Report of the 24th Meeting of the Thyroid Examination Evaluation Subcommittee

Date and Time: Friday, March 28, 2025, 13:30 - 15:30
Location: SUGITSUMA KAIKAN, 4th floor meeting room, BOTAN * Both on-site and online
Attendees: 7 subcommittee members
Agenda

1. Summary of results of the full-scale survey (up to the 5th round survey)

Fukushima Medical University reported finalized summary results of the 5th round survey (as of December 31, 2024) (*).

(*) As for "Document 2-1" of this Oversight Committee meeting, Fukushima Medical University will issue a separate report on it later.

2. Results of the full-scale survey (up to the 5th round survey)

A discussion was held on the results of the 5th round survey (as of September 30, 2024) by Fukushima Medical University (hereafter referred to as FMU), based on materials prepared by FMU and the opinions of Subcommittee members.

2-1 To compare national detection rates with those of Fukushima Prefecture, annual trends in age-adjusted detection rates were verified using the cancer registry information in Reference 3. After the start of the Thyroid Ultrasound Examination, trends over national rates were confirmed among males and females. In addition, a unified national tabulation (National Cancer Registry), started in FY2016 and proceeding from 2016 to 2020, showed trends for both males and females that have been similar to those of the nation as a whole.

In addition, as in the past, characteristics such as the stage of cancer and the history of detection were confirmed for cases registered in both the Thyroid Ultrasound Examination and cancer registries, as well as for cases registered only in the cancer registries.

< Major opinions of the members of the subcommittee >

・ It is important to confirm trends in detection.

・ This time, the graph is for all ages, but from now on, comparisons should be made within the limited age range of those eligible for the Thyroid Ultrasound Examination.

2-2 The cumulative detection rate by age group at the time of the disaster was graphed to show changes in monitoring effect over time (Ref 4-1 to 4-2). Detection rates were higher in older age groups, regardless of whether the cases were drawn from preliminary examinations or cancer registries only.

< Major opinions of the members of the subcommittee >

- In the Chernobyl nuclear accident, a notable prevalence of thyroid cancer was observed in radiation-sensitive young children (especially those under 5 years of age). Still, no significant risk was observed among those in their 20s. In light of this history, we can confirm that Fukushima Prefecture has not seen a high prevalence of thyroid cancer in radiation-sensitive younger age groups.
- In the cohort aged 15 years or older at the time of the disaster in Figure 4-1-2 (1-7), limited to cases detected by the Thyroid Ultrasound Examination full-scale survey, there are marked increases at ages 25 and 30, indicating the effect of the implementation of Age 25 and Age 30 Survey examinations. In addition, flattening of the curve from the late 20s in Figure 4-2-3 (1-10), which is limited to cases registered only in the cancer registry, is different from the usual trend in which the detection rate increases with age, suggesting a monitoring effect associated with the Thyroid Ultrasound Examination.

2-3 A case-control study within a cohort was conducted to examine the association between individual estimated radiation doses and detection of malignancy or suspicion for malignancy (Ref. 5-1 to 5-12) (*2).

As it was through the 4th round full-scale survey, analysis was limited to the evacuation area and Hamadori,*(1) where doses of 10 mSv or higher were within the dose distribution. As a result, no significant association was found in the evacuation area, but a significant association was found in the Hamadori area at 10 mSv or higher. In addition, inspection results do not indicate an increase in the number of cases above 10 mSv through the 4th round full-scale survey, but this may be an effect of the way the controls were selected.

*1 Three cities and towns in Hamadori (Iwaki City, Soma City, Shinchi Town), not including evacuation areas

*2 Ref 5-1 to 5-6: Cases registered only in cancer registries are not included.

(5-4: Matching Model 2 limited to the evacuation area of + Hamadori, 5-5: limited to the evacuation area, 5-6: limited to Hamadori) Ref 5-7 to 5-12: including cases registered only in cancer registries.

(5-10: Matching Model 2, limited to the evacuation area + Hamadori, 5-11: limited to the evacuation area, 5-12: limited to Hamadori

<Major opinions of the members of the subcommittee>

- Rather than focusing only on the odds ratio, the data can be misleading if one does not pay attention to the way controls were selected (ratio to the control population*1 or the case group*2) and the characteristics of the population.

- The intention of limiting analyses by regions is to reduce biases such as the participation rate of the confirmatory examination, the cytological diagnosis implementation rate, and the timing of the examination, since the examinations are conducted over multiple years. Evacuation areas should be watched most closely because of the high confirmatory examination participation rate and cytological diagnosis implementation rate due to the residents' level of anxiety.
- Because case-control studies are affected by these population characteristics and numbers, trends should be checked in parallel with cohort studies, using the Kaplan-Meier method.
- When verifying the effects of radiation dose, the analysis should be mainstreamed with the addition of cases registered only in cancer registries that are detected clinically, to attenuate the monitoring effect of the Thyroid Ultrasound Examination.

2-4 The Kaplan-Meier method, mainly used for survival time analysis, was used in Reference 6 from the perspective of observation over time using the person-year method for observing the cumulative detection rate of malignant or suspicious for malignancy cases.

Ref 6-1 shows the data by gender, Ref 6-2 shows the data by age group at the time of the disaster, and Ref 6-3 shows the data by thyroid equivalent dose in 3 categories of Hamadori and the evacuation areas.

The graphs in Exhibit 6-4 and Exhibit 6-5 show thyroid equivalent doses in the three areas of residence at the time of the earthquake and the three thyroid equivalent dose categories in Hamadori. No significant differences were found in Data 6-3 to 6-5.

<Major opinions of the members of the subcommittee>

- In the case-control study, there was a significant association at 10 mSv or more limited to Hamadori, but no such association was found using Kaplan-Meier analysis, which could be interpreted as a coincidence due to the way the controls were selected.

Thyroid Ultrasound Examination Results Summary

Examinations / Items		**Preliminary Examination** (The 1st-round survey)	**Full-scale Survey 1** (The 2nd-round survey)	**Full-scale Survey 2** (The 3st round survey)	**Full-scale Survey 3** (The 4th-round survey)	**Full-scale Survey 4** (The 5th-round survey)	**Full-scale Survey 5** (The 6th-round survey)	**Age 25 Survey**	**Age 30 Survey**
		2011-2013	2014-2015	2016-2017	2018-2019	2020-2022	2023-2024	Starting from 2017	Starting from 2022
Eligible persons		367,637	381,237	336,667	294,228	252,936	211,903	149,843	44,489
Participation Rate		81.7%	71.0%	64.7%	62.3%	45.1%	25.0%	8.6%	6.7%
Results	A1	51.5%	40.2%	35.1%	33.6%	28.8%	27.0%	42.3%	42.8%
	A2	47.8%	59.0%	64.2%	65.6%	70.0%	71.6%	52.2%	48.2%
	B	0.8%	0.8%	0.7%	0.8%	1.2%	1.5%	5.5%	9.0%
	C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		As of March 31, 2018	As of March 31, 2021	As of March 31, 2021	As of June 30, 2022	As of December 31, 2024	As of September 30, 2024	As of September 30, 2024	As of September 30, 2024

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

As of December 31, 2024

1. Summary

1.1 Purpose

To monitor the long-term health of children, we are continuing the Full-Scale Survey (fifth-round survey), following the Preliminary Baseline Survey for initial 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 who were approximately 18 years old or younger at the time of the earthquake (those born between April 2, 1992, and April 1, 2012).

1.3 Implementation Period

FY2020 and FY2022, starting in April 2020:

1.3-1 For those 18 years old or younger

The examination was conducted over three years, from FY2020 through FY2022.

1.3-2 For those 19 years old or older

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

FY2020: those born in FY1995
FY2021: those born in FY1996
FY2022: those born in FY1992 and FY1997

The results of the Age 25 and Age 30 Surveys will be reported separately.

1.4 Implementing Organizations (number of medical facilities with agreements for the implementation of thyroid examinations as of December 31, 2024)

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

1.4-1 Primary examination facilities

In Fukushima Prefecture	85 medical facilities
Outside Fukushima Prefecture	150 medical facilities

1.4-2 Confirmatory examination facilities

In Fukushima Prefecture	7 medical facilities, including FMU
Outside Fukushima Prefecture	42 medical facilities

1.5 Methods

1.5-1 Primary examination

Ultrasonography of the thyroid gland

Assessments are made by specialists based on the following criteria:

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

1.5-2 Confirmatory examination

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

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

1.5-3 Flow chart

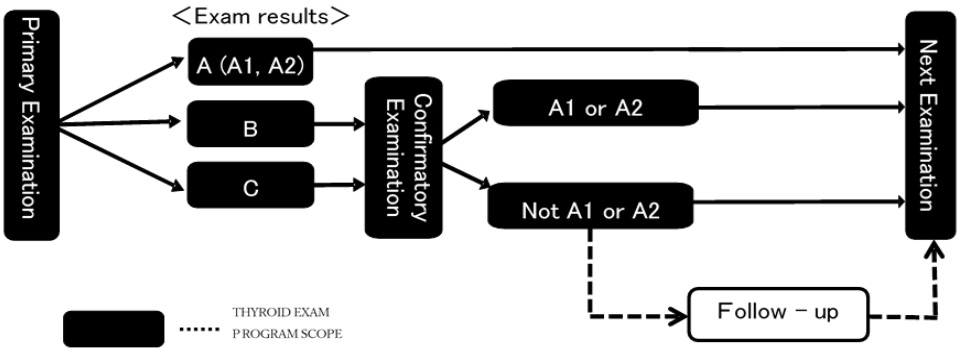


Figure 1: Flow chart

1.6 Municipalities Surveyed

The municipalities where examinations (for those 18 years old or younger) were carried out in FY2020 and FY2022 are as follows:

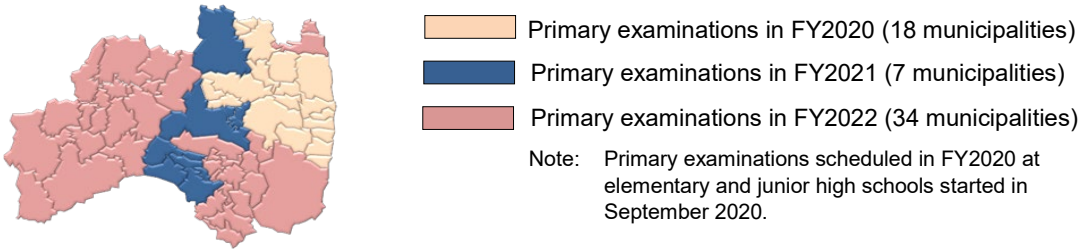


Figure 2 Municipalities covered for primary examinations at elementary and junior high schools

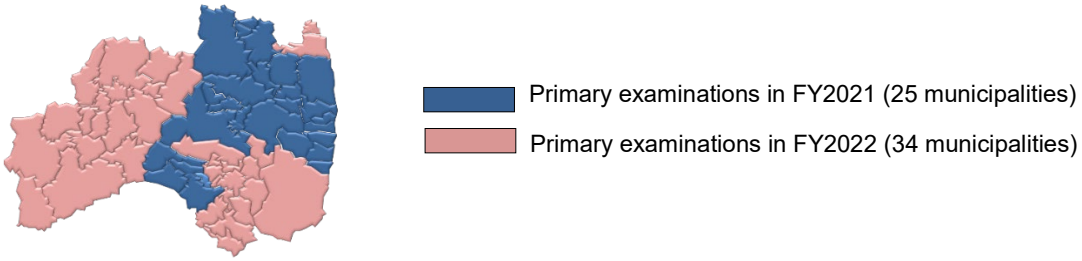


Figure 3 Municipalities covered for primary examinations at high schools and other facilities

The data will be compiled biannually, per the initial plan.

2. Results as of December 31, 2024

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was completed for 113,959 participants (45.1%) by December 31, 2024. (Refer to Appendices 1 and 2 for the participation and progress summaries by municipalities in Fukushima and other prefectures.)

The results of 113,959 participants (100.0%) have been finalized, and individual reports have been sent to them. (See Appendix 3 for the results by municipalities.)

Of these, 32,846 (28.8%) had Grade A1 results, 79,767 (70.0%) had Grade A2, 1,346 (1.2%) had Grade B, and none had Grade C.

Table 1: Progress and results of the primary examination

	Eligible persons	Participants (persons)			Participants with finalized results (persons)									
							Details by grade (%)							
							A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	Participation rate (%) (b/a)	Those who participated outside Fukushima	c	Judgment rate (%) (c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
FY2020	144,902	69,179	(47.7)	5,500	69,179	(100.0)	19,999	(28.9)	48,432	(70.0)	748	(1.1)	0	(0.0)
FY2021	108,034	44,780	(41.4)	2,471	44,780	(100.0)	12,847	(28.7)	31,335	(70.0)	598	(1.3)	0	(0.0)
Total	252,936	113,959	(45.1)	7,971	113,959	(100.0)	32,846	(28.8)	79,767	(70.0)	1,346	(1.2)	0	(0.0)

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

	Participants with finalized results	Participants with nodules / cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
FY2020	69,179	748	(1.1)	381	(0.6)	1	(0.0)	48,848	(70.6)
FY2021	44,780	598	(1.3)	284	(0.6)	0	(0.0)	31,678	(70.7)
Total	113,959	1,346	(1.2)	665	(0.6)	1	(0.0)	80,526	(70.7)

- 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: Age 25 and Age 30 Surveys) are excluded and will be reported separately.
- Examinations for those born in FY1995 (approx. 21,000) took place in FY2020; for those born in FY1996 (approx. 21,000), FY2021; and for those born in FY1992 (approx. 23,000) and FY1997 (approx. 20,000), FY2022.

