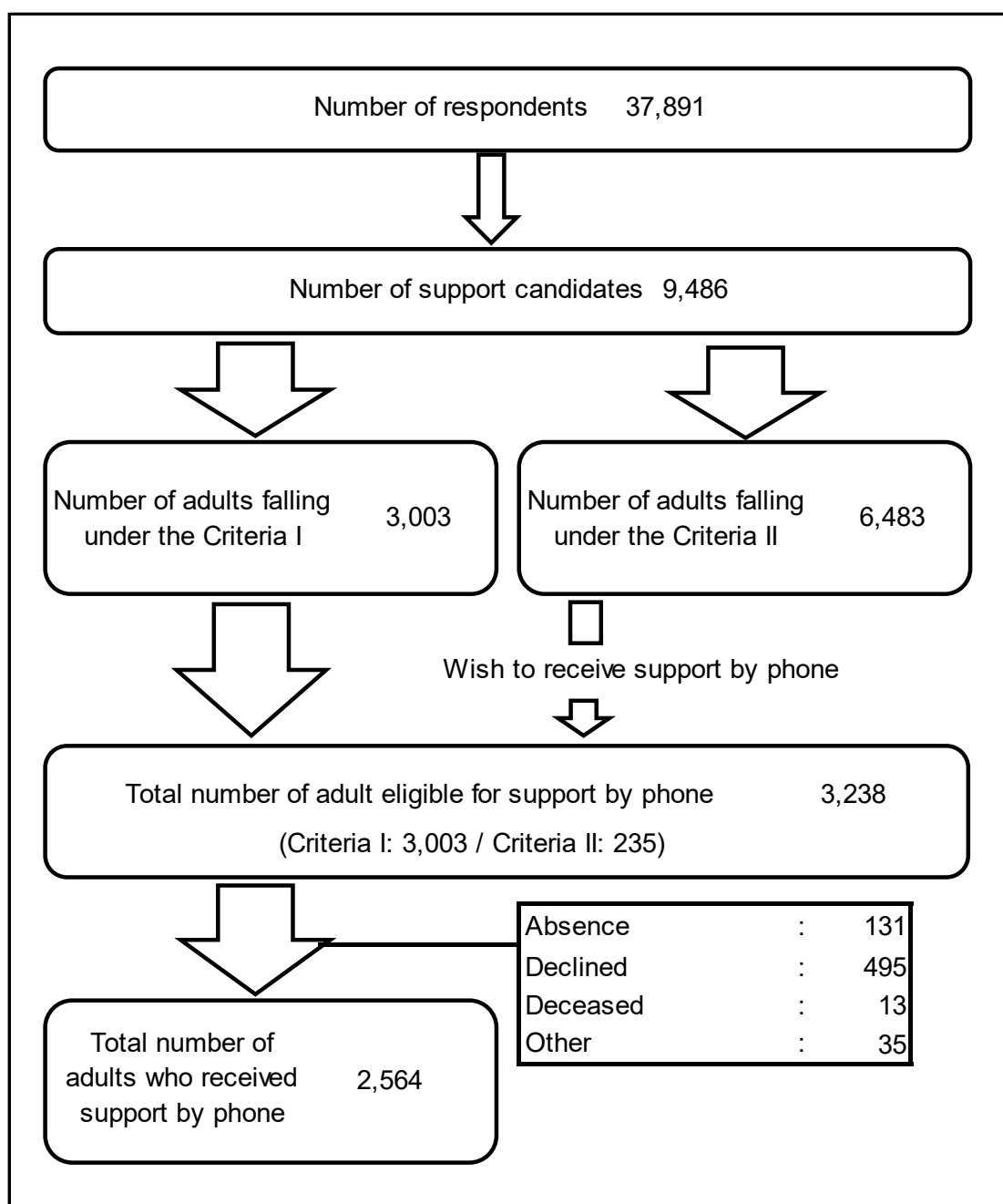


Figure 34. FY2021 Number of support candidates and recipients for personal issues of adults

Table 10. FY2021 Telephone support recipients by gender (adult)

Classification	Under 40	40 - 64	65 and older	Total
Overall	341 (13.3%)	783 (30.5%)	1,440 (56.2%)	2,564
Mental Health Survey				
Male	117 (13.6%)	262 (30.4%)	483 (56.0%)	862
Female	181 (15.4%)	330 (28.1%)	662 (56.4%)	1,173
Life Style Survey				
Male	25 (7.7%)	130 (39.9%)	171 (52.5%)	326
Female	18 (8.9%)	61 (30.0%)	124 (61.1%)	203

Table 11. FY2021 Telephone support recipients by age group (adult)

Number of respondents	Under 40	40-64	65 and older	Total
	5,182	10,848	21,861	37,891
Those who received the support	341	783	1,440	2,564
(Rate)	(6.6%)	(7.2%)	(6.6%)	(6.8%)

Table 12. FY2021 Support recipients by the place of residence at the time of the survey (adult)

Classification	Fukushima Prefecture	Outside Fukushima	Total
Overall	2,116 (82.5%)	448 (17.5%)	2,564
Mental Health Survey	1,666 (81.9%)	369 (18.1%)	2,035
Life Style Survey	450 (85.1%)	79 (14.9%)	529

Table 13. FY2021 Support recipients by the place of residence at the time of the survey in total response (adult)

Number of respondents	Fukushima Prefecture	Outside Fukushima	Total
	32,817	5,074	37,891
Those who received the support	2,116	448	2,564
(Rate)	(6.4%)	(8.8%)	(6.8%)

(B) Results of Support

The Mental Health Support Team made phone calls and asked about current issues, based on survey responses. Table 14 shows the contents of telephone counseling for FY2012, FY2015, FY2020 and FY2021. Table 15 indicates details of the contents in FY2021.

Table14. Contents of the telephone support (adult)

FY2012	FY2015	FY2020	FY2021
Physical health 2,761 (46.1%)	Physical health 1,145 (44.6%)	Physical health 866 (44.0%)	Physical health 1,233 (48.1%)
Sleep 2,349 (39.2%)	Sleep 798 (31.1%)	Sleep 583 (29.6%)	Sleep 680 (26.5%)
Depression 1,417 (23.7%)	Depression 342 (13.3%)	Depression 296 (15.0%)	Depression 451 (17.6%)
Family relationships 1,058 (17.7%)	Dietary habits 236 (9.2%)	Dietary habits 249 (12.7%)	Exercise habit 333 (13.0%)
Living environment 1,049 (17.5%)	Anxiety over the future 235 (9.2%)	Exercise habits 245 (12.4%)	Dietary habits 272 (10.6%)

* FY2011 is not included because the tabulation method was different from that for other years; therefore, the table indicated from FY2012

Table15. FY2021 Detailed contents of the telephone support (adult)

Physical health	Have chronic stomach pain Have been feeling dizzy and anxious since the earthquake, and seeing psychosomatic and otorhinolaryngology doctors Under the medical treatment for high blood pressure and diabetes.
Sleep	Unable to sleep without sleeping pills Taking sleeping pills but awake early in the morning Have difficulty getting into sleep with work related anxieties
Depression	Visited psychosomatic clinic because of poor physical health, and was diagnosed with depression Been depressing by lack of interaction with son's family who are out of Fukushima prefecture Mood swings Interference with life, like many other people
Exercise habit	Too hot to go for a walk Used to go for a walk before COVID-19 epidemic, but not anymore Have not been excising since stated to work
Dietary habit	Have no appetite at all Side effects of medications made increased appetite and had weight gain Hard to keep food restriction
Others	The March 16, 2022 earthquake messed up the house. Because the water was cut off and busy carrying water for daily use Unable to visit the family member in the hospital due to epidemic of COVID-19. Thought , able to go back to hometown in 10 or 20 years, but gave up returning

During the telephone counseling (support), our support staff recommendations included: to see a doctor / visit clinic, guidance on daily habits, and psychoeducation. Table 16 shows the results of the first telephone support, and as a result, 'continuous support' was recommended for 142 persons due to mental health issues and 126 persons due to physical health issues.

For further actions taken after the support, there were 7 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 16. FY2021 Results of the first telephone support for personal issues of adults

Classification	Continuous support needed	One time support	Details unknown	Support declined	Total
Overall	255 (9.9%)	2,240 (87.4%)	45 (1.8%)	24 (0.9%)	2,564
Mental Health Survey	243 (11.9%)	1,729 (85.0%)	43 (2.1%)	20 (1.0%)	2,035
Life Style Survey	12 (2.3%)	511 (96.6%)	2 (0.4%)	4 (0.8%)	529

- Need continuous support

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.

(2) Support by sending information brochures

For 2,842 persons who met Criteria III, information brochures were sent to help them better manage their health conditions. Brochures on such topics as obesity and drinking problems were sent to 1,784 persons and 1,058 persons, respectively.

(3) Consultation by incoming call

During the support period in FY2021, 945 incoming call calls were made to the "KOKOKARA CHOUSA Dial". The breakdown of incoming calls (978 in total) were as follows: 530 calls were returned from support candidates who were not available at the time of telephone support, 181 were consultations, 145 were inquiries about the survey, and 122 were for other reasons.

Regarding inquiries about the survey, most of them were about changes in basic information or how to fill out the survey. In addition, there were incoming calls for consultation throughout the year, mainly on matters related to the health of themselves and/or their families, and relationships at their workplaces and among friends.

(4) Conclusions

In the cases of "children," a high percentage of the consultations were for "school-related issues," followed by "anger / frustration / violence" and "daily life and habits," a trend similar to that of the previous year. In the "Continued support" cases, 12 (11.2%) of the respondents were judged to be somewhat concerned about their social/school maladjustment or isolation at the time of the initial telephone support.

In the cases of "adults," "physical health," "sleep," and "depression" were the most frequently consulted topics, showing a similar trend to the previous year. In the initial telephone support, 243 (11.9%) of those who received mental health telephone support and 12 (2.3%) of those who received lifestyle telephone support chose "Continuation of support."

For support recipients who were judged to need continued support or who wished to continue receiving support either for their own issues (adults) or issues related to their children, our Support Team continued to provide telephone support to monitor their conditions and provided them with information on support resources. If the Support Team judged that the urgency was very high, they provided information of support recipients to the recipients' local health/medical facilities. For those to whom the team could not offer telephone support because they were absent at the time of the call, etc., we sent a "Mental Health and Lifestyle Support Book," produced by the Radiation Medical Science Center for the Fukushima Health Management Survey, to encourage them to perform self-checks on their physical and mental health, along with information on various consultation services including our telephone number dedicated to inquiries about the Mental Health and Lifestyle Survey, the "KOKOKARA CHOUSA Dial".

6. FY2021 Mental Health and Lifestyle Survey

(1) Ages 0 to 3

				Persons	Percentage	
Response Method			(Valid responses: 446)	• Paper	290 65.0%	
				• Online	156 35.0%	
Sex			(Valid responses: 446)	• Boys	241 54.0%	
(Mean age: 1.8)				• Girls	205 46.0%	
Residential location at the time of survey			(Valid responses: 446)	• In Fukushima prefecture	429 96.2%	
				• Outside the prefecture	17 3.8%	
Q1 Health condition			(Valid responses: 445)	• Very good	233 52.4%	
				• Good	163 36.6%	
				• Fair	48 10.8%	
				• Unsatisfactory	1 0.2%	
				• Very unsatisfactory	0 0.0%	
Q2 Height	Boys	Age 1	(Valid responses: 72)	Average height	77.2 cm	
		Age 2	(Valid responses: 74)	Average height	87.4 cm	
		Age 3	(Valid responses: 70)	Average height	94.9 cm	
		Girls	Age 1	(Valid responses: 67)	Average height	75.5 cm
			Age 2	(Valid responses: 60)	Average height	86.9 cm
			Age 3	(Valid responses: 55)	Average height	94.4 cm
	Weight	Boys	Age 1	(Valid responses: 78)	Average weight	10.3 kg
			Age 2	(Valid responses: 81)	Average weight	12.5 kg
			Age 3	(Valid responses: 78)	Average weight	14.5 kg
		Girls	Age 1	(Valid responses: 77)	Average weight	9.6 kg
			Age 2	(Valid responses: 64)	Average weight	12.3 kg
			Age 3	(Valid responses: 59)	Average weight	14.3 kg
Q3 Frequency of exercising			(Valid responses: 259)	• Almost everyday	188 72.6%	
				• 2-4 times a week	47 18.1%	
				• Once a week	14 5.4%	
				• Rarely	10 3.9%	
Q4 Loss of confidence in child rearing			(Valid responses: 446)	• Yes	80 17.9%	
				• No	187 41.9%	
				• Neither yes nor no	179 40.1%	
Q5 Childcare concerns			(Valid responses: 446)	• Yes	59 13.2%	
				• No	299 67.0%	
				• Neither yes nor no	88 19.7%	
Q6 Availability of consultation resources			(Valid responses: 446)			
Do you have someone to consult with about child rearing?				• Yes	428 96.0%	
				• No	18 4.0%	
Q7 Influence of the COVID-19 pandemic			(Valid responses: 445)	• Not at all	107 24.0%	
Is the COVID-19 affecting your daily life?				• Not much	82 18.4%	
				• To some extent	197 44.3%	
				• Very much	59 13.3%	

(2) Ages 4 to 6

				Persons	Percentage			
Response Method				(Valid responses: 481)	• Paper	309	64.2%	
					• Online	172	35.8%	
Sex				(Valid responses: 481)	• Boys	257	53.4%	
(Mean age 5.0)					• Girls	224	46.6%	
Residential location at the time of survey				(Valid responses: 481)	• In Fukushima prefecture	459	95.4%	
					• Outside the prefecture	22	4.6%	
Q1	Health condition			(Valid responses: 477)	• Very good	256	53.7%	
					• Good	161	33.8%	
					• Fair	59	12.4%	
					• Unsatisfactory	1	0.2%	
					• Very unsatisfactory	0	0.0%	
Q2	Height	Boys	Age 4	(Valid responses: 70)	Average height	102.8	cm	
			Age 5	(Valid responses: 90)	Average height	108.4	cm	
			Age 6	(Valid responses: 81)	Average height	116.2	cm	
		Girls	Age 4	(Valid responses: 62)	Average height	103.0	cm	
			Age 5	(Valid responses: 77)	Average height	109.4	cm	
			Age 6	(Valid responses: 73)	Average height	115.3	cm	
	Weight	Boys	Age 4	(Valid responses: 73)	Average weight	16.9	kg	
			Age 5	(Valid responses: 94)	Average weight	18.6	kg	
			Age 6	(Valid responses: 80)	Average weight	21.9	kg	
		Girls	Age 4	(Valid responses: 64)	Average weight	16.4	kg	
			Age 5	(Valid responses: 79)	Average weight	18.7	kg	
			Age 6	(Valid responses: 77)	Average weight	21.1	kg	
Q3	Frequency of exercising			(Valid responses: 479)	• Almost everyday	298	62.2%	
					• 2-4 times a week	125	26.1%	
					• Once a week	30	6.3%	
					• Rarely	26	5.4%	
Q4	Child's emotion and behavior (SDQ)							
	1) SDQ				(Valid responses: 481)	• Average score	8.4	
					(Valid responses: 257)	• Average score (Boys)	8.9	
					(Valid responses: 224)	• Average score (Girls)	7.8	
						• ≥ 16 points	33	6.9%
						(Boys)	22	8.6%
						(Girls)	11	4.9%
					(Valid responses: 459)	(In Fukushima prefecture)	32	7.0%
					(Valid responses: 22)	(Outside the prefecture)	1	4.5%
	2) Developmental/psychological problems				(Valid responses: 479)	• Yes	53	11.1%
				• No	426	88.9%		
Q5	Availability of consultation resources			(Valid responses: 480)				
	Do you have someone to consult with about child rearing?				• Yes	468	97.5%	
					• No	12	2.5%	
Q6	Influence of the COVID-19 pandemic			(Valid responses: 476)	• Not at all	91	19.1%	
	Is the COVID-19 affecting your daily life?				• Not much	79	16.6%	
					• To some extent	260	54.6%	
					• Very much	46	9.7%	

(3) Elementary school students

				Persons	Percentage	
Response Method		(Valid responses: 481)		• Paper	309	64.2%
				• Online	172	35.8%
Sex		(Valid responses: 481)		• Boys	257	53.4%
(Mean age 5.0)				• Girls	224	46.6%
Residential location at the time of survey		(Valid responses: 481)		• In Fukushima prefecture	459	95.4%
				• Outside the prefecture	22	4.6%
Q1	Health condition		(Valid responses: 477)	• Very good	256	53.7%
				• Good	161	33.8%
				• Fair	59	12.4%
				• Unsatisfactory	1	0.2%
				• Very unsatisfactory	0	0.0%
Q2	Height	Boys	Age 4 (Valid responses: 70)	Average height	102.8	cm
			Age 5 (Valid responses: 90)	Average height	108.4	cm
			Age 6 (Valid responses: 81)	Average height	116.2	cm
		Girls	Age 4 (Valid responses: 62)	Average height	103.0	cm
			Age 5 (Valid responses: 77)	Average height	109.4	cm
			Age 6 (Valid responses: 73)	Average height	115.3	cm
	Weight	Boys	Age 4 (Valid responses: 73)	Average weight	16.9	kg
			Age 5 (Valid responses: 94)	Average weight	18.6	kg
			Age 6 (Valid responses: 80)	Average weight	21.9	kg
		Girls	Age 4 (Valid responses: 64)	Average weight	16.4	kg
			Age 5 (Valid responses: 79)	Average weight	18.7	kg
			Age 6 (Valid responses: 77)	Average weight	21.1	kg
Q3	Frequency of exercising		(Valid responses: 479)	• Almost everyday	298	62.2%
				• 2-4 times a week	125	26.1%
				• Once a week	30	6.3%
				• Rarely	26	5.4%
Q4 Child's emotion and behavior (SDQ)						
1) SDQ		(Valid responses: 481)	• Average score	8.4		
		(Valid responses: 257)	• Average score (Boys)	8.9		
		(Valid responses: 224)	• Average score (Girls)	7.8		
			• ≥ 16 points	33		6.9%
			(Boys)	22		8.6%
			(Girls)	11		4.9%
		(Valid responses: 459)	(In Fukushima prefecture)	32		7.0%
		(Valid responses: 22)	(Outside the prefecture)	1		4.5%
2) Developmental/psychological problems		(Valid responses: 479)	• Yes	53		11.1%
			• No	426		88.9%
Q5 Availability of consultation resources						
Do you have someone to consult with about child rearing?		(Valid responses: 480)	• Yes	468		97.5%
			• No	12		2.5%
Q6	Influence of the COVID-19 pandemic		(Valid responses: 476)	• Not at all	91	19.1%
	Is the COVID-19 affecting your daily life?			• Not much	79	16.6%
				• To some extent	260	54.6%
				• Very much	46	9.7%

(4) Junior high school students

				Persons	Percentage
Response method		(Valid responses: 760)	• Paper	536	70.5%
			• Online	224	29.5%
Sex		(Valid responses: 760)	• Boys	384	50.5%
(Average age: 13.9)			• Girls	376	49.5%
Residential location at the time of survey		(Valid responses: 760)	• In the prefecture	597	78.6%
			• Outside the prefecture	163	21.4%
Q1 Health condition		(Valid responses: 544)	• Very good	201	36.9%
			• Good	166	30.5%
			• Fair	169	31.1%
			• Unsatisfactory	8	1.5%
			• Very unsatisfactory	0	0.0%
Q2 Height	Boys	Grade 7 (Valid responses: 89)	Average height	159.1 cm	
		Grade 8 (Valid responses: 96)	Average height	166.3 cm	
		Grade 9 (Valid responses: 80)	Average height	168.8 cm	
	Girls	Grade 7 (Valid responses: 92)	Average height	153.0 cm	
		Grade 8 (Valid responses: 86)	Average height	155.6 cm	
		Grade 9 (Valid responses: 93)	Average height	156.2 cm	
Weight	Boys	Grade 7 (Valid responses: 87)	Average weight	49.0 kg	
		Grade 8 (Valid responses: 96)	Average weight	56.4 kg	
		Grade 9 (Valid responses: 78)	Average weight	59.1 kg	
	Girls	Grade 7 (Valid responses: 88)	Average weight	46.6 kg	
		Grade 8 (Valid responses: 85)	Average weight	49.7 kg	
		Grade 9 (Valid responses: 93)	Average weight	51.3 kg	
Q3 Frequency of exercising		(Valid responses: 543)	• Almost everyday	162	29.8%
			• 2-4 times a week	146	26.9%
			• Once a week	58	10.7%
			• Rarely	177	32.6%
Q4 Influence of the COVID-19 pandemic		(Valid responses: 541)	• Not at all	62	11.5%
Is the COVID-19 affecting your daily life?			• Not much	154	28.5%
(From student himself/herself perspective)			• To some extent	248	45.8%
			• Very much	77	14.2%
Q5 Child's emotion and behavior (SDQ)					
1) SDQ		(Valid responses: 747)	Average score	7.8 points	
		(Valid responses: 379)	Average score (Boys)	8.0 points	
		(Valid responses: 368)	Average score (Girls)	7.7 points	
			≥ 16 points	63	8.4%
			(Boys)	29	7.7%
			(Girls)	34	9.2%
		(Valid responses: 588)	(In Fukushima)	48	8.2%
		(Valid responses: 159)	(Outside the prefecture)	15	9.4%
2) Developmental/psychological problems		(Valid responses: 746)	• Yes	109	14.6%
			• No	637	85.4%
Q6 Availability of consultation resources		(Valid responses: 748)	• Yes	701	93.7%
Have someone to consult with about child rearing?			• No	47	6.3%
Q7 Influence of the COVID-19 pandemic		(Valid responses: 742)	• Not at all	160	21.6%
Is the COVID-19 affecting your daily life?			• Not much	112	15.1%
(From parents/guardians perspective)			• To some extent	376	50.7%
			• Very much	94	12.7%

(5) Adults

				Persons	Percentage
Response method		(Valid responses: 37,762)		• Paper	31,664 83.9%
				• Online	6,098 16.1%
Sex		(Valid responses: 37,762)		• Male	17,724 46.9%
(Average age:62.9)				• Female	20,038 53.1%
Residential location at the time of survey		(Valid responses: 37,762)		• In Fukushima	32,678 86.5%
				• Outside the prefecture	5,084 13.5%
Q1	Health condition	(Valid responses: 34,439)		• Very good	2,271 6.6%
				• Good	8,030 23.3%
				• Fair	19,725 57.3%
				• Unsatisfactory	4,020 11.7%
				• Very unsatisfactory	393 1.1%
		16-39 (Valid responses: 4,493)	• Very good	905 20.1%	
			• Good	1,465 32.6%	
			• Fair	1,831 40.8%	
			• Unsatisfactory	258 5.7%	
			• Very unsatisfactory	34 0.8%	
		40-64 (Valid responses: 10,303)	• Very good	741 7.2%	
			• Good	2,702 26.2%	
			• Fair	5,704 55.4%	
			• Unsatisfactory	1,032 10.0%	
			• Very unsatisfactory	124 1.2%	
		65 and older (Valid responses: 19,643)	• Very good	625 3.2%	
			• Good	3,863 19.7%	
			• Fair	12,190 62.1%	
			• Unsatisfactory	2,730 13.9%	
			• Very unsatisfactory	235 1.2%	
Q2 Height and weight					
Height	Male	(Valid responses: 17,484)	Average height	166.5 cm	
	Female	(Valid responses: 19,601)	Average height	153.6 cm	
Weight	Male	(Valid responses: 17,489)	Average weight	67.3 kg	
	Female	(Valid responses: 19,585)	Average weight	54.6 kg	
BMI	Male	(Valid responses: 17,391)	Average BMI	24.2 kg/m ²	
	Female	(Valid responses: 19,397)	Average BMI	23.1 kg/m ²	
Q3 Past Medical history					
1) Hypertension (or high blood pressure)	(Valid responses: 36,348)		• No	19,945 54.9%	
			• Yes	16,403 45.1%	
			(Currently under treatment)	14,721 90.7%	
			(Not under treatment)	1,518 9.3%	
	(Valid responses: 35,649)		• No	29,616 83.1%	
			• Yes	6,033 16.9%	
			(Currently under treatment)	5,433 91.9%	
			(Not under treatment)	482 8.1%	
	3) Mental disorder		(Valid responses: 35,712)	• No	32,188 90.1%
			• Yes	3,524 9.9%	
		(Currently under treatment)	2,518 73.1%		
		(Currently not under treatment due to improvement)	593 17.2%		
		(Not under treatment)	333 9.7%		
4) medical check ups in the past one year		(Valid responses: 36,506)	• Yes	27,192 74.5%	
			• No	9,314 25.5%	

			Persons	Percentage
Q4 Satisfaction with sleep	(Valid responses: 34,002)	• Sufficient	13,130	38.6%
		• Slightly insufficient	16,142	47.5%
		• Very insufficient	4,052	11.9%
		• Greatly insufficient	678	2.0%
Q5 Frequency of exercising	(Valid responses: 36,918)	• Almost everyday	6,100	16.5%
		• 2-4 times a week	9,077	24.6%
		• Once a week	6,571	17.8%
		• Rarely	15,170	41.1%
In Fukushima	(Valid responses: 31,928)	• Almost everyday	5,369	16.8%
		• 2-4 times a week	7,764	24.3%
		• Once a week	5,695	17.8%
		• Rarely	13,100	41.0%
Outside the prefecture	(Valid responses: 4,990)	• Almost everyday	731	14.6%
		• 2-4 times a week	1,313	26.3%
		• Once a week	876	17.6%
		• Rarely	2,070	41.5%
Q6 Living condition				
1) Current place of residence	(Valid responses: 37,033)	• In Fukushima	31,712	85.6%
		• Outside the prefecture	5,321	14.4%
2) Do you live by yourself?	(Valid responses: 36,952)	• Yes	6,431	17.4%
		• No	30,521	82.6%
3) Do you work?	(Valid responses: 36,848)	• Yes (I work)	15,340	41.6%
(Valid responses:		• No(include students,etc.)	21,508	58.4%
Q7 Smoking	(Valid responses: 35,947)	• I have never smoked	20,367	56.7%
		• I quit	10,359	28.8%
		• Yes	5,221	14.5%
	(Valid responses: 17,073)	Male	3,939	23.1%
	(Valid responses: 18,874)	Female	1,282	6.8%

				Persons	Percentage
Q8 Alcohol					
1) Alcohol consumption	(Valid responses: 35,722)	No, or rarely	19,243	53.9%	
		I quit	1,816	5.1%	
		Yes (Once a month or more)	14,663	41.0%	
2) Experiences related to alcohol					
1. Have you ever felt the necessity of cut back on drinking?	(Valid responses: 13,771)	• No	9,899	71.9%	
		• Yes	3,872	28.1%	
2. Have you ever felt offended because others criticized your drinking?	(Valid responses: 13,728)	• No	12,775	93.1%	
		• Yes	953	6.9%	
3. Have you felt guilty about drinking?	(Valid responses: 13,720)	• No	12,312	89.7%	
		• Yes	1,408	10.3%	
4. Have you ever had an another drink in the morning for curing a hangover?	(Valid responses: 13,700)	• No	12,947	94.5%	
		• Yes	753	5.5%	
			1,639	12.0%	
	(Valid responses: 9,313)	Male	1,352	14.5%	
	(Valid responses: 4,327)	Female	287	6.6%	
Male	(Valid responses: 734)	20-39	103	14.0%	
	(Valid responses: 3,129)	40-64	522	16.7%	
	(Valid responses: 5,450)	65 and older	727	13.3%	
Female	(Valid responses: 841)	20-39	59	7.0%	
	(Valid responses: 1,839)	40-64	159	8.6%	
	(Valid responses: 1,647)	65 and older	69	4.2%	
Male	(Valid responses: 8,154)	In Fukushima	1,176	14.4%	
	(Valid responses: 1,159)	Outside the prefecture	176	15.2%	
Female	(Valid responses: 3,600)	In Fukushima	225	6.3%	
	(Valid responses: 727)	Outside the prefecture	62	8.5%	
Q9 General mental health status					
1) Kessler psychological distress scale (K6)	(Valid responses: 32,871)	Average score	4.2 points		
	(Valid responses: 15,538)	Average score (Male)	3.9 points		
	(Valid responses: 17,333)	Average score (Female)	4.5 points		
		• ≥ 13 points	1,989	6.1%	
	(Valid responses: 15,538)	(Male)	819	5.3%	
	(Valid responses: 17,333)	(Female)	1,170	6.8%	
	(Valid responses: 4,468)	(16-39)	393	8.8%	
	(Valid responses: 10,179)	(40-64)	717	7.0%	
	(Valid responses: 18,224)	(65 and older)	879	4.8%	
	(Valid responses: 28,391)	(In Fukushima)	1,618	5.7%	
	(Valid responses: 4,480)	(Outside the prefecture)	371	8.3%	

		Persons	Percentage
Q10 Influence of the COVID-19 pandemic			
1) Impact on daily life	(Valid responses: 35,817)		
		• Not at all	12,501 34.9%
		• Not much	8,425 23.5%
		• To some extent	11,825 33.0%
		• Very much	3,066 8.6%
Male	(Valid responses: 17,017)	• Not at all	6,154 36.2%
		• Not much	3,944 23.2%
		• To some extent	5,514 32.4%
		• Very much	1,405 8.3%
Female	(Valid responses: 18,800)	• Not at all	6,347 33.8%
		• Not much	4,481 23.8%
		• To some extent	6,311 33.6%
		• Very much	1,661 8.8%
16-39	(Valid responses: 5,126)	• Not at all	2,239 43.7%
		• Not much	939 18.3%
		• To some extent	1,483 28.9%
		• Very much	465 9.1%
40-64	(Valid responses: 10,612)	• Not at all	3,561 33.6%
		• Not much	2,514 23.7%
		• To some extent	3,500 33.0%
		• Very much	1,037 9.8%
65 and older	(Valid responses: 20,079)	• Not at all	6,701 33.4%
		• Not much	4,972 24.8%
		• To some extent	6,842 34.1%
		• Very much	1,564 7.8%
Kessler psychological distress scale	(Valid responses: 18,411)	• Not at all / Not much	607 3.3%
≥ 13 points on K6	(Valid responses: 13,207)	• To some extent / Very much	1,243 9.4%

2) Interfering event during COVID 19 pandemic		• Deterioration of health status	5,944 -
*Multiple answers allowed		• Deterioration of a family member	3,472 -
		• Nursing care for a family member	1,978 -
		• Got divorced/separated from the	222 -
		• Started living apart from the family	670 -
		• Death of a family member	1,381 -
		• Death of a loved one other than family	2,815 -
		• Started working or changed jobs	733 -
		• Lost a job	498 -
		• Retired or quit a job	527 -
		• Increased interpersonal problems	5,858 -
		• Entering higher education	1,726 -
		• Other significant event	3,191 -

			Persons	Percentage
Q11	Risk perception of radiation health effects			
1)	Possibility of radiation health effects			
	Health effects will likely to occur to the next generation and beyond as a result of current radiation exposure.	Very low	8,343	24.9%
		Low	16,977	50.8%
	(Valid responses: 33,447)	High	6,905	20.6%
		Very high	1,222	3.7%
	In Fukushima (Valid responses: 28,927)	Very low	7,223	25.0%
		Low	14,907	51.5%
		High	5,839	20.2%
		Very high	958	3.3%
	Outside the prefecture (Valid responses: 4,520)	Very low	1,120	24.8%
		Low	2,070	45.8%
		High	1,066	23.6%
		Very high	264	5.8%
2)	Hindrance to daily life (Valid responses: 33,748)	• Frequently	683	2.0%
	Daily life hindered by fear of radiation during the past month?	• Sometimes	2,454	7.3%
		• Rarely	4,946	14.7%
		• Never	25,665	76.0%
問12	Availability of consultation resources (Valid responses: 36,884)			
	Do you have someone to consult with or talk about you mental/physical problems?	• Yes	29,937	81.2%
		• No	6,947	18.8%

Implementation Status of the "Comprehensive Health Check," Fukushima Health Management Survey (FY2011-FY2022)

1. Overview of the Comprehensive Health Check

1-1 Purpose

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

1-2 Coverage

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

* Covered area: municipalities designated as evacuation zones in 2011

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

1-3 Health check items

Health check items differ according to age groups as follows.