2.1-2 Participation rate by age group

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

Table 3: Participation rates by age group

			Total	Age group		
FY2020	Age group*			8 to 11 years old	12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	144,902	37,105	61,911	45,886
	Participants	(b)	69,179	27,925	36,161	5,093
	Participation rate (%)	(b/a)	47.7	75.3	58.4	11.1
FY2021	Age group*			9 to 11 years old	12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	108,034	19,771	45,059	43,204
	Participants	(b)	44,780	14,152	25,688	4,940
	Participation rate (%)	(b/a)	41.4	71.6	57.0	11.4
Total	Eligible persons	(a)	252,936	56,876	106,970	89,090
	Participants	(b)	113,959	42,077	61,849	10,033
	Participation rate (%)	(b/a)	45.1	74.0	57.8	11.3

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

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

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

Among 106,592 (sum of *1) participants with Grade A (A1 and A2) results in the fourth-round survey, 105,825 (sum of *2, 99.3%) had Grade A (A1 and A2) results, and 767 (sum of *3, 0.7%) had Grade B results in the fifth-round survey.

Among 546 participants with Grade B results in the fourth-round survey, 104 (sum of *4, 19.0%) had Grade A (A1 and A2) results, and 442 (81.0%) had Grade B results in the fifth-round survey.

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

			Results of the fourth-round survey*	Results of the fifth-round survey**			
				A		B	C
			a (%)	A1 b (b/a)	A2 c (c/a)	d (d/a)	e (e/a)
Results of the fourth-round survey	A	A1	34,598 *1 (100.0)	23,881 *2 (69.0)	10,582 *2 (30.6)	135 *3 (0.4)	0 (0.0)
		A2	71,994 *1 (100.0)	6,645 *2 (9.2)	64,717 *2 (89.9)	632 *3 (0.9)	0 (0.0)
	B		546 (100.0)	11 *4 (2.0)	93 *4 (17.0)	442 (81.0)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		6,821 (100.0)	2,309 (33.9)	4,375 (64.1)	137 (2.0)	0 (0.0)
Total			113,959 (100.0)	32,846 (28.8)	79,767 (70.0)	1,346 (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 diagnosed for each grade in the fourth-round survey.

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By December 31, 2024, of 1,346 eligible persons, 1,116 (82.9%) had participated in the confirmatory examination, and 1,101 (98.7%) had completed the entire procedure. (See Appendix 5 for the implementation status of the confirmatory examinations by area.)

Of those 1,101 participants, 104 (A1: 7, A2: 97) (9.4%) were confirmed to meet A1 or A2 diagnostic criteria by primary examination standards (including those with other thyroid conditions). After the detailed examination, 997 (90.6%) were confirmed to be outside the A1 or A2 criteria.

Table 5: Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (persons) (%)		Those with finalized results (persons)									
			Participation Rate (%)	Determination rate (%)		A1		A2		Other than A1 or A2			
												FNAC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
FY2020	748	627	(83.8)	618	(98.6)	4	(0.6)	64	(10.4)	550	(89.0)	67	(12.2)
FY2021	598	489	(81.8)	483	(98.8)	3	(0.6)	33	(6.8)	447	(92.5)	34	(7.6)
Total	1,346	1,116	(82.9)	1,101	(98.7)	7	(0.6)	97	(8.8)	997	(90.6)	101	(10.1)

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

Among those who underwent FNAC, 50 participants had nodules classified as malignant or suspicious for malignancy: 13 were male, and 37 were female. Participants' ages at the confirmatory examination ranged from 12 to 24 years (mean age: 17.3 ± 2.9 years). The tumor diameters were from 5.4 mm to 46.7 mm (mean tumor diameter: 14.0 ± 8.2 mm).

Of these 50 participants, 38 had Grade A (A1:11, A2:27), 6 had Grade B results in the fourth-round survey, and the remaining 6 did not participate. Among 27 participants with Grade A2, 1 met nodule, 23 met cyst, and 3 met both cyst and nodule criteria.

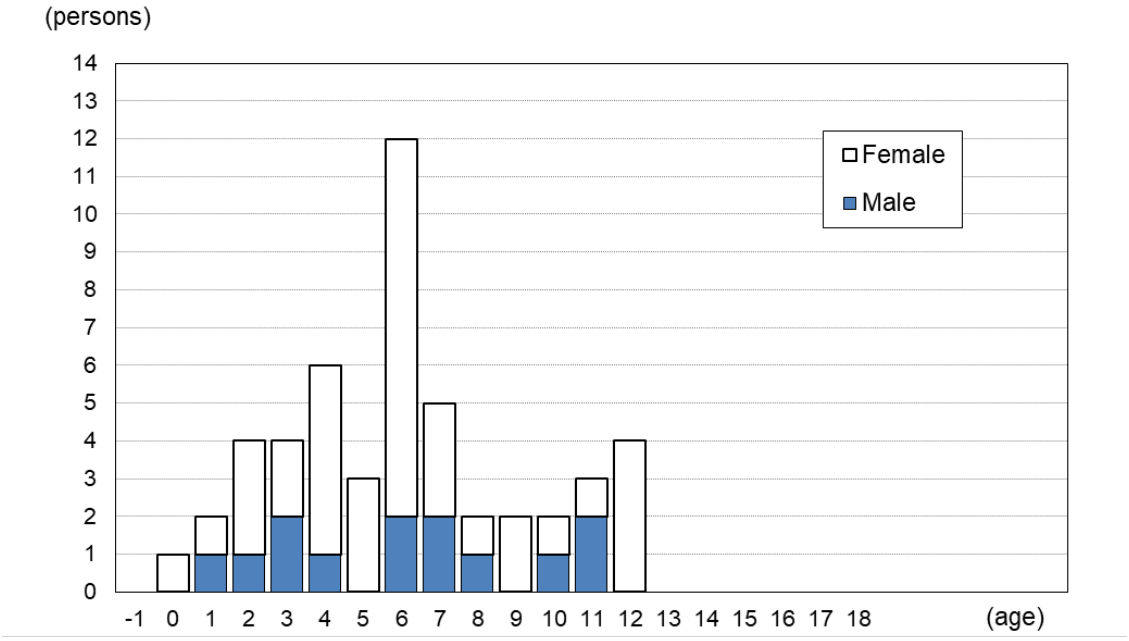
Table 6: Results of FNAC (The mean age and mean tumor size in parentheses indicate the range.)

A. Municipalities surveyed in FY2020	
・Malignant or suspicious for malignancy	30*
・Male to female ratio	6:24
・Mean age ± SD (min-max)	17.5 ± 3.3 (12–24)
	6.6 ± 3.3 (1–12) at the time of the earthquake
・Mean tumor size ± SD (min-max)	11.2 ± 4.9 mm (5.4–30.1 mm)
B. Municipalities surveyed in FY2021	
・Malignant or suspicious for malignancy	20*
・Male to female ratio	7:13
・Mean age ± SD (min-max)	17.1 ± 2.1 (13–21)
	5.3 ± 2.8 (0–10) at the time of the earthquake
・Mean tumor size±SD (min-max)	18.1 ±10.3 mm (7.1–46.7 mm)
C. Total	
・Malignant or suspicious for malignancy	50*
・Male to female ratio	13:37
・Mean age ± SD (min-max)	17.3 ± 2.9 (12–24)
	6.1 ± 3.2 (0–12) at the time of the earthquake
・Mean tumor size ± SD (min-max)	14.0 ± 8.2 mm (5.4–46.7 mm)

* Appendix 6 shows surgical cases.

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

The age distribution of 50 people with malignant or suspected malignant nodules based on their age as of March 11, 2011, is in Figure 4. The age distribution based on their age at the time of confirmatory examination is in Figure 5.



Note: Those aged between 13 and 18 at the time of the disaster are not included in the fifth-round survey participants.
The horizontal axis begins at -1, including those born between April 2, 2011, and April 1, 2012.
*Those born between March 12 and April 1, 2011, are included in age 0.

Figure 4: Age distributions as of March 11, 2011

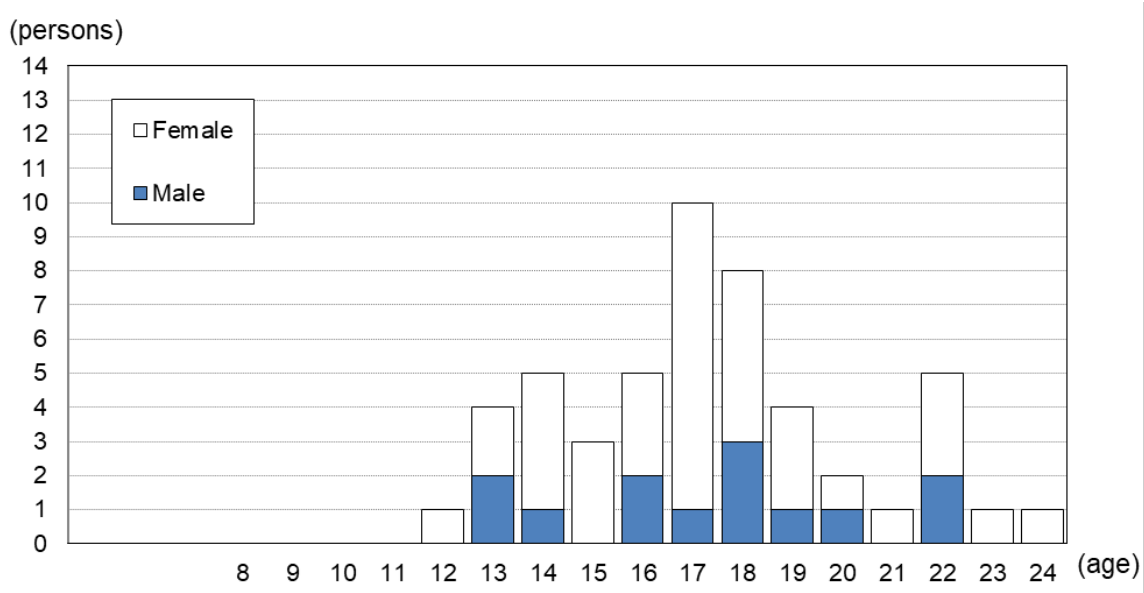


Figure 5: Age distributions as of the date of confirmatory examination

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

Of those 50 people with malignant or suspicious findings, 29 (58.0%) had participated in the Basic Survey (for external radiation dose estimation), and all 29 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 earthquake									
	0–5		6–10		11–15		16–18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	2	5	2	7	0	3	0	0	4	15
< 2	1	1	1	2	1	1	0	0	3	4
< 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	3	8	3	9	2	4	0	0	8	21

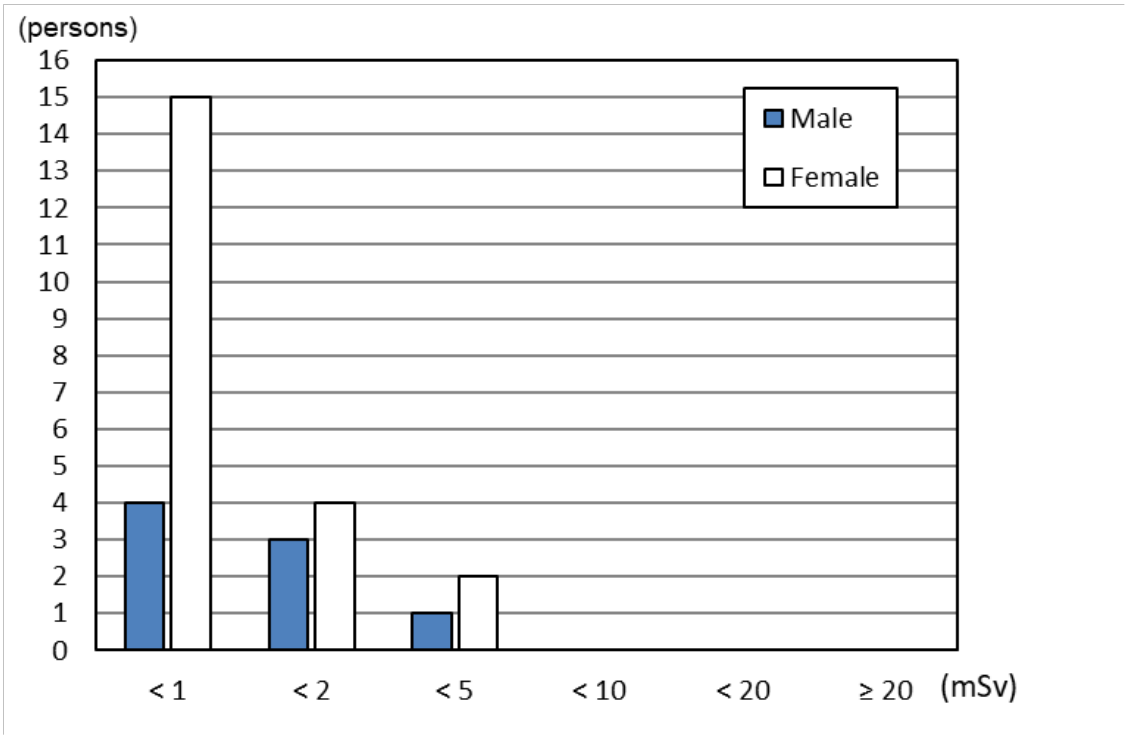


Figure 6: Effective dose distribution of the Basic Survey participants

2.2-5 Blood test and urinary iodine test results

Table 8: Blood test results

	FT4[1] (ng/dL)	FT3[2] (pg/mL)	TSH[3] (μIU/mL)	Tg[4] (ng/mL)	TgAb[5] (IU/mL)	TPOAb[6] (IU/mL)
Reference Range	0.95–1.74[7]	2.13–4.07[7]	0.340–3.880[7]	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious : 50	1.2 ± 0.2 (4.0%)	3.5 ± 0.4 (4.0%)	1.3±0.7 (10.0%)	78.0±306.1 (22.0%)	14.0%	14.0%
Other : 956	1.2 ± 0.2 (5.3%)	3.6 ± 0.8 (7.4%)	1.3±1.1 (8.6%)	30.3±79.8 (15.8%)	8.9%	7.5%

Table 9: Urinary iodine test results [8]

(μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious : 47	36	127	175	410	2,471
Other : 942	21	113	193	331	12,670

1) FT4: free thyroxine, thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
2) FT3: free triiodothyronine, thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or neoplastic tissue produces thyroglobulin.
5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease or Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference intervals vary according to age.
8) Due to the temporary suspension of reagents, the urinary iodine tests have been suspended since March 8, 2024, as of December 31, 2024.