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

2. Implementation Status for FY2011 to FY2021

2-1 Methods

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

Age group	Place of residence	Implementation method	Number of cooperating medical facilities in FY2021	Tabulation category
15 and younger	Those living in Fukushima prefecture	Pediatric health checks at designated health check facilities in the prefecture	84	Pediatric health check in the prefecture
	Those living outside of the prefecture	Pediatric health checks at designated health check facilities outside of the prefecture	293 (of which, 174 facilities also accept those aged 16 or older)	Pediatric health check outside of the prefecture
16 and older	Those living in Fukushima prefecture	Additional health check items are added to specific health checks or general health checks conducted by municipalities.	—	Municipal general health check in the prefecture
				Other *1
		Individual health checks conducted at designated health check facilities in the prefecture ^(*)	419	Individual health check in the prefecture
	Those living outside the prefecture	Group health checks conducted by FMU ^(*)	28 venues in the prefecture (conducted 44 times)	Group health check in the prefecture
		Additional health check items are added to specific health checks or general health checks conducted by municipalities.	—	Other *2
		Individual health checks conducted at designated health check facilities outside of the prefecture	452 (of which, 174 facilities also accept those aged 15 or younger)	Individual health check outside of the prefecture

*1 Other: Municipal health checks conducted in the prefecture by the county/municipal medical association or medical facilities

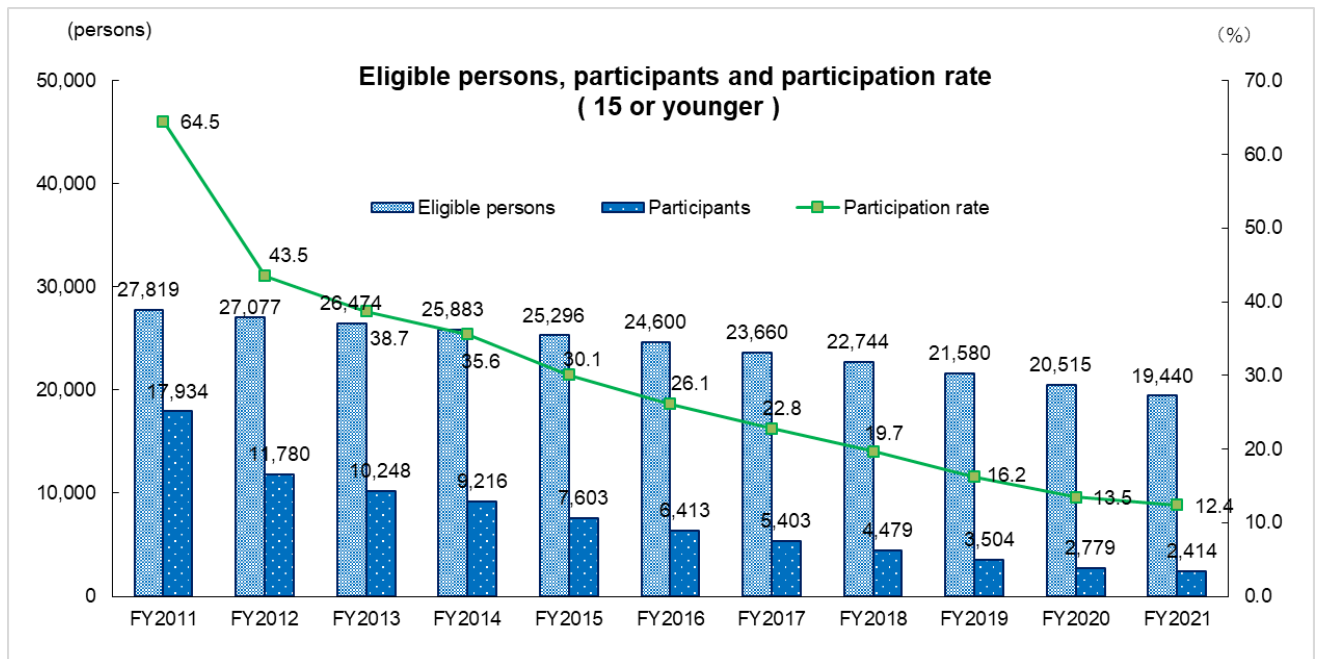
*2 Other: Municipal health checks conducted outside of the prefecture by cooperating facilities

2-2 Participation status

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

(a) Participants ages 15 or younger

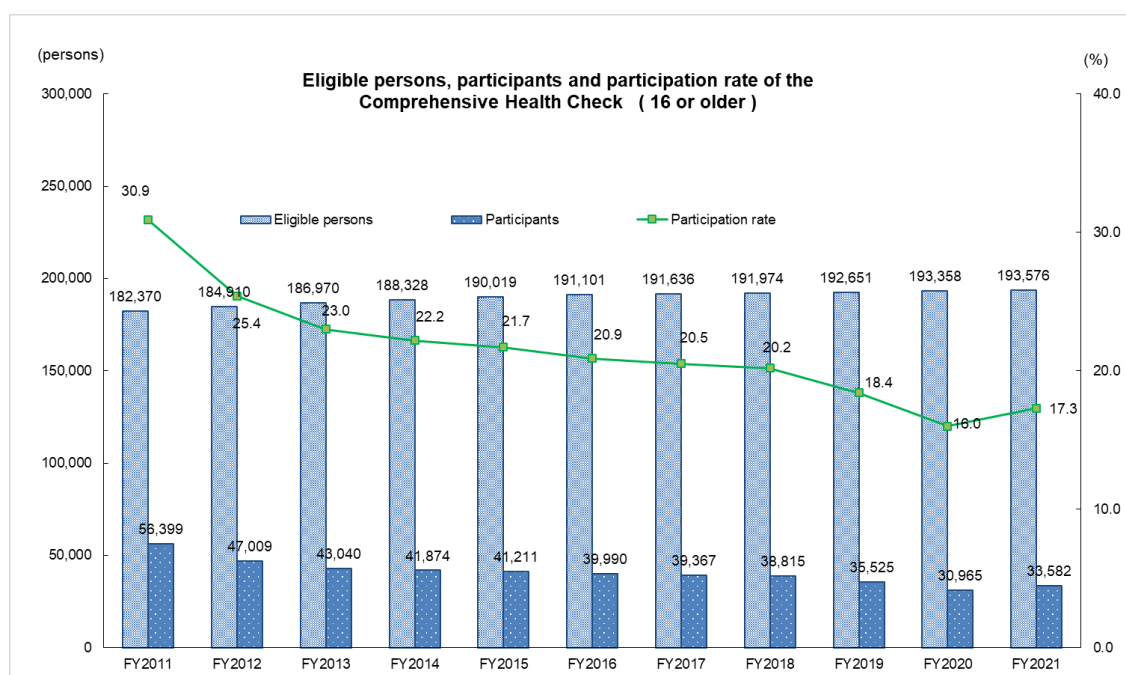
The participation rate for FY2021 was 12.4%, down by 1.1 points compared with a participation rate of 13.5% for FY2020, but the rate of decline was gradual.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
	Confirmed data as of Sep. 11, 2012	Confirmed data as of July 5, 2013	Confirmed data as of Sep. 1, 2014	Confirmed data as of Sep. 1, 2015	Confirmed data as of Sep. 1, 2016	Confirmed data as of Dec. 31, 2017	Confirmed data as of Mar. 31, 2018	Confirmed data as of Mar. 31, 2019	Confirmed data as of Mar. 31, 2020	Confirmed data as of Mar. 31, 2021	Confirmed data as of Mar. 31, 2022
Eligible persons	27,819	27,077	26,474	25,883	25,296	24,600	23,660	22,744	21,580	20,515	19,440
Pediatric health checks in Fukushima	15,002	9,534	8,432	7,432	6,206	5,193	4,474	3,648	2,857	2,335	2,037
Pediatric health checks outside Fukushima	2,949	2,283	1,822	1,792	1,403	1,226	929	834	650	444	377
Number of those participated both of the above	17	37	6	8	6	6	0	3	3	0	0
Total (excluding those participated both)	17,934	11,780	10,248	9,216	7,603	6,413	5,403	4,479	3,504	2,779	2,414
Participation rate	64.5%	43.5%	38.7%	35.6%	30.1%	26.1%	22.8%	19.7%	16.2%	13.5%	12.4%

(b) Participants ages 16 or older

The participation rate for FY2021 was 17.3%, an increase of 1.3 points compared with the 16.0% in FY2020. The major cause of this increase in the number of participants was considered to be the influence of COVID-19 in FY2020, as people refrained from going out and may have been reluctant to participate for a fear of infection.



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
	Confirmed data as of Sep. 11, 2012	Confirmed data as of July 5, 2013	Confirmed data as of Sep. 1, 2014	Confirmed data as of Sep. 1, 2015	Confirmed data as of Sep. 1, 2016	Confirmed data as of Dec. 31, 2017	Confirmed data as of Mar. 31, 2018	Confirmed data as of Mar. 31, 2019	Confirmed data as of Mar. 31, 2020	Confirmed data as of Mar. 31, 2021	Confirmed data as of Mar. 31, 2022
Eligible persons	182,370	184,910	186,970	188,328	190,019	191,101	191,636	191,974	192,651	193,358	193,576
Participants in municipal general health checks in the prefecture	8,798	23,907	25,604	25,913	26,195	26,636	26,411	26,140	25,255	19,002	21,339
Participants in individual health checks in the prefecture	—	6,692	5,806	4,927	4,443	3,941	3,782	3,730	2,869	3,771	3,927
Participants in group health checks in the prefecture	41,949	10,603	6,767	5,808	5,183	4,341	3,963	3,776	2,444	3,496	3,396
Participants in individual health checks outside the prefecture	3,815	3,055	3,205	3,418	3,332	2,118	2,102	2,087	1,988	1,847	1,809
Other *1, *2	2,045	3,206	2,017	1,846	2,113	3,011	3,154	3,122	3,001	2,941	3,187
Number of those participating in both of the above	208	454	359	38	55	57	45	40	32	92	76
Total (excluding those participating in both)	56,399	47,009	43,040	41,874	41,211	39,990	39,367	38,815	35,525	30,965	33,582
Participation rate	30.9%	25.4%	23.0%	22.2%	21.7%	20.9%	20.5%	20.2%	18.4%	16.0%	17.3%

*1 Other: Municipal health checks conducted in the prefecture by the county/municipal medical association or medical facilities

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

B. Number of participants by age group

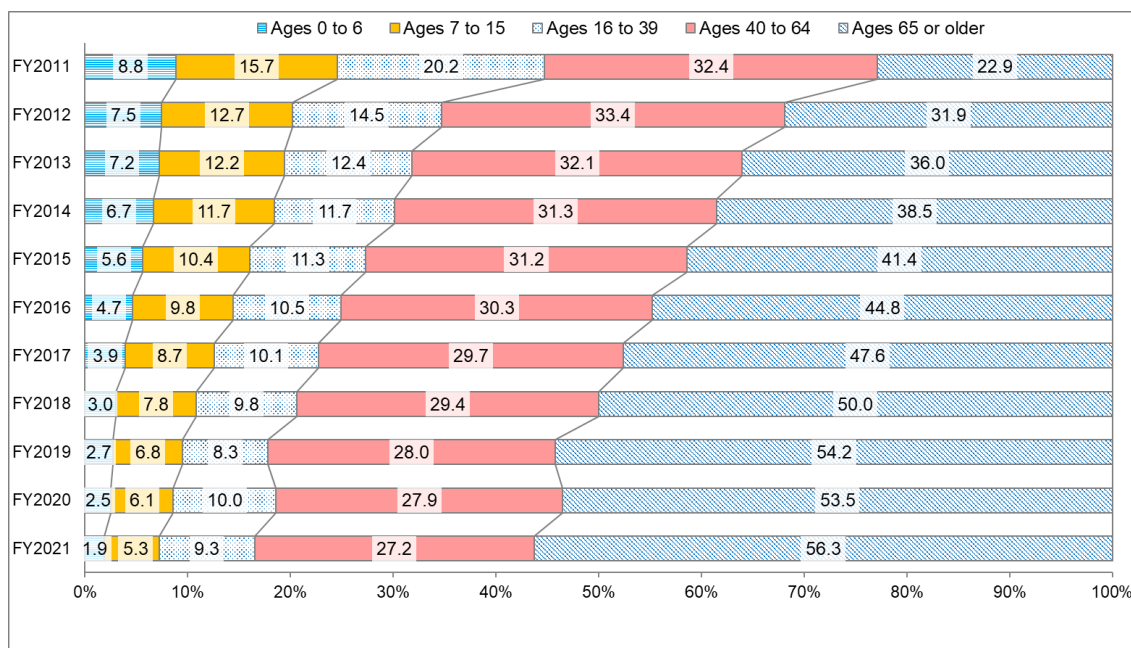
In FY2021, by age group, the numbers of participants ages 0 to 6, 7 to 15, and 16 to 39 decreased, while ages 40 to 64 and 65 or older increased compared with the previous year.

As to the trend of participation by age group, number of participants ages 65 or older have been increasing year by year and reached 56.3% in FY2021.

Changes in the number of participants by age group

(persons)

	Ages 0 to 6	Ages 7 to 15	Ages 16 to 39	Ages 40 to 64	Ages 65 or older
FY2011	6,462	11,481	14,762	23,651	16,726
FY2012	4,365	7,437	8,480	19,553	18,642
FY2013	3,802	6,429	6,536	16,922	18,969
FY2014	3,328	5,840	5,843	15,594	19,166
FY2015	2,655	4,903	5,354	14,748	19,559
FY2016	2,057	4,315	4,632	13,386	19,768
FY2017	1,647	3,712	4,309	12,677	20,299
FY2018	1,220	3,169	3,979	11,948	20,337
FY2019	959	2,457	2,984	10,095	19,529
FY2020	783	1,936	3,157	8,791	16,853
FY2021	638	1,739	3,079	8,982	18,566



*Percentages in the graph are rounded, so totals may not be 100%.

*Source: Materials for the 21st, 26th, 30th, 34th, 37th, 41st and 44th meetings of the Oversight Committee for the Fukushima Health Management Survey (including those who have participated in at least 1 health check item).

[Reference]

FY2021 Number of eligible persons by area of residence (in or outside the prefecture) *

15 or younger	In the prefecture	Outside the prefecture	Total	16 or older	In the prefecture	Outside the prefecture	Total
Eligible persons	16,510	2,930	19,440	Eligible persons	162,277	31,299	193,576
Participants	2,003	411	2,414	Participants	30,517	3,065	33,582
Participation rate	12.1%	14.0%	12.4%	Participation rate	18.8%	9.8%	17.3%

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

3. Implementation Status for FY2022 (as of March 31, 2023)

Covered population: 211,448 (ages 15 or younger: 18,253; ages 16 or older: 193,195)

FY2022		Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Ages 15 or younger	In the prefecture				Pediatric health checks at designated medical facilities in the prefecture Participants 1,426 (Preliminary data)								
	Outside the prefecture				Pediatric health checks at designated medical facilities outside of the prefecture Participants 278 (Preliminary data)								
Ages 16 or older	In the prefecture			Specific health checks or general health checks organized by municipalities with additional examination items Tamura city, Minami-soma city, Kawamata town, Hirono town, Naraha town, Tomioka town, Kawauchi village, Okuma town, Futaba town, Namie town, Katsurao village, and Iitate village Participants 22,213 (Preliminary data)						Group health checks Participants 3,717 (Preliminary data)			
	Outside the prefecture				Health checks at designated medical facilities outside of Fukushima Participants 1,753 (Preliminary data)						Individual health checks at medical facilities Participants 3,679 (Preliminary data)		

3-1 Eligible persons residing in Fukushima prefecture

A. For those ages 15 or younger

In the same manner as in the previous fiscal year, pediatric health checks at designated health check facilities conducted for a period of around six months from July to December 2022 (at 83 cooperating health check facilities).

B. For those ages 16 or older

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

Additionally, group health checks and individual health checks at designated health check facilities were also conducted from January 2023, covering eligible persons who could not receive add-on health checks (at 410 cooperating health check facilities for individual health checks).

3-2 Eligible persons residing outside the prefecture

After coordinating venues in the eligible participants' prefectures of residence, we prepared and sent invitation for health checks starting from the end of June.

3-3 Results reports and feedback

A. Individual results reports

CHC individual results are mailed to each participant. In addition, face-to-face explanations of results are offered to those ages 15 or younger and their parents/guardians at the health check facilities where they received health checks.

B. Preparation of a leaflet

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

a leaflet summarizing what has been learned from the results of the CHC is enclosed. The leaflet theme changes every year: it was "Lifestyle Diseases" for FY2017, "Diabetes" for FY2018, "Metabolic Syndrome" for FY2019, "The Basis of Your Diet" for FY2020, and "The Importance of continuous health check participation" for FY2021. In FY2022, the theme was CKD (Chronic Kidney Disease), with a leaflet explaining the causes of the disease, incorporating findings of the Fukushima Health Management Survey (FHMS).

Also, in FY2022, the leaflet for those of ages 15 or younger was the same as for the adult CHC, with keys to improve and prevent pediatric obesity and lipid abnormalities, and also findings from the Pediatric CHC.

C. Preparation of analysis reports on CHC results

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

We also performed additional analyses (e.g., analysis by age group and analysis of drinking, smoking, and exercise habits) at these municipalities' request.

D. Holding health seminars

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

Health seminars conducted in FY2022

as of March 31, 2023

Venue	Event name	Times	Contents
Naraha Town	Locomotion improvement program	9	• Individual consultation with health specialists • Panel exhibition, leaflet distribution
	General health check	10	• Panel exhibition
	Individual Health Consultation Session	3	• Individual consultation with health specialists • Panel exhibition
Katsurao Village	Katsurao Festival	1	• Panel exhibition
Tamura City	Stroke Prevention Program	1	• Lecture by a medical doctor • Panel exhibition
Kawamata Town	Health Supporters' Workshop	1	• Lecture by a medical doctor

Total 25

3-4 Efforts to raise health awareness through the CHC

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

A. Publicity efforts

We have requested that municipal and prefectural governments run notices of the CHC in their public

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

B. Use of the Fukushima Kenmin App

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

C. Securing venues for group health checks

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

D. Efforts to deepen residents' understanding of health

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

E. Posting and updating articles on the Center's website

To provide the general public with easy-to-understand information on prevention methods for lifestyle-related diseases, we started to post articles on our website and we update them on a regular basis.

Report on the Results of the FY2021 Comprehensive Health Check Fukushima Health Management Survey (Participants Ages 15 or Younger)

< Supplementary Notes >

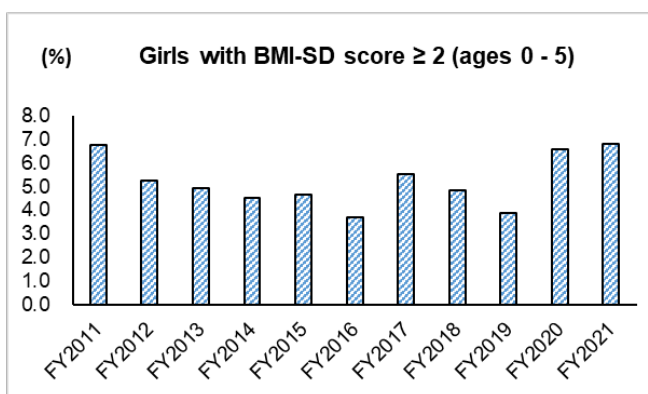
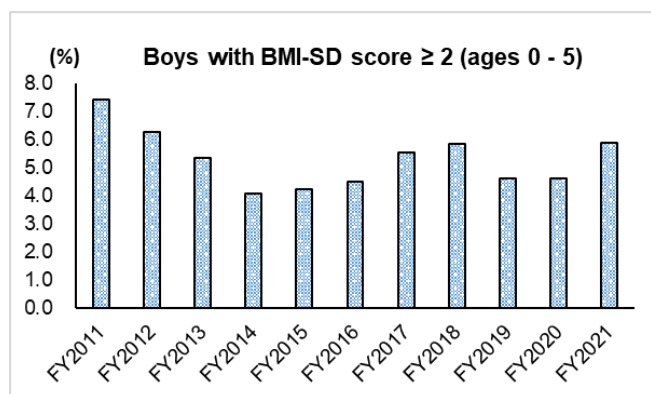
- * Pediatric Health Checks were conducted during the following period.
 - FY2011 : January to March 2012
 - FY2012 to FY2021 : July to December of each fiscal year
- * Percentages of obese participants were evaluated using BMI Standard Deviation Scores (BMI SDS), which were calculated based on heights and weights of the participants measured periodically at ages from 0 to 15, and the results from FY2011 to FY2021 were compared.
- * Results of blood tests vary substantially by age, but since participants were divided broadly into two age groups, 0 to 6 years and 7 to 15 years, year-by-year comparisons are not possible and definitive conclusions cannot be drawn.
- * Rules for describing tabulation results are the same as those used for *Vital Statistics in Japan* by the Ministry of Health, Labour and Welfare, including this nomenclature:
 - When there is no data: -
 - When the ratio is minor (lower than 0.05) : 0.0%
- * Reference materials
 - FY2011 to FY2014 : Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 21st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2015: Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 26th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2016: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 30th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2017: Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 34th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2018: Material 4-4 "Tabulation Results by Health Check Item" for the 37th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2019: Material 3-4 "Tabulation Results by Health Check Item" for the 41st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
 - FY2020: Material 4-4 "Tabulation Results by Health Check Item" for the 44th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

Physical Exam (percentage with obesity based on BMI SD scores):

1. Results

[Participants ages 0 to 5]

The percentage of obese boys who were ages 0 to 5 at the time of the exam (BMI-SDS $\geq$ 2), which was the highest in FY2011, showed a downward trend until FY2014 and then showed no specific trend thereafter. The percentage of obese girls who were ages 0 to 5 at the time of the exam (BMI-SDS $\geq$ 2), which was the highest in FY2011, showed a downward trend until FY2016 and then showed no specific trend thereafter.



BMI-SDS (0-5 years old)

Boys ages 0 - 5 at the time of health check

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Participants	2,710	1,942	1,757	1,517	1,156	908	722	582	454	391	305
Average age	3.5	3.4	3.4	3.5	3.4	3.3	3.2	3.1	3.1	3.2	3.2
Average BMI-SDS	0.627	0.398	0.405	0.326	0.322	0.335	0.283	0.288	0.265	0.346	0.323
SD	1.011	1.082	1.032	1.033	0.989	1.029	1.047	1.103	1.096	1.038	1.053
SD score $\geq$ 2 (%)	7.5	6.3	5.4	4.1	4.2	4.5	5.5	5.8	4.6	4.6	5.9

Girls ages 0 - 5 at the time of health check

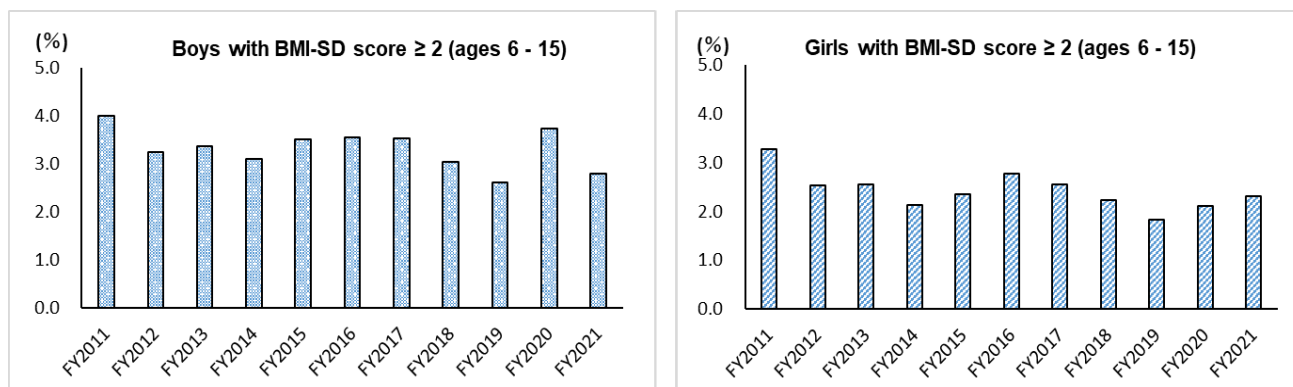
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Participants	2,688	1,955	1,667	1,467	1,181	893	741	539	437	320	279
Average age	3.5	3.3	3.4	3.5	3.5	3.4	3.3	3.3	3.2	3.2	3.3
Average BMI-SDS	0.558	0.332	0.304	0.278	0.314	0.317	0.339	0.291	0.265	0.447	0.447
SD	0.984	1.018	1.010	0.991	0.988	0.965	1.018	1.011	1.037	1.028	1.008
SD score $\geq$ 2 (%)	6.8	5.3	4.9	4.5	4.7	3.7	5.5	4.8	3.9	6.6	6.8

Cited file for calculation:

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

[Participants ages 6 to 15]

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



BMI-SDS (6-15 years old)

Boys ages 6 - 15 at the time of health check

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Participants	6,318	4,042	3,484	3,165	2,711	2,367	1,981	1,650	1,266	1,016	914
Average age	10.9	10.6	10.6	10.6	10.7	10.7	10.6	10.8	11.0	11.3	11.4
Average BMI-SDS	0.168	0.066	0.090	0.051	0.046	0.018	0.076	0.061	0.045	0.154	0.123
SD	1.048	1.127	1.089	1.076	1.097	1.113	1.066	1.074	1.158	1.082	1.075
SD score $\geq$ 2 (%)	4.0	3.2	3.4	3.1	3.5	3.5	3.5	3.0	2.6	3.7	2.8

Girls ages 6 -15 at the time of health check

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Participants	6,209	3,862	3,322	3,020	2,510	2,204	1,915	1,614	1,259	992	878
Average age	11.0	10.7	10.6	10.6	10.6	10.6	10.5	10.7	11.1	11.2	11.4
Average BMI-SDS	0.135	0.004	-0.001	-0.014	0.021	0.006	0.000	-0.011	-0.070	0.019	0.001
SD	0.993	1.023	1.002	0.988	0.981	1.017	0.991	1.002	1.000	1.007	0.985
SD score $\geq$ 2 (%)	3.3	2.5	2.6	2.1	2.4	2.8	2.6	2.2	1.8	2.1	2.3

Cited file for calculation:

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

2. Explanation of the Graphs

A body mass index standard deviation score (BMI SDS) was calculated from height and weight; those with a BMI-SDS of 2 or higher were classified as obese.

3. Action Threshold

Item	Obese
BMI-SDS	$\geq$ 2 SD

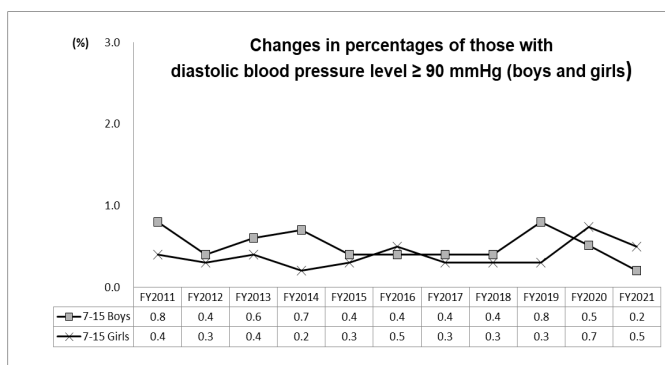
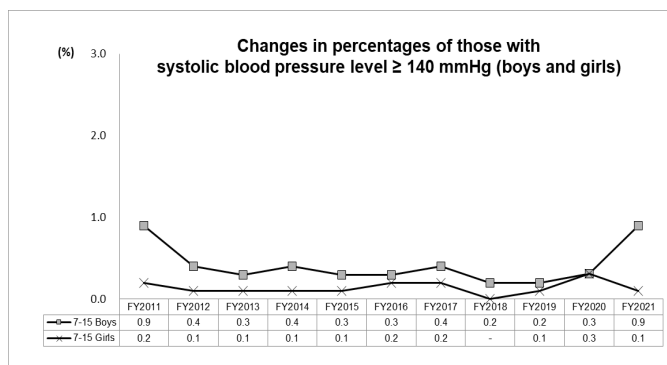
* When evaluating the physical constitution of Japanese children, it is considered appropriate to use thresholds based on the anthropometric data published by the Ministry of Health, Labour and Welfare and the Ministry of Education, Culture, Sports, Science and Technology in FY2000, as the standard values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

In this report, the standard values calculated based on the FY2000 measurement results were used.

Physical Exam: Blood Pressure

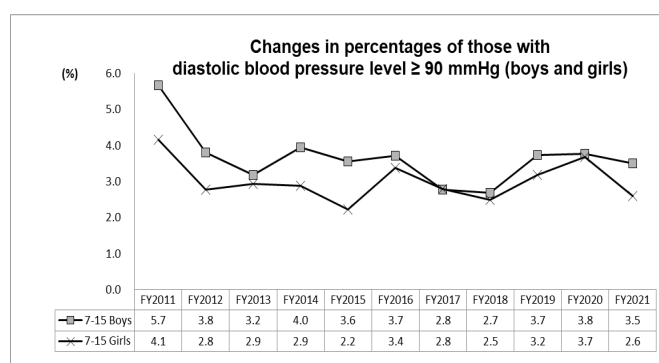
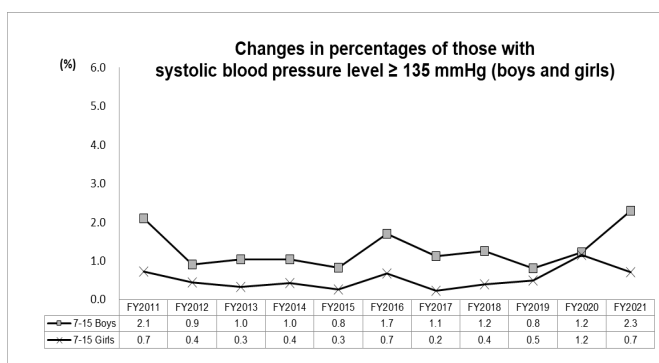
1. Results

The percentage of boys with systolic blood pressures of 140 mmHg or over was the highest in FY2011 and showed a downward trend thereafter, but it showed increase in FY2021. No specific trend was observed in the percentage of boys with diastolic blood pressures of 90 mmHg or over. The percentage of girls with systolic blood pressures of 140 mmHg or over showed no substantial changes. The percentage of girls with diastolic blood pressures of 90 mmHg or over also showed no substantial changes.



The percentage of boys with systolic blood pressures of 135 mmHg or over was the highest in FY2011 and varied up and down thereafter until FY2020, and slightly increased in FY2021 compare to FY2011. The percentage of boys with diastolic blood pressures of 80 mmHg or over was the highest in FY2011, and showed a declining trend thereafter through FY2021.

The percentage of girls with systolic blood pressures of 135 mmHg or over showed no substantial changes from FY2011 to FY2019, showed an upward trend in FY2020, then a downward trend in FY2021. The percentage of girls with diastolic blood pressures of 80 mmHg or over was the highest in FY2011, varied up and down thereafter, and slightly decreased in FY2021.



2. Explanation of the Graphs

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

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

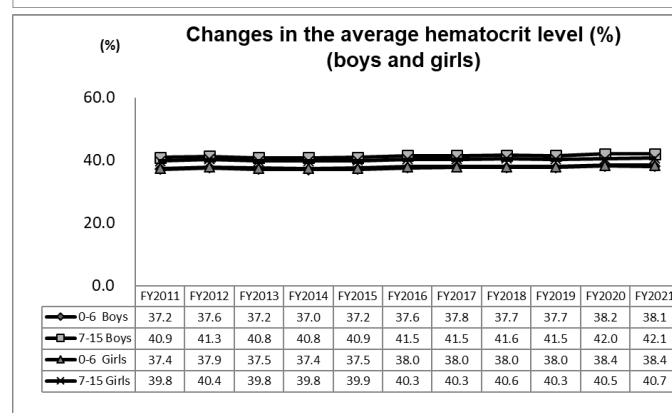
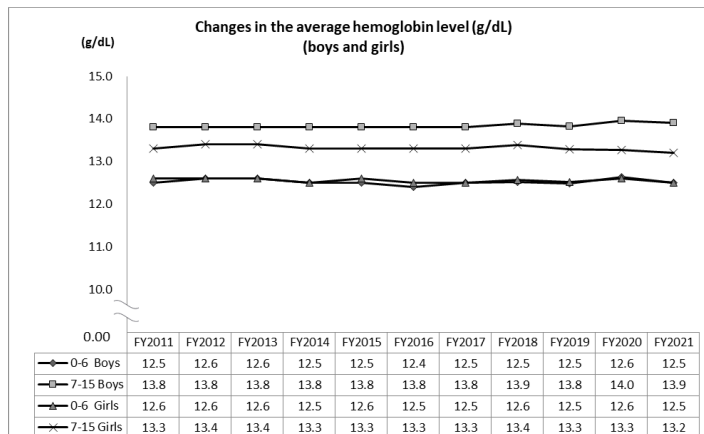
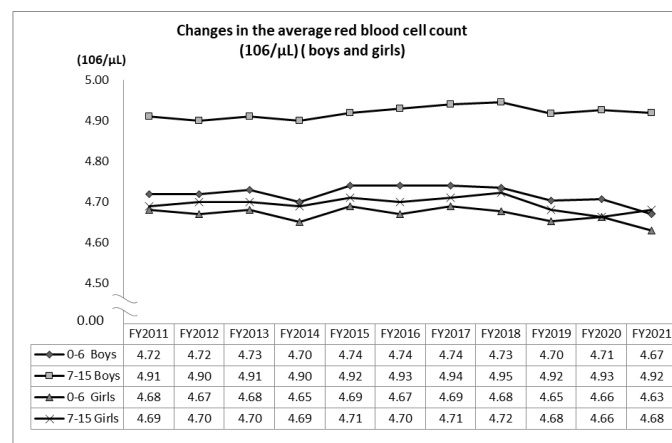
Age group	Systolic blood pressure level (mmHg)	Diastolic blood pressure level (mmHg)
Infants	≥120	≥70
Elementary school: Lower grades	≥130	≥80
Higher grades	≥135	≥80
Junior high school: Boys	≥140	≥85
Girls	≥135	≥80
High school	≥140	≥85

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

Peripheral Blood Test: Red Blood Cells, Hemoglobin, Hematocrit

1. Results

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



2. Explanation of the Graphs

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

3. Reference Intervals

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

* Average value ± standard deviation

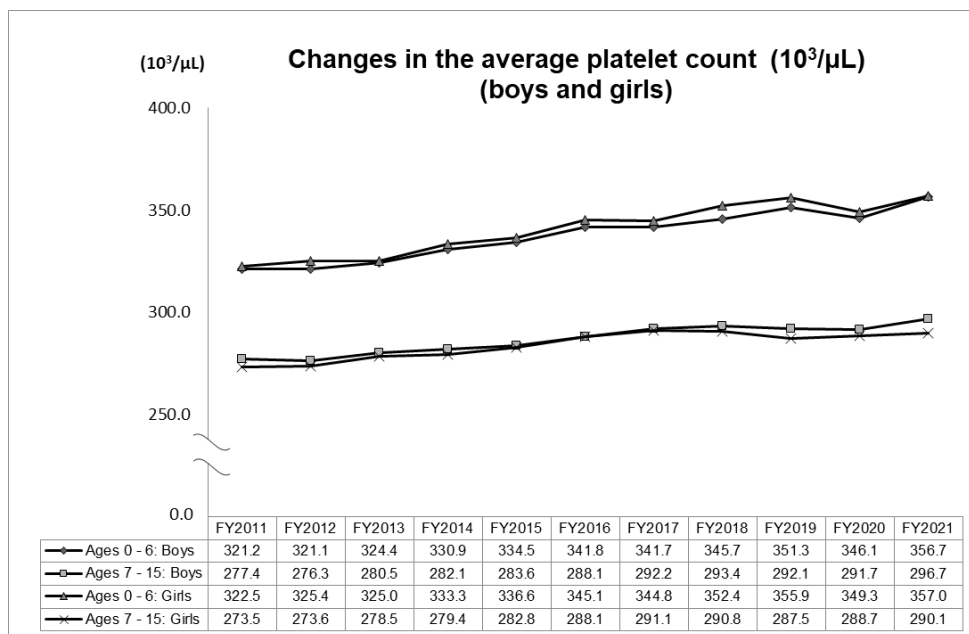
* By international consensus, red blood cell counts are expressed as numbers ×10¹²/L or ×10⁶/μL).