2.2-6 Confirmatory examination results by area

The percentages of those with malignant or suspicious findings were 0.04% in the 13 municipalities of the nationally designated evacuation zone and Nakadori, 0.06% in Hamadori, and 0.03% in Aizu.

Table 10: Confirmatory examination results by area

	The fifth-round survey participants (persons)	Those referred to confirmatory exam (persons) and rate (%)		Those who received the confirmatory exam (persons)	Those with malignant or suspicious findings (persons) and rate (%)	
	a	b	b/a		c	c/a
13 municipalities[1)]	14,787	156	1.1	129	6	0.04
Nakadori[2)]	65,595	739	1.1	617	28	0.04
Hamadori[3)]	20,786	293	1.4	236	12	0.06
Aizu[4)]	12,791	158	1.2	134	4	0.03
Total	113,959	1,346	1.2	1,116	50	0.04

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

Table 11　Percentage of grade B・C and malignant or suspicious for malignancy cases by region in the 5th round survey

As of December 31, 2024

			13 municipalities "1	Nakadori *2	Hamadori *3	Aizu *4	Total
Covered population			32,140	139,069	48,283	33,444	252,936
Number of participants undergoing primary examination ***a**			14,787	65,595	20,786	12,791	113,959
Mean age at the time of disaster (Standard deviation)	Overall		3.8(3.1)	3.6 (3.0)	3.8(3.2)	3.3(2.9)	-
Mean age at the time of disaster (Standard deviation)	Female		3.9(3.2)	3.7 (3.1)	3.9(3.3)	3.4(3.0)	-
Mean age at the time of disaster (Standard deviation)	Male		3.7(3.0)	3.5 (3.0)	3.6(3.1)	3.2(2.8)	-
Mean age at the time of examination (Standard deviation)	Overall		13.9(3.4)	14.1 (3.1)	15.1(3.0)	14.6(2.9)	-
Mean age at the time of examination (Standard deviation)	Female		14.0(3.5)	14.2 (3.2)	15.3(3.0)	14.7(3.0)	-
Mean age at the time of examination (Standard deviation)	Male		13.8(3.3)	14.0 (3.1)	15.0(2.9)	14.4(2.8)	-
Percentages of female participants on primary examination		%	50.1	49.8	49.9	50.0	49.9
Number of participants with grade B･C ***b**			156	739	293	158	1,346
Percentages of participants with grade B･C results (Participants with grade B･C results/primary exam participants) ***b/a**		%	1.05	1.13	1.41	1.24	1.18
Number of finalized results of the confirmatory examination ***c**			126	608	235	132	1,101
Participation rate of the confirmatory examination (Confirmatory exam finalized results/participants with grade B･C) ***c/b**		%	80.8	82.3	80.2	83.5	81.8
Number of participants underwent cytological examination (FNAC) ***d**			8	66	18	9	101
Participation rate of FNAC ***d/c** (Number of FNACs/number of finalized results of the confirmatory exam)		%	6.3	10.9	7.7	6.8	9.2
Participation rate of FNAC *d/a (Number of FNACs /number of participants of the primary exam)		%	0.05	0.10	0.09	0.07	0.09
Cases of malignant or suspicious for malignancy ***e**			6	28	12	4	50
Cases of malignant or suspicious for malignancy /number of FNACs ***e/d**		%	75.0	42.4	66.7	44.4	49.5
Percentages of malignant or suspicious for malignancycases：100,000 per capita ***e/a**			40.6	42.7	57.7	31.3	43.9
		(%)	(0.041)	(0.043)	(0.058)	(0.031)	(0.044)

*The table data above does not include duplicates or results that have not been finalized.

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

Table 11: The comparison results by area

The mean age of primary examination participants at the time of the earthquake was highest in the “13 municipalities,” and "Hamadori," followed by "Nakadori," and "Aizu."

The mean age of primary examination participants at the time of examination was highest in "Hamadori," followed by "Aizu," "Nakadori," and "13 municipalities."

The "13 municipalities" had the highest proportion of female primary examination participants, followed by "Aizu," "Hamadori," and "Nakadori."

The following insights are provided by comparing the results of an analysis of the 113,959 individuals who underwent the primary examination without considering factors such as age, gender, examination interval, participation rate by age group, and participation rate of the confirmatory examination.

The percentages of grade B and C were highest in the following order: "Hamadori," "Aizu," "Nakadori," and "13 municipalities."

The percentages of participants having malignant or suspicious for malignancy were in descending order: "Hamadori," "Nakadori," "13 Municipalities," and "Aizu."

3. Mental Health Care

We have been providing the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

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

Consultation booths were set up at all venues for examinations conducted in and after April 2020; as of Devember 31, 2024, all 2,759 participants (100%) have visited these consultation booths.

3.2 Outreach programs (on-location lectures and information sessions)

We have conducted on-location lectures and information sessions to support participants and their parents/guardians to deepen their understanding of the thyroid examination.

From April 2020 to March 31, 2023, 607 people participated in sessions offered at 11 locations: 3 elementary schools, 4 junior high schools, and 4 high schools.

3.3 Support for Confirmatory Examination Participants

A support team has been established within Fukushima Medical University to offer mental health support to those undergoing the confirmatory (secondary) examination to address their concerns and anxiety, as well as to answer questions and provide guidance via web consultation.

Since the start of the fifth-round survey, 402 participants (127 males and 275 females) have received support as of December 31, 2024. The number of support sessions provided, including telephone counseling, was 710 in total. Of these, 397 (55.9%) received support at the participants' first examination and 313 (44.1%) at subsequent examinations.

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

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

As of December 31, 2024

	Number of eligible persons	Participants (persons)		Participation rate(%)	Number of participants and participation rate by age group[2]			Participants living outside Fukushima	%
	a	b	Participated outside Fukushima[1]	b/a	8–11	12–17	18–24	c[3]	c/b
Municipalities surveyed in FY2020									
Kawamata	1,567	739	14	47.2	238	431	70	58	7.8
					32.2	58.3	9.5		
Namie	2,478	954	235	38.5	210	547	197	245	25.7
					22.0	57.3	20.6		
Iitate	731	346	20	47.3	88	202	56	27	7.8
					25.4	58.4	16.2		
Minamisoma	8,849	3,975	571	44.9	1,201	2,253	521	669	16.8
					30.2	56.7	13.1		
Date	7,412	4,039	166	54.5	1,143	2,284	612	183	4.5
					28.3	56.5	15.2		
Tamura	4,577	2,281	52	49.8	803	1,227	251	97	4.3
					35.2	53.8	11.0		
Hirono	647	289	28	44.7	68	166	55	27	9.3
					23.5	57.4	19.0		
Naraha	916	369	44	40.3	73	221	75	54	14.6
					19.8	59.9	20.3		
Tomioka	1,980	715	122	36.1	153	412	150	134	18.7
					21.4	57.6	21.0		
Kawauchi	225	98	7	43.6	20	59	19	10	10.2
					20.4	60.2	19.4		
Okuma	1,771	670	117	37.8	145	392	133	125	18.7
					21.6	58.5	19.9		
Futaba	839	247	48	29.4	51	155	41	57	23.1
					20.6	62.8	16.6		
Katsurao	148	65	3	43.9	14	39	12	7	10.8
					21.5	60.0	18.5		
Fukushima	37,320	18,605	1,416	49.9	4,862	11,047	2,696	1,434	7.7
					26.1	59.4	14.5		
Nihonmatsu	6,920	3,713	160	53.7	1,126	2,156	431	163	4.4
					30.3	58.1	11.6		
Motomiya	4,232	2,211	78	52.2	663	1,302	246	81	3.7
					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	20,620	1,966	45.1	4,729	12,879	3,012	1,996	9.7
					22.9	62.5	14.6		
Koori	1,375	789	25	57.4	224	467	98	33	4.2
					28.4	59.2	12.4		
Kunimi	1,022	559	20	54.7	126	349	84	24	4.3
					22.5	62.4	15.0		
Tenei	728	332	19	45.6	95	180	57	12	3.6
					28.6	54.2	17.2		
Shirakawa	8,566	4,240	257	49.5	1,229	2,366	645	262	6.2
					29.0	55.8	15.2		
Nishigo	2,856	1,345	77	47.1	399	740	206	80	5.9
					29.7	55.0	15.3		
Izumizaki	893	394	7	44.1	105	245	44	11	2.8
					26.6	62.2	11.2		
Miharu	1,989	903	30	45.4	218	525	160	35	3.9
					24.1	58.1	17.7		
Subtotal	144,902	69,179	5,500	47.7	18,197	41,028	9,954	5,838	8.4
					26.3	59.3	14.4		

*1) The number of participants who received the examination at facilities outside Fukushima (as of November 30, 2024).

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

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

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

	Number of eligible persons	Participants (persons)	Participated outside Fukushima[1]	Participation rate(%)	Number of participants and participation rate by age group[2]			Participants living outside Fukushima	%
	a	b		b/a	8–11	12–17	18–24	c[3]	c/b
Municipalities surveyed in FY2021									
Iwaki	42,529	18,581	1,371	43.7	2,130	12,306	4,145	1,368	7.4
					11.5	66.2	22.3		
Sukagawa	10,705	4,583	181	42.8	773	3,055	755	196	4.3
					16.9	66.7	16.5		
Soma	4,771	1,781	167	37.3	325	1,204	252	192	10.8
					18.2	67.6	14.1		
Kagamiishi	1,834	818	28	44.6	142	552	124	25	3.1
					17.4	67.5	15.2		
Shinchi	983	424	29	43.1	61	279	84	35	8.3
					14.4	65.8	19.8		
Nakajima	706	266	9	37.7	54	169	43	7	2.6
					20.3	63.5	16.2		
Yabuki	2,326	978	22	42.0	217	639	122	28	2.9
					22.2	65.3	12.5		
Ishikawa	1,860	790	25	42.5	161	489	140	28	3.5
					20.4	61.9	17.7		
Yamatsuri	685	306	13	44.7	66	207	33	8	2.6
					21.6	67.6	10.8		
Asakawa	913	409	21	44.8	73	268	68	17	4.2
					17.8	65.5	16.6		
Hirata	838	371	9	44.3	86	220	65	7	1.9
					23.2	59.3	17.5		
Tanagura	2,049	847	32	41.3	178	562	107	39	4.6
					21.0	66.4	12.6		
Hanawa	1,070	419	8	39.2	83	262	74	11	2.6
					19.8	62.5	17.7		
Samegawa	457	191	4	41.8	43	129	19	4	2.1
					22.5	67.5	9.9		
Ono	1,252	502	7	40.1	107	339	56	6	1.2
					21.3	67.5	11.2		
Tamakawa	920	386	9	42.0	68	258	60	6	1.6
					17.6	66.8	15.5		
Furudono	692	337	17	48.7	71	199	67	11	3.3
					21.1	59.1	19.9		
Hinoemata	75	16	2	21.3	3	11	2	0	0.0
					18.8	68.8	12.5		
Minamiaizu	1,788	666	20	37.2	148	445	73	23	3.5
					22.2	66.8	11.0		
Kaneyama	114	38	0	33.3	6	25	7	0	0.0
					15.8	65.8	18.4		
Showa	101	33	5	32.7	9	22	2	5	15.2
					27.3	66.7	6.1		
Mishima	131	45	0	34.4	12	24	9	1	2.2
					26.7	53.3	20.0		
Shimogo	646	216	3	33.4	41	143	32	4	1.9
					19.0	66.2	14.8		
Kitakata	5,939	2,227	66	37.5	393	1,515	319	77	3.5
					17.6	68.0	14.3		
Nishiaizu	618	201	5	32.5	43	133	25	4	2.0
					21.4	66.2	12.4		
Tadami	475	212	5	44.6	38	150	24	6	2.8
					17.9	70.8	11.3		
Inawashiro	1,760	696	23	39.5	137	454	105	22	3.2
					19.7	65.2	15.1		
Bandai	415	159	9	38.3	32	106	21	8	5.0
					20.1	66.7	13.2		
Kitashiobara	385	163	6	42.3	32	111	20	7	4.3
					19.6	68.1	12.3		
Aizumisato	2,371	987	25	41.6	179	633	175	30	3.0
					18.1	64.1	17.7		
Aizubange	2,012	790	27	39.3	140	504	146	37	4.7
					17.7	63.8	18.5		
Yanaizu	393	148	3	37.7	31	98	19	4	2.7
					20.9	66.2	12.8		
Aizuwakamatsu	15,770	5,983	316	37.9	950	4,003	1,030	346	5.8
					15.9	66.9	17.2		
Yugawa	451	211	4	46.8	38	130	43	6	2.8
					18.0	61.6	20.4		
Subtotal	108,034	44,780	2,471	41.4	6,870	29,644	8,266	2,568	5.7
					15.3	66.2	18.5		
Total	252,936	113,959	7,971	45.1	25,067	70,672	18,220	8,406	7.4
					22.0	62.0	16.0		

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

As of November 30, 2024

Prefecture	Number of medical facilities	Participants (persons)
Hokkaido	7	**195**
Aomori	3	**94**
Iwate	4	**182**
Miyagi	2	**1,757**
Akita	1	**131**
Yamagata	3	**355**
Ibaraki	5	**477**
Tochigi	9	**542**
Gunma	2	**154**
Saitama	4	**443**
Chiba	5	**353**
Tokyo	22	**1,366**
Kanagawa	7	**538**
Niigata	3	**346**
Toyama	2	**21**
Ishikawa	1	**25**

Prefecture	Number of medical facilities	Participants (persons)
Fukui	1	**12**
Yamanashi	2	**65**
Nagano	4	**104**
Gifu	2	**13**
Shizuoka	3	**75**
Aichi	6	**144**
Mie	1	**17**
Shiga	1	**15**
Kyoto	3	**49**
Osaka	10	**109**
Hyogo	3	**99**
Nara	4	**16**
Wakayama	1	**4**
Tottori	1	**2**
Shimane	1	**11**
Okayama	3	**35**

Prefecture	Number of medical facilities	Participants (persons)
Hiroshima	2	**17**
Yamaguchi	1	**14**
Tokushima	1	**4**
Kagawa	1	**13**
Ehime	3	**13**
Kochi	2	**8**
Fukuoka	4	**56**
Saga	1	**6**
Nagasaki	3	**20**
Kumamoto	1	**19**
Oita	1	**12**
Miyazaki	1	**12**
Kagoshima	2	**6**
Okinawa	1	**22**
Total	150	**7,971**

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

Appendix 3: TUE primary examination results, by the municipality

As of December 31, 2024

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)							
			A		B	C	Percentage (%)		Percentage (%)	
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in 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	954	954	298	640	16	0	16	5	0	649
		100.0	31.2	67.1	1.7	0.0	1.7	0.5	0.0	68.0
Iitate	346	346	104	232	10	0	10	1	0	240
		100.0	30.1	67.1	2.9	0.0	2.9	0.3	0.0	69.4
Minamisoma	3,975	3,975	1,235	2,697	43	0	43	14	0	2,720
		100.0	31.1	67.8	1.1	0.0	1.1	0.4	0.0	68.4
Date	4,039	4,039	1,159	2,847	33	0	33	23	0	2,859
		100.0	28.7	70.5	0.8	0.0	0.8	0.6	0.0	70.8
Tamura	2,281	2,281	718	1,540	23	0	23	10	0	1,548
		100.0	31.5	67.5	1.0	0.0	1.0	0.4	0.0	67.9
Hirono	289	289	93	191	5	0	5	1	0	192
		100.0	32.2	66.1	1.7	0.0	1.7	0.3	0.0	66.4
Naraha	369	369	114	253	2	0	2	1	0	253
		100.0	30.9	68.6	0.5	0.0	0.5	0.3	0.0	68.6
Tomioka	715	715	212	497	6	0	6	4	0	501
		100.0	29.7	69.5	0.8	0.0	0.8	0.6	0.0	70.1
Kawauchi	98	98	32	65	1	0	1	0	0	66
		100.0	32.7	66.3	1.0	0.0	1.0	0.0	0.0	67.3
Okuma	670	670	196	464	10	0	10	9	0	464
		100.0	29.3	69.3	1.5	0.0	1.5	1.3	0.0	69.3
Futaba	247	247	72	174	1	0	1	0	0	175
		100.0	29.1	70.4	0.4	0.0	0.4	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	18,605	18,605	5,413	13,007	185	0	185	98	0	13,104
		100.0	29.1	69.9	1.0	0.0	1.0	0.5	0.0	70.4
Nihonmatsu	3,713	3,713	1,158	2,504	51	0	51	27	0	2,535
		100.0	31.2	67.4	1.4	0.0	1.4	0.7	0.0	68.3
Motomiya	2,211	2,211	668	1,522	21	0	21	9	0	1,533
		100.0	30.2	68.8	0.9	0.0	0.9	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	20,620	20,620	5,589	14,805	226	0	226	128	0	14,945
		100.0	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	332	88	239	5	0	5	0	1	242
		100.0	26.5	72.0	1.5	0.0	1.5	0.0	0.3	72.9
Shirakawa	4,240	4,240	1,201	2,993	46	0	46	25	0	3,019
		100.0	28.3	70.6	1.1	0.0	1.1	0.6	0.0	71.2
Nishigo	1,345	1,345	402	925	18	0	18	6	0	937
		100.0	29.9	68.8	1.3	0.0	1.3	0.4	0.0	69.7
Izumizaki	394	394	119	271	4	0	4	2	0	272
		100.0	30.2	68.8	1.0	0.0	1.0	0.5	0.0	69.0
Miharu	903	903	248	646	9	0	9	6	0	652
		100.0	27.5	71.5	1.0	0.0	1.0	0.7	0.0	72.2
Subtotal	69,179	69,179	19,999	48,432	748	0	748	381	1	48,848
		100.0	28.9	70.0	1.1	0.0	1.1	0.6	0.0	70.6

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)							
			A		B	C	Percentage (%)		Percentage (%)	
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in FY2021										
Iwaki	18,581	18,581	5,309	13,017	255	0	255	107	0	13,154
		100.0	28.6	70.1	1.4	0.0	1.4	0.6	0.0	70.8
Sukagawa	4,583	4,583	1,256	3,255	72	0	72	41	0	3,301
		100.0	27.4	71.0	1.6	0.0	1.6	0.9	0.0	72.0
Soma	1,781	1,781	523	1,227	31	0	31	12	0	1,245
		100.0	29.4	68.9	1.7	0.0	1.7	0.7	0.0	69.9
Kagamiishi	818	818	214	593	11	0	11	6	0	595
		100.0	26.2	72.5	1.3	0.0	1.3	0.7	0.0	72.7
Shinchi	424	424	127	290	7	0	7	5	0	293
		100.0	30.0	68.4	1.7	0.0	1.7	1.2	0.0	69.1
Nakajima	266	266	78	187	1	0	1	2	0	188
		100.0	29.3	70.3	0.4	0.0	0.4	0.8	0.0	70.7
Yabuki	978	978	279	694	5	0	5	4	0	697
		100.0	28.5	71.0	0.5	0.0	0.5	0.4	0.0	71.3
Ishikawa	790	790	226	557	7	0	7	5	0	561
		100.0	28.6	70.5	0.9	0.0	0.9	0.6	0.0	71.0
Yamatsuri	306	306	70	230	6	0	6	4	0	235
		100.0	22.9	75.2	2.0	0.0	2.0	1.3	0.0	76.8
Asakawa	409	409	102	304	3	0	3	4	0	306
		100.0	24.9	74.3	0.7	0.0	0.7	1.0	0.0	74.8
Hirata	371	371	119	247	5	0	5	1	0	251
		100.0	32.1	66.6	1.3	0.0	1.3	0.3	0.0	67.7
Tanagura	847	847	224	611	12	0	12	2	0	618
		100.0	26.4	72.1	1.4	0.0	1.4	0.2	0.0	73.0
Hanawa	419	419	106	303	10	0	10	0	0	308
		100.0	25.3	72.3	2.4	0.0	2.4	0.0	0.0	73.5
Samegawa	191	191	49	141	1	0	1	1	0	142
		100.0	25.7	73.8	0.5	0.0	0.5	0.5	0.0	74.3
Ono	502	502	143	355	4	0	4	4	0	358
		100.0	28.5	70.7	0.8	0.0	0.8	0.8	0.0	71.3
Tamagawa	386	386	125	256	5	0	5	1	0	260
		100.0	32.4	66.3	1.3	0.0	1.3	0.3	0.0	67.4
Furudono	337	337	91	241	5	0	5	3	0	245
		100.0	27.0	71.5	1.5	0.0	1.5	0.9	0.0	72.7
Hinoemata	16	16	4	12	0	0	0	0	0	12
		100.0	25.0	75.0	0.0	0.0	0.0	0.0	0.0	75.0
Minamiaizu	666	666	205	453	8	0	8	2	0	459
		100.0	30.8	68.0	1.2	0.0	1.2	0.3	0.0	68.9
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	45	8	36	1	0	1	1	0	37
		100.0	17.8	80.0	2.2	0.0	2.2	2.2	0.0	82.2
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	2,227	2,227	692	1,509	26	0	26	10	0	1,525
		100.0	31.1	67.8	1.2	0.0	1.2	0.4	0.0	68.5
Nishiaizu	201	201	44	154	3	0	3	3	0	155
		100.0	21.9	76.6	1.5	0.0	1.5	1.5	0.0	77.1
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	696	696	195	488	13	0	13	6	0	496
		100.0	28.0	70.1	1.9	0.0	1.9	0.9	0.0	71.3
Bandai	159	159	44	114	1	0	1	1	0	114
		100.0	27.7	71.7	0.6	0.0	0.6	0.6	0.0	71.7
Kitashiobara	163	163	47	113	3	0	3	1	0	114
		100.0	28.8	69.3	1.8	0.0	1.8	0.6	0.0	69.9
Aizumisato	987	987	297	681	9	0	9	7	0	686
		100.0	30.1	69.0	0.9	0.0	0.9	0.7	0.0	69.5
Aizubange	790	790	203	572	15	0	15	5	0	582
		100.0	25.7	72.4	1.9	0.0	1.9	0.6	0.0	73.7
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
Aizuwakamatsu	5,983	5,983	1,799	4,113	71	0	71	39	0	4,155
		100.0	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	44,780	44,780	12,847	31,335	598	0	598	284	0	31,678
		100.0	28.7	70.0	1.3	0.0	1.3	0.6	0.0	70.7
Total	113,959	113,959	32,846	79,767	1,346	0	1,346	665	1	80,526
		100.0	28.8	70.0	1.2	0.0	1.2	0.6	0.0	70.7

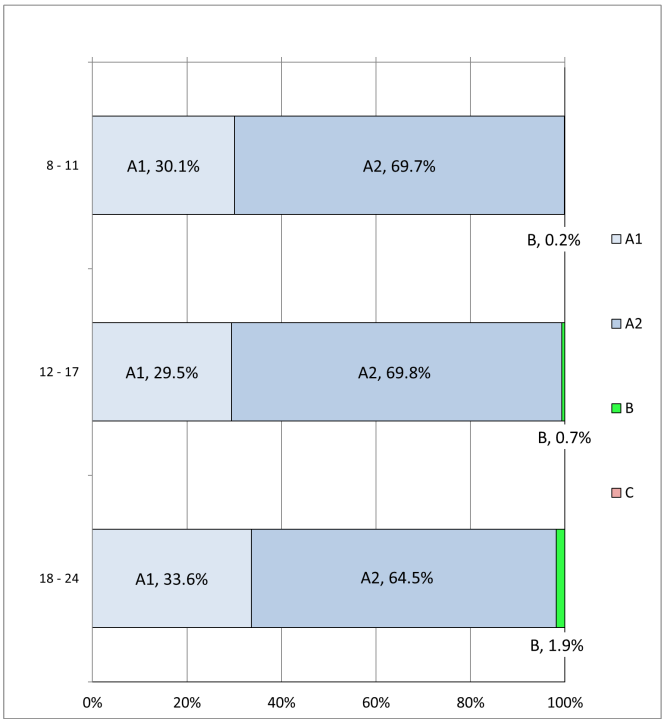
Appendix 4-1: TUE primary examination results by age and gender

As of December 31, 2024

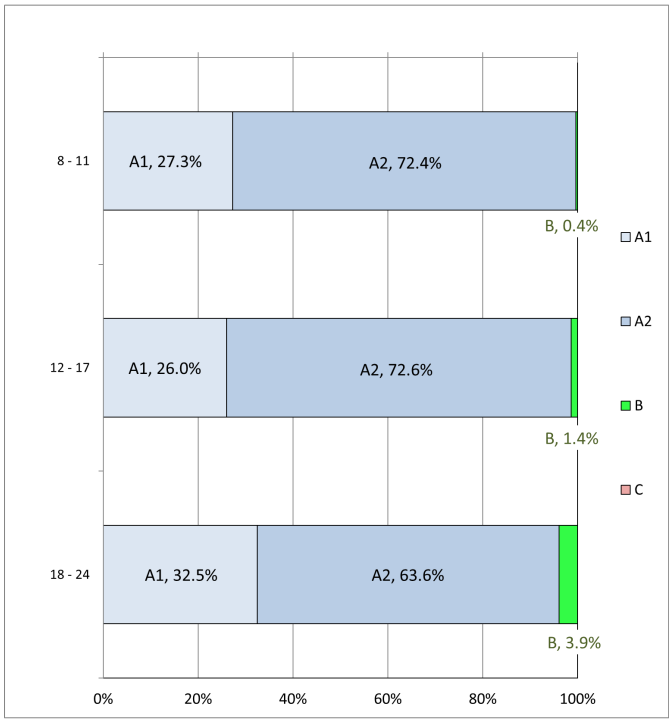
(persons)

Grade/ Gender / Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
8-11	3,862	3,338	7,200	8,951	8,852	17,803	21	43	64	0	0	0	12,834	12,233	25,067
12-17	10,583	9,052	19,635	25,072	25,227	50,299	251	487	738	0	0	0	35,906	34,766	70,672
18-24	2,807	3,204	6,011	5,382	6,283	11,665	159	385	544	0	0	0	8,348	9,872	18,220
Total	17,252	15,594	32,846	39,405	40,362	79,767	431	915	1,346	0	0	0	57,088	56,871	113,959

Results by age group (Male)



Results by age group (Female)