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

Peripheral Blood Test: Platelet Count

1. Results

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



2. Explanation of the Graph

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

3. Reference Interval

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

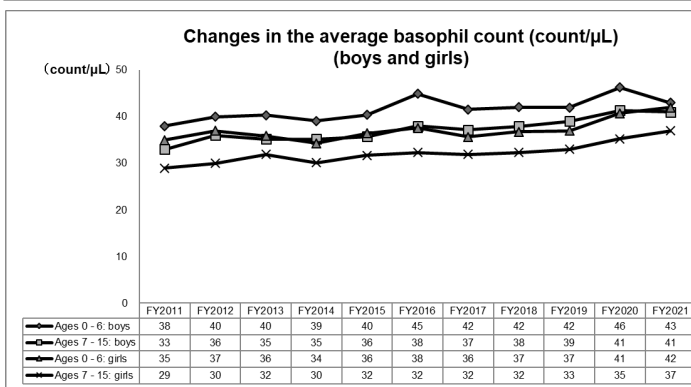
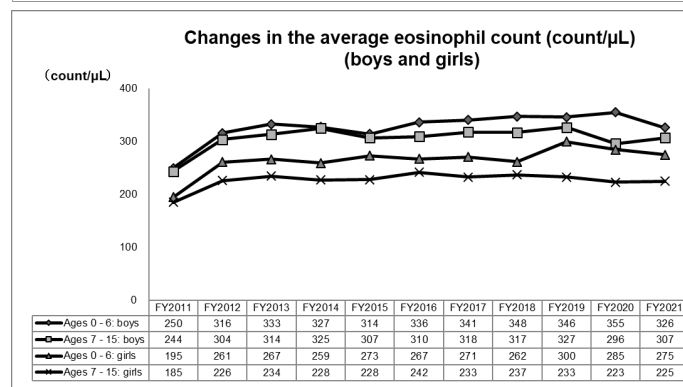
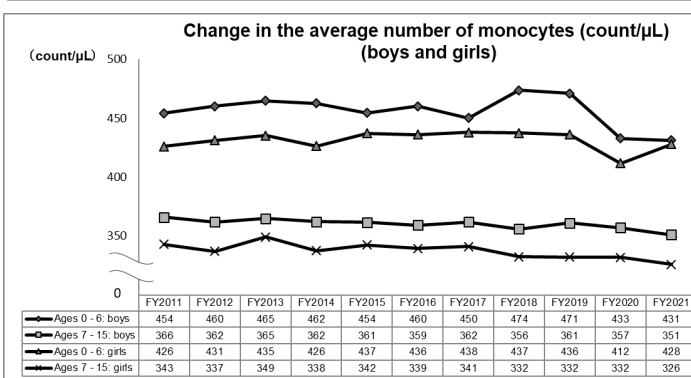
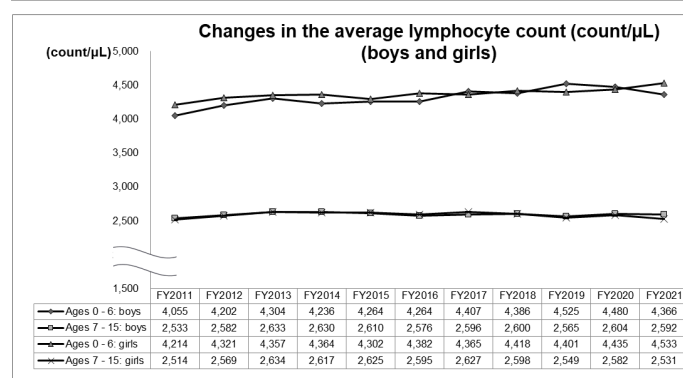
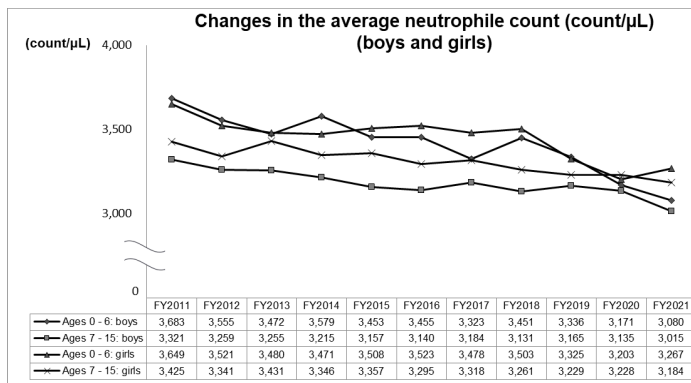
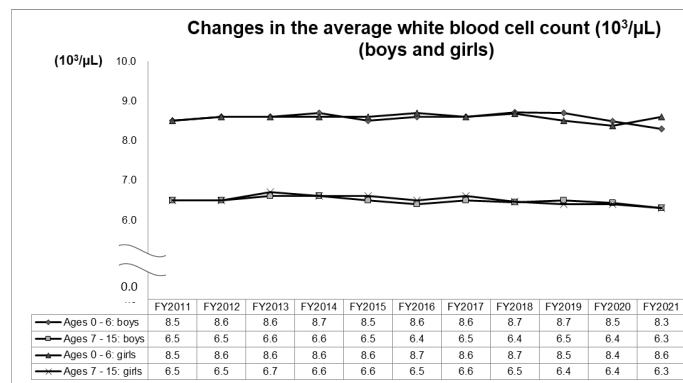
*By international consensus, platelet counts are expressed as numbers $\times 10^9/\text{L}$ or $\times 10^3/\mu\text{L}$.

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

Peripheral Blood Test: White Blood Cell Count and Differential

1. Results

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



2. Explanation of the Graphs

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

3. Reference Intervals

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

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

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

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

Neutrophil, lymphocyte, monocyte and eosinophil counts and percentages

($\times 10^3/\mu L$; Range is the 95% confidence interval.)

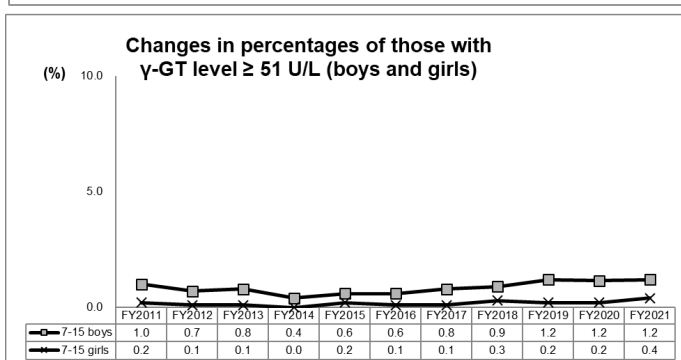
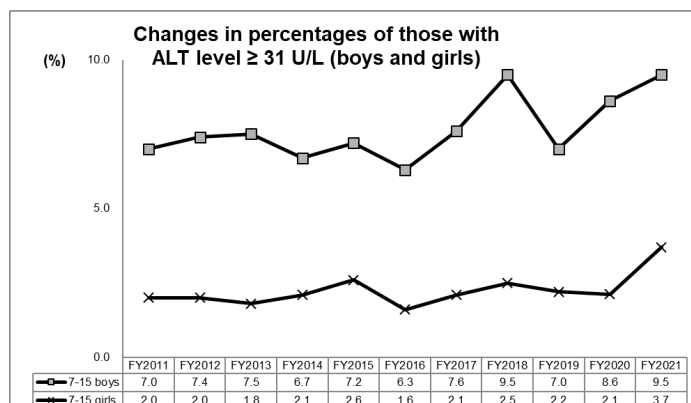
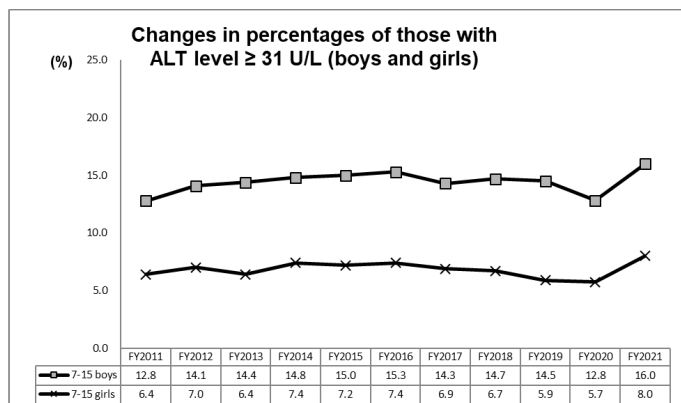
Age	Neutrophil count			Lymphocyte count			Monocyte count		Eosinophil count	
	Average	Range	%	Average	Range	%	Average	%	Average	%
At birth	11.0	6.0-26.0	61	5.5	2.0-11.0	31	1.1	6	0.4	2
12 hours old	15.5	6.0-28.0	68	5.5	2.0-11.0	24	1.2	5	0.5	2
24 hours old	11.5	5.0-21.0	61	5.8	2.0-11.5	31	1.1	6	0.5	2
1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

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

Liver Function: AST, ALT, γ-GT

1. Results

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



2. Explanation of the Graphs

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

3. Reference Intervals

AST(GOT) (U/L)

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

ALT(GPT) (U/L)

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

γ-GT(U/L)

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

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

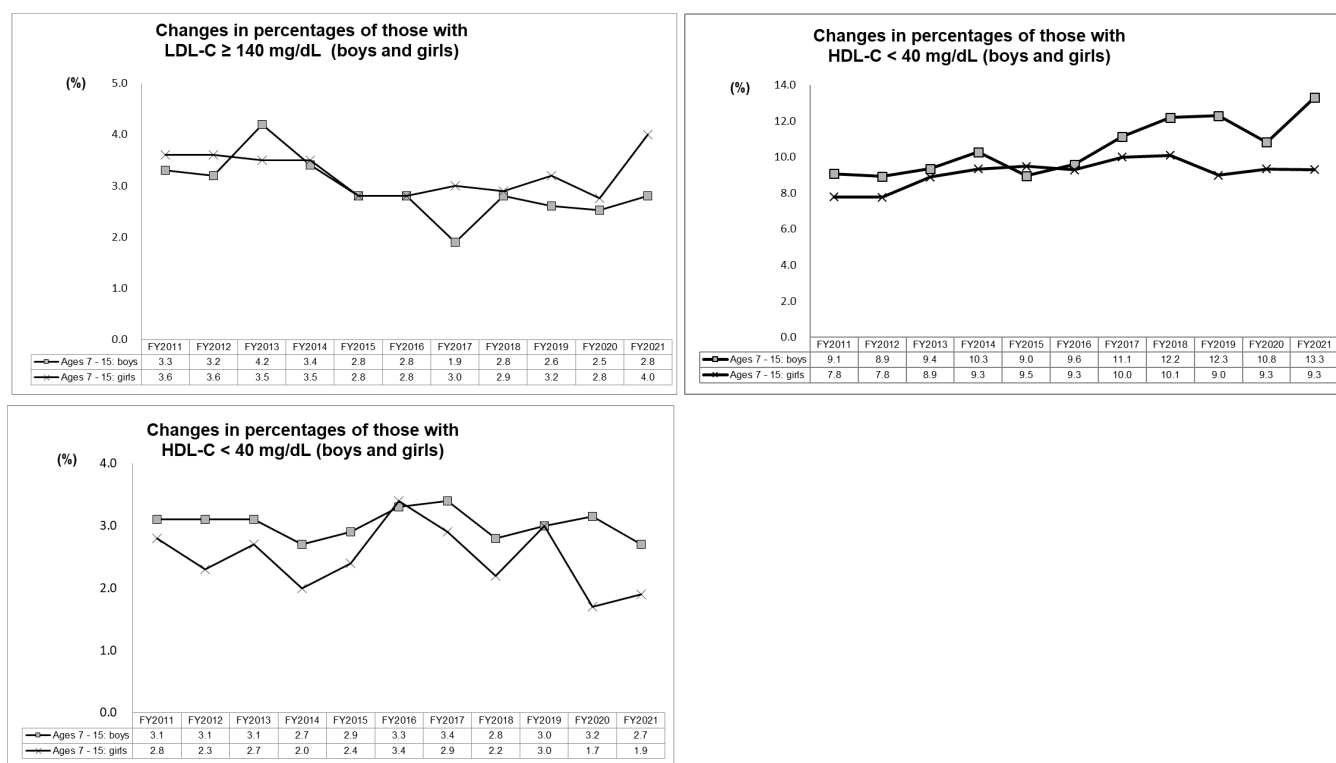
Lipids: LDL Cholesterol, Triglycerides, HDL Cholesterol

1. Results

The percentage of both boys and girls with LDL-C levels of 140 mg/dL or over were variable with a repetitive ups and downs, but showed an increase in FY2021.

The percentage of boys with triglyceride levels of 140 mg/dL or over showed cyclic ups and downs from FY2011 to FY2020, but increased in FY2021. There were no substantial changes in the percentage of girls with triglyceride levels of 140 mg/dL or over.

There were no substantial trends in the percentage of either both boys or girls with HDL-C levels lower than 40 mg/dL.



2. Explanation of the Graphs

Determination of hyperlipidemia was based on the following reference intervals.

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

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

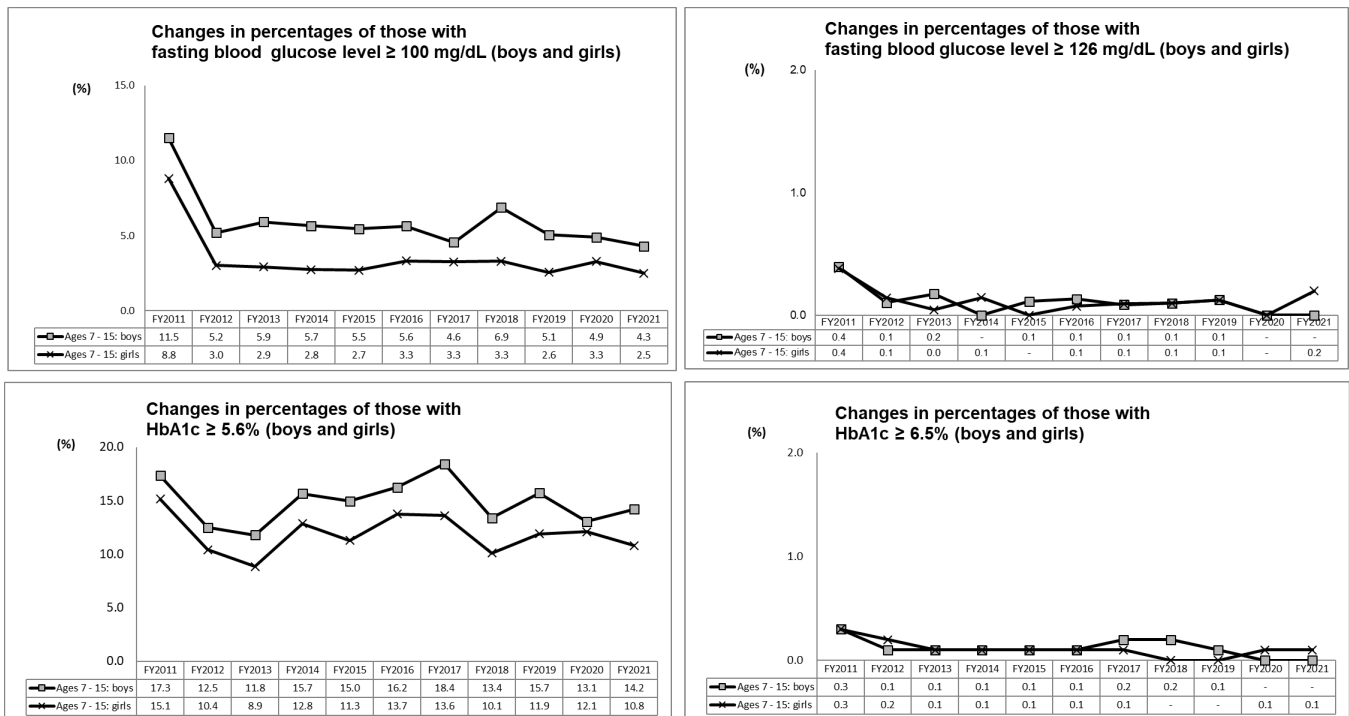
Source: Japan Atherosclerosis Society (JAS) Guidelines for Prevention of Atherosclerotic Cardiovascular Diseases 2022

Blood Glucose: Fasting Blood Glucose, HbA1c

1. Results

Both for boys and girls, the percentages of those whose fasting blood glucose level was 100 mg/dL or over hit a peak in FY2011, decreased through FY2012, and maintained almost the same levels thereafter. There were no substantial changes in the percentage of those with fasting blood glucose level of 126 mg/dL or over for either boys or girls.

The percentage of those with HbA1c levels of 5.6% or over cycled up and down both for boys and girls. There were also no substantial differences in the percentages of those whose HbA1c level was 6.5% or over between boys and girls, and the percentages remained unchanged both for boys and girls.



2. Explanation of the Graphs

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

3. Reference Intervals

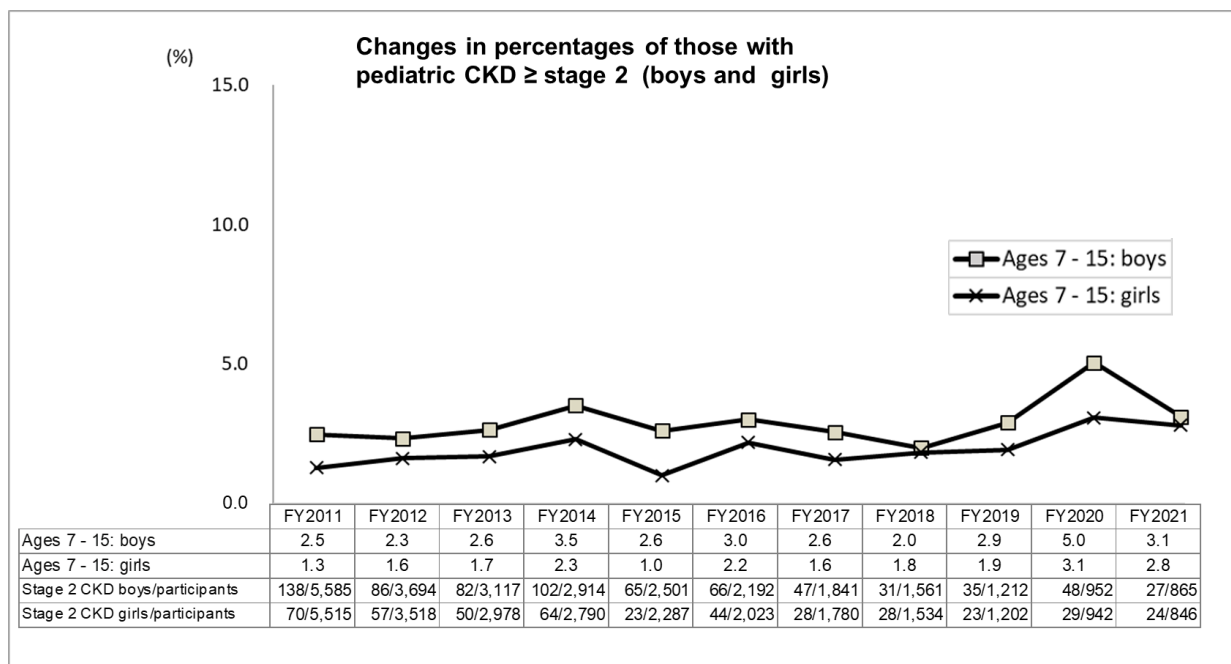
Classification and determination criteria based on fasting blood glucose level and through 75g OGTT

	Measurement time		Classification
	Fasting	2-hours postprandial	
Blood glucose (venous plasma level)	126 mg/dL or over		

Renal Function (Serum Creatinine)

1. Results

The percentage of children having stage 2 or higher chronic kidney disease showed no specific trend from FY2011 to FY2021 for either boys or girls.



2. Explanation of the Graph

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

3. Reference Intervals

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

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

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

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

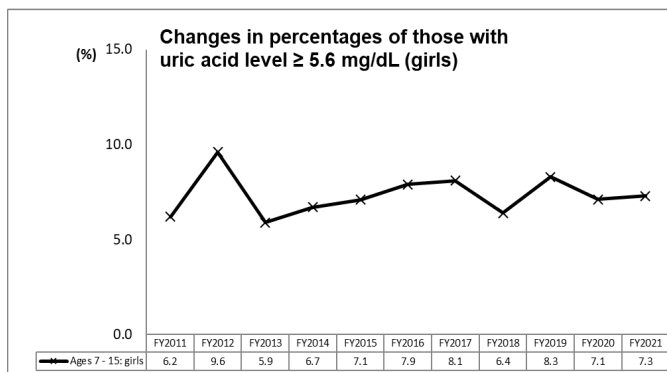
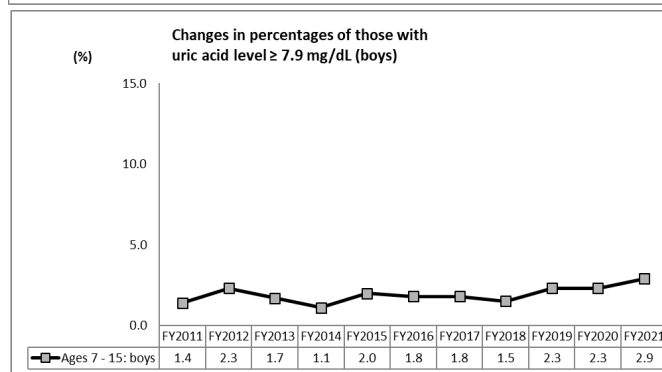
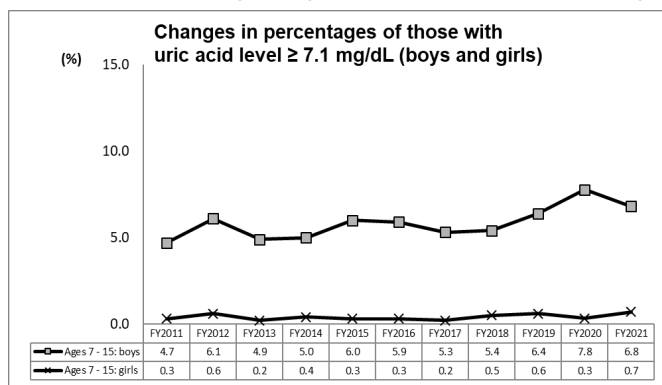
Uric Acid

1. Results

The percentage of boys with uric acid of 7.1 mg/dL or over showed an increasing tendency from FY2011 through FY2020, but decreased slightly in FY2021. The percentage of girls with uric acid of 7.1 mg/dL or over showed no substantial changes.

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

The percentage of girls with uric acid of 5.6 mg/dL or over showed cyclic increases and decreases.



2. Explanation of the Graphs

Determination of hyperuricemia was based on the following reference intervals.

3. Reference Intervals

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

Report on the Results of the FY2021 Comprehensive Health Check Fukushima Health Management Survey (Participants Ages 16 or Older)

< Supplementary Notes >

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

*** Reference materials**

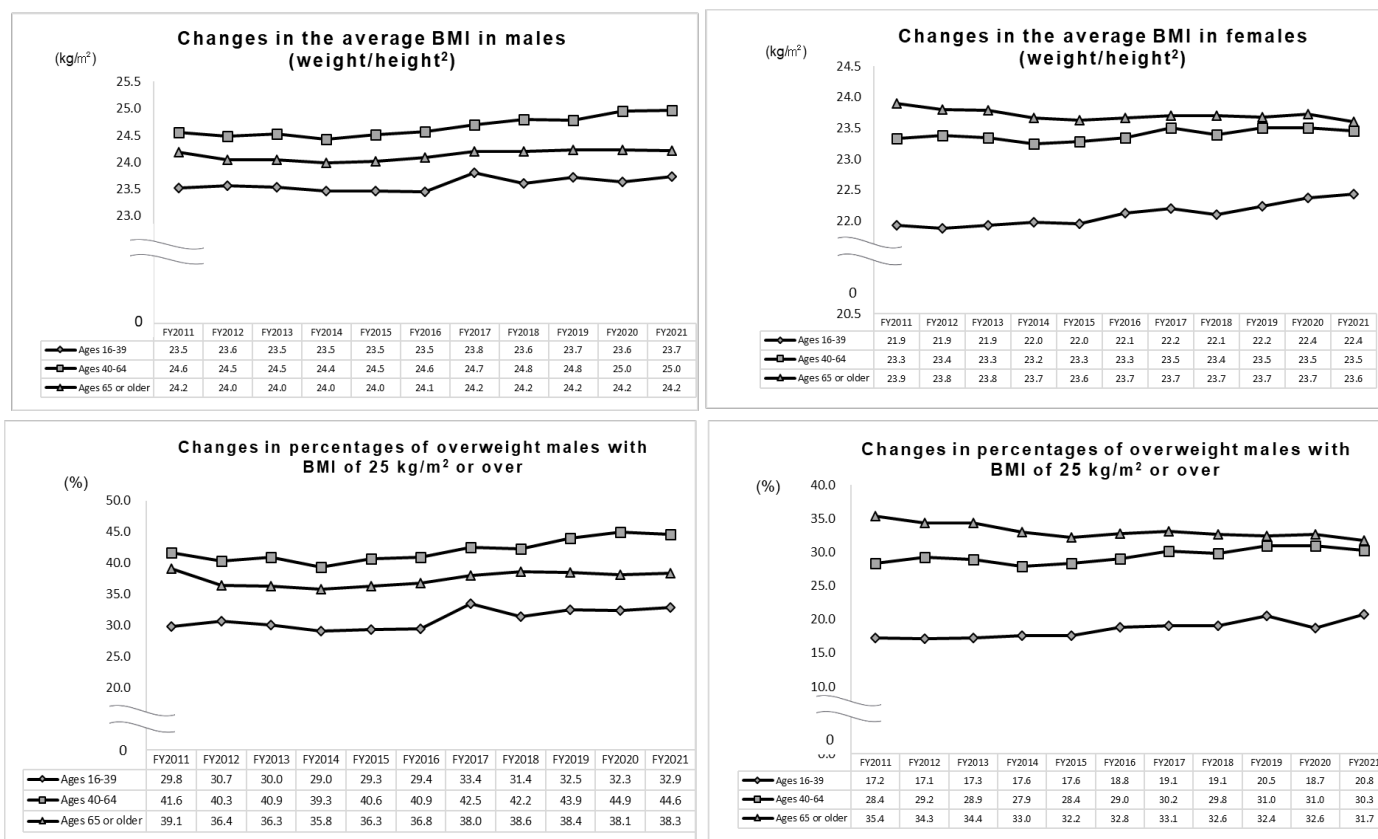
FY2011 to FY2014 :	Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 21st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2015:	Material 3-2 "Basic Statistics of CHC Results by Health Check Item" for the 26th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2016:	Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 30th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2017:	Material 2-3 "Basic Statistics of CHC Results by Health Check Item" for the 34th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2018:	Material 4-4 "Tabulation Results by Health Check Item" for the 37th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2019:	Material 3-4 "Tabulation Results by Health Check Item" for the 41st Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey
FY2020:	Material 4-4 "Tabulation Results by Health Check Item" for the 44th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey

Physical Exam: BMI

1. Results

Compared with the results for FY2016, the percentage of males with BMI of 25 kg/m² or over increased in FY2017 for all age groups, with no substantial changes thereafter to FY2021.

The percentage of females with BMI of 25 kg/m² or over showed an upward trend among those ages 16 to 39 from FY2011 to FY2021. The same percentage increased slightly among those ages 40 to 64 from FY2014 to FY2020, but decreased slightly in FY2021. Among those ages 65 or older, it showed a decreasing trend through FY2011 to FY2021.



2. Explanation of the Graphs

A BMI was calculated based on measured heights and weights and those with a BMI of 25 kg/m² or over were classified as obese.

$$\text{BMI} = \text{Weight (kg)} / \text{Height (m)} / \text{Height (m)}$$

3. Reference Intervals and Action Thresholds

Degrees of obesity

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

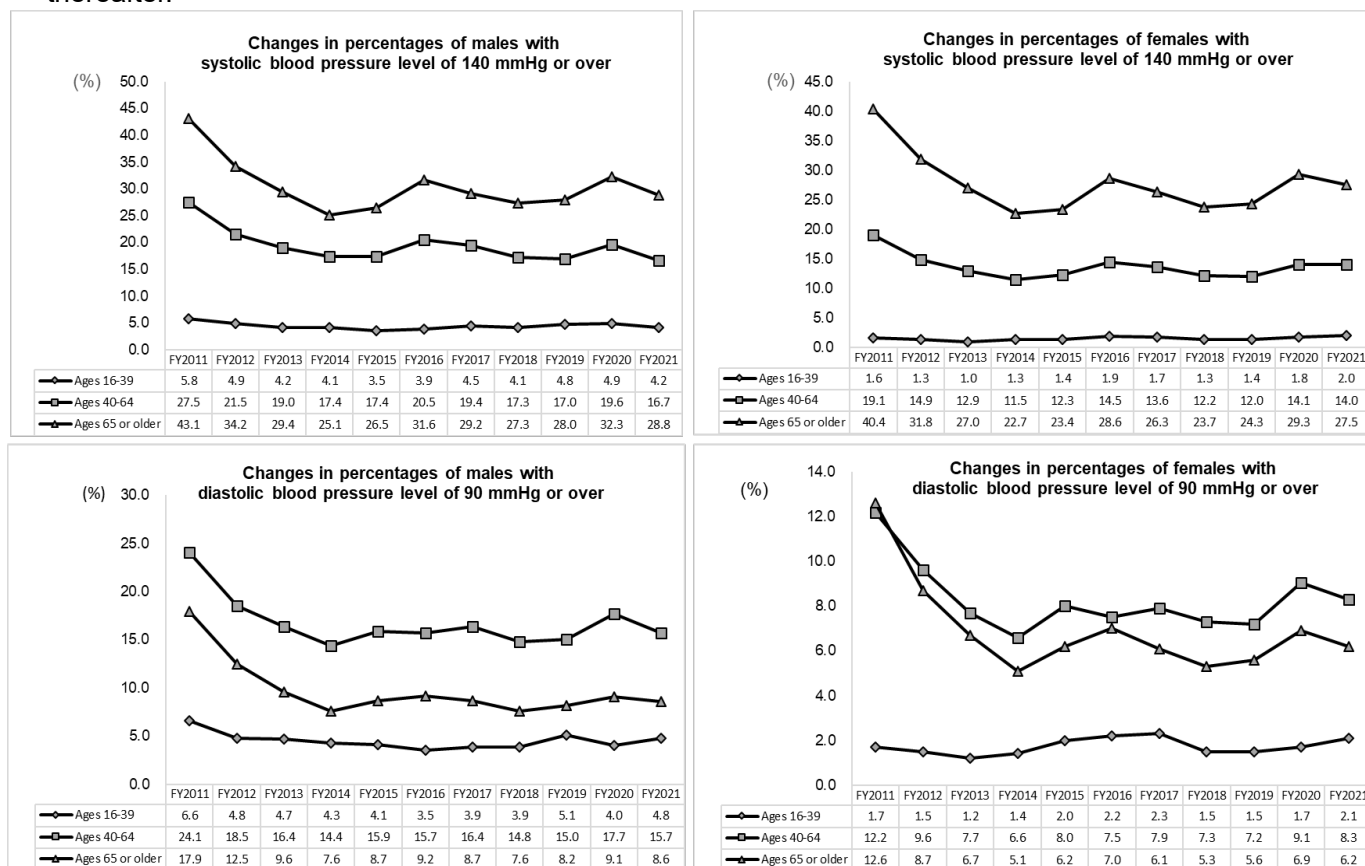
*Source: "Guidelines for the Management of Obesity Disease 2022" by the Japan Society for the Study of obesity

Physical Exam: Blood Pressure

1. Results

The percentage of those with systolic blood pressure levels of 140 mmHg or over decreased both among males and females ages 40 or older from FY2011 to FY2014. These percentages showed a cyclic increase and decrease thereafter.

The percentage of those with diastolic blood pressure levels of 90 mmHg or over decreased among both males and females age 40 or older from FY2011 to FY2014, and showed no substantial changes thereafter.



2. Explanation of the Graphs

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

3. Reference Intervals

Classification of adults' blood pressure levels

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

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

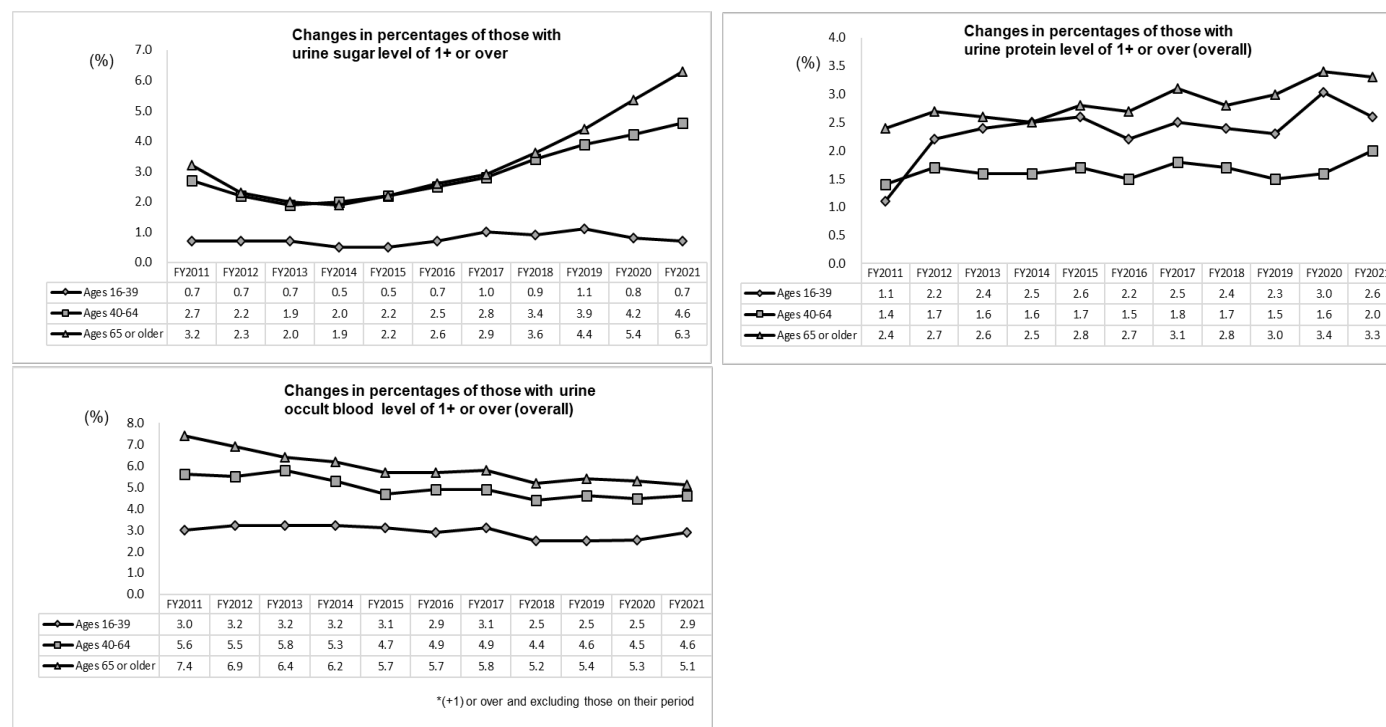
Urine Tests: Urine Sugar, Urine Protein, Urine Occult Blood

1. Results

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

The percentage of those with a urine protein level of 1+ or over increased among those ages 16 to 39 and those ages 65 or older from FY2011 to FY2020, but showed a decrease in FY2021.

The percentage of those with a urine occult blood level of 1+ or over decreased among those ages 65 or older from FY2011 to FY2021.



2. Explanation of the Graphs

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

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

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

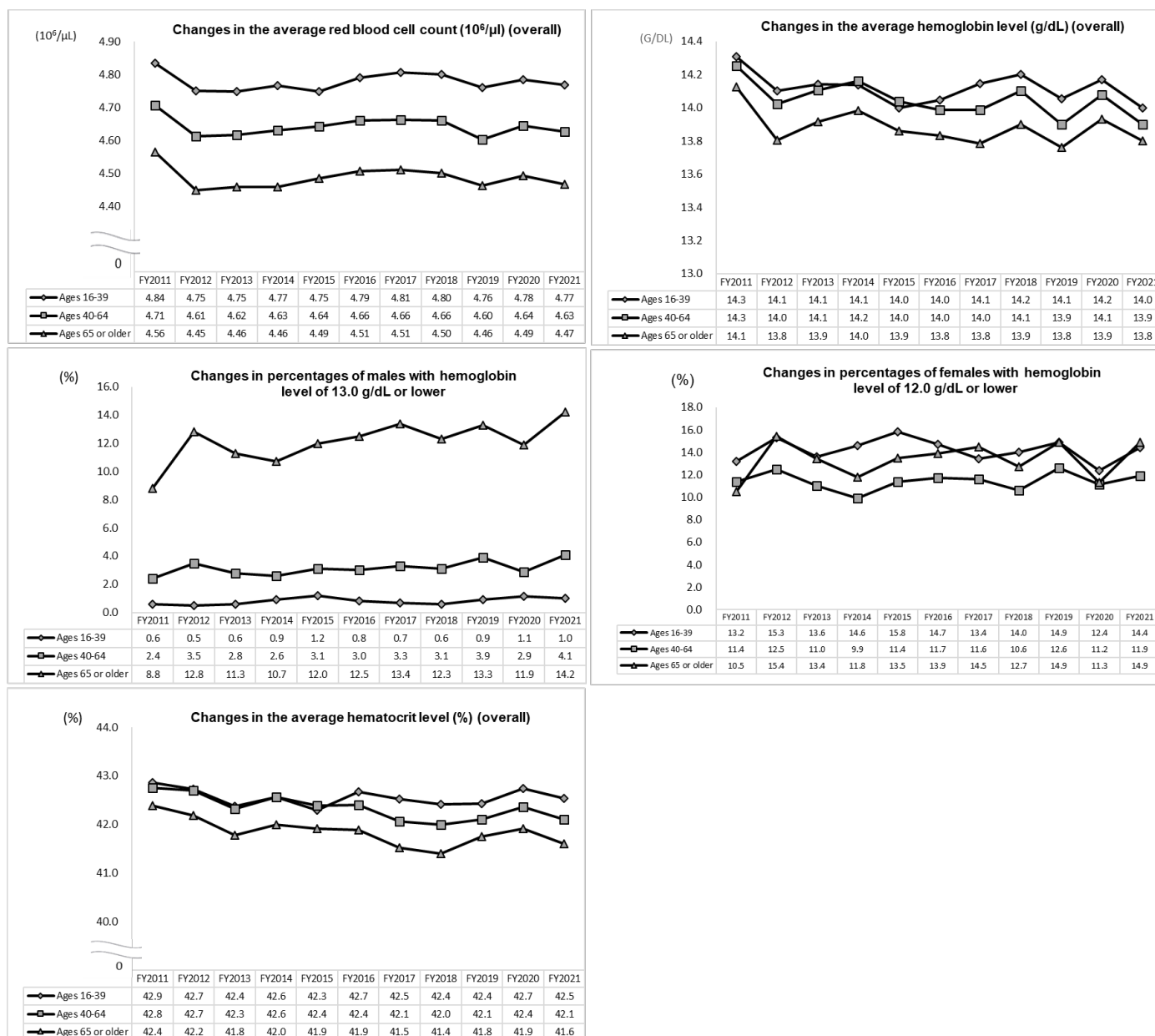
Peripheral Blood Tests: Red Blood Cells, Hemoglobin, Hematocrit

1. Results

The average red blood cell count and the average hemoglobin level decreased for all age groups from FY2011 to FY2012, but without substantial changes.

The percentage of males with hemoglobin levels of 13.0 g/dL or lower increased among those ages 65 or older from FY2011 to FY2012 and showing no sign of a trend thereafter. The percentage of females with hemoglobin levels of 12.0 g/dL or lower increased among those ages 65 or older from FY2011 to FY2012 and then fluctuated up and down thereafter.

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



2. Explanation of the Graphs

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

3. Reference Intervals

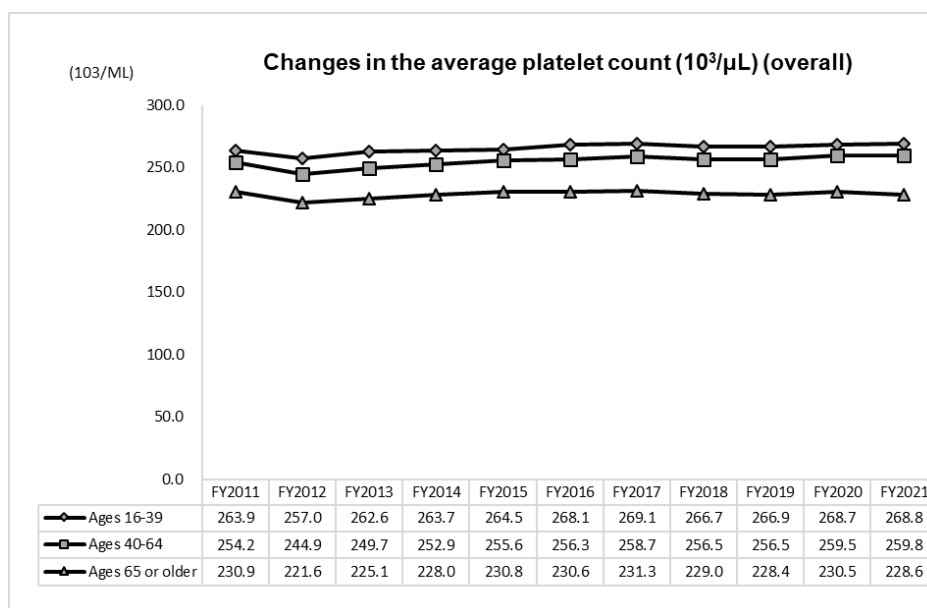
Item	Unit		Lower reference limit	Upper reference limit
Red blood cell count	10 ⁶ /μL	Male	4.35	5.55
		Female	3.86	4.92
Hemoglobin	g/dL	Male	13.7	16.8
		Female	11.6	14.8
Hematocrit	%	Male	40.7	50.1
		Female	35.1	44.4

Source: "Guidelines for Clinical Laboratory Tests 2021" (JSLM2021) by the Japanese Society of Laboratory Medicine

Peripheral Blood Test: Platelet Count

1. Results

There were no substantial changes in the average platelet count from FY2011 to FY2021 in any age group.



2. Explanation of the Graph

The graph shows changes in average values of platelet counts.

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

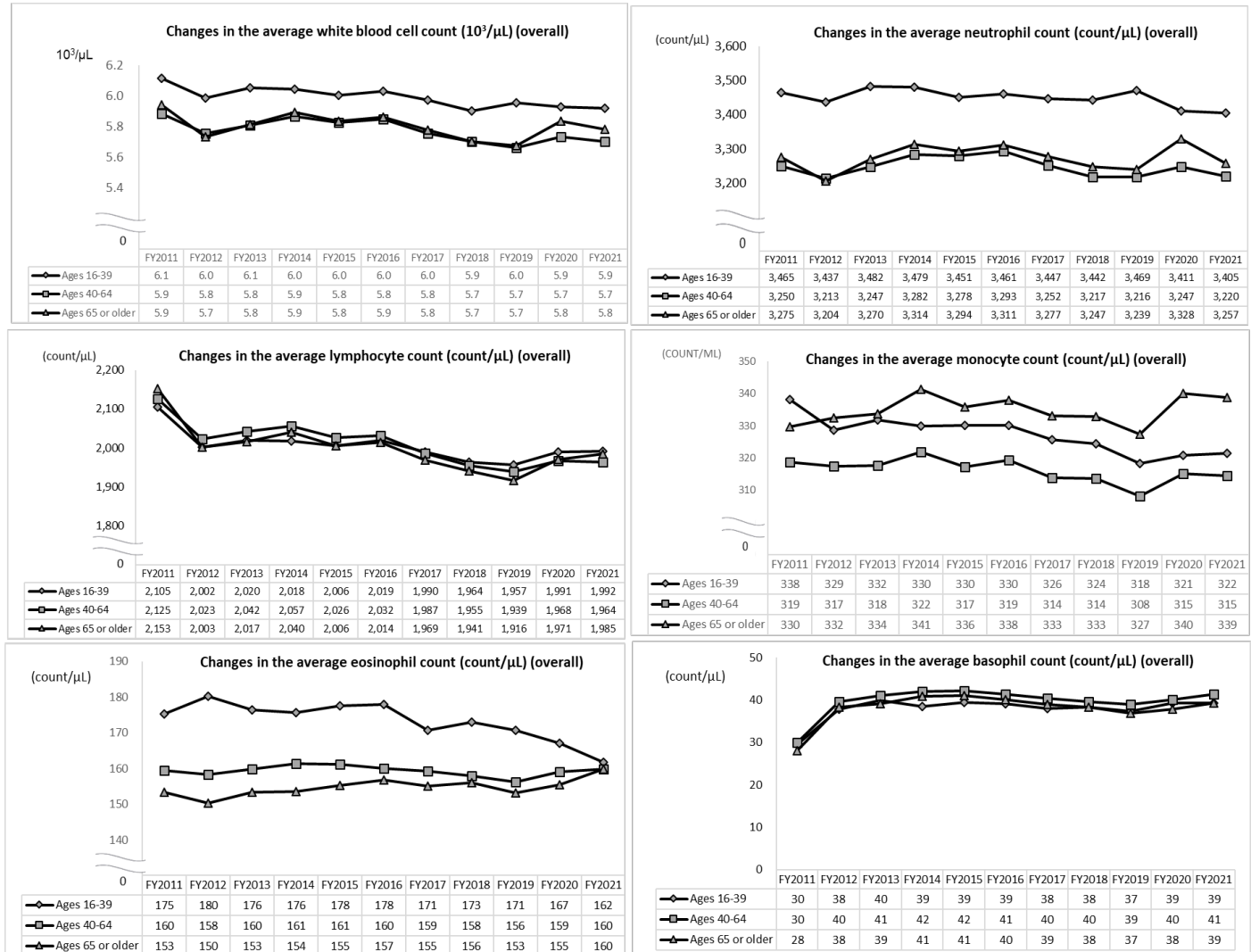
Diagnosis Item	Reference Interval	Action Thresholds		Abnormality		Units
Number of blood platelets	130–369	90–129	370–449	89 or lower	450 or over	$\times 10^3/\mu\text{L}$

Peripheral Blood Test: White Blood Cell Count and Differential

1. Results

There were no substantial changes in the average white blood cell count from FY2011 to FY2021 in any age group.

There were also no substantial changes in the average neutrophil, lymphocyte, monocyte, eosinophil, or basophil counts from FY2011 to FY2021 in any age group.



2. Explanation of the Graphs

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

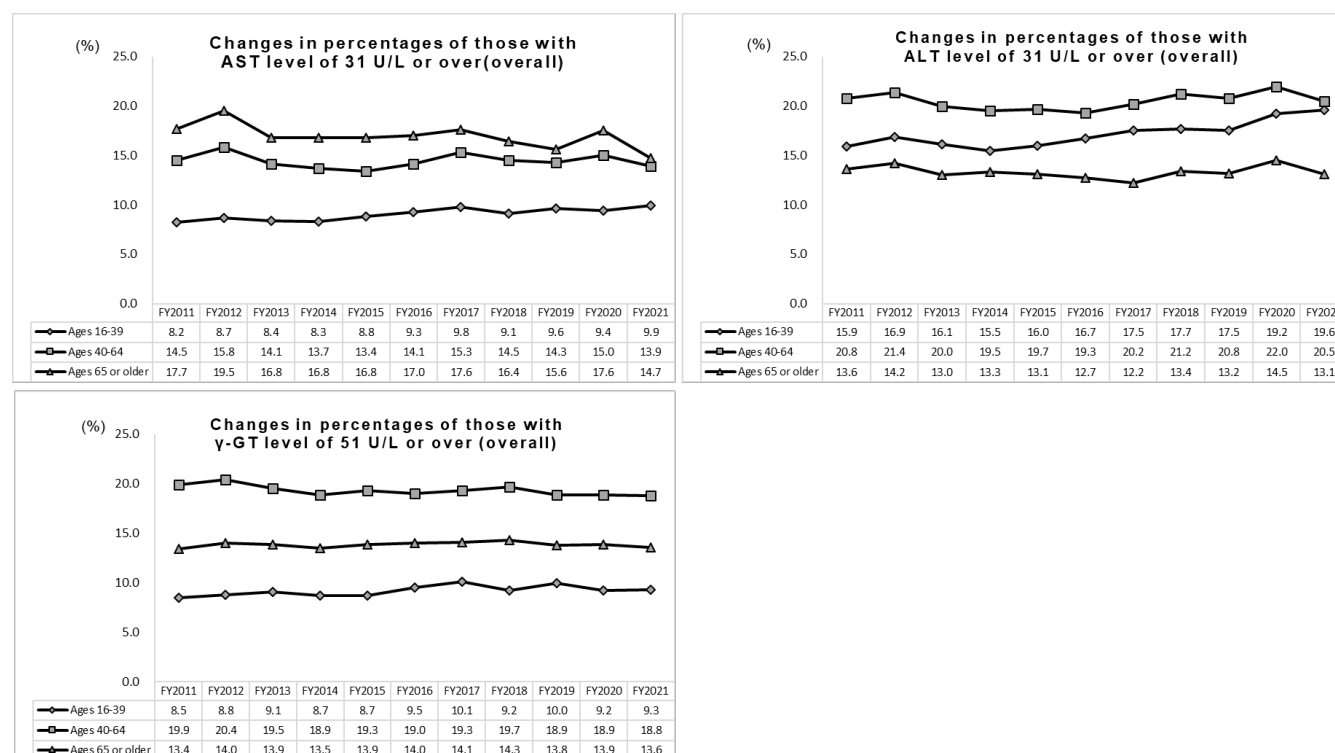
3. Reference Intervals and Action Thresholds (diagnostic criteria used for group and individual health checks)

Diagnosis		Reference Interval	Action Thresholds		Abnormality	Unit
Item						
Number of white blood cells		4.0–9.5	3.0–3.9	9.6–11.0	2.9 or lower 11.1 or over	$\times 10^3/\mu\text{L}$
Differential Leucocyte Counts (DLCs, Reference)	Neutrophils	40.0–75.0				%
	Lymphocytes	20.0–55.0				
	Monocytes	0–12.0				
	Eosinophils	0–10.0				
	Basophils	0–3.0				

Liver Function: AST, ALT, γ-GT

1. Results

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



2. Explanation of the Graphs

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

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

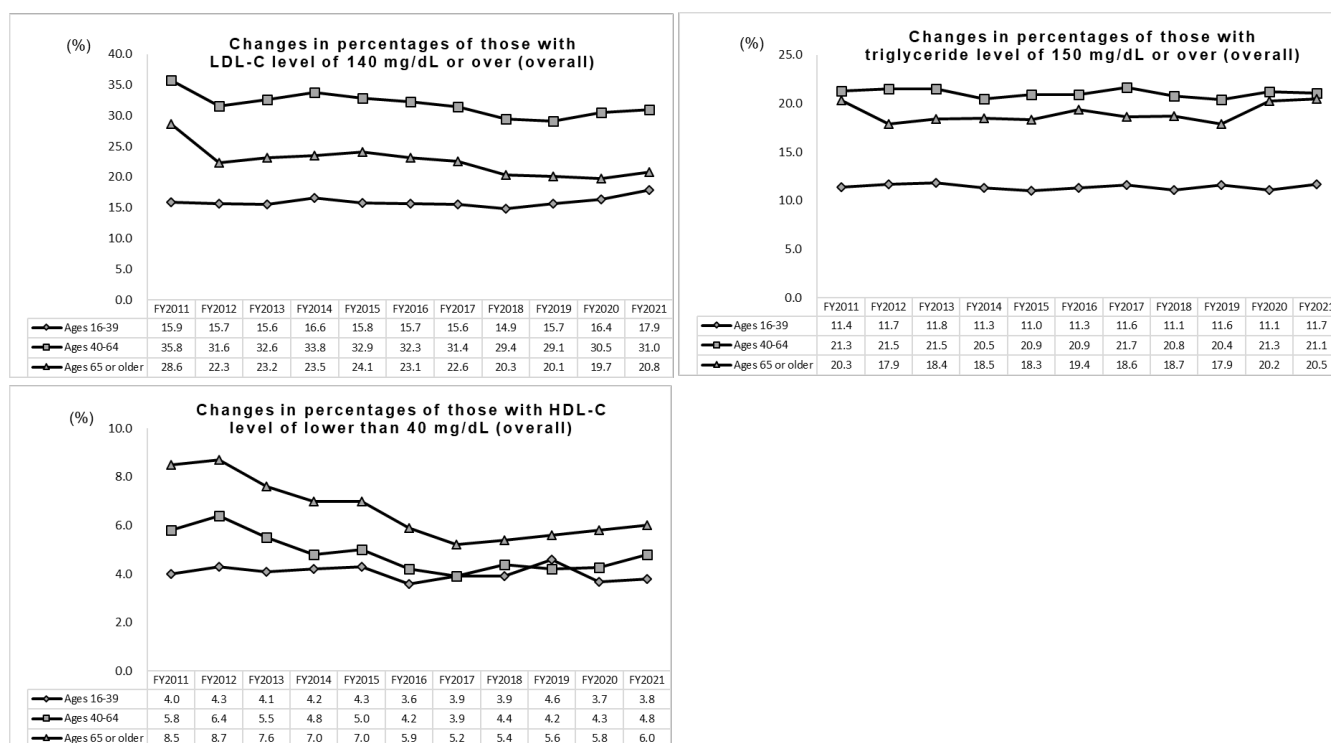
Diagnosis Item	Reference Interval	Action Threshold	Abnormality	Unit
AST (GOT)	30 or lower	31-50	51 or over	U/L
ALT (GPT)	30 or lower	31-50	51 or over	U/L
γ-GT	50 or lower	51-100	101 or over	U/L

Lipids: LDL Cholesterol, Triglycerides, HDL Cholesterol

1. Results

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

The percentages of those with HDL-C below 40 mg/dL decreased from FY2011 through FY2017 for ages 65 or older, but tended to increase thereafter.



2. Explanation of the Graphs

Determination of hyperlipidemia was based on the following reference intervals.

3. Reference Intervals

Diagnostic criteria for hyperlipidemia (fasting blood sampling)

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

Source: "Guidelines for the Prevention of Arteriosclerotic Diseases 2022" by the Japan Atherosclerosis Society

Blood Glucose (Fasting Blood Glucose, HbA1c)

1. Results

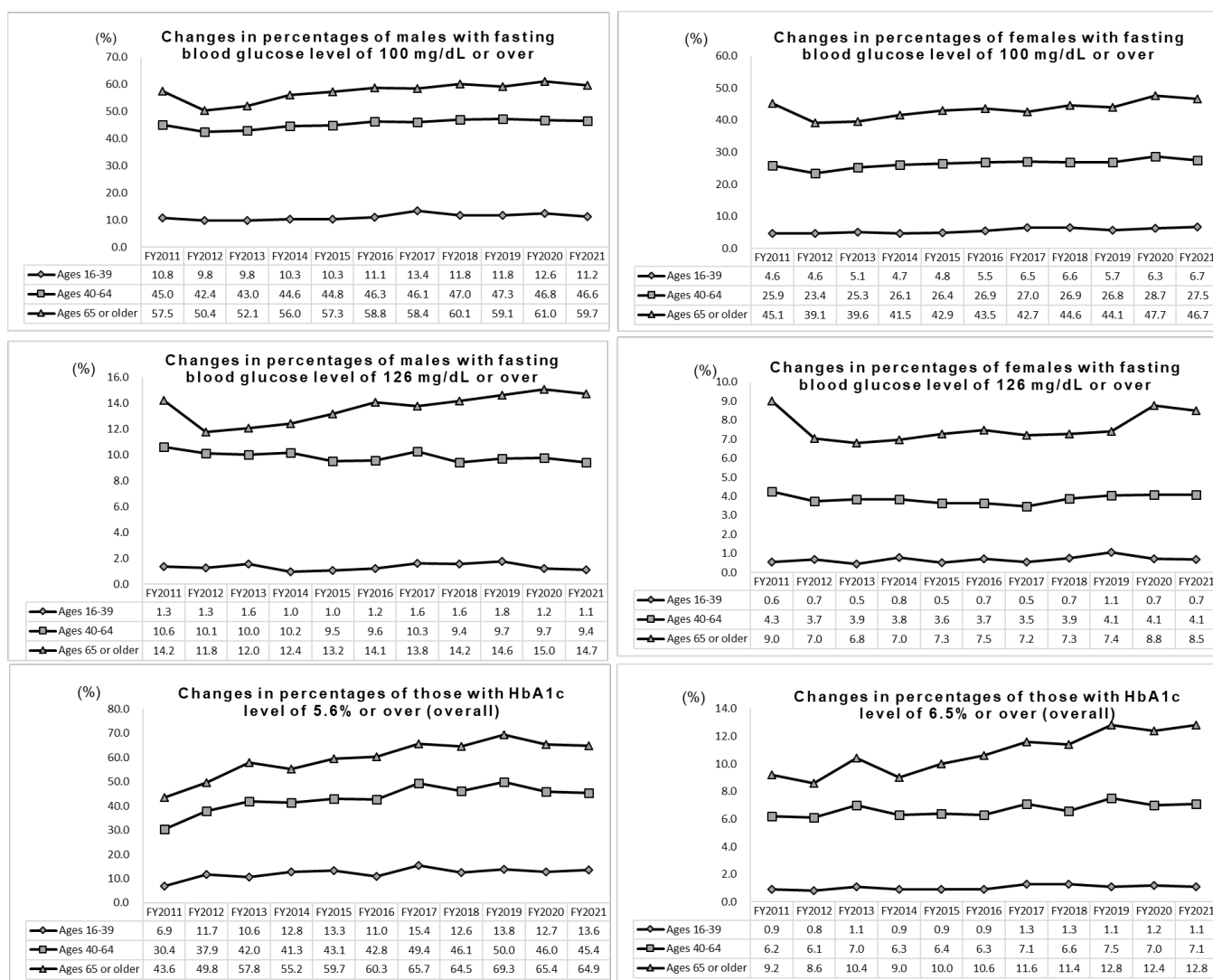
Among males and females ages 65 or older, the percentages of those with fasting blood glucose of 100 mg/dL or over decreased from FY2011 to FY2012, then showed slight increases thereafter until FY2020, but slightly decreased in FY2021.

The percentage of males ages 65 or older with fasting blood glucose of 126 mg/dL or over was on a downward trend from FY2011 to FY2012, but showed slight increases thereafter until FY2020 and a slight decrease in FY2021.

The percentage of females ages 65 or older with fasting blood glucose of 126 mg/dL or over was on a downward trend from FY2011 to FY2013, then trended slightly upward through FY2020, but decreased slightly in FY2021.

The percentages of those with HbA1c of 5.6% or over increased in ages 40 years and older from FY2011 to FY2019. The relevant percentages decreased slightly in FY2021 but were higher compared with levels in FY2011.

The percentage of those who were diagnosed as having diabetes (HbA1c of 6.5% or over) was on an upward trend from FY2011 to FY2021 for the age group of 65 and older.



2. Explanation of the Graphs

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

3. Reference Intervals

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

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

- 1) Fasting plasma glucose of 126 mg/dL or over in the early morning
- 2) Plasma glucose of 200 mg/dL or over at 2 hours after a 75g OGTT
- 3) Casual plasma glucose of 200 mg/dL or over
- 4) HbA1c level of 6.5% or over
- 5) Fasting plasma glucose of lower than 110 mg/dL in the early morning
- 6) Plasma glucose of lower than 140 mg/dL at 2 hours after a 75g OGTT

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

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

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

Source: "Japanese Clinical Practice Guideline for Diabetes 2022–2023" by the Japan Diabetes Society

*In this report, based on the "Epidemiological study: For the purpose of estimating the frequency of diabetes mellitus," 'diabetes mellitus' can be substituted for the determination of 'diabetic type' from a single examination. In this case, HbA1c of 6.5% (HbA1c (JDS) $\geq$ 6.1%) alone can be defined as diagnostic of diabetes mellitus. Source: "Report of the Committee on the Classification and Diagnostic Criteria of Diabetes Mellitus (2012)" (Japan Diabetes Society).

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

Blood glucose level	Fasting blood glucose of 100 mg/dL or over and HbA1c (NGSP level) of 5.6% or over or casual blood glucose of 100 mg/dL or over
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Source: "Guidelines for Smooth Implementation of Specified Health Checkups and Health Guidance (ver. 3.2) 2021" by the Ministry of Health, Labour and Welfare

Renal Function (Serum Creatinine, eGFR)

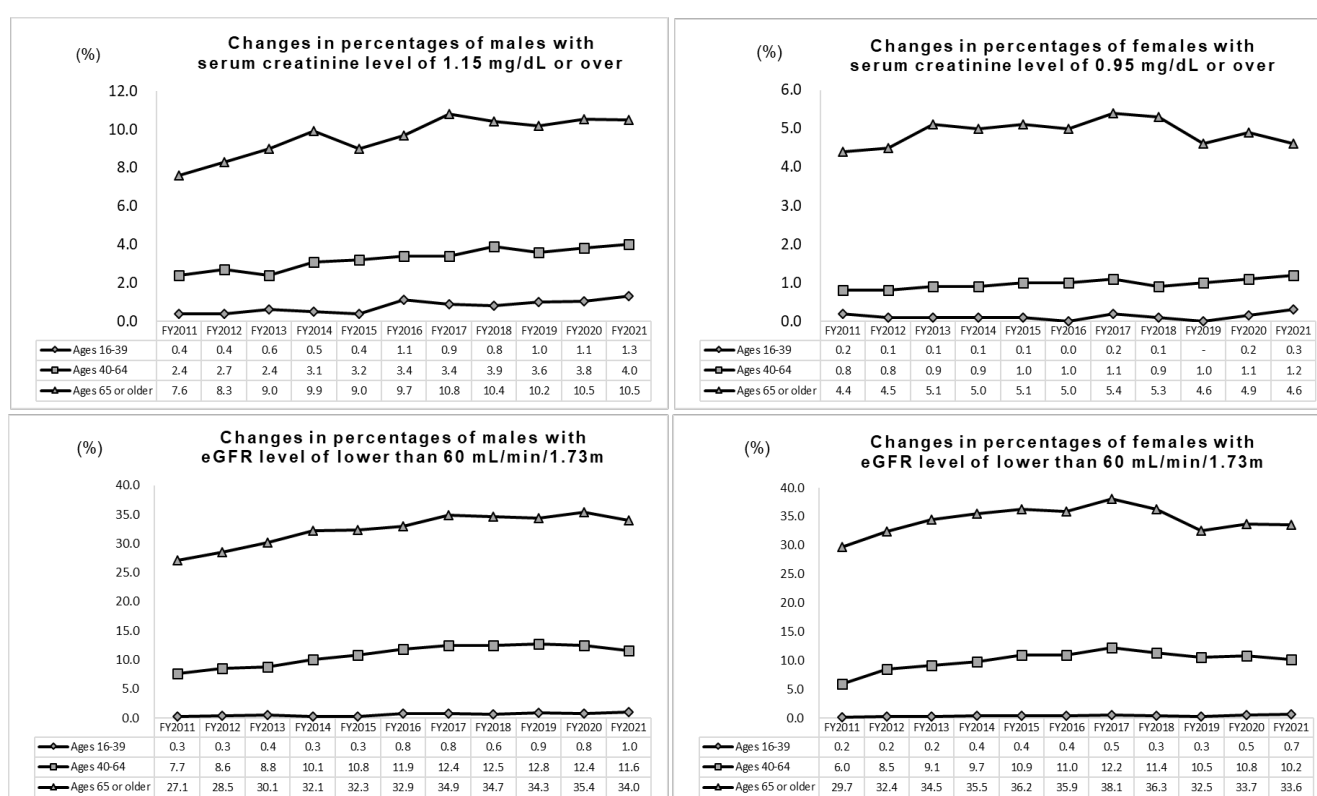
1. Results

The percentage of males with serum creatinine of 1.15 mg/dL or over increased slightly among those ages 40 to 64 from FY2011 to FY2021, while the relevant percentage for males ages 65 or older continued to increase until FY2017, but there were no substantial changes thereafter.

The percentage of females ages 65 or older with serum creatinine of 0.95 mg/dL or over increased from FY2011 to FY2017, but showed downward trend thereafter.

The percentage of males ages 40 to 64 with eGFR lower than 60mL/min/1.73m² was on an upward trend from FY2011 to FY2019 but decreased slightly in FY2020. The relevant percentage for males ages 65 or older showed an upward trend from FY2011 to FY2020, then decreased slightly in FY2021.

The percentage of females ages 40 or older with eGFR lower than 60mL/min/1.73m² was on an upward trend from FY2011 to FY2017, then trended downward.



2. Explanation of the Graphs

The graphs show the percentages of those with eGFR lower than 60mL/min/1.73m², which is one of the diagnostic criteria for chronic kidney diseases.

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

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

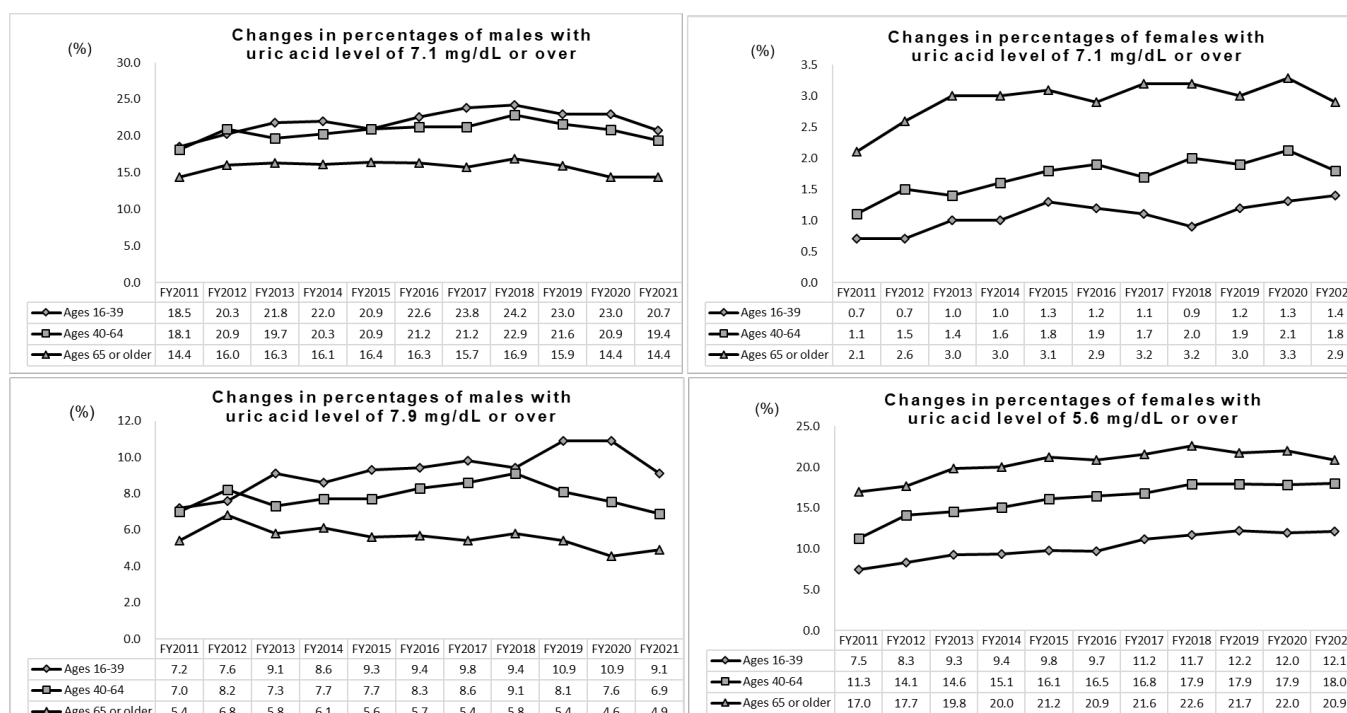
Renal Function: Uric Acid

1. Results

The percentage of males with uric acid of 7.1 mg/dL or over increased for all age groups from FY2011 to FY2018 but showed a slight downward trend through FY2021. The percentage among females showed no substantial changes in any age group.

The percentage of males with uric acid of 7.9 mg/dL or over increased among those ages 16 to 39 from FY2011 to FY2020, but showed a downward trend in FY2021.

The percentage of females with uric acid of 5.6 mg/dL or over increased from FY2011 to FY2021 for those ages 16-39 and 40 to 64.



2. Explanation of the Graphs

Determination of hyperuricemia was based on the following reference intervals.

3. Reference Intervals

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

FY2021 Comprehensive Health Check Fukushima Health Management Survey Results of Tabulation by Health Check Item

[Coverage]

- Residents registered at covered areas* from March 11, 2011 to April 1, 2012 (also after moving out from those covered areas)
- Residents registered at evacuation zones, etc. as of April 1 of the examination year
- Others, as warranted, based on Basic Survey results, even if the above conditions are not met
- * Covered areas: Municipalities designated as the evacuation zone in 2011
Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village, Minamisoma City, Tamura City and Kawamata Town, and parts of Date City (containing specific spots recommended for evacuation)

[Examination Items]

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

- * As general age categories and items for the Comprehensive Health Check do not correspond, we classified the participants into five age groups, namely, those aged 0 to 6, those aged 7 to 15, those aged 16 to 39, those aged 40 to 64, and those aged 65 or older, and tabulated the results by
- * For each health check item, tabulation was conducted by age group and by gender.
- * Tabulation results include those who received health checks twice or more in the same fiscal year.
- * Rules for describing tabulation results are the same as those used for the Vital Statistics in Japan by the Ministry of Health, Labour and Welfare.
When there is no data: -
When an item is not applicable to the relevant age group: ·
When it is inappropriate to indicate data: ...
When the ratio is minor (lower than 0.05): 0.0%
- * The Data in this document are presented with the same items as those in the previous reports to make comparison possible. Therefore, the results may not correspond to the graphs shown in the Report on the Results of the FY2021 Comprehensive Health Check.
- * The "number of participants" are the numbers used for the tabulation, and it differs from the actual number of examinees.