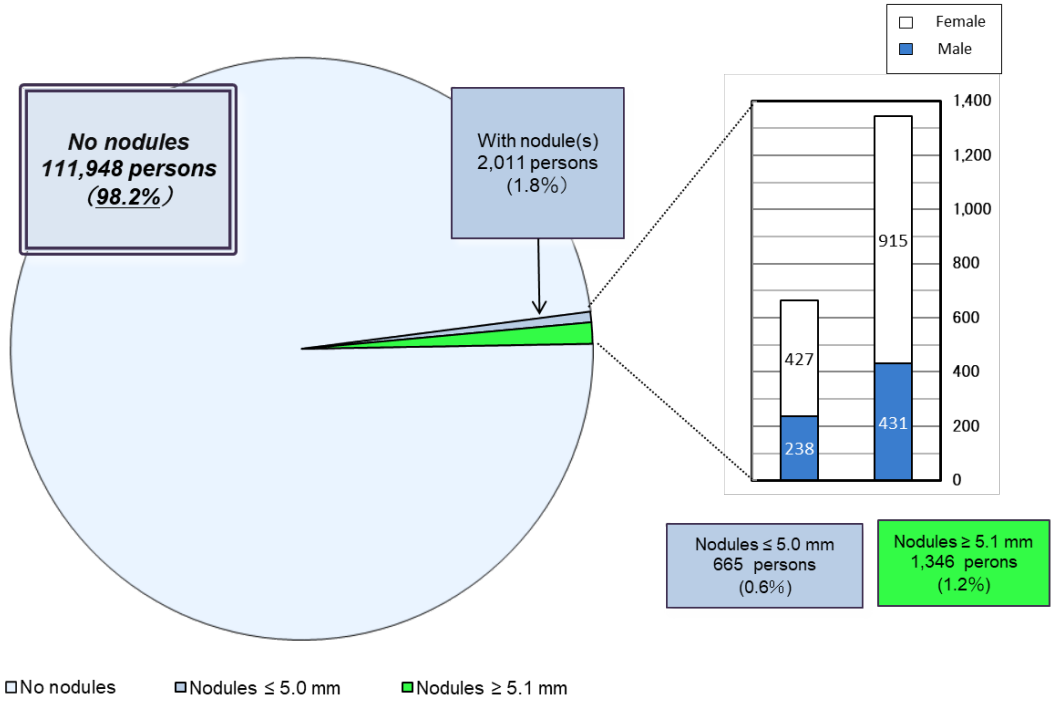


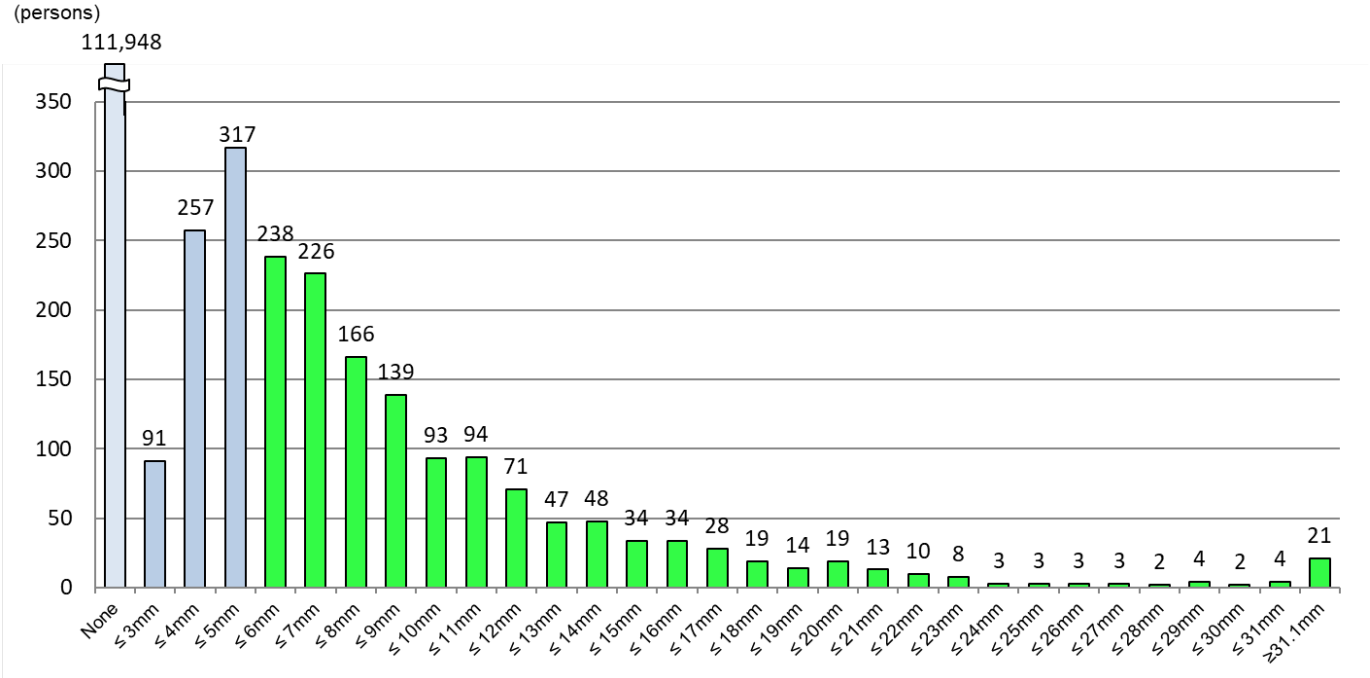
Appendix 4-2: Nodule characteristics

As of December 31, 2024

(persons)

Nodule size	Total	Male	Female	Grade	
None	111,948	56,419	55,529	A1	98.2%
≤ 3.0mm	91	27	64	A2	0.6%
3.1–5.0mm	574	211	363		
5.1–10.0mm	862	284	578	B	1.2%
10.1–15.0mm	294	85	209		
15.1–20.0mm	114	42	72		
20.1–25.0mm	37	10	27		
≥ 25.1mm	39	10	29		
Total	113,959	57,088	56,871		



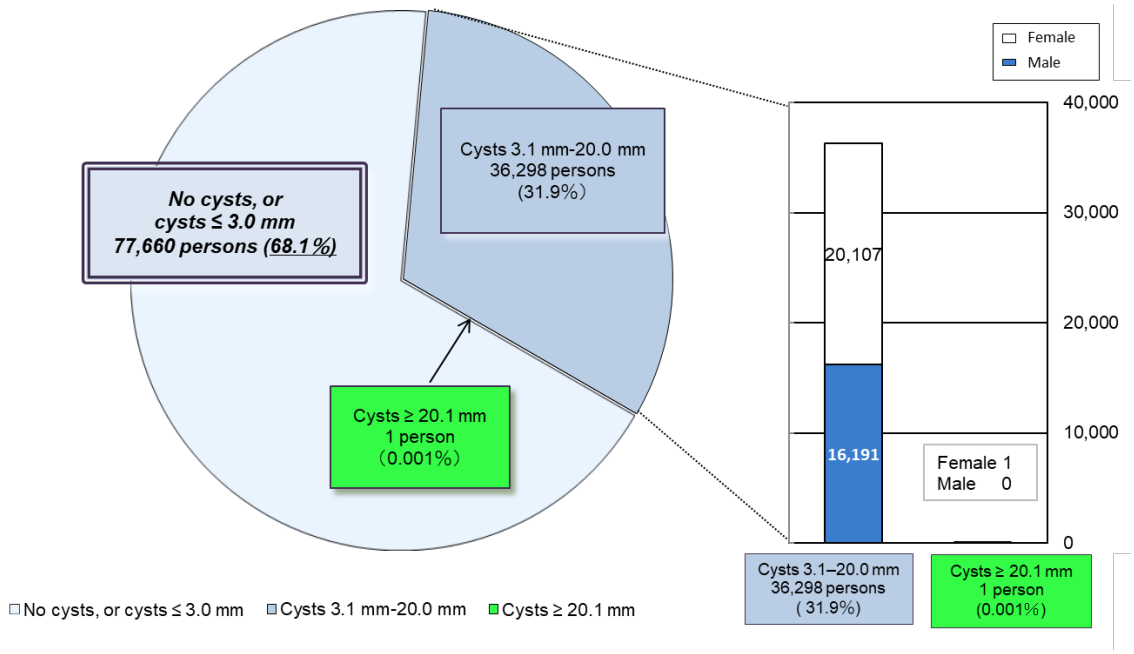


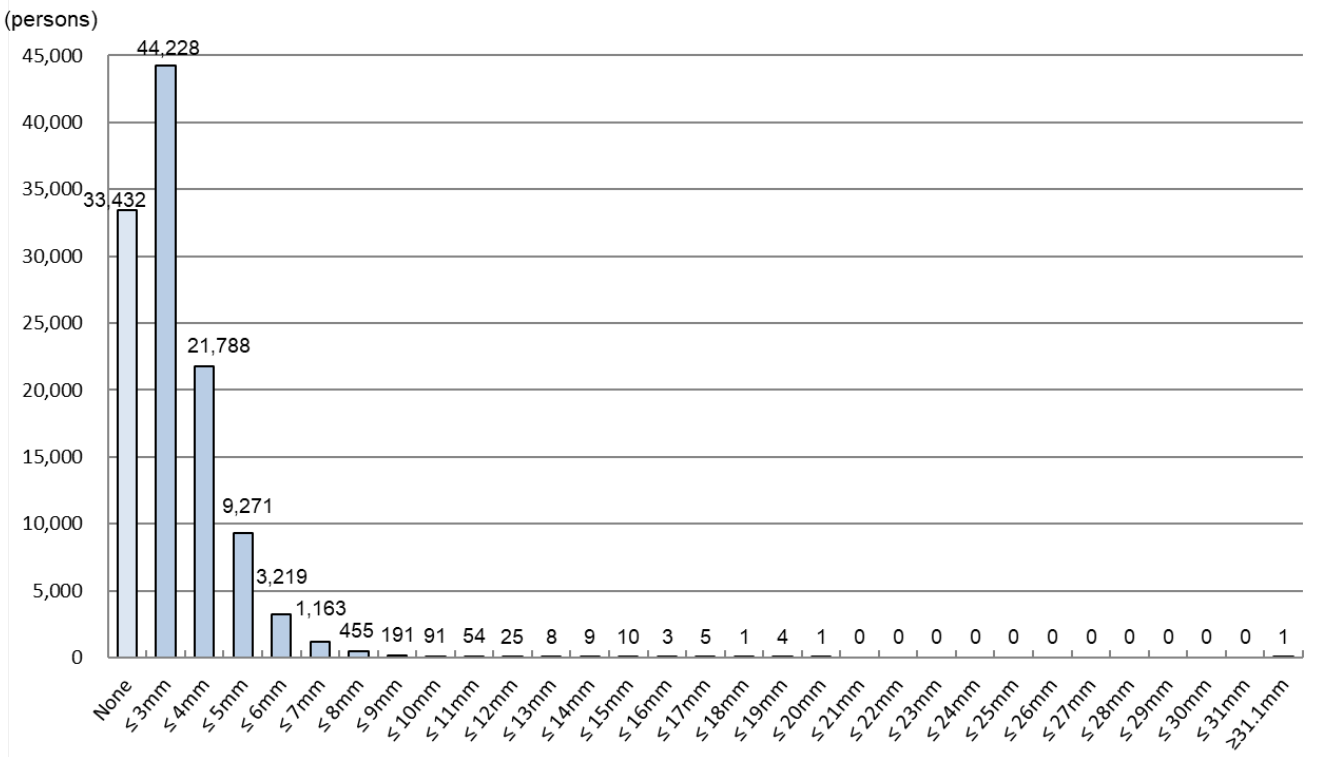
Appendix 4 – 3: Cyst characteristics

As of December 31, 2024

(persons)

Cyst size	Total	Male	Female	Grade	
None	33,432	17,463	15,969	A1	68.1%
≤ 3.0mm	44,228	23,434	20,794	A2	31.9%
3.1–5.0mm	31,059	14,334	16,725		
5.1–10.0mm	5,119	1,829	3,290		
10.1–15.0mm	106	25	81		
15.1–20.0mm	14	3	11		
20.1–25.0mm	0	0	0	B	0.001%
≥ 25.1mm	1	0	1		
Total	113,959	57,088	56,871		





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

As of December 31, 2024

	Those who participated in primary examination (persons) a	Those refered to confirmatory examination (persons) b b/a (%)	Those who participated in confirmatory examination				Those with finalized results (persons)				
			Total c Participation rate 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)	14,787	156	129	8	62	59	126	0	12	114	8
		1.1	82.7	6.2	48.1	45.7	97.7	0.0	9.5	90.5	7.0
Nakadori 2)	65,595	739	617	27	309	281	608	4	61	543	66
		1.1	83.5	4.4	50.1	45.5	98.5	0.7	10.0	89.3	12.2
Hamadori 3)	20,786	293	236	3	104	129	235	2	18	215	18
		1.4	80.5	1.3	44.1	54.7	99.6	0.9	7.7	91.5	8.4
Aizu 4)	12,791	158	134	4	66	64	132	1	6	125	9
		1.2	84.8	3.0	49.3	47.8	98.5	0.8	4.5	94.7	7.2
Total	113,959	1,346	1,116	42	541	533	1,101	7	97	997	101
		1.2	82.9	3.8	48.5	47.8	98.7	0.6	8.8	90.6	10.1

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: Surgery for cases malignant or suspicious for malignancy

1. Municipalities surveyed in FY2020	
Malignant or suspicious for malignancy:	30 (surgical cases: 27, papillary thyroid carcinomas: 27)
2. Municipalities surveyed in FY2021	
Malignant or suspicious for malignancy:	20 (surgical cases: 19, papillary thyroid carcinomas: 18, others: 1)
3. Total	
Malignant or suspicious for malignancy:	50 (surgical cases: 46, papillary thyroid carcinomas: 45, others: 1)

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

As of December 31, 2024

1. Summary

1.1 Purpose

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

1.2 Eligible persons

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

1.3 Implementation Period

FY2023 and FY2024, starting in April 2023:

1.3-1 For those 18 years old or younger

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

1.3-2 For those 19 years old or older

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

FY2023: those born between FY2000 and FY2003

FY2024: those born in FY2004

1.3-3 For those 25 years old or older

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

FY2023: those born in FY1993 and FY1998

FY2024: those born in FY1994 and FY1999

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

1.4 Implementing Organizations (number of medical facilities with agreements for the implementation of thyroid examinations as of December 31, 2024)

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

1.4-1 Primary examination facilities

In Fukushima Prefecture	85 medical facilities
Outside Fukushima Prefecture	150 medical facilities

1.4-2 Confirmatory examination facilities

In Fukushima Prefecture	7 medical facilities, including FMU
Outside Fukushima Prefecture	42 medical facilities

1.5 Methods

1.5-1 Primary examination

Ultrasonography of the thyroid gland.

Assessments are made by specialists based on the following criteria:

- Grade A

A1: No nodules/cysts

A2: Nodules ≤ 5.0 mm or cysts ≤ 20.0 mm

- Grade B

B: Nodules ≥ 5.1 mm or cysts ≥ 20.1 mm

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

-Grade C

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

1.5-2 Confirmatory examination

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

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

1.5-3 Flow chart

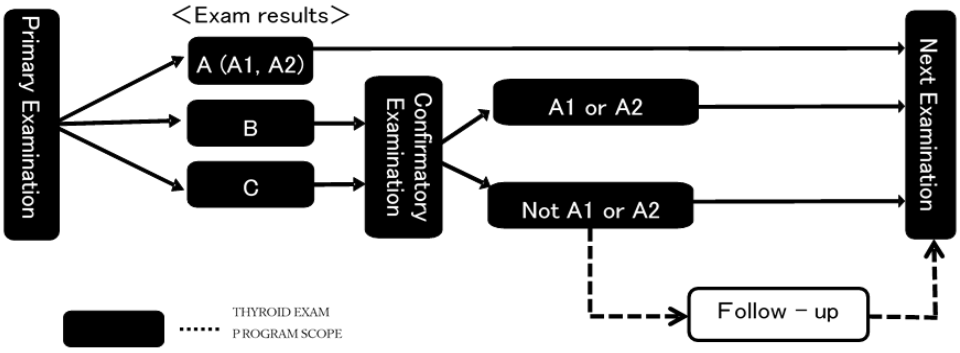


Figure 1: Flow chart

1.6 Municipalities Surveyed

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

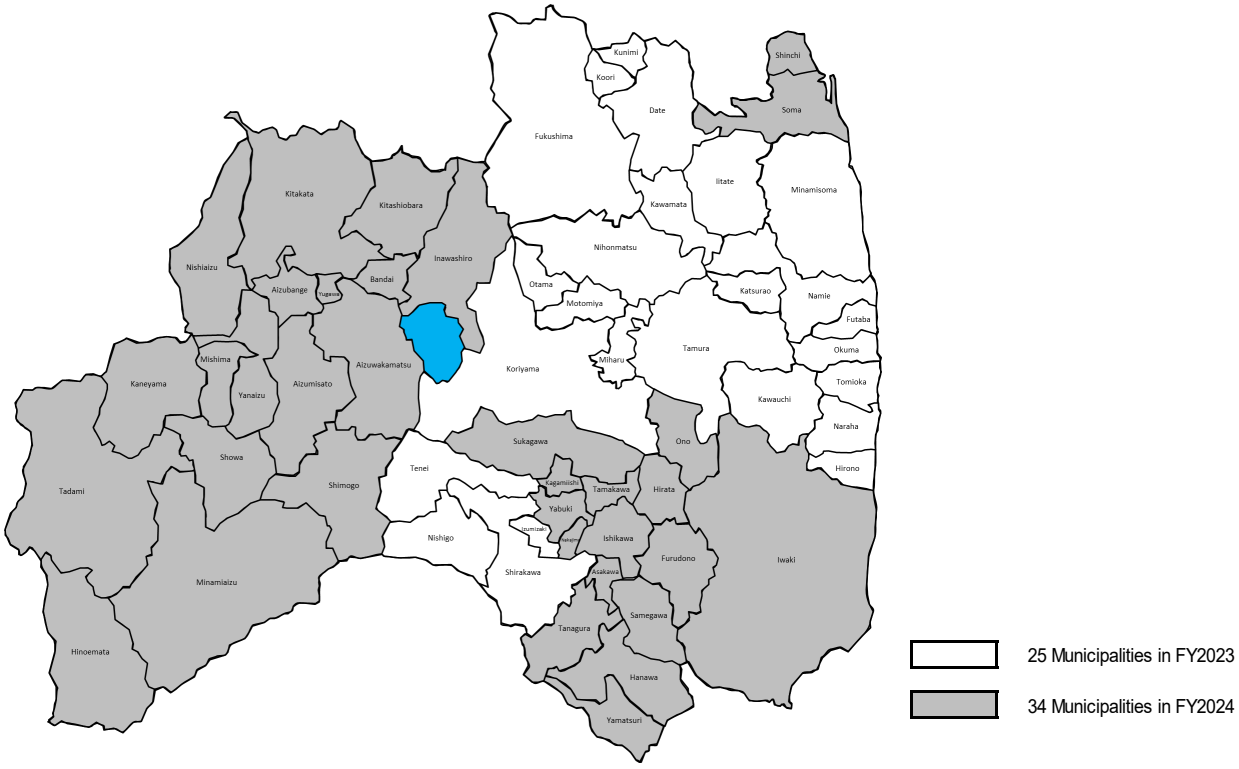


Figure 2: Municipalities covered for primary examinations in FY2023 and FY2024

2. Results as of December 31, 2024

2.1 Results of the Primary Examination

2.1-1 Implementation status

The primary examination was completed for 63,705 participants (30.1%) by December 31, 2024. (Refer to Appendix 1 for the status by municipalities in Fukushima, and Appendix 2 for by prefectures outside Fukushima.)

The results of 59,381 (93.2%) examinees have been finalized, and individual reports have been sent to them. (Refer to Appendix 3 for the primary examination results by the municipality.)

Of these, 15,963 (26.9%) had Grade A1 results, 42,534 (71.6%) had Grade A2, 884 (1.5%) had Grade B, and none had Grade C.

Table 1: Progress and results of the primary examination

	Eligible persons	Participants (persons)			Participants with finalized results (persons)									
			Participation rate (%)	Those who participated outside Fukushima		Judgment rate (%)	Details by grade (%)							
							A				Those referred to confirmatory exam			
							A1		A2		B		C	
	a	b	(b/a)		c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/c)
FY2023	121,814	41,147	(33.8)	3,070	40,781	(99.1)	10,981	(26.9)	29,249	(71.7)	551	(1.4)	0	(0.0)
FY2024	90,098	22,558	(25.0)	1,296	18,600	(82.5)	4,982	(26.8)	13,285	(71.4)	333	(1.8)	0	(0.0)
Total	211,912	63,705	(30.1)	4,366	59,381	(93.2)	15,963	(26.9)	42,534	(71.6)	884	(1.5)	0	(0.0)

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

	Participants with finalized results	Participants with nodules / cysts (%)							
		Nodules				Cysts			
		≥ 5.1mm		≤ 5.0mm		≥ 20.1mm		≤ 20.0mm	
	a	b	(b/a)	c	(c/a)	d	(d/a)	e	(e/a)
FY2023	40,781	547	(1.3)	270	(0.7)	4	(0.0)	29,570	(72.5)
FY2024	18,600	331	(1.8)	148	(0.8)	2	(0.0)	13,469	(72.4)
Total	59,381	878	(1.5)	418	(0.7)	6	(0.0)	43,039	(72.5)

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

2.1-2 Participation rate by age group

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

Table 3: Participation rates by age group

			Total	Age group		
FY2023	Age group*			11 years old	12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	121,814	8,420	58,639	54,755
	Participants	(b)	41,147	5,048	32,815	3,284
	Participation rate (%)	(b/a)	33.8	60.0	56.0	6.0
FY2024	Age group*				12 to 17 years old	18 to 24 years old
	Eligible persons	(a)	90,098		41,660	48,438
	Participants	(b)	22,558		19,037	3,521
	Participation rate (%)	(b/a)	25.0		45.7	7.3
Total	Eligible persons	(a)	211,912	8,420	100,299	103,193
	Participants	(b)	63,705	5,048	51,852	6,805
	Participation rate (%)	(b/a)	30.1	60.0	51.7	6.6

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

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

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

Among 53,023 (sum of *1) participants with Grade A1 and A2 results in the fifth-round survey, 52,612 (sum of *2, 99.2%) had Grade A results, and 411 (sum of *3, 0.8%) had Grade B results in the sixth-round survey.

Among 461 participants with Grade B results in the fifth-round survey, 98 (sum of *4, 21.3%) had Grade A results, and 363 (78.7%) had Grade B results in the sixth-round survey.

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

			Results of the fifth-round survey*	Results of the sixth-round survey**			
				A		B	C
			a (%)	A1 b (b/a)	A2 c (c/a)	d (d/a)	e (e/a)
Results of the fifth-round survey	A	A1	14,569 *1 (100.0)	10,472 *2 (71.9)	4,027 *2 (27.6)	70 *3 (0.5)	0 (0.0)
		A2	38,454 *1 (100.0)	3,764 *2 (9.8)	34,349 *2 (89.3)	341 *3 (0.9)	0 (0.0)
	B		461 (100.0)	10 *4 (2.2)	88 *4 (19.1)	363 (78.7)	0 (0.0)
	C		0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Did not participate		5,897 (100.0)	1,717 (29.1)	4,070 (69.0)	110 (1.9)	0 (0.0)
Total			59,381 (100.0)	15,963 (26.9)	42,534 (71.6)	884 (1.5)	0 (0.0)

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

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

2.2 Results of the Confirmatory Examination

2.2-1 Implementation status

By December 31, 2024, of 884 eligible persons, 555 (62.8%) had participated in the confirmatory examination, and 493 (88.8%) had completed the entire procedure.

Of those 493 participants, 38 (A1: 1, A2: 37) (7.7%) were confirmed to meet A1 or A2 diagnostic criteria by primary examination standards (including those with other thyroid conditions). After the detailed examination, 455 (92.3%) were confirmed to be outside the A1 or A2 criteria.

Table 5: Progress and results of the confirmatory examination

	Those referred to confirmatory exams	Participants (persons)		Those with finalized results (persons)									
			Participation Rate (%)		Determination rate (%)	A1		A2		Other than A1 or A2			
												FNAC	
	a	b	(b/a)	c	(c/b)	d	(d/c)	e	(e/c)	f	(f/c)	g	(g/f)
FY2023	551	411	(74.6)	378	(92.0)	1	(0.3)	29	(7.7)	348	(92.1)	23	(6.6)
FY2024	333	144	(43.2)	115	(79.9)	0	(0.0)	8	(7.0)	107	(93.0)	7	(6.5)
Total	884	555	(62.8)	493	(88.8)	1	(0.2)	37	(7.5)	455	(92.3)	30	(6.6)

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

Among those who underwent FNAC, 14 participants were diagnosed with lesions malignant or suspicious for malignancy: 4 were male and 10 were female. Participants' ages at the confirmatory examination ranged from 12 to 21 years (mean age: 17.6 ± 2.8 years). The tumor diameters were from 8.2 mm to 18.6 mm (mean tumor diameter: 13.0 ± 3.1 mm).

Of these 14 participants, 7 had Grade A (A1:2, A2:5), 3 had Grade B results in the fifth-round survey, and the remaining 4 did not participate. Among 5 participants with Grade A2, 4 met nodule criteria, and 1 met both cyst and nodule criteria.

Table 6: Results of FNAC (The mean age and mean tumor size in parentheses indicate the range.)

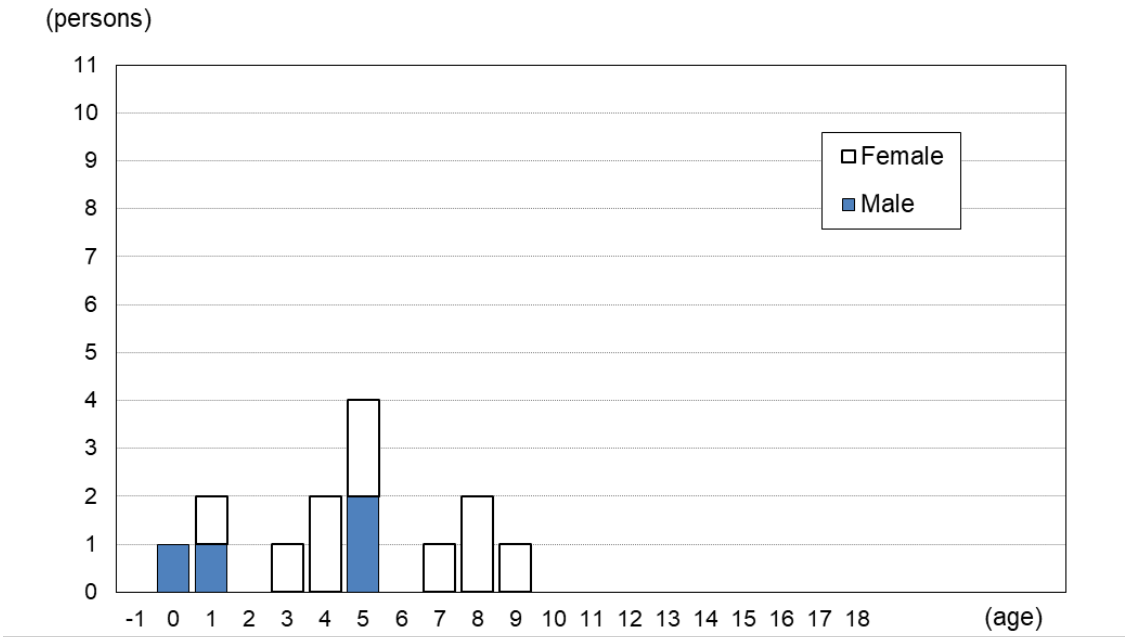
Those referred to confirmatory examination at the sixth-round survey

- Malignant or suspicious for malignancy: 14*
- Male to female ratio: 4:10
- Mean age ± SD (min-max) 17.6 ± 2.8 (12–21)
  4.6 ± 2.8 (0–9) at the time of the earthquake
- Mean tumor size ± SD (min-max) 13.0 ± 3.1 mm (8.2–18.6 mm)

*Refer to Appendix 5 for surgical cases

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

Figure 4 shows the age distribution of 14 people with malignant or suspected malignant nodules based on their age as of March 11, 2011. The age distribution based on their age at the time of confirmatory examination is in Figure 5.