Height

Height (cm) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	637	3.5	94.7
7 to 15	1,739	11.6	146.1
16 to 39	3,077	28.9	163.2
40 to 64	8,979	54.7	161.2
65 or older	18,558	73.8	156.4

Height (cm) (males)					
Age group	Number of participants	Average age	Average value	150 cm or shorter	170 cm or taller
0 to 6	334	3.5	95.0	...	...
7 to 15	885	11.6	147.5	...	...
16 to 39	1,233	27.9	170.9	0.8%	58.1%
40 to 64	3,218	54.9	169.4	0.1%	47.2%
65 or older	8,672	74.0	163.3	1.9%	14.2%

Height (cm) (females)					
Age group	Number of participants	Average age	Average value	140 cm or shorter	160 cm or taller
0 to 6	303	3.5	94.5	...	...
7 to 15	854	11.6	144.8	...	...
16 to 39	1,844	29.6	158.1	0.3%	36.4%
40 to 64	5,761	54.6	156.6	0.3%	26.8%
65 or older	9,886	73.6	150.3	5.0%	5.2%

Weight

Weight (kg) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	638	3.5	14.9
7 to 15	1,739	11.6	40.9
16 to 39	3,079	28.9	61.4
40 to 64	8,981	54.7	62.6
65 or older	18,566	73.8	58.6

Weight (kg) (males)					
Age group	Number of participants	Average age	Average value	50 kg or less	70 kg or over
0 to 6	335	3.5	14.9	...	...
7 to 15	885	11.6	42.1	...	...
16 to 39	1,234	27.9	69.4	6.7%	42.4%
40 to 64	3,219	54.9	71.7	1.5%	51.5%
65 or older	8,675	74.0	64.7	5.4%	27.0%

Weight (kg) (females)					
Age group	Number of participants	Average age	Average value	45 kg or less	65 kg or over
0 to 6	303	3.5	14.8	...	...
7 to 15	854	11.6	39.6	...	...
16 to 39	1,845	29.6	56.1	11.8%	16.4%
40 to 64	5,762	54.6	57.5	8.9%	20.8%
65 or older	9,891	73.7	53.3	16.7%	10.2%

1. Physical Exam (1) BMI

BMI (Weight/Height ²) (overall)					
Age group	Number of participants	Average age	Average value	18 kg/m ² or lower	25 kg/m ² or over
0 to 6	.	.	.	.	.
7 to 15	.	.	.	.	.
16 to 39	3,077	28.9	22.9	8.4%	25.7%
40 to 64	8,979	54.7	24.0	3.9%	35.4%
65 or older	18,558	73.8	23.9	3.2%	34.8%

BMI (Weight/Height ²) (males)					
Age group	Number of participants	Average age	Average value	18 kg/m ² or lower	25 kg/m ² or over
0 to 6	.	.	.	.	.
7 to 15	.	.	.	.	.
16 to 39	1,233	27.9	23.7	7.8%	32.9%
40 to 64	3,218	54.9	25.0	1.3%	44.6%
65 or older	8,672	74.0	24.2	1.8%	38.3%

BMI (Weight/Height ²) (females)					
Age group	Number of participants	Average age	Average value	18 kg/m ² or lower	25 kg/m ² or over
0 to 6	.	.	.	.	.
7 to 15	.	.	.	.	.
16 to 39	1,844	29.6	22.4	8.8%	20.8%
40 to 64	5,761	54.6	23.5	5.3%	30.3%
65 or older	9,886	73.6	23.6	4.4%	31.7%

1. Physical Exam (2) Abdominal Circumference

Abdominal circumference (cm) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	743	28.4	78.2
40 to 64	8,977	54.7	84.3
65 or older	12,440	70.3	85.2

Abdominal circumference (cm) (males)				
Age group	Number of participants	Average age	Average value	85 cm or over
0 to 6	.	.	.	.
7 to 15	.	.	.	.
16 to 39	344	28.7	82.0	38.4%
40 to 64	3,218	54.9	87.5	57.4%
65 or older	5,746	70.5	86.9	57.7%

Abdominal circumference (cm) (females)				
Age group	Number of participants	Average age	Average value	90 cm or over
0 to 6	.	.	.	.
7 to 15	.	.	.	.
16 to 39	399	28.0	75.0	9.0%
40 to 64	5,759	54.6	82.4	22.9%
65 or older	6,694	70.2	83.7	24.0%

1. Physical Exam (3) Blood Pressure

Systolic blood pressure (mmHg) (overall)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	.	.	.	.
7 to 15	1,738	11.6	106.7	0.5%
16 to 39	3,079	28.9	113.3	2.9%
40 to 64	8,982	54.7	124.6	14.9%
65 or older	18,566	73.8	132.1	28.1%

Systolic blood pressure (mmHg) (males)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	.	.	.	.
7 to 15	885	11.6	107.9	0.9%
16 to 39	1,234	27.9	117.7	4.2%
40 to 64	3,219	54.9	127.2	16.7%
65 or older	8,675	74.0	132.3	28.8%

Systolic blood pressure (mmHg) (females)				
Age group	Number of participants	Average age	Average value	140 mmHg or over
0 to 6	.	.	.	.
7 to 15	853	11.6	105.5	0.1%
16 to 39	1,845	29.6	110.4	2.0%
40 to 64	5,763	54.6	123.1	14.0%
65 or older	9,891	73.7	131.8	27.5%

Diastolic blood pressure (mmHg) (overall)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	.	.	.	.
7 to 15	1,738	11.6	61.3	0.3%
16 to 39	3,079	28.9	67.9	3.2%
40 to 64	8,982	54.7	75.8	11.0%
65 or older	18,566	73.8	73.8	7.3%

Diastolic blood pressure (mmHg) (males)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	.	.	.	.
7 to 15	885	11.6	61.5	0.2%
16 to 39	1,234	27.9	70.0	4.8%
40 to 64	3,219	54.9	78.8	15.7%
65 or older	8,675	74.0	74.7	8.6%

Diastolic blood pressure (mmHg) (females)				
Age group	Number of participants	Average age	Average value	90 mmHg or over
0 to 6	.	.	.	.
7 to 15	853	11.6	61.1	0.5%
16 to 39	1,845	29.6	66.4	2.1%
40 to 64	5,763	54.6	74.1	8.3%
65 or older	9,891	73.7	73.1	6.2%

2. Urine Test (1) Urine Sugar

Urine sugar (overall)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	3,063	28.9	0.7%
40 to 64	8,961	54.7	4.6%
65 or older	18,510	73.8	6.3%

Urine sugar (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,234	27.9	1.0%
40 to 64	3,213	54.9	7.9%
65 or older	8,652	73.9	9.2%

Urine sugar (females)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,829	29.6	0.5%
40 to 64	5,748	54.6	2.7%
65 or older	9,858	73.6	3.7%

2. Urine Test (2) Urine Protein

Urine protein (overall)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	3,063	28.9	2.6%
40 to 64	8,961	54.7	2.0%
65 or older	18,510	73.8	3.3%

Urine protein (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,234	27.9	2.3%
40 to 64	3,213	54.9	3.0%
65 or older	8,652	73.9	5.1%

Urine protein (females)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,829	29.6	2.8%
40 to 64	5,748	54.6	1.4%
65 or older	9,858	73.6	1.8%

2. Urine Test (3) Urine Occult Blood

Urine occult blood (overall)				
Age group	Number of participants	Average age	(1+) or over	(1+) or over and excluding those on their period
0 to 6	.	.	.	.
7 to 15	.	.	.	.
16 to 39	3,062	28.9	7.4%	2.9%
40 to 64	8,957	54.7	6.0%	4.6%
65 or older	18,510	73.8	5.1%	5.1%

Urine occult blood (males)			
Age group	Number of participants	Average age	(1+) or over
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,234	27.9	1.1%
40 to 64	3,211	54.9	2.3%
65 or older	8,652	73.9	3.5%

Urine occult blood (females)				
Age group	Number of participants	Average age	(1+) or over	(1+) or over and excluding those on their period
0 to 6	.	.	.	.
7 to 15	.	.	.	.
16 to 39	1,828	29.6	11.7%	4.2%
40 to 64	5,746	54.6	8.0%	6.0%
65 or older	9,858	73.6	6.4%	6.4%

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

Red blood cell count ($10^6/\mu\text{L}$) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	4.65
7 to 15	1,730	11.6	4.80
16 to 39	3,078	28.9	4.77
40 to 64	8,975	54.7	4.63
65 or older	18,561	73.8	4.47

Red blood cell count ($10^6/\mu\text{L}$) (males)						
Age group	Number of participants	Average age	Average value	$3.69 \times 10^6/\mu\text{L}$ or lower	$3.99 \times 10^6/\mu\text{L}$ or lower	$5.80 \times 10^6/\mu\text{L}$ or over
0 to 6	303	3.6	4.67	-	1.0%	0.7%
7 to 15	879	11.6	4.92	-	0.3%	1.0%
16 to 39	1,235	27.9	5.19	0.2%	0.2%	5.3%
40 to 64	3,216	54.9	4.91	0.7%	2.5%	2.7%
65 or older	8,672	74.0	4.63	3.0%	8.9%	0.9%

Red blood cell count ($10^6/\mu\text{L}$) (females)						
Age group	Number of participants	Average age	Average value	$3.39 \times 10^6/\mu\text{L}$ or lower	$3.69 \times 10^6/\mu\text{L}$ or lower	$5.50 \times 10^6/\mu\text{L}$ or over
0 to 6	272	3.6	4.63	-	-	0.4%
7 to 15	851	11.6	4.68	-	-	0.4%
16 to 39	1,843	29.6	4.49	0.2%	1.4%	0.4%
40 to 64	5,759	54.6	4.47	0.4%	1.8%	0.7%
65 or older	9,889	73.7	4.32	1.4%	5.4%	0.3%

3. Peripheral Blood Test (1)-2 Hemoglobin

Hemoglobin (g/dL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	12.5
7 to 15	1,730	11.6	13.6
16 to 39	3,078	28.9	14.0
40 to 64	8,975	54.7	13.9
65 or older	18,561	73.8	13.8

Hemoglobin (g/dL) (males)						
Age group	Number of participants	Average age	Average value	12.0 g/dL or lower	13.0 g/dL or lower	18.0 g/dL or over
0 to 6	303	3.6	12.5	31.4%	76.6%	-
7 to 15	879	11.6	13.9	3.5%	23.3%	-
16 to 39	1,235	27.9	15.5	0.5%	1.0%	0.8%
40 to 64	3,216	54.9	15.1	1.1%	4.1%	0.8%
65 or older	8,672	74.0	14.5	4.9%	14.2%	0.5%

Hemoglobin (g/dL) (females)						
Age group	Number of participants	Average age	Average value	11.0 g/dL or lower	12.0 g/dL or lower	16.0 g/dL or over
0 to 6	272	3.6	12.5	2.9%	29.4%	-
7 to 15	851	11.6	13.2	2.0%	8.6%	0.2%
16 to 39	1,843	29.6	13.1	5.3%	14.4%	0.2%
40 to 64	5,759	54.6	13.3	4.3%	11.9%	0.7%
65 or older	9,889	73.7	13.1	3.4%	14.9%	0.4%

3. Peripheral Blood Test (1)-3 Hematocrit

Hematocrit (%) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	38.2
7 to 15	1,730	11.6	41.4
16 to 39	3,078	28.9	42.5
40 to 64	8,975	54.7	42.1
65 or older	18,561	73.8	41.6

Hematocrit (%) (males)						
Age group	Number of participants	Average age	Average value	35.9% or lower	37.9% or lower	55.0% or over
0 to 6	303	3.6	38.1	19.8%	53.8%	-
7 to 15	879	11.6	42.1	1.4%	10.2%	-
16 to 39	1,235	27.9	46.4	0.2%	0.3%	0.2%
40 to 64	3,216	54.9	45.2	0.9%	2.2%	0.4%
65 or older	8,672	74.0	43.4	4.0%	8.4%	0.2%

Hematocrit (%) (females)						
Age group	Number of participants	Average age	Average value	28.9% or lower	32.9% or lower	48.0% or over
0 to 6	272	3.6	38.4	-	0.7%	-
7 to 15	851	11.6	40.7	0.1%	0.8%	0.4%
16 to 39	1,843	29.6	40.0	0.4%	2.2%	0.2%
40 to 64	5,759	54.6	40.5	0.5%	1.8%	1.0%
65 or older	9,889	73.7	40.0	0.3%	1.9%	0.8%

3. Peripheral Blood Test (2) Platelet Count

Platelet count ($10^3/\mu\text{L}$) (overall)							
Age group	Number of participants	Average age	Average value	$89 \times 10^3/\mu\text{L}$ or lower	$129 \times 10^3/\mu\text{L}$ or lower	$370 \times 10^3/\mu\text{L}$ or over	$450 \times 10^3/\mu\text{L}$ or over
0 to 6	575	3.6	356.9	0.2%	0.2%	38.1%	12.9%
7 to 15	1,730	11.6	293.5	0.2%	0.3%	10.6%	1.3%
16 to 39	3,078	28.9	268.8	0.1%	0.4%	4.7%	0.7%
40 to 64	8,969	54.7	259.8	0.1%	0.6%	4.7%	0.7%
65 or older	18,556	73.8	228.6	0.3%	1.7%	1.4%	0.2%

Platelet count ($10^3/\mu\text{L}$) (males)							
Age group	Number of participants	Average age	Average value	$89 \times 10^3/\mu\text{L}$ or lower	$129 \times 10^3/\mu\text{L}$ or lower	$370 \times 10^3/\mu\text{L}$ or over	$450 \times 10^3/\mu\text{L}$ or over
0 to 6	303	3.6	356.7	-	-	37.6%	12.5%
7 to 15	879	11.6	296.7	0.1%	0.2%	11.6%	1.5%
16 to 39	1,235	27.9	262.1	-	0.3%	3.2%	0.4%
40 to 64	3,212	54.9	253.2	0.1%	0.7%	3.1%	0.4%
65 or older	8,668	74.0	220.7	0.2%	2.1%	1.2%	0.3%

Platelet count ($10^3/\mu\text{L}$) (females)							
Age group	Number of participants	Average age	Average value	$89 \times 10^3/\mu\text{L}$ or lower	$129 \times 10^3/\mu\text{L}$ or lower	$370 \times 10^3/\mu\text{L}$ or over	$450 \times 10^3/\mu\text{L}$ or over
0 to 6	272	3.6	357.0	0.4%	0.4%	38.6%	13.2%
7 to 15	851	11.6	290.1	0.4%	0.4%	9.6%	1.1%
16 to 39	1,843	29.6	273.4	0.1%	0.4%	5.8%	0.9%
40 to 64	5,757	54.6	263.5	0.1%	0.6%	5.6%	0.9%
65 or older	9,888	73.7	235.4	0.3%	1.3%	1.6%	0.2%

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

White blood cell count ($10^3/\mu\text{L}$) (overall)							
Age group	Number of participants	Average age	Average value	$2.9 \times 10^3/\mu\text{L}$ or lower	$3.9 \times 10^3/\mu\text{L}$ or lower	$9.6 \times 10^3/\mu\text{L}$ or over	$11.1 \times 10^3/\mu\text{L}$ or over
0 to 6	575	3.6	8.4	-	0.5%	25.9%	12.5%
7 to 15	1,730	11.6	6.3	0.2%	2.6%	3.9%	1.3%
16 to 39	3,078	28.9	5.9	0.4%	8.0%	3.0%	0.7%
40 to 64	8,975	54.7	5.7	1.2%	10.9%	2.3%	0.5%
65 or older	18,561	73.8	5.8	0.6%	7.9%	2.0%	0.5%

White blood cell count ($10^3/\mu\text{L}$) (males)							
Age group	Number of participants	Average age	Average value	$2.9 \times 10^3/\mu\text{L}$ or lower	$3.9 \times 10^3/\mu\text{L}$ or lower	$9.6 \times 10^3/\mu\text{L}$ or over	$11.1 \times 10^3/\mu\text{L}$ or over
0 to 6	303	3.6	8.3	-	0.3%	21.8%	10.6%
7 to 15	879	11.6	6.3	-	2.0%	4.1%	1.3%
16 to 39	1,235	27.9	5.9	0.3%	7.0%	2.8%	0.6%
40 to 64	3,216	54.9	6.0	0.5%	6.7%	3.5%	0.7%
65 or older	8,672	74.0	6.0	0.4%	6.1%	2.6%	0.7%

White blood cell count ($10^3/\mu\text{L}$) (females)							
Age group	Number of participants	Average age	Average value	$2.9 \times 10^3/\mu\text{L}$ or lower	$3.9 \times 10^3/\mu\text{L}$ or lower	$9.6 \times 10^3/\mu\text{L}$ or over	$11.1 \times 10^3/\mu\text{L}$ or over
0 to 6	272	3.6	8.6	-	0.7%	30.5%	14.7%
7 to 15	851	11.6	6.3	0.4%	3.2%	3.8%	1.4%
16 to 39	1,843	29.6	5.9	0.5%	8.6%	3.2%	0.8%
40 to 64	5,759	54.6	5.5	1.6%	13.2%	1.6%	0.4%
65 or older	9,889	73.7	5.6	0.9%	9.6%	1.5%	0.3%

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

Neutrophil count (count/ μ L) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	3,168
7 to 15	1,730	11.6	3,098
16 to 39	3,076	28.9	3,405
40 to 64	8,974	54.7	3,220
65 or older	18,558	73.8	3,257

Neutrophil count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	303	3.6	3,080
7 to 15	879	11.6	3,015
16 to 39	1,235	27.9	3,310
40 to 64	3,216	54.9	3,412
65 or older	8,671	74.0	3,402

Neutrophil count (count/ μ L) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	272	3.6	3,267
7 to 15	851	11.6	3,184
16 to 39	1,841	29.6	3,468
40 to 64	5,758	54.6	3,112
65 or older	9,887	73.7	3,130

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

Lymphocyte count (count/ μ L) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	4,445
7 to 15	1,730	11.6	2,562
16 to 39	3,076	28.9	1,992
40 to 64	8,974	54.7	1,964
65 or older	18,558	73.8	1,985

Lymphocyte count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	303	3.6	4,366
7 to 15	879	11.6	2,592
16 to 39	1,235	27.9	2,057
40 to 64	3,216	54.9	2,042
65 or older	8,671	74.0	1,968

Lymphocyte count (count/ μ L) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	272	3.6	4,533
7 to 15	851	11.6	2,531
16 to 39	1,841	29.6	1,949
40 to 64	5,758	54.6	1,920
65 or older	9,887	73.7	2,001

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

Monocyte count (count/ μ L) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	430
7 to 15	1,730	11.6	339
16 to 39	3,076	28.9	322
40 to 64	8,974	54.7	315
65 or older	18,558	73.8	339

Monocyte count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	303	3.6	431
7 to 15	879	11.6	351
16 to 39	1,235	27.9	340
40 to 64	3,216	54.9	355
65 or older	8,671	74.0	371

Monocyte count (count/ μ L) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	272	3.6	428
7 to 15	851	11.6	326
16 to 39	1,841	29.6	309
40 to 64	5,758	54.6	292
65 or older	9,887	73.7	310

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

Eosinophil count (count/ μ L) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	302
7 to 15	1,730	11.6	267
16 to 39	3,076	28.9	162
40 to 64	8,974	54.7	160
65 or older	18,558	73.8	160

Eosinophil count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	303	3.6	326
7 to 15	879	11.6	307
16 to 39	1,235	27.9	184
40 to 64	3,216	54.9	186
65 or older	8,671	74.0	184

Eosinophil count (count/ μ L) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	272	3.6	275
7 to 15	851	11.6	225
16 to 39	1,841	29.6	147
40 to 64	5,758	54.6	145
65 or older	9,887	73.7	139

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

Basophil count (count/ μ L) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	575	3.6	43
7 to 15	1,730	11.6	39
16 to 39	3,076	28.9	39
40 to 64	8,974	54.7	41
65 or older	18,558	73.8	39

Basophil count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	303	3.6	43
7 to 15	879	11.6	41
16 to 39	1,235	27.9	41
40 to 64	3,216	54.9	45
65 or older	8,671	74.0	41

Basophil count (count/ μ L) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	272	3.6	42
7 to 15	851	11.6	37
16 to 39	1,841	29.6	38
40 to 64	5,758	54.6	39
65 or older	9,887	73.7	38

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

AST (U/L) (overall)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	23.6	12.0%	0.8%
16 to 39	3,079	28.9	21.6	9.9%	2.6%
40 to 64	8,976	54.7	23.9	13.9%	2.8%
65 or older	18,561	73.8	24.6	14.7%	2.5%

AST (U/L) (males)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	25.3	16.0%	1.3%
16 to 39	1,235	27.9	25.9	18.2%	5.1%
40 to 64	3,216	54.9	27.1	22.5%	4.7%
65 or older	8,673	74.0	25.5	18.1%	3.1%

AST (U/L) (females)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	21.9	8.0%	0.4%
16 to 39	1,844	29.6	18.7	4.3%	1.0%
40 to 64	5,760	54.6	22.1	9.0%	1.7%
65 or older	9,888	73.7	23.9	11.7%	2.0%

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

ALT (U/L) (overall)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	16.9	6.6%	2.2%
16 to 39	3,079	28.9	24.5	19.6%	8.9%
40 to 64	8,976	54.7	24.2	20.5%	6.6%
65 or older	18,561	73.8	20.8	13.1%	3.2%

ALT (U/L) (males)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	19.5	9.5%	3.0%
16 to 39	1,235	27.9	36.7	37.0%	18.5%
40 to 64	3,216	54.9	31.2	35.3%	12.5%
65 or older	8,673	74.0	22.8	17.5%	4.1%

ALT (U/L) (females)					
Age group	Number of participants	Average age	Average value	31 U/L or over	51 U/L or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	14.3	3.7%	1.4%
16 to 39	1,844	29.6	16.4	8.0%	2.5%
40 to 64	5,760	54.6	20.3	12.3%	3.3%
65 or older	9,888	73.7	19.1	9.3%	2.3%

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

γ to GT (U/L) (overall)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	14.7	0.8%	-
16 to 39	3,079	28.9	25.7	9.3%	2.5%
40 to 64	8,976	54.7	38.9	18.8%	6.1%
65 or older	18,561	73.8	33.5	13.6%	3.7%

γ to GT (U/L) (males)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	16.3	1.2%	-
16 to 39	1,235	27.9	37.0	18.8%	5.5%
40 to 64	3,216	54.9	57.8	34.0%	12.0%
65 or older	8,673	74.0	42.8	21.0%	6.2%

γ to GT (U/L) (females)					
Age group	Number of participants	Average age	Average value	51 U/L or over	101 U/L or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	13.1	0.4%	-
16 to 39	1,844	29.6	18.2	2.9%	0.5%
40 to 64	5,760	54.6	28.4	10.3%	2.7%
65 or older	9,888	73.7	25.2	7.1%	1.5%

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

LDL-C (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	92.7	12.2%	3.4%
16 to 39	3,079	28.9	111.8	36.7%	17.9%
40 to 64	8,976	54.7	125.7	55.2%	31.0%
65 or older	18,561	73.8	116.5	43.8%	20.8%

LDL-C (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	91.2	10.8%	2.8%
16 to 39	1,235	27.9	115.4	43.2%	23.9%
40 to 64	3,216	54.9	123.0	52.9%	28.7%
65 or older	8,673	74.0	112.5	39.5%	17.2%

LDL-C (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	120 mg/dL or over	140 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	94.2	13.7%	4.0%
16 to 39	1,844	29.6	109.4	32.3%	13.8%
40 to 64	5,760	54.6	127.1	56.5%	32.3%
65 or older	9,888	73.7	120.0	47.6%	23.9%

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

Triglyceride (TG) (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	82.9	9.5%	1.2%
16 to 39	3,079	28.9	89.9	11.7%	1.5%
40 to 64	8,976	54.7	117.7	21.1%	3.5%
65 or older	18,561	73.8	116.0	20.5%	1.9%

Triglyceride (TG) (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	84.6	11.1%	1.6%
16 to 39	1,235	27.9	108.9	18.8%	3.0%
40 to 64	3,216	54.9	146.4	33.1%	6.5%
65 or older	8,673	74.0	121.4	23.4%	2.6%

Triglyceride (TG) (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	150 mg/dL or over	300 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	81.1	7.9%	0.7%
16 to 39	1,844	29.6	77.3	6.9%	0.5%
40 to 64	5,760	54.6	101.7	14.5%	1.8%
65 or older	9,888	73.7	111.3	18.0%	1.2%

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

HDL-C (mg/dL) (overall)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	.	.	.	.
7 to 15	1,711	11.6	61.8	2.3%
16 to 39	3,079	28.9	62.0	3.8%
40 to 64	8,976	54.7	64.0	4.8%
65 or older	18,561	73.8	60.2	6.0%

HDL-C (mg/dL) (males)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	.	.	.	.
7 to 15	865	11.6	61.9	2.7%
16 to 39	1,235	27.9	55.6	7.0%
40 to 64	3,216	54.9	56.6	10.0%
65 or older	8,673	74.0	56.0	9.6%

HDL-C (mg/dL) (females)				
Age group	Number of participants	Average age	Average value	Lower than 40 mg/dL
0 to 6	.	.	.	.
7 to 15	846	11.6	61.7	1.9%
16 to 39	1,844	29.6	66.3	1.6%
40 to 64	5,760	54.6	68.2	1.8%
65 or older	9,888	73.7	63.9	2.8%

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

Fasting blood glucose (mg/dL) (overall)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	.	.	.	.	.	.
7 to 15	1,089	11.7	87.0	0.3%	-	-
16 to 39	2,746	28.9	89.3	2.4%	0.8%	0.3%
40 to 64	7,831	54.5	99.2	14.8%	5.0%	1.4%
65 or older	14,095	73.2	105.5	27.7%	9.5%	2.2%

Fasting blood glucose (mg/dL) (males)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	.	.	.	.	.	.
7 to 15	529	11.7	87.8	0.2%	-	-
16 to 39	1,101	27.9	90.9	3.4%	0.8%	0.5%
40 to 64	2,810	54.8	103.8	21.8%	8.2%	2.5%
65 or older	6,622	73.3	108.4	33.9%	12.3%	3.0%

Fasting blood glucose (mg/dL) (females)						
Age group	Number of participants	Average age	Average value	110 mg/dL or over	130 mg/dL or over	160 mg/dL or over
0 to 6	.	.	.	.	.	.
7 to 15	560	11.7	86.2	0.4%	-	-
16 to 39	1,645	29.5	88.3	1.8%	0.7%	0.2%
40 to 64	5,021	54.4	96.7	10.9%	3.2%	0.9%
65 or older	7,473	73.1	102.8	22.3%	7.1%	1.5%

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

HbA1c (%) (NGSP) (overall)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	.	.	.	.	.	.
7 to 15	1,711	11.6	5.3	0.4%	0.1%	0.1%
16 to 39	3,078	28.9	5.3	2.2%	0.6%	0.4%
40 to 64	8,977	54.7	5.6	15.9%	3.7%	1.5%
65 or older	18,561	73.8	5.8	29.3%	5.8%	1.2%

HbA1c (%) (NGSP) (males)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	.	.	.	.	.	.
7 to 15	865	11.6	5.3	0.6%	-	-
16 to 39	1,235	27.9	5.3	2.4%	0.7%	0.5%
40 to 64	3,217	54.9	5.7	19.6%	5.8%	2.4%
65 or older	8,673	74.0	5.9	32.3%	7.0%	1.5%

HbA1c (%) (NGSP) (females)						
Age group	Number of participants	Average age	Average value	6.0% or over	7.0% or over	8.0% or over
0 to 6	.	.	.	.	.	.
7 to 15	846	11.6	5.3	0.2%	0.1%	0.1%
16 to 39	1,843	29.6	5.3	2.1%	0.6%	0.3%
40 to 64	5,760	54.6	5.6	13.8%	2.5%	1.0%
65 or older	9,888	73.7	5.8	26.7%	4.7%	0.9%

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

Serum creatinine (mg/dL) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	.	.	.
7 to 15	1,711	11.6	0.51
16 to 39	3,079	28.9	0.70
40 to 64	8,974	54.7	0.74
65 or older	18,561	73.8	0.80

Serum creatinine (mg/dL) (males)					
Age group	Number of participants	Average age	Average value	1.15 mg/dL or over	1.35 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	865	11.6	0.53	-	-
16 to 39	1,235	27.9	0.84	1.3%	0.1%
40 to 64	3,215	54.9	0.88	4.0%	1.0%
65 or older	8,673	74.0	0.92	10.5%	3.7%

Serum creatinine (mg/dL) (females)					
Age group	Number of participants	Average age	Average value	0.95 mg/dL or over	1.15 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	846	11.6	0.49	0.1%	-
16 to 39	1,844	29.6	0.61	0.3%	0.1%
40 to 64	5,759	54.6	0.65	1.2%	0.4%
65 or older	9,888	73.7	0.69	4.6%	1.4%

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

eGFR (mL/min/1.73m ²) (overall)			
Age group	Number of participants	Average age	Average value
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	3,079	28.9	94.6
40 to 64	8,974	54.7	74.8
65 or older	18,561	73.8	65.6

eGFR (mL/min/1.73m ²) (males)			
Age group	Number of participants	Average age	Average value
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,235	27.9	93.6
40 to 64	3,215	54.9	74.4
65 or older	8,673	74.0	65.5

eGFR (mL/min/1.73m ²) (females)			
Age group	Number of participants	Average age	Average value
0 to 6	.	.	.
7 to 15	.	.	.
16 to 39	1,844	29.6	95.3
40 to 64	5,759	54.6	75.0
65 or older	9,888	73.7	65.6

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

Uric acid (mg/dL) (overall)					
Age group	Number of participants	Average age	Average value	7.1 mg/dL or over	8.0 mg/dL or over
0 to 6	.	.	.	.	.
7 to 15	1,711	11.6	4.7	3.8%	1.3%
16 to 39	3,079	28.9	5.1	9.1%	3.3%
40 to 64	8,974	54.7	5.1	8.1%	2.6%
65 or older	18,561	73.8	5.2	8.3%	2.4%

Uric acid (mg/dL) (males)						
Age group	Number of participants	Average age	Average value	7.1 mg/dL or over	7.9 mg/dL or over	8.0 mg/dL or over
0 to 6	.	.	.	.	.	.
7 to 15	865	11.6	5.1	6.8%	2.9%	2.3%
16 to 39	1,235	27.9	6.1	20.7%	9.1%	8.0%
40 to 64	3,215	54.9	6.0	19.4%	6.9%	6.3%
65 or older	8,673	74.0	5.7	14.4%	4.9%	4.2%

Uric acid (mg/dL) (females)						
Age group	Number of participants	Average age	Average value	5.6 mg/dL or over	7.1 mg/dL or over	8.0 mg/dL or over
0 to 6	.	.	.	.	.	.
7 to 15	846	11.6	4.4	7.3%	0.7%	0.2%
16 to 39	1,844	29.6	4.4	12.1%	1.4%	0.2%
40 to 64	5,759	54.6	4.6	18.0%	1.8%	0.5%
65 or older	9,888	73.7	4.7	20.9%	2.9%	0.8%

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

As of March 31, 2023

1. Summary**1.1 Purpose**

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

1.2 Eligible persons

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

1.3 Implementation Period

FY2020 and FY2022, starting in April 2020:

1.3-1 For those 18 years old or younger

The examination will be carried out over 3 years, from FY2020 through FY2022.

1.3-2 For those 19 years old or older

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

FY2020: those born in FY1998 and FY2000

FY2021: those born in FY1999 and FY2001

FY2022: no eligible persons

1.3-3 For those 25 years old or older

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

FY2020: those born in FY1995

FY2021: those born in FY1996

FY2022: those born in FY1997

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

1.4 Implementing Organizations (number of medical facilities with agreements for implementation of thyroid examinations as of March 31, 2023)

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

1.4-1 Primary examination facilities

Inside Fukushima Prefecture	85 medical facilities
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Outside Fukushima Prefecture	137 medical facilities
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1.4-2 Confirmatory examination facilities

Inside Fukushima Prefecture	6 medical facilities, including FMU
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Outside Fukushima Prefecture	38 medical facilities
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1.5 Methods**1.5-1 Primary examination**

Ultrasonography of the thyroid gland.

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

- Grade A
A1: No nodules/cysts
A2: Nodules ≤ 5.0 mm or cysts ≤ 20.0 mm
- Grade B
B: Nodules ≥ 5.1 mm or cysts ≥ 20.1 mm
Some A2 results may be re-classified as B results when clinically indicated.
- Grade C
C: Immediate need for confirmatory examination, judging from the condition of the thyroid gland.

1.5-2 Confirmatory examination

Ultrasonography of the thyroid gland, blood 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

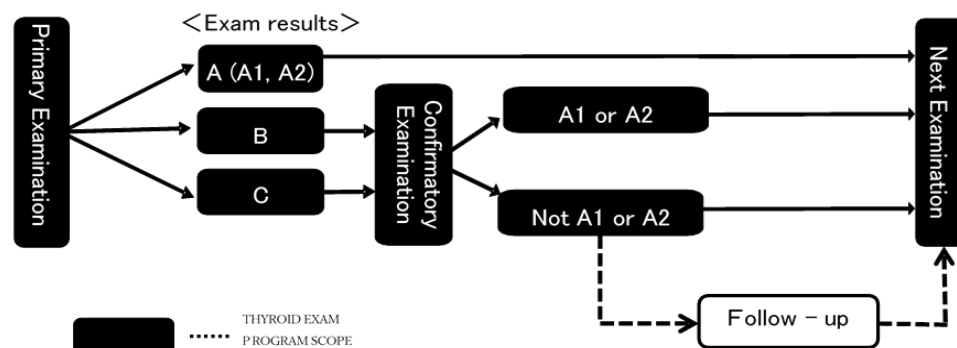


Figure 1 Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2020 and FY2021 are as follows:

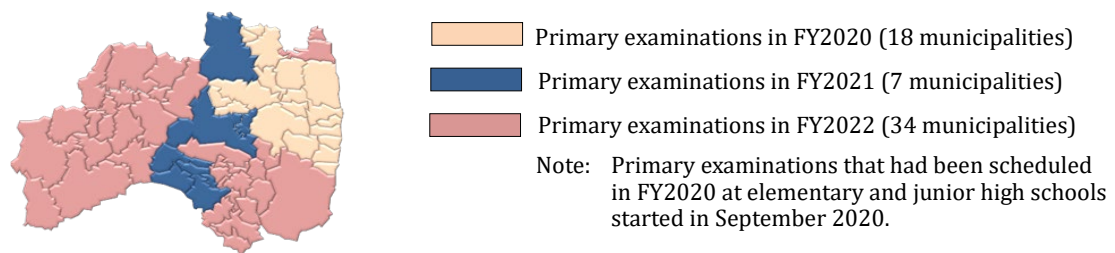


Figure 2 Municipalities covered for primary examinations at elementary and junior high schools

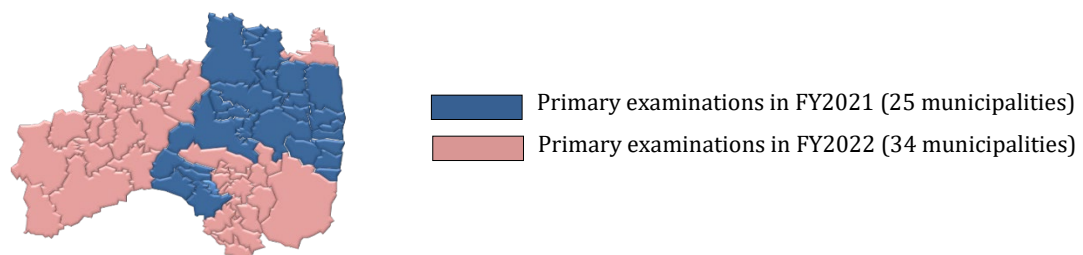


Figure 3 Municipalities covered for primary examinations at high schools and other facilities

Results of these surveys were aggregated based on the year when examinations were originally scheduled, which may differ from the year in which some examinations were actually conducted.

2. Results as of March 31, 2023

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was completed for 113,852 participants (45.0%) by March 31, 2023. (Refer to Appendices 1 and 2 for the participation and progress summaries by municipalities and locations outside Fukushima).

Results of 108,250 participants (95.1%) have been finalized and individual reports have been sent to them. (See Appendix 3 for details.)

Of these, 31,319 (28.9%) had Grade A1 results, 75,632 (69.9%) had Grade A2, 1,299 (1.2%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons a	Participants (%)		Participants with finalized results (%)							
		b (b/a)	Outside Fukushima	c (c/b)	A				Those referred to confirmatory exam		
					A1		A2		B	C	
					d (d/c)	e (e/c)	f (f/c)	g (g/c)			
FY2020	144,902	69,140 (47.7)	5,473	68,541 (99.1)	19,821 (28.9)	47,977 (70.0)	743 (1.1)	0 (0.0)			
FY2021	108,036	44,712 (41.4)	2,446	39,709 (88.8)	11,498 (29.0)	27,655 (69.6)	556 (1.4)	0 (0.0)			
Total	252,938	113,852 (45.0)	7,919	108,250 (95.1)	31,319 (28.9)	75,632 (69.9)	1,299 (1.2)	0 (0.0)			

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

	Participants with finalized results a	Participants with nodules/cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm b (b/a)	≤ 5.0mm c (c/a)	≥ 20.1mm d (d/a)	≤ 20.0mm e (e/a)
FY2020	68,541	743 (1.1)	376 (0.5)	1 (0.0)	48,391 (70.6)
FY2021	39,709	556 (1.4)	273 (0.7)	0 (0.0)	27,969 (70.4)
Total	108,250	1,299 (1.2)	649 (0.6)	1 (0.0)	76,360 (70.5)

- Proportions are rounded to a lower decimal place. This applies to other tables as well.
- Those who receive the examination at 5-year intervals (born between FY1992 and FY1997) are excluded. The results of examinations at 5-year intervals will be shown separately.
- Examinations for those born in FY1992 (approx. 23,000), FY1993 (approx. 22,000), FY1994 (approx. 22,000), FY1995 (approx. 21,000) took place in FY2017, FY2018, FY2019, and FY2020, respectively. Examinations for those born in FY1996 (approx. 21,000) and FY1997 (approx. 20,000) were carried out in FY2021 and FY2022, respectively.

2.1-2 Participation rate by age group

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

Table 3 Participation rates by age group

		Total	Age group		
FY2020	Age group*		8-11	12-17	18-24
	Eligible persons (a)	144,902	37,105	61,911	45,886
	Participants (b)	69,140	27,921	36,144	5,075
	Participation rate (%) (b/a)	47.7	75.2	58.4	11.1
FY2021	Age group *		9-11	12-17	18-24
	Eligible persons (a)	108,036	19,771	45,061	43,204
	Participants (b)	44,712	14,149	25,644	4,919
	Participation rate (%) (b/a)	41.4	71.6	56.9	11.4
Total	Eligible persons (a)	252,938	56,876	106,972	89,090
	Participants (b)	113,852	42,070	61,788	9,994
	Participation rate (%) (b/a)	45.0	74.0	57.8	11.2

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

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

Table 4 shows the comparison of results of two Full-Scale Surveys (fourth- and fifth-round surveys).

Among 101,417 participants with Grade A1 or A2 results in the fourth-round survey, 100,682 (99.3%) had Grade A1 or A2 results and 735 (0.7%) had Grade B results in the fifth-round survey.

Among 533 participants with Grade B results in the fourth-round survey, 101 (18.9%) had Grade A1 or A2 results and 432 (81.1%) had Grade B results in the fifth-round survey.

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

			Results of the fourth-round survey*	Results of the fifth-round survey**			
				A		B	C
				A1 a (%)	A2 b (b/a)	d (d/a)	e (e/a)
Results of the fourth-round survey	A	A1	33,046 (100.0)	22,839 (69.1)	10,078 (30.5)	129 (0.4)	0 (0.0)
		A2	68,371 (100.0)	6,313 (9.2)	61,452 (89.9)	606 (0.9)	0 (0.0)
	B		533 (100.0)	11 (2.1)	90 (16.9)	432 (81.1)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		6,300 (100.0)	2,156 (34.2)	4,012 (63.7)	132 (2.1)	0 (0.0)
	Total		108,250 (100.0)	31,319 (28.9)	75,632 (69.9)	1,299 (1.2)	0 (0.0)

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

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By March 31, 2023, of 1,299 eligible persons, 901 (69.4%) had participated in the confirmatory examination, and 812 (90.1%) of them had completed the entire procedure of the examination. (See Appendix 5 for the implementation status of the confirmatory examinations by area.)

Of the aforementioned 812 participants, 76 (A1: 5, A2: 71) (9.4%) were confirmed to meet A1 or A2 diagnostic criteria by primary examination standards (including those with other thyroid conditions) after detailed examination; 736 (90.6%) were confirmed to be outside of A1/A2 criteria.

Table 5 Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (%)	Those with finalized results (%)				
			Total	A1	A2	Not A1 or A2	
						FNAC	
	a	b (b/a)	c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/f)
FY2020	743	595 (80.1)	556 (93.4)	4 (0.7)	60 (10.8)	492 (88.5)	55 (11.2)
FY2021	556	306 (55.0)	256 (83.7)	1 (0.4)	11 (4.3)	244 (95.3)	13 (5.3)
Total	1,299	901 (69.4)	812 (90.1)	5 (0.6)	71 (8.7)	736 (90.6)	68 (9.2)

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

Among those who underwent FNAC, 34 people had nodules classified as malignant or suspicious for malignancy: 8 were male and 26 were female.

Participants' ages at the time of the confirmatory examination ranged from 12 to 24 (mean age: 17.7 ± 3.1 years). The tumor diameters were from 7.0 mm to 46.7mm, and mean tumor diameter was 12.9 ± 7.7 mm.

Of these 34 participants, 23 had Grade A (A1:8, A2:15), 6 had Grade B, consistent with results in the previous survey, and remaining 5 participants did not receive the third-round survey.

Table 6 Results of FNAC.

A. Municipality surveyed in FY2020

- Malignant or suspicious for malignancy: 26*
- Male to female ratio: 5:21
- Mean age±SD (min – max) 17.4±3.4 (12–24)
6.6±3.4 (1–12) at the time of the earthquake
- Mean tumor size±SD (min – max) 11.3±4.9 mm (7.0–30.1 mm)

B. Municipalities surveyed in FY2021

- Malignant or suspicious for malignancy: 8*
- Male to female ratio: 3:5
- Mean age±SD (min – max) 18.6±1.6 (16–21)
7.8±2.1 (4–10) at the time of the earthquake
- Mean tumor size±SD (min – max) 18.2±12.3 mm (8.4–46.7 mm)

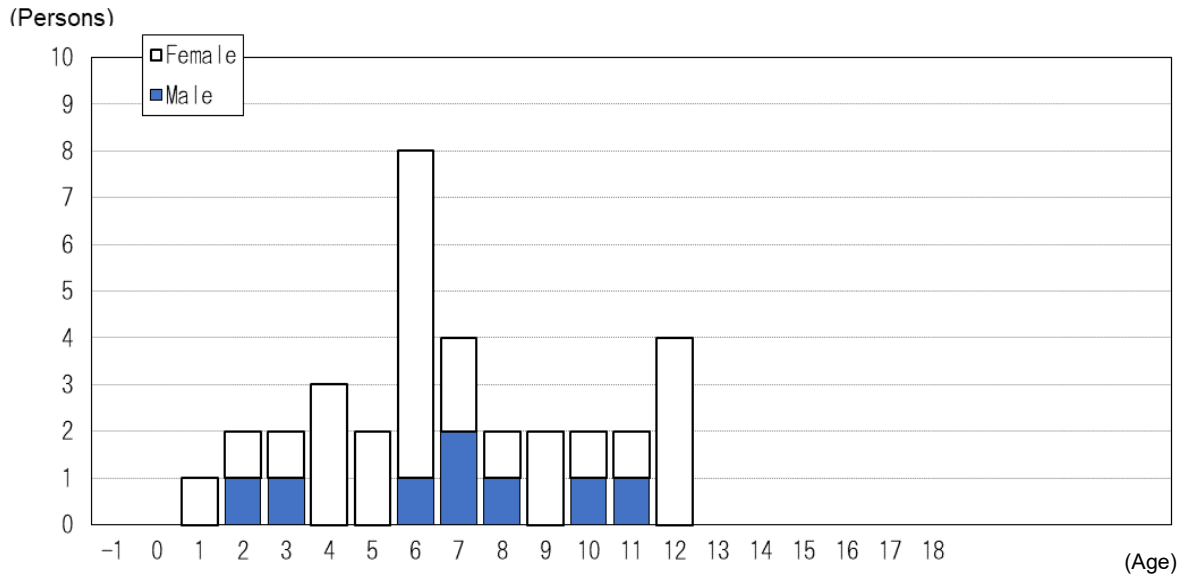
C. Total

- Malignant or suspicious for malignancy: 34*
- Male to female ratio: 8:26
- Mean age±SD (min – max) 17.7±3.1 (12–24)
6.9±3.1 (1–12) at the time of the earthquake
- Mean tumor size±SD (min – max) 12.9±7.7 mm (7.0–46.7 mm)

* Appendix 6 shows surgical cases.

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

Age distribution of 34 people with malignant or suspected malignant nodules based on their age as of March 11, 2011 is per Figure 4, and age distribution based on their age at the time of confirmatory examination is per Figure 5.



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

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

Figure 4 Age as of March 11, 2011

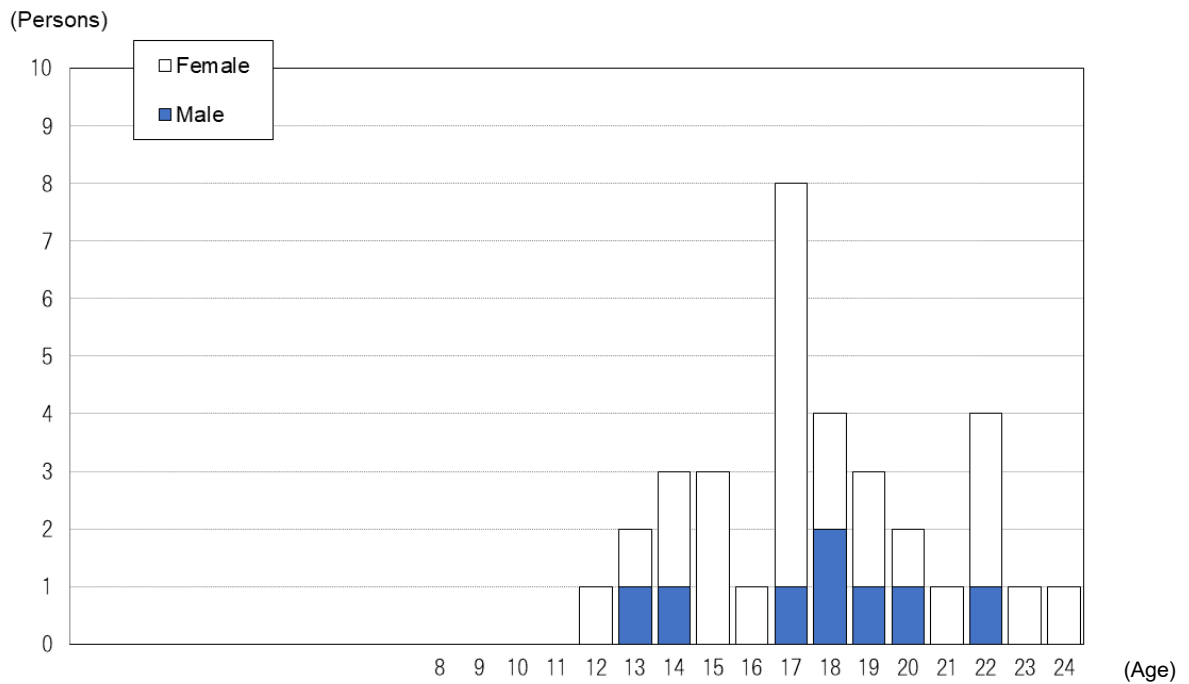


Figure5 Age as of the date of confirmatory examination

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

Of the 34 people with malignant or suspicious nodules, 21 (61.8%) had participated in the Basic Survey (for external radiation dose estimation), and all 21 received their results. The highest effective dose documented was 2.4 mSv.

Table 7 A breakdown of dose estimates for Basic Survey participants

Effective dose (mSv)	Age at the time of the disaster									
	0-5		6-10		11-15		16-18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	0	3	2	5	0	3	0	0	2	11
< 2	1	1	1	1	0	1	0	0	2	3
< 5	0	2	0	0	1	0	0	0	1	2
< 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	1	6	3	6	1	4	0	0	5	16

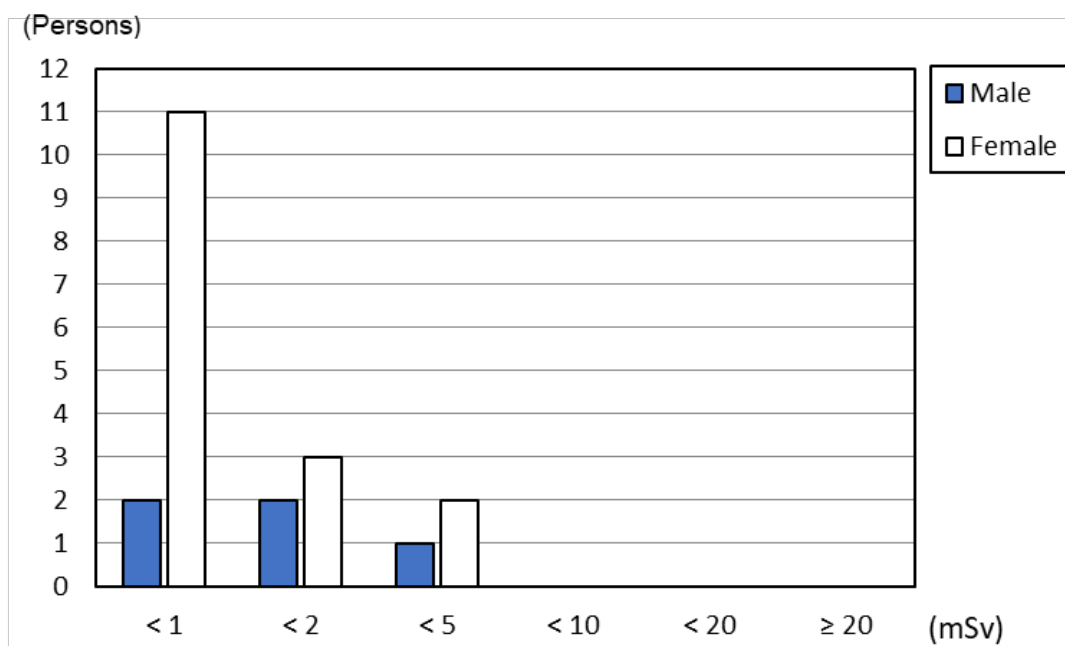


Figure 6 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 8 Blood test results

	FT4 ¹⁾ (ng/dL)	FT3 ²⁾ (pg/mL)	TSH ³⁾ (μIU/mL)	Tg ⁴⁾ (ng/mL)	TgAb ⁵⁾ (IU/mL)	TPOAb ⁶⁾ (IU/mL)
Reference Range	0.95–1.74 ⁷⁾	2.13–4.07 ⁷⁾	0.340–3.880 ⁷⁾	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious: 34	1.2±0.2 (5.9%)	3.4±0.4 (2.9%)	1.3±0.8 (11.8%)	81.4±362.5 (17.6%)	17.6%	14.7%
Other: 707	1.2±0.2 (4.8%)	3.6±0.9 (7.2%)	1.3±1.2 (9.2%)	32.1±90.4 (15.4%)	8.5%	6.9%

Table 9 Urinary iodine test results

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious: 32	36	125	175	470	1311
Other: 706	21	113	193	328	12670

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

2.2-6 Confirmatory examination results by area

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

Table 10 Confirmatory examination results by area

	The fifth-round survey participants (persons)	Those referred to confirmatory exam (persons) and rate (%)		Those who participated confirmatory exam (persons)	Malignant or suspicious (persons) and rate(%)	
	a	b	b/a		c	c/a
13 municipalities ¹⁾	14,777	153	1.0	121	5	0.03
Nakadori ²⁾	65,543	734	1.1	561	21	0.03
Hamadori ³⁾	20,756	257	1.2	130	5	0.02
Aizu ⁴⁾	12,776	155	1.2	89	3	0.02
Total	113,852	1,299	1.1	901	34	0.03

- 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

3. Mental Health Care

We provide the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

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

Consultation booths were set up at all venues for examinations conducted in and after April 2020; as of March 31, 2023, all 2,753 participants (100%) have visited these consultation booths.

3.2 On-location Lectures and Information Sessions

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

By March 31, 2023, a total of 607 people participated in these sessions offered at 11 locations.

Since the start of these sessions, 15,693 people have participated.

3.3 Support for Confirmatory Examination Participants

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

Since the start of the fifth-round survey, 390 participants (126 males and 264 females) have received support as of March 31, 2023. The number of support sessions provided was 680 in total. Of these, 387 (56.9%) received support at the participants' first examination and 293 (43.1%) at subsequent examinations.

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

Appendix 1 Implementation status of the TUE primary examination, by municipality

As of March 31, 2023

	Number of eligible persons	Participants	Participation rate (%)	Number of participants and participation rate by age group ²⁾			Participants living outside Fukushima	Participation rate (%)	
				Participation outside Fukushima ¹⁾					
	a	b	Fukushima ¹⁾	b/a	8-11	12-17	18-24	c ³⁾	c/b
Municipalities surveyed in FY2020									
Kawamata	1,567	739	14	47.2	238	431	70	25	3.4
					32.2	58.3	9.5		
Namie	2,478	950	232	38.3	210	546	194	230	24.2
					22.1	57.5	20.4		
Iitate	731	345	20	47.2	88	202	55	22	6.4
					25.5	58.6	15.9		
Minamisoma	8,849	3,972	570	44.9	1,201	2,252	519	582	14.7
					30.2	56.7	13.1		
Date	7,412	4,039	166	54.5	1,143	2,284	612	153	3.8
					28.3	56.5	15.2		
Tamura	4,577	2,280	52	49.8	803	1,226	251	62	2.7
					35.2	53.8	11.0		
Hirono	647	289	28	44.7	68	166	55	25	8.7
					23.5	57.4	19.0		
Naraha	916	369	44	40.3	73	221	75	41	11.1
					19.8	59.9	20.3		
Tomiooka	1,980	714	121	36.1	153	412	149	124	17.4
					21.4	57.7	20.9		
Kawauchi	225	98	7	43.6	20	59	19	8	8.2
					20.4	60.2	19.4		
Okuma	1,771	670	117	37.8	145	392	133	114	17.0
					21.6	58.5	19.9		
Futaba	839	247	48	29.4	51	155	41	49	19.8
					20.6	62.8	16.6		
Katsurao	148	65	3	43.9	14	39	12	4	6.2
					21.5	60.0	18.5		
Fukushima	37,320	18,594	1,409	49.8	4,861	11,046	2,687	1,347	7.2
					26.1	59.4	14.5		
Nihonmatsu	6,920	3,712	159	53.6	1,126	2,156	430	144	3.9
					30.3	58.1	11.6		
Motomiya	4,232	2,211	78	52.2	663	1,302	246	71	3.2
					30.0	58.9	11.1		
Otama	1,122	681	18	60.7	214	384	83	14	2.1
					31.4	56.4	12.2		
Koriyama	45,739	20,606	1,954	45.1	4,728	12,872	3,006	1,878	9.1
					22.9	62.5	14.6		
Koori	1,375	789	25	57.4	224	467	98	26	3.3
					28.4	59.2	12.4		
Kunimi	1,022	559	20	54.7	126	349	84	21	3.8
					22.5	62.4	15.0		
Tenei	728	332	19	45.6	95	180	57	11	3.3
					28.6	54.2	17.2		
Shirakawa	8,566	4,238	255	49.5	1,229	2,365	644	237	5.6
					29.0	55.8	15.2		
Nishigo	2,856	1,344	77	47.1	399	740	205	64	4.8
					29.7	55.1	15.3		
Izumizaki	893	394	7	44.1	105	245	44	7	1.8
					26.6	62.2	11.2		
Miharu	1,989	903	30	45.4	218	525	160	31	3.4
					24.1	58.1	17.7		
Subtotal	144,902	69,140	5,473	47.7	18,195	41,016	9,929	5,290	7.7
					26.3	59.3	14.4		

*1) The number of participants who received the examination at facilities outside Fukushima (as of February 28, 2023).

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

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

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

	Number of eligible persons	Participants		Participation rate (%) b/a	Number of participants and participation rate by age group ²⁾			Participants living outside Fukushima c ³⁾	Participation rate (%) c/b
	a	b	Participation outside Fukushima ¹⁾		8-11	12-17	18-24		
Municipalities surveyed in FY2021									
Iwaki	42,530	18,553	1,352	43.6	2,129 11.5	12,295 66.3	4,129 22.3	1,203	6.5
Sukagawa	10,705	4,570	181	42.7	773 16.9	3,043 66.6	754 16.5		
Soma	4,771	1,780	167	37.3	325 18.3	1,203 67.6	252 14.2	184	10.3
Kagamiishi	1,835	817	28	44.5	142 17.4	551 67.4	124 15.2		
Shinchi	983	423	29	43.0	61 14.4	278 65.7	84 19.9	29	6.9
Nakajima	706	266	9	37.7	54 20.3	169 63.5	43 16.2		
Yabuki	2,326	976	22	42.0	217 22.2	638 65.4	121 12.4	19	1.9
Ishikawa	1,860	789	25	42.4	161 20.4	488 61.9	140 17.7		
Yamatsuri	685	306	13	44.7	66 21.6	207 67.6	33 10.8	7	2.3
Asakawa	913	407	21	44.6	73 17.9	267 65.6	67 16.5		
Hirata	838	371	9	44.3	86 23.2	220 59.3	65 17.5	7	1.9
Tanagura	2,049	847	32	41.3	178 21.0	562 66.4	107 12.6		
Hanawa	1,070	416	8	38.9	83 20.0	260 62.5	73 17.5	12	2.9
Samegawa	457	191	4	41.8	43 22.5	129 67.5	19 9.9		
Ono	1,252	501	7	40.0	107 21.4	338 67.5	56 11.2	5	1.0
Tamakawa	920	386	9	42.0	68 17.6	258 66.8	60 15.5		
Furudono	692	337	17	48.7	71 21.1	199 59.1	67 19.9	7	2.1
Hinoemata	75	15	1	20.0	3 20.0	10 66.7	2 13.3		
Minamiaizu	1,788	666	20	37.2	148 22.2	445 66.8	73 11.0	18	2.7
Kaneyama	114	38	0	33.3	6 15.8	25 65.8	7 18.4		
Showa	101	33	5	32.7	9 27.3	22 66.7	2 6.1	5	15.2
Mishima	131	45	0	34.4	12 26.7	24 53.3	9 20.0		
Shimogo	646	216	3	33.4	41 19.0	143 66.2	32 14.8	2	0.9
Kitakata	5,939	2,225	65	37.5	393 17.7	1,514 68.0	318 14.3		
Nishiaizu	618	201	5	32.5	43 21.4	133 66.2	25 12.4	4	2.0
Tadami	475	212	5	44.6	38 17.9	150 70.8	24 11.3		
Inawashiro	1,760	694	23	39.4	137 19.7	452 65.1	105 15.1	20	2.9
Bandai	415	159	9	38.3	32 20.1	106 66.7	21 13.2		
Kitashiobara	385	163	6	42.3	32 19.6	111 68.1	20 12.3	6	3.7
Aizumisato	2,371	987	25	41.6	179 18.1	633 64.1	175 17.7		
Aizubange	2,012	788	26	39.2	140 17.8	504 64.0	144 18.3	24	3.0
Yanaizu	393	148	3	37.7	31 20.9	98 66.2	19 12.8		
Aizuwakamatsu	15,770	5,975	313	37.9	950 15.9	3,998 66.9	1,027 17.2	287	4.8
Yugawa	451	211	4	46.8	38 18.0	130 61.6	43 20.4		
Subtotal	108,036	44,712	2,446	41.4	6,869 15.4	29,603 66.2	8,240 18.4	2,215	5.0
Total	252,938	113,852	7,919	45.0	25,064 22.0	70,619 62.0	18,169 16.0		

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

As of February 28, 2023

Prefecture	Number of medical facilities	Participants (persons)	Prefecture	Number of medical facilities	Participants (persons)	Prefecture	Number of medical facilities	Participants (persons)
Hokkaido	7	194	Fukui	1	11	Hiroshima	2	17
Aomori	2	93	Yamanashi	2	65	Yamaguchi	1	13
Iwate	3	179	Nagano	4	104	Tokushima	1	4
Miyagi	2	1,753	Gifu	2	13	Kagawa	1	13
Akita	1	131	Shizuoka	3	74	Ehime	3	13
Yamagata	3	353	Aichi	5	143	Kochi	1	8
Ibaraki	4	476	Mie	1	17	Fukuoka	3	56
Tochigi	8	537	shiga	1	15	Saga	1	6
Gunma	2	154	Kyoto	3	49	Nagasaki	3	20
Saitama	4	443	Osaka	10	106	Kumamoto	1	19
Chiba	5	353	Hyogo	2	99	Oita	1	12
Tokyo	19	1,344	Nara	2	16	Miyazaki	1	12
Kanagawa	7	534	Wakayama	1	4	Kagoshima	1	6
Niigata	3	344	Tottori	1	2	Okinawa	1	22
Toyama	2	21	Shimane	1	11			
Ishikawa	1	25	Okayama	3	35			
						Total	136	7,919

The number of participants examined at medical facilities outside Fukushima.

Appendix 3 TUE primary examination results, by municipality

As of March 31, 2023

	Number of participants (persons) a	Those with finalized results b % b/a	Number of participants by grade (persons)				Number of participants with nodules (persons and rate %)		Number of participants with cysts (persons and rate %)	
			%							
			A1		B	C				
			A1	A2						
Municipalities surveyed in FY2020										
Kawamata	739	739	227	506	6	0	6	5	0	508
		100.0	30.7	68.5	0.8	0.0	0.8	0.7	0.0	68.7
Namie	950	888	282	591	15	0	15	5	0	600
		93.5	31.8	66.6	1.7	0.0	1.7	0.6	0.0	67.6
Iitate	345	345	104	231	10	0	10	0	0	240
		100.0	30.1	67.0	2.9	0.0	2.9	0.0	0.0	69.6
Minamisoma	3,972	3,918	1,218	2,657	43	0	43	13	0	2,680
		98.6	31.1	67.8	1.1	0.0	1.1	0.3	0.0	68.4
Date	4,039	4,034	1,159	2,842	33	0	33	23	0	2,854
		99.9	28.7	70.5	0.8	0.0	0.8	0.6	0.0	70.7
Tamura	2,280	2,273	716	1,535	22	0	22	10	0	1,542
		99.7	31.5	67.5	1.0	0.0	1.0	0.4	0.0	67.8
Hirono	289	257	80	172	5	0	5	1	0	173
		88.9	31.1	66.9	1.9	0.0	1.9	0.4	0.0	67.3
Naraha	369	303	95	206	2	0	2	1	0	206
		82.1	31.4	68.0	0.7	0.0	0.7	0.3	0.0	68.0
Tomioka	714	627	184	437	6	0	6	4	0	441
		87.8	29.3	69.7	1.0	0.0	1.0	0.6	0.0	70.3
Kawauchi	98	95	32	62	1	0	1	0	0	63
		96.9	33.7	65.3	1.1	0.0	1.1	0.0	0.0	66.3
Okuma	670	587	174	404	9	0	9	9	0	404
		87.6	29.6	68.8	1.5	0.0	1.5	1.5	0.0	68.8
Futaba	247	220	64	155	1	0	1	0	0	156
		89.1	29.1	70.5	0.5	0.0	0.5	0.0	0.0	70.9
Katsurao	65	65	29	36	0	0	0	0	0	36
		100.0	44.6	55.4	0.0	0.0	0.0	0.0	0.0	55.4
Fukushima	18,594	18,540	5,394	12,962	184	0	184	96	0	13,058
		99.7	29.1	69.9	1.0	0.0	1.0	0.5	0.0	70.4
Nihonmatsu	3,712	3,710	1,158	2,501	51	0	51	27	0	2,532
		99.9	31.2	67.4	1.4	0.0	1.4	0.7	0.0	68.2
Motomiya	2,211	2,208	668	1,519	21	0	21	9	0	1,530
		99.9	30.3	68.8	1.0	0.0	1.0	0.4	0.0	69.3
Otama	681	681	198	472	11	0	11	3	0	479
		100.0	29.1	69.3	1.6	0.0	1.6	0.4	0.0	70.3
Koriyama	20,606	20,524	5,563	14,736	225	0	225	128	0	14,875
		99.6	27.1	71.8	1.1	0.0	1.1	0.6	0.0	72.5
Koori	789	789	245	535	9	0	9	2	0	542
		100.0	31.1	67.8	1.1	0.0	1.1	0.3	0.0	68.7
Kunimi	559	559	181	371	7	0	7	2	0	377
		100.0	32.4	66.4	1.3	0.0	1.3	0.4	0.0	67.4
Tenei	332	330	88	237	5	0	5	0	1	240
		99.4	26.7	71.8	1.5	0.0	1.5	0.0	0.3	72.7
Shirakawa	4,238	4,218	1,196	2,976	46	0	46	25	0	3,002
		99.5	28.4	70.6	1.1	0.0	1.1	0.6	0.0	71.2
Nishigo	1,344	1,338	400	920	18	0	18	5	0	932
		99.6	29.9	68.8	1.3	0.0	1.3	0.4	0.0	69.7
Izumizaki	394	392	119	269	4	0	4	2	0	270
		99.5	30.4	68.6	1.0	0.0	1.0	0.5	0.0	68.9
Miharu	903	901	247	645	9	0	9	6	0	651
		99.8	27.4	71.6	1.0	0.0	1.0	0.7	0.0	72.3
Subtotal	69,140	68,541	19,821	47,977	743	0	743	376	1	48,391
		99.1	28.9	70.0	1.1	0.0	1.1	0.5	0.0	70.6

	Number of participants (persons) a	Those with finalized results b % b/a	Number of participants by grade (persons)				Number of participants with nodules (persons and rate %)		Number of participants with cysts (persons and rate %)	
			%							
			A1		B	C				
			A1	A2						
Municipalities surveyed in FY2021										
Iwaki	18,553	13,805	4,032	9,553	220	0	220	98	0	9,666
		74.4	29.2	69.2	1.6	0.0	1.6	0.7	0.0	70.0
Sukagawa	4,570	4,516	1,244	3,202	70	0	70	41	0	3,248
		98.8	27.5	70.9	1.6	0.0	1.6	0.9	0.0	71.9
Soma	1,780	1,768	521	1,217	30	0	30	12	0	1,234
		99.3	29.5	68.8	1.7	0.0	1.7	0.7	0.0	69.8
Kagamiishi	817	807	211	585	11	0	11	5	0	587
		98.8	26.1	72.5	1.4	0.0	1.4	0.6	0.0	72.7
Shinchi	423	416	126	283	7	0	7	4	0	286
		98.3	30.3	68.0	1.7	0.0	1.7	1.0	0.0	68.8
Nakajima	266	263	78	184	1	0	1	2	0	185
		98.9	29.7	70.0	0.4	0.0	0.4	0.8	0.0	70.3
Yabuki	976	963	275	683	5	0	5	4	0	686
		98.7	28.6	70.9	0.5	0.0	0.5	0.4	0.0	71.2
Ishikawa	789	783	224	552	7	0	7	5	0	556
		99.2	28.6	70.5	0.9	0.0	0.9	0.6	0.0	71.0
Yamatsuri	306	300	69	225	6	0	6	4	0	230
		98.0	23.0	75.0	2.0	0.0	2.0	1.3	0.0	76.7
Asakawa	407	399	100	296	3	0	3	4	0	298
		98.0	25.1	74.2	0.8	0.0	0.8	1.0	0.0	74.7
Hirata	371	365	119	241	5	0	5	1	0	245
		98.4	32.6	66.0	1.4	0.0	1.4	0.3	0.0	67.1
Tanagura	847	839	221	607	11	0	11	2	0	613
		99.1	26.3	72.3	1.3	0.0	1.3	0.2	0.0	73.1
Hanawa	416	412	103	299	10	0	10	0	0	304
		99.0	25.0	72.6	2.4	0.0	2.4	0.0	0.0	73.8
Samegawa	191	190	49	140	1	0	1	1	0	141
		99.5	25.8	73.7	0.5	0.0	0.5	0.5	0.0	74.2
Ono	501	496	140	352	4	0	4	4	0	355
		99.0	28.2	71.0	0.8	0.0	0.8	0.8	0.0	71.6
Tamagawa	386	383	124	254	5	0	5	1	0	258
		99.2	32.4	66.3	1.3	0.0	1.3	0.3	0.0	67.4
Furudono	337	331	90	236	5	0	5	3	0	240
		98.2	27.2	71.3	1.5	0.0	1.5	0.9	0.0	72.5
Hinoemata	15	15	4	11	0	0	0	0	0	11
		100.0	26.7	73.3	0.0	0.0	0.0	0.0	0.0	73.3
Minamiaizu	666	655	204	444	7	0	7	2	0	449
		98.3	31.1	67.8	1.1	0.0	1.1	0.3	0.0	68.5
Kaneyama	38	38	12	26	0	0	0	0	0	26
		100.0	31.6	68.4	0.0	0.0	0.0	0.0	0.0	68.4
Showa	33	33	13	20	0	0	0	0	0	20
		100.0	39.4	60.6	0.0	0.0	0.0	0.0	0.0	60.6
Mishima	45	44	8	35	1	0	1	1	0	36
		97.8	18.2	79.5	2.3	0.0	2.3	2.3	0.0	81.8
Shimogo	216	216	66	146	4	0	4	1	0	148
		100.0	30.6	67.6	1.9	0.0	1.9	0.5	0.0	68.5
Kitakata	2,225	2,208	684	1,498	26	0	26	10	0	1,514
		99.2	31.0	67.8	1.2	0.0	1.2	0.5	0.0	68.6
Nishiaizu	201	199	43	153	3	0	3	3	0	154
		99.0	21.6	76.9	1.5	0.0	1.5	1.5	0.0	77.4
Tadami	212	212	53	158	1	0	1	3	0	158
		100.0	25.0	74.5	0.5	0.0	0.5	1.4	0.0	74.5
Inawashiro	694	686	192	481	13	0	13	6	0	489
		98.8	28.0	70.1	1.9	0.0	1.9	0.9	0.0	71.3
Bandai	159	158	43	114	1	0	1	1	0	114
		99.4	27.2	72.2	0.6	0.0	0.6	0.6	0.0	72.2
Kitashiobara	163	161	46	112	3	0	3	1	0	113
		98.8	28.6	69.6	1.9	0.0	1.9	0.6	0.0	70.2
Aizumisato	987	981	293	679	9	0	9	7	0	684
		99.4	29.9	69.2	0.9	0.0	0.9	0.7	0.0	69.7
Aizubange	788	785	202	568	15	0	15	5	0	578
		99.6	25.7	72.4	1.9	0.0	1.9	0.6	0.0	73.6
Yanaizu	148	148	51	96	1	0	1	1	0	96
		100.0	34.5	64.9	0.7	0.0	0.7	0.7	0.0	64.9
Aizuwakamatu	5,975	5,923	1,785	4,069	69	0	69	39	0	4,109
		99.1	30.1	68.7	1.2	0.0	1.2	0.7	0.0	69.4
Yugawa	211	211	73	136	2	0	2	2	0	138
		100.0	34.6	64.5	0.9	0.0	0.9	0.9	0.0	65.4
Subtotal	44,712	39,709	11,498	27,655	556	0	556	273	0	27,969
		88.8	29.0	69.6	1.4	0.0	1.4	0.7	0.0	70.4
Total	113,852	108,250	31,319	75,632	1,299	0	1,299	649	1	76,360
		95.1	28.9	69.9	1.2	0.0	1.2	0.6	0.0	70.5