Note: Those aged between 11 and 18 at the time of the disaster are not included in the sixth-round survey participants.

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

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

Figure 4: Age distributions as of March 11, 2011

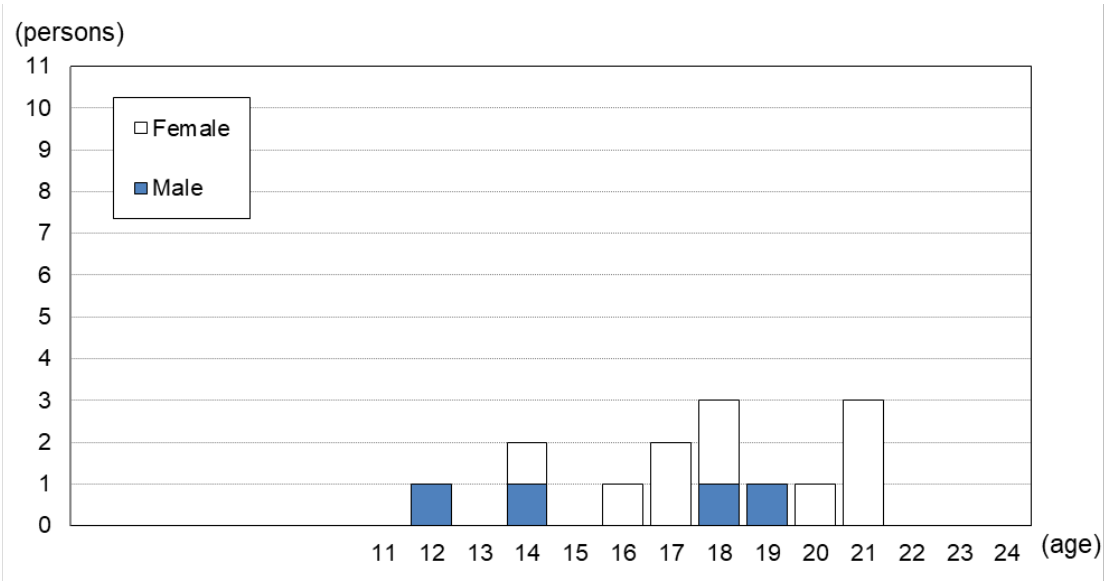


Figure 5: Age distributions as of the date of confirmatory examination

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

Of those 14 people with malignant or suspicious findings, 11 (78.6%) had participated in the Basic Survey (for external radiation exposure dose estimation), and all 11 received their results. The highest effective dose documented was 1.9 mSv.

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

Effective dose (mSv)	Age at the time of the earthquake									
	0–5		6–10		11–15		16–18		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
< 1	1	2	0	2	0	0	0	0	1	4
< 2	2	2	0	2	0	0	0	0	2	4
< 5	0	0	0	0	0	0	0	0	0	0
< 10	0	0	0	0	0	0	0	0	0	0
< 20	0	0	0	0	0	0	0	0	0	0
≥ 20	0	0	0	0	0	0	0	0	0	0
Total	3	4	0	4	0	0	0	0	3	8

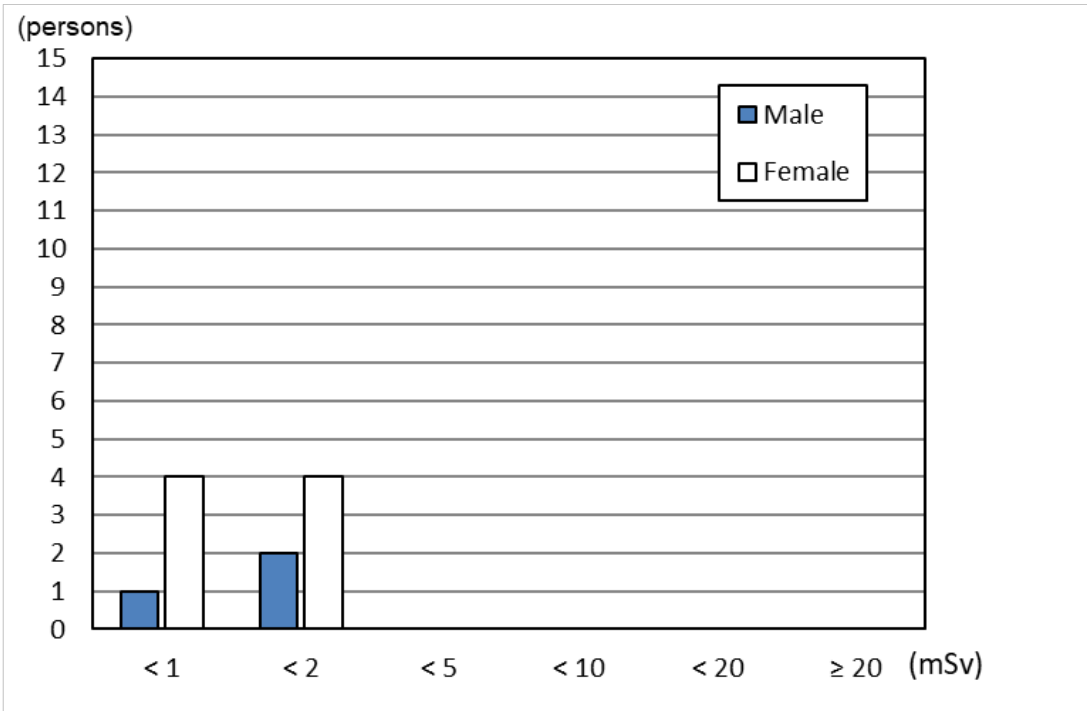


Figure 6: Effective dose distribution of the Basic Survey participants

2.2-5 Blood test and urinary iodine test results

Table 8: Blood test results

	FT4[1] (ng/dL)	FT3[2] (pg/mL)	TSH[3] (μIU/mL)	Tg[4] (ng/mL)	TgAb[5] (IU/mL)	TPOAb[6] (IU/mL)
Reference Range	0.95–1.74[7]	2.13–4.07[7]	0.340–3.880[7]	≤ 33.7	< 28.0	< 16.0
Malignant or suspicious : 14	1.2±0.2 (7.1%)	3.5±0.6 (21.4%)	1.4±0.6 (0.0%)	34.5±34.6 (42.9%)	14.3%	21.4%
Other : 415	1.2±0.2 (4.6%)	3.6±0.5 (8.9%)	1.3±1.3 (9.9%)	31.1±159.2 (13.0%)	7.2%	8.9%

Table 9: Urinary iodine test results [8]

(μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
Malignant or suspicious : 10	88	135	285	476	757
Other : 166	39	115	188	375	5,521

1) FT4: free thyroxine, thyroid hormone binding 4 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
2) FT3: free triiodothyronine, thyroid hormone binding 3 iodines; higher among patients with thyrotoxicosis (such as Graves' disease) and lower with hypothyroidism (such as Hashimoto's thyroiditis).
3) TSH: thyroid-stimulating hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.
4) Tg: thyroglobulin; higher when thyroid tissue is destroyed or when neoplastic tissue produces thyroglobulin.
5) TgAb: anti-thyroglobulin antibody; higher among patients with Hashimoto's disease or Graves' disease.
6) TPOAb: anti-thyroid peroxidase antibody; higher among patients with Hashimoto's disease or Graves' disease.
7) Reference intervals vary according to age.
8) Due to the temporary suspension of reagents, the urinary iodine tests have been suspended since March 8, 2024, as of December 31, 2024.

3. Mental Health Care

We provide the following support for thyroid examination participants.

3.1 Support for Primary Examination Participants

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

Consultation booths were set up at all venues for examinations conducted in and after April 2023; as of December 31, 2024, all 1,273 participants (100%) have visited these consultation booths.

3.2 Outreach programs (on-location lectures and information sessions)

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

Between April 2023 (the start of FY2023) and December 31, 2024, we delivered 13 on-location sessions (5 at elementary schools, 6 at junior high schools, and 2 at high schools) for 1,257 students. In total, 16,950 people have participated since the start of these sessions.

3.3 Support for Confirmatory Examination Participants

A support team has been established within Fukushima Medical University to offer mental health support to those undergoing the confirmatory (secondary) examination to address their concerns and anxiety, as well as to answer questions and provide guidance via web consultation.

Since the start of the sixth-round survey, 230 participants (82 males and 148 females) have received support as of December 31, 2024. The number of support sessions, including telephone counseling, was 353 in total. Of these, 230 (65.2%) received support at the participants' first examination and 123 (34.8%) at subsequent examinations.

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

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

As of December 31, 2024

	Number of eligible persons	Participants (persons)		Participation rate(%)	Number of participants and participation rate by age group[2]			Participants living outside Fukushima	%
	a	b	Participated outside Fukushima[1]	b/a	11	12–17	18–24	c[3]	c/b
Municipalities surveyed in FY2023									
Kawamata	1,282	400	10	31.2	29	331	40	13	3.3
					7.3	82.8	10.0		
Namie	2,063	489	98	23.7	29	339	121	109	22.3
					5.9	69.3	24.7		
Iitate	620	184	6	29.7	10	142	32	6	3.3
					5.4	77.2	17.4		
Minamisoma	7,561	2,044	301	27.0	163	1,542	339	322	15.8
					8.0	75.4	16.6		
Date	6,096	2,316	90	38.0	201	1,790	325	91	3.9
					8.7	77.3	14.0		
Tamura	3,783	1,299	34	34.3	108	1,023	168	29	2.2
					8.3	78.8	12.9		
Hirono	538	141	10	26.2	10	99	32	11	7.8
					7.1	70.2	22.7		
Naraha	766	151	17	19.7	4	99	48	19	12.6
					2.6	65.6	31.8		
Tomioka	1,640	342	58	20.9	17	226	99	52	15.2
					5.0	66.1	28.9		
Kawauchi	192	52	2	27.1	1	37	14	3	5.8
					1.9	71.2	26.9		
Okuma	1,521	351	68	23.1	14	244	93	70	19.9
					4.0	69.5	26.5		
Futaba	717	117	17	16.3	4	84	29	17	14.5
					3.4	71.8	24.8		
Katsurao	126	31	2	24.6	3	19	9	3	9.7
					9.7	61.3	29.0		
Fukushima	31,363	11,121	828	35.5	666	8,979	1,476	822	7.4
					6.0	80.7	13.3		
Nihonmatsu	5,779	2,079	95	36.0	167	1,686	226	99	4.8
					8.0	81.1	10.9		
Motomiya	3,566	1,250	46	35.1	105	977	168	41	3.3
					8.4	78.2	13.4		
Otama	951	403	5	42.4	28	321	54	6	1.5
					6.9	79.7	13.4		
Koriyama	38,693	13,190	1,144	34.1	282	10,885	2,023	1,106	8.4
					2.1	82.5	15.3		
Koori	1,139	480	20	42.1	48	354	78	22	4.6
					10.0	73.8	16.3		
Kunimi	827	292	11	35.3	16	226	50	9	3.1
					5.5	77.4	17.1		
Tenei	621	194	7	31.2	9	155	30	6	3.1
					4.6	79.9	15.5		
Shirakawa	7,161	2,627	140	36.7	120	2,118	389	127	4.8
					4.6	80.6	14.8		
Nishigo	2,410	841	40	34.9	36	692	113	34	4.0
					4.3	82.3	13.4		
Izumizaki	759	222	4	29.2	7	189	26	2	0.9
					3.2	85.1	11.7		
Miharu	1,640	531	17	32.4	18	433	80	17	3.2
					3.4	81.5	15.1		
Subtotal	121,814	41,147	3,070	33.8	2,095	32,990	6,062	3,036	7.4
					5.1	80.2	14.7		

*1) The number of participants who received the examination at facilities outside Fukushima (as of November 30, 2024).