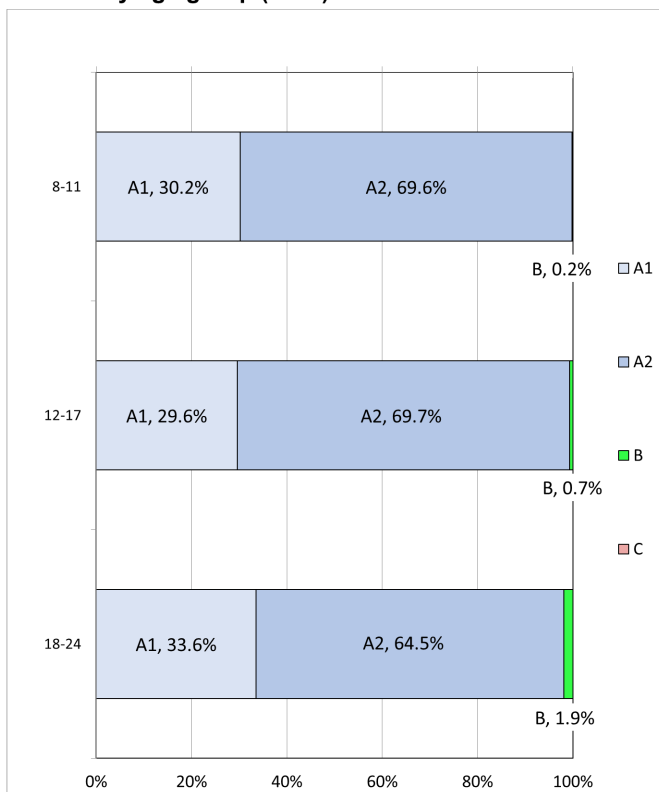
Appendix 4 – 1 TUE primary examination results, by age and gender

As of March 31, 2023

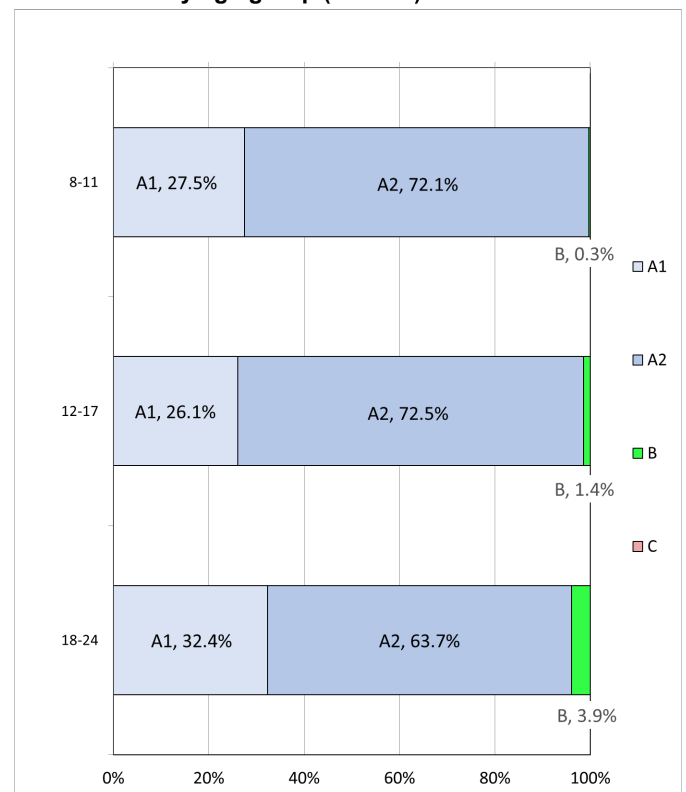
(Persons)

Age group	Grade Gender	A						B			C			Total		
		A1			A2			Male	Female	Total	Male	Female	Total	Male	Female	Total
		Male	Female	Total	Male	Female	Total									
8-11		3,700	3,209	6,909	8,518	8,400	16,918	21	39	60	0	0	0	12,239	11,648	23,887
12-17		9,986	8,519	18,505	23,509	23,706	47,215	240	464	704	0	0	0	33,735	32,689	66,424
18-24		2,764	3,141	5,905	5,316	6,183	11,499	157	378	535	0	0	0	8,237	9,702	17,939
Total		16,450	14,869	31,319	37,343	38,289	75,632	418	881	1,299	0	0	0	54,211	54,039	108,250

Results by age group (Male)



Results by age group (Female)

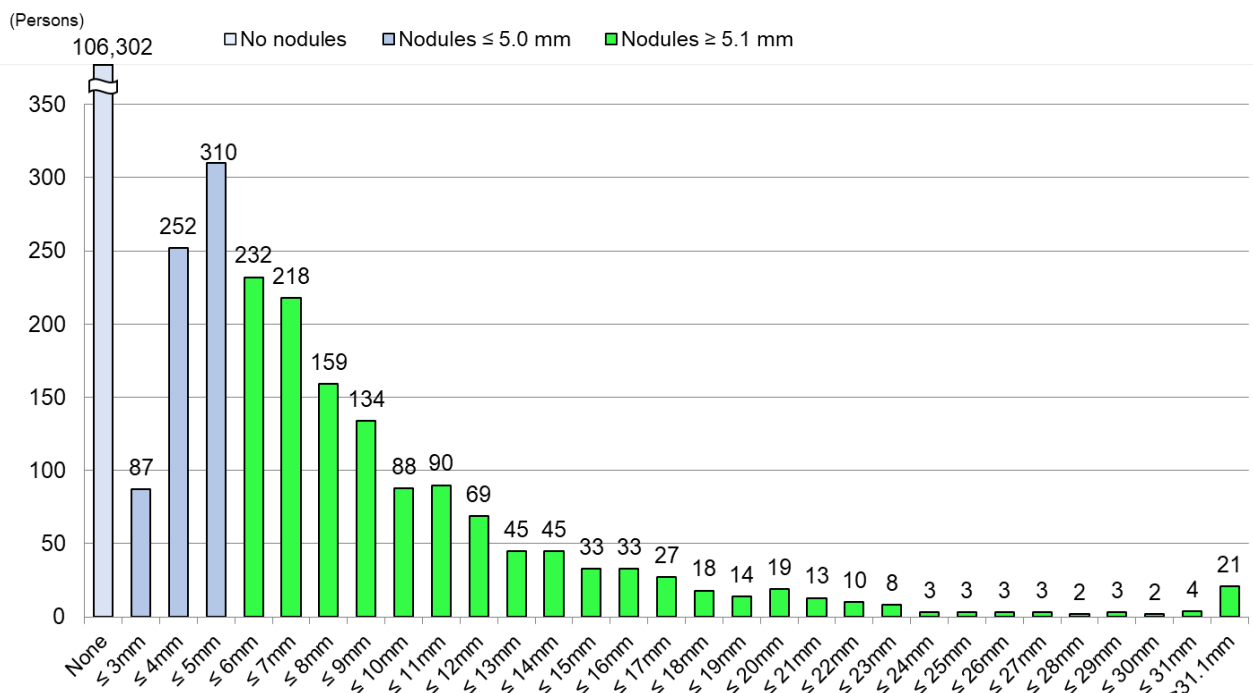
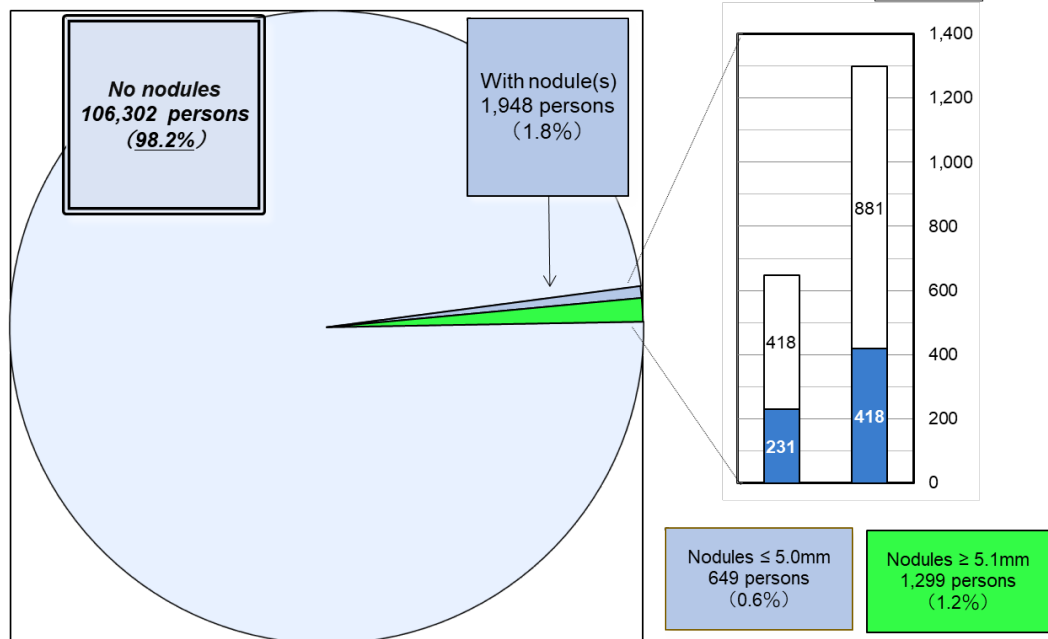


Appendix 4 – 2 Nodule characteristics

As of March 31, 2023

(persons)

Nodule size	Total	Male	Female	Grade	
None	106,302	53,562	52,740	A1	98.2%
≤ 3.0mm	87	26	61	A2	0.6%
3.1–5.0mm	562	205	357		
5.1–10.0mm	831	275	556	B	1.2%
10.1–15.0mm	282	82	200		
15.1–20.0mm	111	41	70		
20.1–25.0mm	37	10	27		
≥ 25.1mm	38	10	28		
Total	108,250	54,211	54,039		

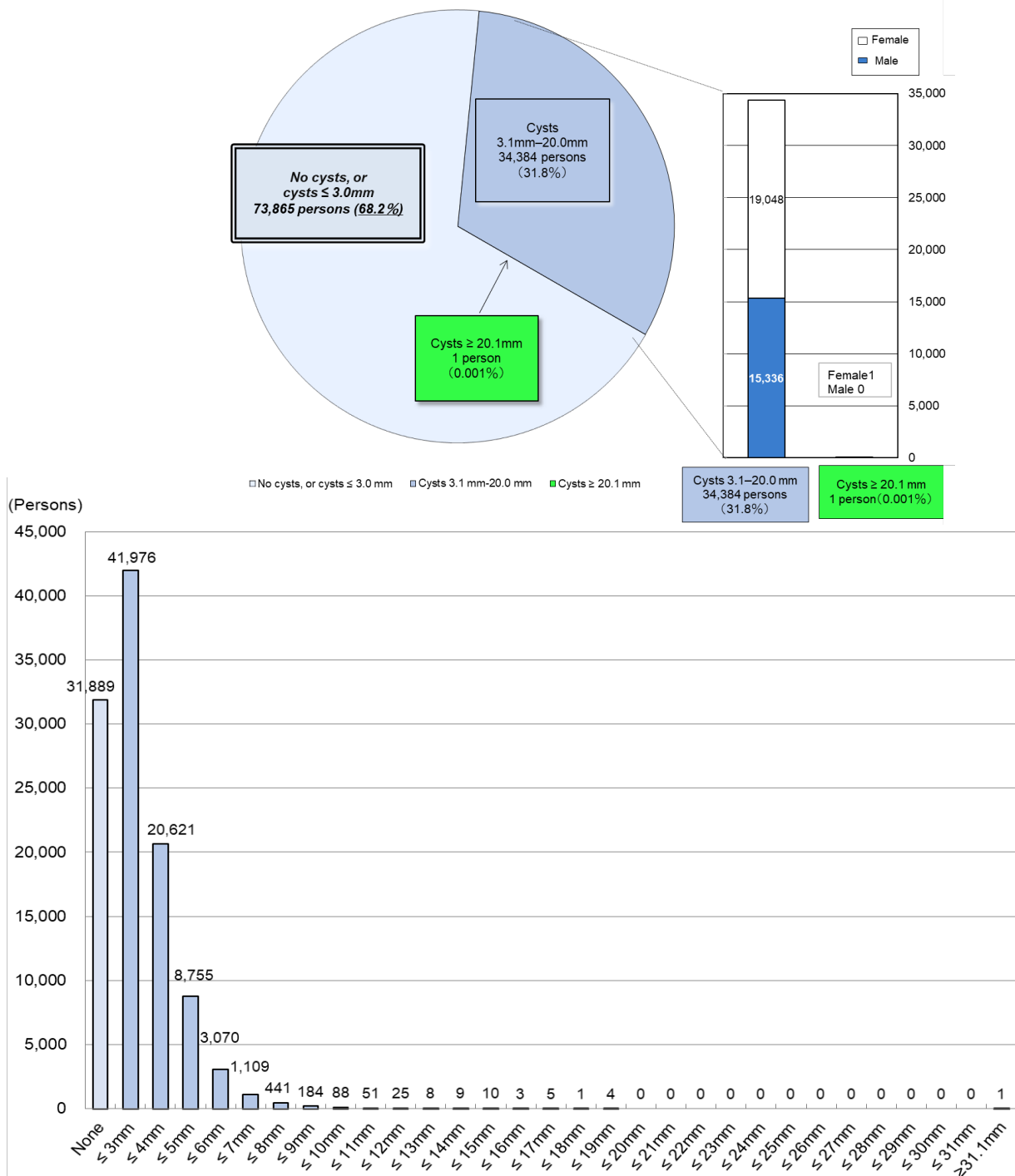


Appendix 4 – 3 Cyst characteristics

As of March 31, 2023

(persons)

Cyst size	Total			Grade	
		Male	Female		
None	31,889	16,656	15,233	A1	68.2%
≤ 3.0mm	41,976	22,219	19,757	A2	
3.1–5.0mm	29,376	13,566	15,810		
5.1–10.0mm	4,892	1,742	3,150		
10.1–15.0mm	103	25	78		
15.1–20.0mm	13	3	10		
20.1–25.0mm	0	0	0	B	0.001%
≥ 25.1mm	1	0	1		
Total	108,250	54,211	54,039		



Appendix 5 Implementation status of the TUE confirmatory examination, by area

As of March 31, 2023

	Those who participated in primary examination (persons) a	Those referred to confirmatory examination (persons) b b/a (%)	Those who participate in confirmatory examination				Those with finalized results (persons)				
			Total c c/b (%)	8-11 years old d d/c (%)	12-17 years old e e/c (%)	18 and older f f/c (%)	Total g g/c (%)	A1 h h/g (%)	A2 i i/g (%)	Other than A1 or A2	
										j j/g (%)	FNAC k k/j (%)
13 municipalities ¹⁾	14,777	153 1.0	121 79.1	8 6.6	58 47.9	55 45.5	112 92.6	0 0.0	12 10.7	100 89.3	7 7.0
Nakadori ²⁾	65,543	734 1.1	561 76.4	26 4.6	276 49.2	259 46.2	516 92.0	4 0.8	53 10.3	459 89.0	49 10.7
Hamadori ³⁾	20,756	257 1.2	130 50.6	2 1.5	27 20.8	101 77.7	106 81.5	0 0.0	4 3.8	102 96.2	6 5.9
Aizu ⁴⁾	12,776	155 1.2	89 57.4	4 4.5	37 41.6	48 53.9	78 87.6	1 1.3	2 2.6	75 96.2	6 8.0
Total	113,852	1,299	901	40	398	463	812	5	71	736	68
		1.1	69.4	4.4	44.2	51.4	90.1	0.6	8.7	90.6	9.2

- 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 6 Surgical cases for malignancy or suspicion of malignancy

1. Municipalities surveyed in FY2020
Malignant or suspicious for malignancy: 26
(Surgical cases: 20, Papillary thyroid carcinoma: 20)
2. Municipalities surveyed in FY2021
Malignant or suspicious for malignancy: 8
(Surgical cases: 6, Papillary thyroid carcinoma: 6)
3. Total
Malignant or suspicious for malignancy: 34
(Surgical cases: 26, Papillary thyroid carcinoma: 26)

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

As of March 31, 2023

1. Summary**1.1 Eligible Persons**

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

This report includes the Survey status of those born from FY1992 to FY1997 (those born between April 2, 1992 and April 1, 1998)

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. If residents are unable to receive the examination in the year they turn 25, they are entitled to one any time through the fiscal year prior to the year they turn 30 (see Figure 1 for the implementation schedule of Age 25+ Survey).

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

- Beginning in FY2017, examinations are offered to those who turn age 25 in each fiscal year.
- Invitations for the examination will be sent to those who turn age 25 in the fiscal year marked with ★.

Figure 1 Implementation schedule for Age 25+ Survey

2. Overview of Age 25+ survey as of March 31, 2023

2.1 Results of the Primary Examination

2.1-1 Implementation status

Primary examinations for the Age 25 Survey started in May 2017 for those who turned 25 years old in FY2017 (those born between FY1992 and FY1997) and 11,781 (9.1%) people participated. (See Appendix 1 and Appendix 2 for implementation status by area and implementation status outside Fukushima Prefecture, respectively.)

Results for 11,674 (99.1%) participants have been finalized and individual reports have been sent to them. (See Appendix 3 for a breakdown by area.)

Of these, 4,952 (42.4%) had Grade A1 results, 6,087 (52.1%) had Grade A2, 635 (5.4%) 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 (%) b (b/a)	Outside Fukushima	c	c (c/b)	Breakdown by grade (rate%)			
						A		Those referred to confirmatory exam	
						A1	A2	B	C
						d	d (d/c)	e	e (e/c)
Born in FY1992	22,651	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	21,890	2,348 (10.7)	858	2,331 (99.3)	1,062 (45.6)	1,151 (49.4)	118 (5.1)	0 (0.0)	
Born in FY1994	22,093	1,917 (8.7)	733	1,887 (98.4)	790 (41.9)	996 (52.8)	101 (5.4)	0 (0.0)	
Born in FY1995	21,056	2,021 (9.6)	757	2,008 (99.4)	830 (41.3)	1,058 (52.7)	120 (6.0)	0 (0.0)	
Born in FY1996	21,019	1,816 (8.6)	656	1,795 (98.8)	747 (41.6)	931 (51.9)	117 (6.5)	0 (0.0)	
Born in FY1997	20,298	1,336 (6.6)	488	1,310 (98.1)	543 (41.5)	693 (52.9)	74 (5.6)	0 (0.0)	
Total	129,007	11,781 (9.1)	4,262	11,674 (99.1)	4,952 (42.4)	6,087 (52.1)	635 (5.4)	0 (0.0)	

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

	Participants with finalized results (persons) a	Participants with nodules / cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm b (b/a)	≤ 5.0mm c (c/a)	≥ 20.1mm d (d/a)	≤ 20.0mm e (e/a)
Born in FY1992	2,343	104 (4.4)	53 (2.3)	1 (0.0)	1,305 (55.7)
Born in FY1993	2,331	118 (5.1)	42 (1.8)	0 (0.0)	1,200 (51.5)
Born in FY1994	1,887	101 (5.4)	39 (2.1)	0 (0.0)	1,053 (55.8)
Born in FY1995	2,008	118 (5.9)	36 (1.8)	2 (0.1)	1,111 (55.3)
Born in FY1996	1,795	116 (6.5)	34 (1.9)	1 (0.1)	983 (54.8)
Born in FY1997	1,310	73 (5.6)	19 (1.5)	1 (0.1)	730 (55.7)
Total	11,674	630 (5.4)	223 (1.9)	5 (0.0)	6,382 (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.

2.1-2 Comparison with previous examination results

Comparison of results of the Age 25+ Survey and previous surveys is shown in Table 3.

Among 6,727 participants with Grade A1 or A2 results in the previous survey, 6,551 (97.4%) had Grade A1 or A2 results and 176 (2.6%) had Grade B results in the Age 25+ Survey.

Among 235 participants with Grade B results in the previous survey, 56 (23.8%) had Grade A (A1 or A2) results and 179 (76.2%) had Grade B results in the Age 25+ Survey.

Table 3 Comparison with the previous survey results

			Results of the previous survey*	Results of the Age 25+ survey**			
				A		B	C
				A1	A2		
			a (%)	b (b/a)	c (c/a)	d (d/a)	e (e/a)
Results of the previous survey	A	A1	2,703 (100.0)	2,191 (81.1)	485 (17.9)	27 (1.0)	0 (0.0)
		A2	4,024 (100.0)	656 (16.3)	3,219 (80.0)	149 (3.7)	0 (0.0)
	B		235 (100.0)	5 (2.1)	51 (21.7)	179 (76.2)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Not participated		4,712 (100.0)	2,100 (44.6)	2,332 (49.5)	280 (5.9)	0 (0.0)
Total			11,674 (100.0)	4,952 (42.4)	6,087 (52.1)	635 (5.4)	0 (0.0)

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

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 635 eligible persons, 523 (82.4%) participated, of whom 500 (95.6%) completed the entire process of the confirmatory examination.

Of the aforementioned 500 participants, 42 (8.4%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1:5, A2:37) (including those with other thyroid conditions). The remaining 458 (91.6%) were confirmed to be out of A1/A2 criteria.

Table 4 Progress of the Confirmatory Examination

	Those referred to confirmatory exams (persons)	Participants (persons)	Those with finalized results (%)						
			Total	A1		A2		Other than A1 or A2	
				d	(d/c)	e	(e/c)	f	(f/c)
	a	b (b/a)	c (c/b)					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	118	101 (85.6)	100 (99.0)	1 (1.0)		9 (9.0)		90 (90.0)	8 (8.9)
Those born in FY1994	101	81 (80.2)	76 (93.8)	2 (2.6)		7 (9.2)		67 (88.2)	6 (9.0)
Those born in FY1995	120	108 (90.0)	107 (99.1)	0 (0.0)		4 (3.7)		103 (96.3)	11 (10.7)
Those born in FY1996	117	92 (78.6)	83 (90.2)	2 (2.4)		7 (8.4)		74 (89.2)	7 (9.5)
Those born in FY1997	74	53 (71.6)	49 (92.5)	0 (0.0)		6 (12.2)		43 (87.8)	3 (7.0)
Total	635	523 (82.4)	500 (95.6)	5 (1.0)		37 (7.4)		458 (91.6)	43 (9.4)

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

Among those who underwent FNAC, 22 were classified as malignant or suspicious for malignancy: 4 were male and 18 were female. Participants' age at the time of the confirmatory examination ranged from 24 to 27 years (mean age: 25.3 ± 0.7 years). The minimum and maximum tumor diameters were 5.3 mm and 49.9 mm (mean tumor diameter: 14.4 ± 10.7 mm).

Of these 22 participants, 4 had Grade A results (A1:1, A2:4), and 4 had Grade B results in the previous survey. The remaining 13 people did not participate in the previous survey.

Table 5. Results of FNAC

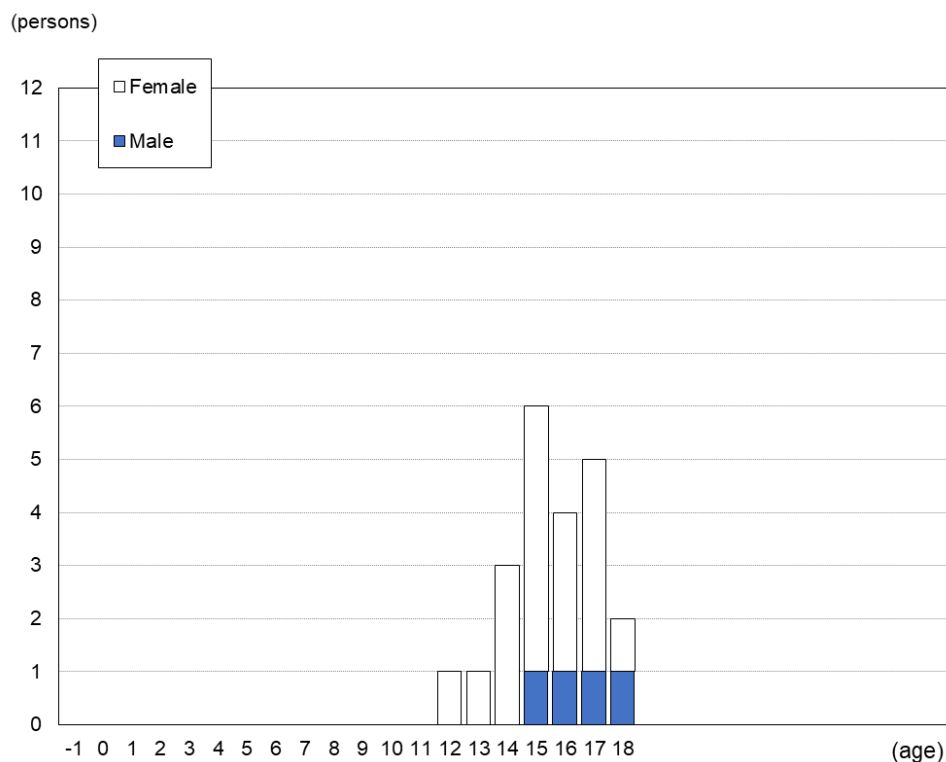
Among those who underwent the Age 25+ Survey:

- Malignant or suspicious for malignancy: 22*
- Male to female ratio: 4:18
- Mean age $\pm$ SD (min – max): 25.3 ± 0.7 (24–27),
 15.5 ± 1.6 (12–18) at the time of disaster
- Mean tumor size $\pm$ SD (min – max): 14.4 ± 10.7 mm (5.3–49.9 mm)

*Appendix 5 shows surgery cases.

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

Age distributions of those 22 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 – 11 are not included in the Age 25+ Survey for those born between FY1992 and FY1997.

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

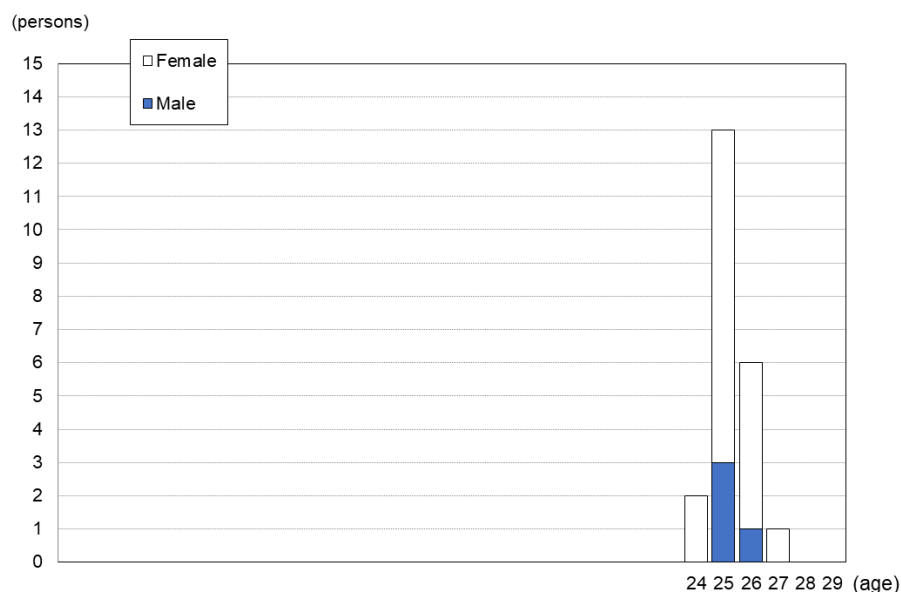


Figure 3 Age at the time of confirmatory examination

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

Of the 22 people with malignant or suspicious nodules, 12 (54.5%) had participated in the Basic Survey (for external radiation dose estimation), and all 12 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	4	1	2	1	6
< 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	6	2	3	3	9

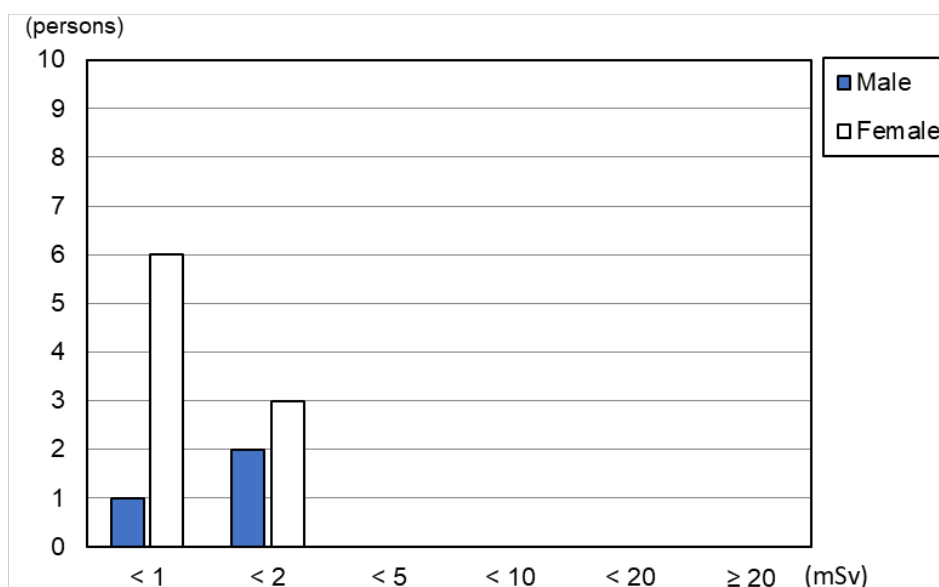


Figure 4 Effective doses of Basic Survey participants

2.2-5 Blood and urinary iodine test results

Table 7 Blood test results

	FT4 ¹⁾ (ng/dL)	FT3 ²⁾ (pg/mL)	TSH ³⁾ (μIU/mL)	Tg ⁴⁾ (ng/mL)	TgAb ⁵⁾ (IU/mL)	TPOAb ⁶⁾ (IU/mL)
Reference Range	0.95–1.74 ⁷⁾	2.13–4.07 ⁷⁾	0.340–3.880 ⁷⁾	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious : 22	1.2±0.1 (4.5%)	3.3±0.4 (9.1%)	1.6±1.6 (22.7%)	35.2±36.1 (40.9%)	13.6%	13.6%
Other : 456	1.2±0.2 (6.4%)	3.3±0.4 (6.8%)	1.2±0.7 (7.0%)	78.9±604.7 (21.3%)	11.8%	10.7%

Table 8 Urinary iodine test results

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious : 22	66	102	171	271	953
Other : 453	29	118	181	327	11,060

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

3 Mental Health Care

3.1 Support for Primary Examination Participants

Since April 2017, medical doctors offer person-to-person explanations on examination results, showing ultrasound images in private consultation booths at examination venues set up in public facilities. As of March 31, 2023, of 987 participants 986 (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 examination. The team also answers questions and offers counseling via our website.

Since the start of the Age 25+ survey, 138 participants (30 males and 108 females) have received support as of March 31, 2023. The number of support sessions provided was 265 in total. Of these, 138 sessions (52.1%) were offered at the participants' first examination and 127 (47.9%) at subsequent examinations.

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

Appendix 1 Implementation status of the Primary Survey by area

As of March 31, 2023

	Eligible persons a	Participants (persons)		Participation rate (%) b/a	Participants living outside the prefecture (persons) c ²⁾	Proportion of participants living outside the prefecture (%) c/b
		b	Participated outside the prefecture ¹⁾			
Number of eligible persons (Those born in 1992-1997)						
13 municipalities ³⁾	17,312	1,623	618	9.4	603	37.2
Nakadori ⁴⁾	68,486	6,408	2,285	9.4	2,012	31.4
Hamadori ⁵⁾	24,800	2,606	958	10.5	849	32.6
Aizu ⁶⁾	18,409	1,144	401	6.2	371	32.4
Total	129,007	11,781	4,262	9.1	3,835	32.6

1) The number of those who received examinations at medical facilities outside the prefecture (as of February 28, 2023)

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, 2023

Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)
Hokkaido	7	68	Fukui	1	4	Hiroshima	2	17
Aomori	2	18	Yamanashi	2	12	Yamaguchi	1	2
Iwate	3	56	Nagano	4	22	Tokushima	1	3
Miyagi	2	441	Gifu	2	5	Kagawa	1	2
Akita	1	17	Shizuoka	3	41	Ehime	3	3
Yamagata	3	53	Aichi	5	74	Kochi	1	2
Ibaraki	4	203	Mie	1	3	Fukuoka	3	21
Tochigi	8	202	Shiga	1	6	Saga	1	1
Gunma	2	50	Kyoto	3	33	Nagasaki	3	2
Saitama	4	252	Osaka	10	63	Kumamoto	1	6
Chiba	5	213	Hyogo	2	33	Oita	1	3
Tokyo	19	1,804	Nara	2	3	Miyazaki	1	3
Kanagawa	7	410	Wakayama	1	3	Kagoshima	1	2
Niigata	3	76	Tottori	1	2	Okinawa	1	7
Toyama	2	6	Shimane	1	1			
Ishikawa	1	5	Okayama	3	9			
						Total	136	4,262

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

Appendix 3 Primary Survey results by area

As of March 31, 2023

	Number of participants (persons)	Those with finalized results (persons)	Number of participants by final result (persons) (%)				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 (Those born in 1992-1997)										
13 municipalities 1)	1,623	1,605	688	832	85	0	84	26	1	871
		98.9	42.9	51.8	5.3	0.0	5.2	1.6	0.1	54.3
Nakadori 2)	6,408	6,361	2,693	3,337	331	0	329	121	2	3,499
		99.3	42.3	52.5	5.2	0.0	5.2	1.9	0.0	55.0
Hamadori 3)	2,606	2,577	1,114	1,326	137	0	136	51	1	1,377
		98.9	43.2	51.5	5.3	0.0	5.3	2.0	0.0	53.4
Aizu 4)	1,144	1,131	457	592	82	0	81	25	1	635
		98.9	40.4	52.3	7.3	0.0	7.2	2.2	0.1	56.1
Total	11,781	11,674	4,952	6,087	635	0	630	223	5	6,382
		99.1	42.4	52.1	5.4	0.0	5.4	1.9	0.0	54.7

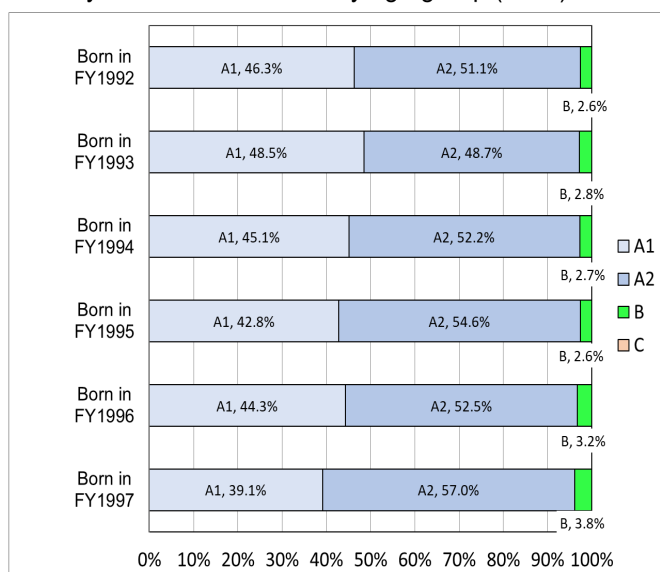
- 1) Tamura City, Minamisoma City, Date City, Kawamata Town, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village
- 2) Fukushima City, Koriyama City, Shirakawa City, Sukagawa City, Nihonmatsu City, Motomiya City, Koori Town, Kunimi 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

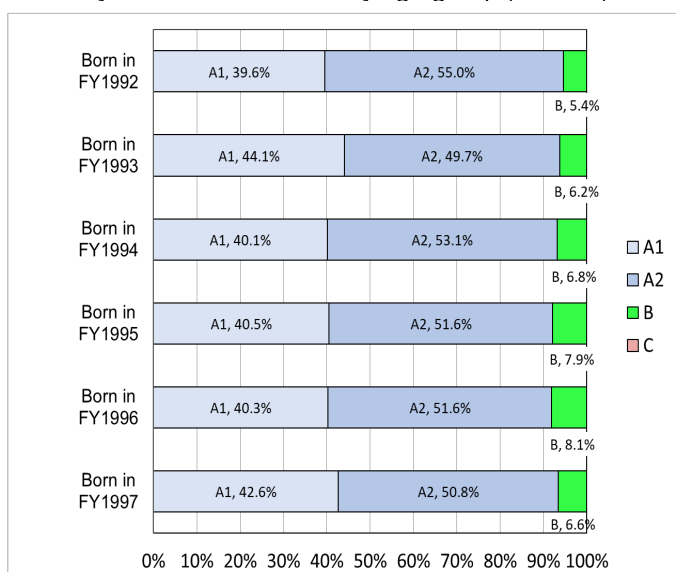
As of March 31, 2023

Grade Participants	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Those born in FY1992	360	620	980	397	861	1,258	20	85	105	0	0	0	777	1,566	2,343
Those born in FY1993	383	679	1,062	385	766	1,151	22	96	118	0	0	0	790	1,541	2,331
Those born in FY1994	303	487	790	351	645	996	18	83	101	0	0	0	672	1,215	1,887
Those born in FY1995	310	520	830	396	662	1,058	19	101	120	0	0	0	725	1,283	2,008
Those born in FY1996	261	486	747	309	622	931	19	98	117	0	0	0	589	1,206	1,795
Those born in FY1997	173	370	543	252	441	693	17	57	74	0	0	0	442	868	1,310
Total	1,790	3,162	4,952	2,090	3,997	6,087	115	520	635	0	0	0	3,995	7,679	11,674

Primary examination results by age group (Male)



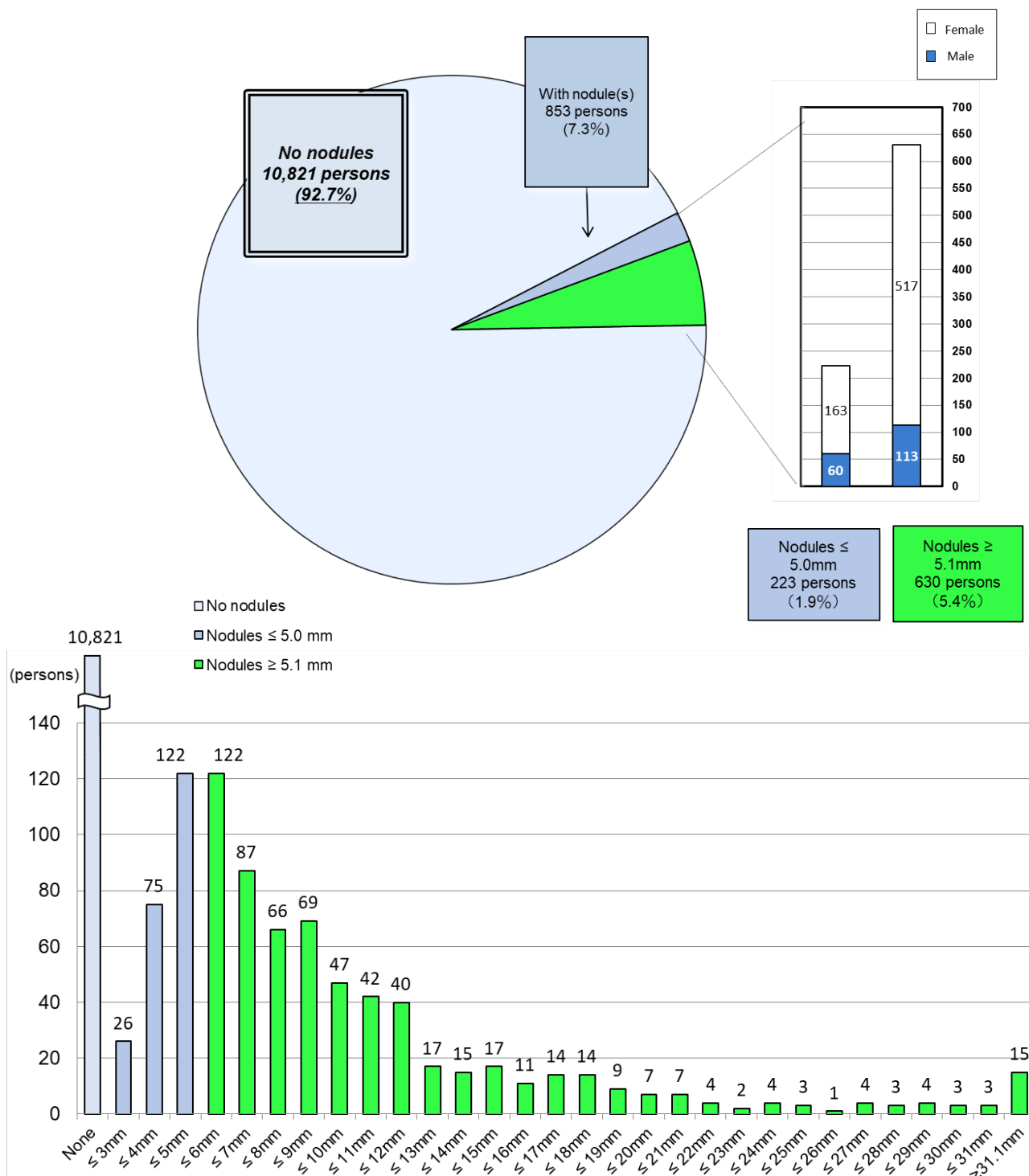
Primary examination results by age group (Female)



Appendix 4.2 Nodule characteristics

As of March 31, 2023
(persons)

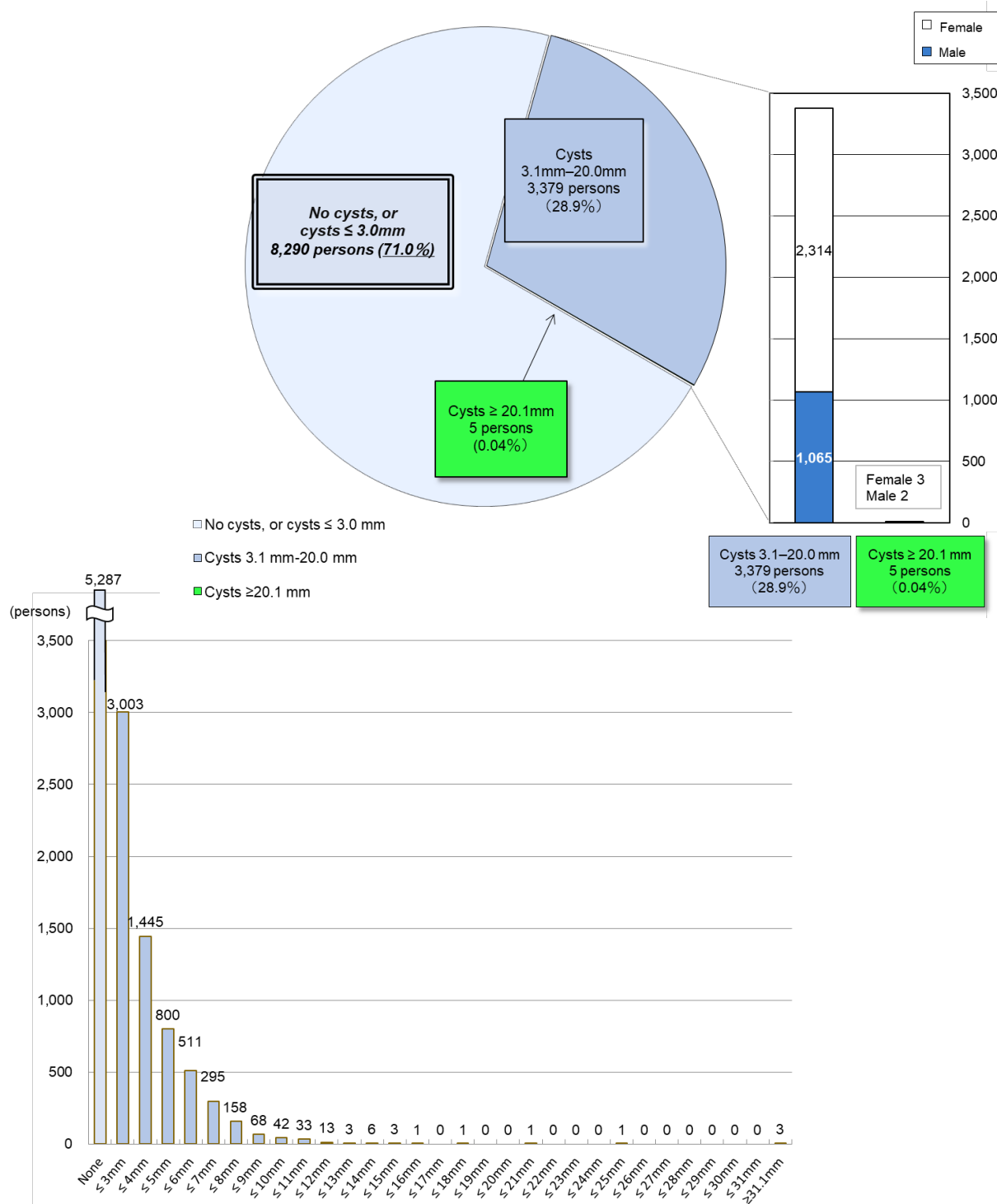
Nodule size	Total	Grade	
		Male	Female
None	10,821	3,822	6,999
≤ 3.0mm	26	8	18
3.1–5.0mm	197	52	145
5.1–10.0mm	391	70	321
10.1–15.0mm	131	30	101
15.1–20.0mm	55	7	48
20.1–25.0mm	20	3	17
≥ 25.1mm	33	3	30
Total	11,674	3,995	7,679



Appendix 4.3 Cyst characteristics

As of March 31, 2023
(persons)

Cyst size	Total	Grade	
		Male	Female
None	5,287	1,865	3,422
≤ 3.0mm	3,003	1,063	1,940
3.1–5.0mm	2,245	759	1,486
5.1–10.0mm	1,074	296	778
10.1–15.0mm	58	9	49
15.1–20.0mm	2	1	1
20.1–25.0mm	2	0	2
≥ 25.1mm	3	2	1
Total	11,674	3,995	7,679



Appendix 5 Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 25 Survey:

• Malignant or suspicious for malignancy	22
Surgical cases	14
Papillary thyroid carcinomas	13
Follicular thyroid carcinomas	1

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

As of March 31, 2023

1. Summary

1.1 Eligible Persons

Among Fukushima residents 18 years old or younger at the time of 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 in FY1992 (born between April 2, 1992 and April 1, 1993)

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. If residents are unable to receive the examination in the year they turn 30, they are entitled to one any time through the fiscal year prior to the year they turn 35 (see Figure 1 for the implementation schedule of Age 30+ Survey).

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

- The examinations are offered to those who turn age 30 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 Age 30+ Survey

2. Overview of Age 30+ Survey as of March 31, 2023

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) in FY2022, of whom 1,524 (6.7%) people participated. (See Appendix 1 and Appendix 2 for implementation status by area and implementation status outside Fukushima Prefecture, respectively.)

Results for 1,474 (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, 655 (44.4%) had Grade A1 results, 693 (47.0%) had Grade A2, 126 (8.5%) had Grade B, and none had Grade C.

Table 1 Progress and results of the primary examination

	Eligible persons a	Participants (persons)		Participants with finalized results (persons / %)					
		Participation rate (%) b (b/a)	Participated outside Fukushima c (c/b)	A				Those referred to confirmatory exam	
				A1		A2		B	C
				d (d/c)	e (e/c)	f (f/c)	g (g/c)		
Born in FY1992	22,626	1,524 (6.7)	562	1,474 (96.7)	655 (44.4)	693 (47.0)	126 (8.5)	0 (0.0)	
Total	22,626	1,524 (6.7)	562	1,474 (96.7)	655 (44.4)	693 (47.0)	126 (8.5)	0 (0.0)	

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

	Participants with finalized results (persons) a	Participants with nodules / cysts (%)			
		Nodules		Cysts	
		≥ 5.1mm b (b/a)	≤ 5.0mm c (c/a)	≥ 20.1mm d (d/a)	≤ 20.0mm e (e/a)
Born in FY1992	1,474	125 (8.5)	55 (3.7)	1 (0.1)	757 (51.4)
Total	1,474	125 (8.5)	55 (3.7)	1 (0.1)	757 (51.4)

- 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 shows a comparison of results of the Age 30+ Survey and previous surveys.

Among 785 participants with Grade A1 or A2 results in the previous survey, 748 (95.3%) had Grade A1 or A2 results and 37 (4.7%) had Grade B results in the Age 30+ Survey.

Among 36 participants with Grade B results in the previous survey, 4 (11.1%) had Grade A (A1 or A2) results and 32 (88.9%) 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 30+ survey**			
				A		B	C
				A1	A2		
			a	b	c	d	e
(%)	(b/a)	(c/a)	(d/a)	(e/a)			
Results of the previous survey (Age 25+ survey)	A	A1	290 (100.0)	248 (85.5)	36 (12.4)	6 (2.1)	0 (0.0)
		A2	495 (100.0)	99 (20.0)	365 (73.7)	31 (6.3)	0 (0.0)
	B		36 (100.0)	1 (2.8)	3 (8.3)	32 (88.9)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		653 (100.0)	307 (47.0)	289 (44.3)	57 (8.7)	0 (0.0)
	Total		1,474 (100.0)	655 (44.4)	693 (47.0)	126 (8.5)	0 (0.0)

* Results of the previous survey refers Age 25+ survey participants with finalized results

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

Of 126 eligible persons, 75 (59.5%) participated, of whom 58 (77.3%) completed the entire process of the confirmatory examination.

Of the aforementioned 58 participants, 3 (5.2%) were confirmed to meet Grade A diagnostic criteria by primary examination standards (A1:1, A2:2) (including those with other thyroid conditions). The remaining 55 (94.8%) were confirmed to be out of A1/A2 criteria.

Table 4 Progress of the Confirmatory Examination

	Those referred to confirmatory exams (persons)	Participants (persons) Participation rate (%)	Those with finalized results (%)				
			Total	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	126	75 (59.5)	58 (77.3)	1 (1.7)	2 (3.4)	55 (94.8)	5 (9.1)
Total	126	75 (59.5)	58 (77.3)	1 (1.7)	2 (3.4)	55 (94.8)	5 (9.1)

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

Among those who underwent FNAC, 3 were classified as malignant or suspicious for malignancy, all of whom were female. (See Appendix 5 for 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, 2023, all 165 (100%) examinees 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 examination. The team also answers questions and offers counseling via our website.

Since the start of the Age 30+ Survey, 31 participants (6 males and 25 females) have received support as of March 31, 2023. The number of support sessions provided was 55 in total. Of these, 31 sessions (56.4%) were offered at the participants' first examination and 24 (43.6%) at subsequent examinations.

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

Appendix 1 Implementation status of the Primary Survey, by area

As of March 31, 2023

	Eligible persons a	Participants (persons)		Participati on rate (%) b/a	Participants reside outside of Fukushima (persons / %) c ²⁾ c/b	
		b	Participated outside Fukushima ¹⁾			
Number of eligible persons (Those born in 1992)						
13 municipalities ³⁾	2,997	211	78	7.0	76	36.0
Nakadori ⁴⁾	12,131	871	323	7.2	312	35.8
Hamadori ⁵⁾	4,226	285	99	6.7	104	36.5
Aizu ⁶⁾	3,272	157	62	4.8	62	39.5
Total	22,626	1,524	562	6.7	554	36.4

1) The number of those who received examinations at medical facilities outside the prefecture (as of February 28, 2023)

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, 2023

Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)	Prefecture	No. of medical facilities	Participants (persons)
Hokkaido	7	7	Fukui	1	0	Hiroshima	2	2
Aomori	2	3	Yamanashi	2	1	Yamaguchi	1	1
Iwate	3	7	Nagano	4	8	Tokushima	1	0
Miyagi	2	56	Gifu	2	0	Kagawa	1	1
Akita	1	1	Shizuoka	3	2	Ehime	3	1
Yamagata	3	11	Aichi	5	11	Kochi	1	0
Ibaraki	4	37	Mie	1	1	Fukuoka	3	3
Tochigi	8	28	Shiga	1	1	Saga	1	1
Gunma	2	8	Kyoto	3	6	Nagasaki	3	1
Saitama	4	38	Osaka	10	13	Kumamoto	1	0
Chiba	5	17	Hyogo	2	1	Oita	1	0
Tokyo	19	234	Nara	2	0	Miyazaki	1	0
Kanagawa	7	49	Wakayama	1	0	Kagoshima	1	0
Niigata	3	6	Tottori	1	0	Okinawa	1	1
Toyama	2	0	Shimane	1	0			
Ishikawa	1	1	Okayama	3	4			
						Total	136	562

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

Appendix 3 Primary Survey results, by area

As of March 31, 2023

	Number of participants	Those with finalized results	Number of participants by final result (persons)				Those with nodules (%)		Those with cysts (%)	
	a	b	A		B	C	≥ 5.1mm	≤ 5.0mm	≥ 20.1mm	≤ 20.0mm
		b/a (%)	A1	A2						

Number of eligible persons for Age 30+ (Those born in 1992)

13 municipalities1)	211	203	90	93	20	0	20	8	0	106
		96.2	44.3	45.8	9.9	0.0	9.9	3.9	0.0	52.2
Nakadori2)	871	845	357	413	75	0	74	36	1	450
		97.0	42.2	48.9	8.9	0.0	8.8	4.3	0.1	53.3
Hamadori3)	285	273	134	116	23	0	23	7	0	124
		95.8	49.1	42.5	8.4	0.0	8.4	2.6	0.0	45.4
Aizu4)	157	153	74	71	8	0	8	4	0	77
		97.5	48.4	46.4	5.2	0.0	5.2	2.6	0.0	50.3
Total	1,524	1,474	655	693	126	0	125	55	1	757
		96.7	44.4	47.0	8.5	0.0	8.5	3.7	0.1	51.4

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

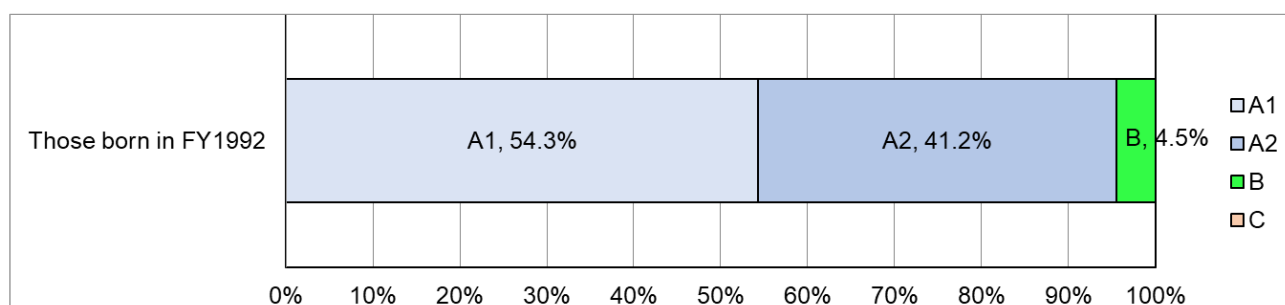
Appendix 4.1 Summary for participants with finalized results, by gender

As of March 31, 2023

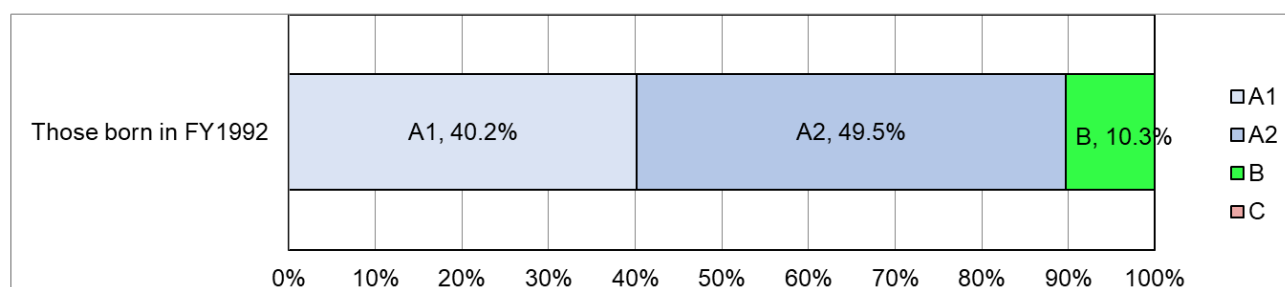
(persons)

Grade Participants	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Those born in FY1992	241	414	655	183	510	693	20	106	126	0	0	0	444	1,030	1,474
Total	241	414	655	183	510	693	20	106	126	0	0	0	444	1,030	1,474

Primary examination results by age group (Male)



Primary examination results by age group (Female)

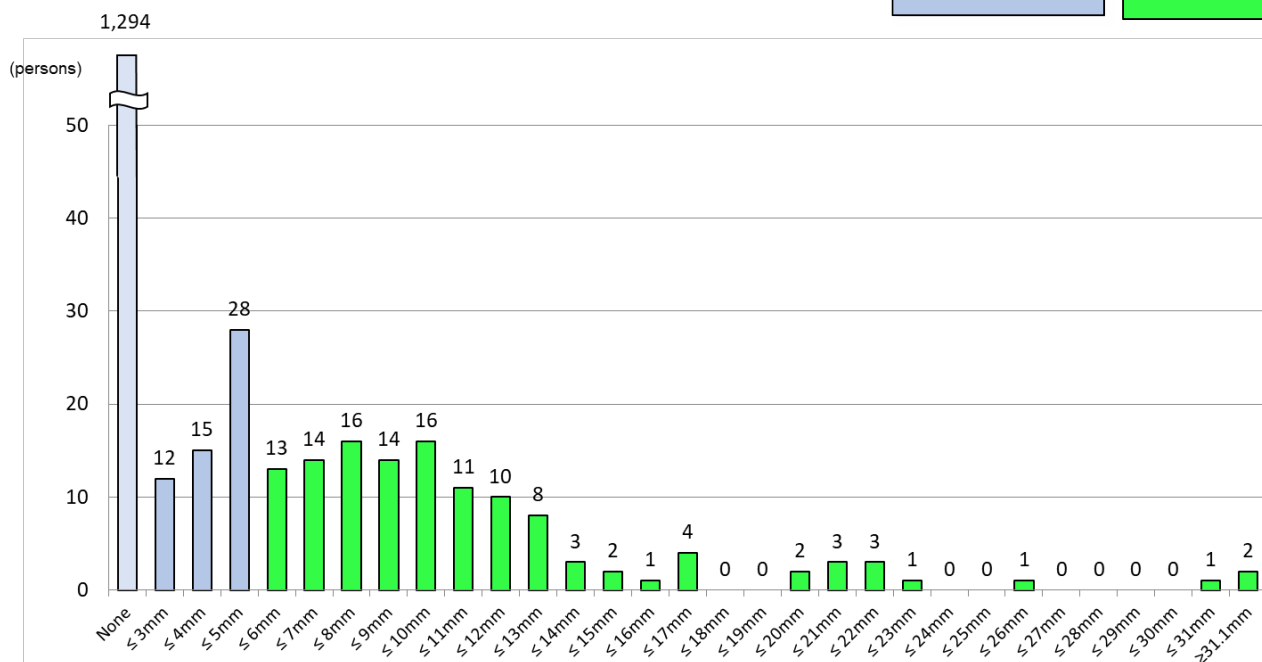
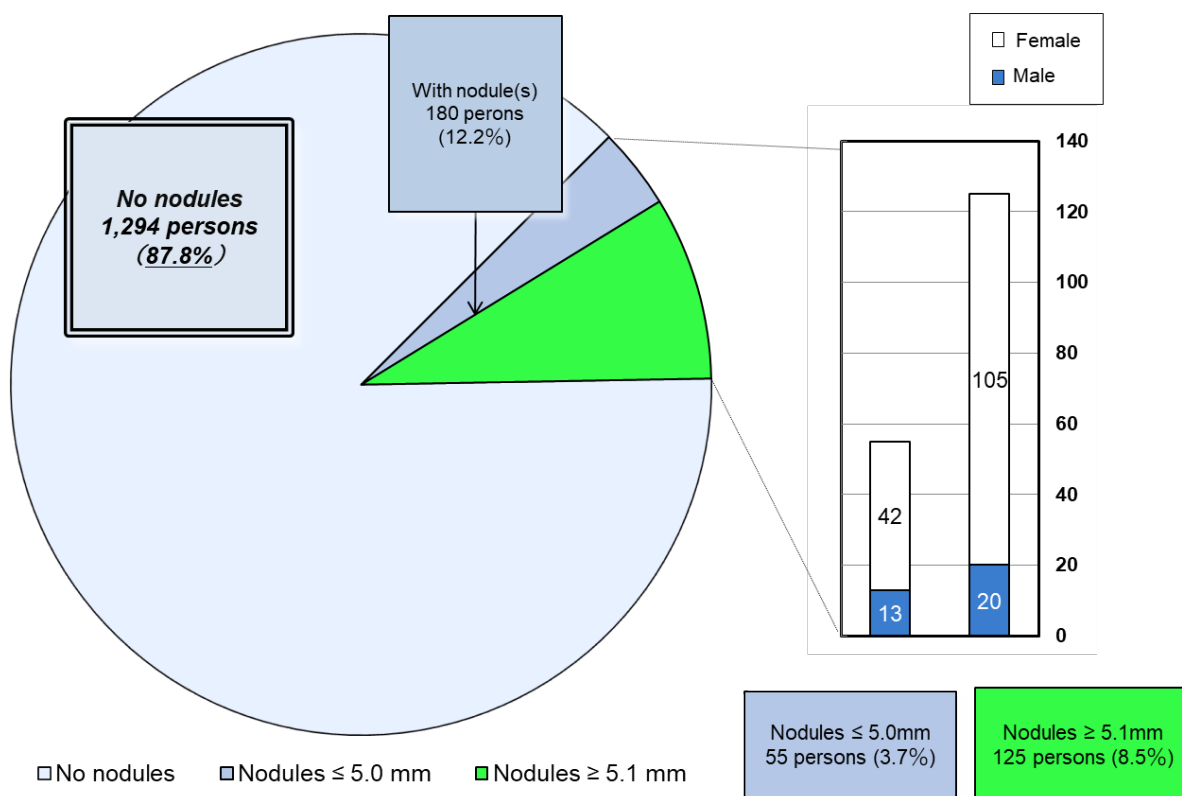


Appendix 4.2 Nodule characteristics

As of March 31, 2023

(persons)

Nodule size	Total	Gender		Grade	
		Male	Female		
None	1,294	411	883	A1	87.8%
≤ 3.0mm	12	3	9	A2	3.7%
3.1–5.0mm	43	10	33		
5.1–10.0mm	73	14	59	B	8.5%
10.1–15.0mm	34	3	31		
15.1–20.0mm	7	1	6		
20.1–25.0mm	7	1	6		
≥ 25.1mm	4	1	3		
Total	1,474	444	1,030		

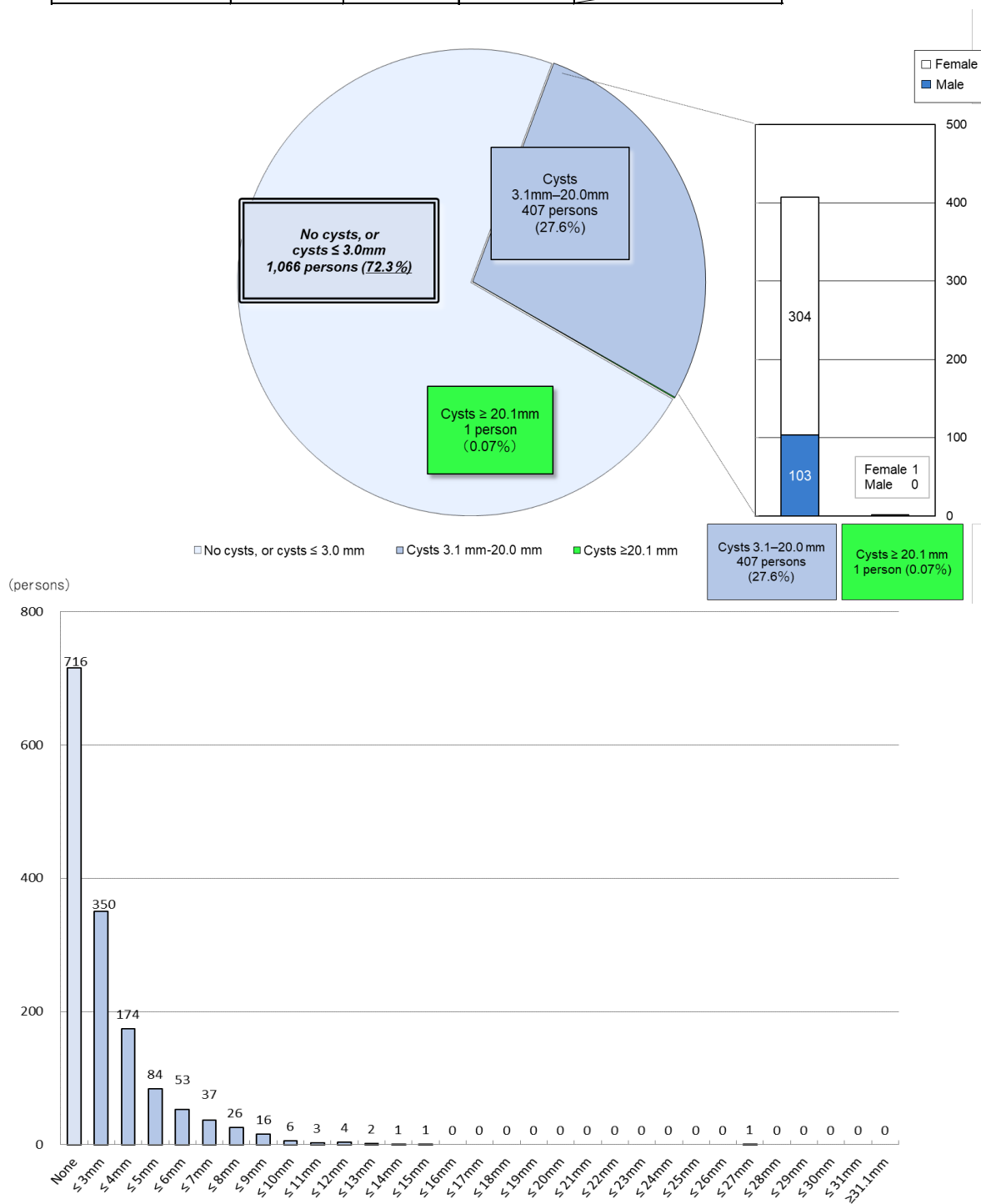


Appendix 4.3 Cyst characteristics

As of March 31, 2023

(persons)

Cyst size	Total	Grade	
		Male	Female
None	716	251	465
≤ 3.0mm	350	90	260
3.1–5.0mm	258	69	189
5.1–10.0mm	138	34	104
10.1–15.0mm	11	0	11
15.1–20.0mm	0	0	0
20.1–25.0mm	0	0	0
≥ 25.1mm	1	0	1
Total	1,474	444	1,030



Appendix 5 Surgical cases for malignancy or suspicion of malignancy

Among those who underwent the Age 30 Survey:

• Malignant or suspicious for malignancy	3
[Surgical cases	1]
Papillary thyroid carcinomas	1]