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

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

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

	Number of eligible persons	Participants (persons)	Participated outside Fukushima[1)]	Participation rate(%)	Number of participants and participation rate by age group[2)]			Participants living outside Fukushima	%
	a	b		b/a	11	12–17	18–24	c[3)]	c/b
Municipalities surveyed in FY2024									
Iwaki	35,474	6,900	689	19.5	18	4,402	2,480	594	8.6
					0.3	63.8	35.9		
Sukagawa	8,982	2,781	110	31.0	7	2,254	520	87	3.1
					0.3	81.0	18.7		
Soma	4,020	983	92	24.5	9	794	180	91	9.3
					0.9	80.8	18.3		
Kagamiishi	1,550	493	14	31.8	0	409	84	13	2.6
					0.0	83.0	17.0		
Shinchi	827	247	16	29.9	1	182	64	15	6.1
					0.4	73.7	25.9		
Nakajima	586	150	0	25.6	0	134	16	1	0.7
					0.0	89.3	10.7		
Yabuki	1,975	605	18	30.6	2	499	104	12	2.0
					0.3	82.5	17.2		
Ishikawa	1,535	480	10	31.3	2	406	72	10	2.1
					0.4	84.6	15.0		
Yamatsuri	564	194	11	34.4	0	162	32	5	2.6
					0.0	83.5	16.5		
Asakawa	768	228	11	29.7	0	184	44	9	3.9
					0.0	80.7	19.3		
Hirata	692	224	5	32.4	0	191	33	4	1.8
					0.0	85.3	14.7		
Tanagura	1,707	533	18	31.2	2	452	79	10	1.9
					0.4	84.8	14.8		
Hanawa	866	246	13	28.4	1	204	41	7	2.8
					0.4	82.9	16.7		
Samegawa	385	118	1	30.6	1	105	12	2	1.7
					0.8	89.0	10.2		
Ono	1,044	301	6	28.8	1	255	45	4	1.3
					0.3	84.7	15.0		
Tamakawa	774	207	6	26.7	1	166	40	0	0.0
					0.5	80.2	19.3		
Furudono	571	207	7	36.3	0	164	43	4	1.9
					0.0	79.2	20.8		
Hinoemata	58	5	0	8.6	0	5	0	0	0.0
					0.0	100.0	0.0		
Minamiaizu	1,483	364	9	24.5	0	323	41	6	1.6
					0.0	88.7	11.3		
Kaneyama	90	26	0	28.9	0	21	5	0	0.0
					0.0	80.8	19.2		
Showa	89	22	1	24.7	0	20	2	1	4.5
					0.0	90.9	9.1		
Mishima	106	27	0	25.5	0	21	6	0	0.0
					0.0	77.8	22.2		
Shimogo	527	114	2	21.6	0	101	13	3	2.6
					0.0	88.6	11.4		
Kitakata	4,942	1,362	34	27.6	2	1,164	196	28	2.1
					0.1	85.5	14.4		
Nishiaizu	491	127	5	25.9	0	109	18	3	2.4
					0.0	85.8	14.2		
Tadami	401	117	3	29.2	1	102	14	3	2.6
					0.9	87.2	12.0		
Inawashiro	1,467	425	16	29.0	1	355	69	13	3.1
					0.2	83.5	16.2		
Bandai	357	110	5	30.8	0	88	22	6	5.5
					0.0	80.0	20.0		
Kitashiobara	324	105	2	32.4	0	92	13	3	2.9
					0.0	87.6	12.4		
Aizumisato	1,953	566	11	29.0	0	471	95	8	1.4
					0.0	83.2	16.8		
Aizubange	1,671	464	12	27.8	2	386	76	9	1.9
					0.4	83.2	16.4		
Yanaizu	326	87	0	26.7	0	81	6	0	0.0
					0.0	93.1	6.9		
Aizuwakamatsu	13,118	3,613	167	27.5	8	2,945	660	148	4.1
					0.2	81.5	18.3		
Yugawa	375	127	2	33.9	0	97	30	3	2.4
					0.0	76.4	23.6		
Subtotal	90,098	22,558	1,296	25.0	59	17,344	5,155	1,102	4.9
					0.3	76.9	22.9		
Total	211,912	63,705	4,366	30.1	2,154	50,334	11,217	4,138	6.5
					3.4	79.0	17.6		

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

As of November 30, 2024

Prefecture	Number of medical facilities	Participants (persons)
Hokkaido	7	**111**
Aomori	3	**56**
Iwate	4	**98**
Miyagi	2	**1,052**
Akita	1	**77**
Yamagata	3	**171**
Ibaraki	5	**235**
Tochigi	9	**324**
Gunma	2	**67**
Saitama	4	**231**
Chiba	5	**123**
Tokyo	22	**778**
Kanagawa	7	**287**
Niigata	3	**162**
Toyama	2	**10**
Ishikawa	1	**5**

Prefecture	Number of medical facilities	Participants (persons)
Fukui	1	**11**
Yamanashi	2	**33**
Nagano	4	**63**
Gifu	2	**16**
Shizuoka	3	**44**
Aichi	6	**84**
Mie	1	**9**
Shiga	1	**7**
Kyoto	3	**20**
Osaka	10	**59**
Hyogo	3	**53**
Nara	4	**12**
Wakayama	1	**2**
Tottori	1	**0**
Shimane	1	**4**
Okayama	3	**25**

Prefecture	Number of medical facilities	Participants (persons)
Hiroshima	2	**13**
Yamaguchi	1	**5**
Tokushima	1	**5**
Kagawa	1	**6**
Ehime	3	**11**
Kochi	2	**8**
Fukuoka	4	**26**
Saga	1	**2**
Nagasaki	3	**12**
Kumamoto	1	**11**
Oita	1	**13**
Miyazaki	1	**9**
Kagoshima	2	**3**
Okinawa	1	**13**
Total	150	**4,366**

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

Appendix 3: TUE primary examination results by the municipality

As of December 31, 2024

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)							
			A		B	C	Percentage (%)		Percentage (%)	
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in FY2023										
Kawamata	400	400	95	298	7	0	7	3	0	303
		100.0	23.8	74.5	1.8	0.0	1.8	0.8	0.0	75.8
Namie	489	456	126	324	6	0	5	8	1	324
		93.3	27.6	71.1	1.3	0.0	1.1	1.8	0.2	71.1
Iitate	184	182	45	134	3	0	3	0	0	137
		98.9	24.7	73.6	1.6	0.0	1.6	0.0	0.0	75.3
Minamisoma	2,044	2,025	523	1,469	33	0	33	12	0	1,490
		99.1	25.8	72.5	1.6	0.0	1.6	0.6	0.0	73.6
Date	2,316	2,314	579	1,707	28	0	28	21	0	1,722
		99.9	25.0	73.8	1.2	0.0	1.2	0.9	0.0	74.4
Tamura	1,299	1,296	362	919	15	0	15	8	0	927
		99.8	27.9	70.9	1.2	0.0	1.2	0.6	0.0	71.5
Hirono	141	121	42	75	4	0	4	1	0	77
		85.8	34.7	62.0	3.3	0.0	3.3	0.8	0.0	63.6
Naraha	151	121	35	84	2	0	2	1	0	84
		80.1	28.9	69.4	1.7	0.0	1.7	0.8	0.0	69.4
Tomioka	342	298	78	217	3	0	3	4	0	220
		87.1	26.2	72.8	1.0	0.0	1.0	1.3	0.0	73.8
Kawauchi	52	50	16	33	1	0	1	0	0	34
		96.2	32.0	66.0	2.0	0.0	2.0	0.0	0.0	68.0
Okuma	351	301	92	204	5	0	5	3	0	205
		85.8	30.6	67.8	1.7	0.0	1.7	1.0	0.0	68.1
Futaba	117	105	28	77	0	0	0	1	0	76
		89.7	26.7	73.3	0.0	0.0	0.0	1.0	0.0	72.4
Katsurao	31	31	6	25	0	0	0	0	0	25
		100.0	19.4	80.6	0.0	0.0	0.0	0.0	0.0	80.6
Fukushima	11,121	11,065	3,035	7,885	145	0	143	63	2	7,965
		99.5	27.4	71.3	1.3	0.0	1.3	0.6	0.0	72.0
Nihonmatsu	2,079	2,071	627	1,416	28	0	28	9	0	1,438
		99.6	30.3	68.4	1.4	0.0	1.4	0.4	0.0	69.4
Motomiya	1,250	1,246	354	878	14	0	14	6	0	886
		99.7	28.4	70.5	1.1	0.0	1.1	0.5	0.0	71.1
Otama	403	402	112	279	11	0	11	2	0	285
		99.8	27.9	69.4	2.7	0.0	2.7	0.5	0.0	70.9
Koriyama	13,190	13,130	3,475	9,478	177	0	176	81	1	9,591
		99.5	26.5	72.2	1.3	0.0	1.3	0.6	0.0	73.0
Koori	480	480	133	339	8	0	8	4	0	344
		100.0	27.7	70.6	1.7	0.0	1.7	0.8	0.0	71.7
Kunimi	292	291	90	191	10	0	10	2	0	197
		99.7	30.9	65.6	3.4	0.0	3.4	0.7	0.0	67.7
Tenei	194	193	44	147	2	0	2	2	0	148
		99.5	22.8	76.2	1.0	0.0	1.0	1.0	0.0	76.7
Shirakawa	2,627	2,614	654	1,928	32	0	32	22	0	1,940
		99.5	25.0	73.8	1.2	0.0	1.2	0.8	0.0	74.2
Nishigo	841	840	232	598	10	0	10	9	0	605
		99.9	27.6	71.2	1.2	0.0	1.2	1.1	0.0	72.0
Izumizaki	222	220	62	155	3	0	3	2	0	157
		99.1	28.2	70.5	1.4	0.0	1.4	0.9	0.0	71.4
Miharu	531	529	136	389	4	0	4	6	0	390
		99.6	25.7	73.5	0.8	0.0	0.8	1.1	0.0	73.7
Subtotal	41,147	40,781	10,981	29,249	551	0	547	270	4	29,570
		99.1	26.9	71.7	1.4	0.0	1.3	0.7	0.0	72.5

	a. Number of participants (persons)	b. Those with finalized results (persons)	Number of participants by grade (persons)				Number of participants with nodules (persons)		Number of participants with cysts (persons)	
			Percentages by grade (%)							
			A		B	C	Percentage (%)		Percentage (%)	
		b/a (%)	A1	A2			≥5.1mm	≤5.0mm	≥20.1mm	≤20.0m
Municipalities surveyed in FY2024										
Iwaki	6,900	4,847	1,400	3,334	113	0	113	35	0	3,396
		70.2	28.9	68.8	2.3	0.0	2.3	0.7	0.0	70.1
Sukagawa	2,781	2,760	725	1,982	53	0	53	16	0	2,015
		99.2	26.3	71.8	1.9	0.0	1.9	0.6	0.0	73.0
Soma	983	975	256	701	18	0	18	12	0	710
		99.2	26.3	71.9	1.8	0.0	1.8	1.2	0.0	72.8
Kagamiishi	493	491	120	367	4	0	4	0	0	371
		99.6	24.4	74.7	0.8	0.0	0.8	0.0	0.0	75.6
Shinchi	247	245	66	172	7	0	7	2	0	175
		99.2	26.9	70.2	2.9	0.0	2.9	0.8	0.0	71.4
Nakajima	150	150	43	107	0	0	0	1	0	107
		100.0	28.7	71.3	0.0	0.0	0.0	0.7	0.0	71.3
Yabuki	605	604	168	427	9	0	9	3	0	432
		99.8	27.8	70.7	1.5	0.0	1.5	0.5	0.0	71.5
Ishikawa	480	473	115	348	10	0	9	6	1	352
		98.5	24.3	73.6	2.1	0.0	1.9	1.3	0.2	74.4
Yamatsuri	194	192	45	146	1	0	1	4	0	147
		99.0	23.4	76.0	0.5	0.0	0.5	2.1	0.0	76.6
Asakawa	228	228	60	165	3	0	3	1	0	167
		100.0	26.3	72.4	1.3	0.0	1.3	0.4	0.0	73.2
Hirata	224	222	52	165	5	0	5	3	0	169
		99.1	23.4	74.3	2.3	0.0	2.3	1.4	0.0	76.1
Tanagura	533	530	133	389	8	0	8	4	0	395
		99.4	25.1	73.4	1.5	0.0	1.5	0.8	0.0	74.5
Hanawa	246	245	71	172	2	0	2	5	0	172
		99.6	29.0	70.2	0.8	0.0	0.8	2.0	0.0	70.2
Samegawa	118	118	37	79	2	0	2	1	0	81
		100.0	31.4	66.9	1.7	0.0	1.7	0.8	0.0	68.6
Ono	301	300	74	220	6	0	6	2	0	224
		99.7	24.7	73.3	2.0	0.0	2.0	0.7	0.0	74.7
Tamakawa	207	202	59	139	4	0	4	2	0	141
		97.6	29.2	68.8	2.0	0.0	2.0	1.0	0.0	69.8
Furudono	207	204	53	147	4	0	4	1	0	150
		98.6	26.0	72.1	2.0	0.0	2.0	0.5	0.0	73.5
Hinoemata	5	5	2	3	0	0	0	1	0	3
		100.0	40.0	60.0	0.0	0.0	0.0	20.0	0.0	60.0
Minamiaizu	364	322	84	233	5	0	5	3	0	237
		88.5	26.1	72.4	1.6	0.0	1.6	0.9	0.0	73.6
Kaneyama	26	24	7	17	0	0	0	0	0	17
		92.3	29.2	70.8	0.0	0.0	0.0	0.0	0.0	70.8
Showa	22	20	8	12	0	0	0	0	0	12
		90.9	40.0	60.0	0.0	0.0	0.0	0.0	0.0	60.0
Mishima	27	24	3	21	0	0	0	0	0	21
		88.9	12.5	87.5	0.0	0.0	0.0	0.0	0.0	87.5
Shimogo	114	105	25	79	1	0	1	1	0	78
		92.1	23.8	75.2	1.0	0.0	1.0	1.0	0.0	74.3
Kitakata	1,362	951	242	695	14	0	14	13	0	695
		69.8	25.4	73.1	1.5	0.0	1.5	1.4	0.0	73.1
Nishiaizu	127	114	17	95	2	0	2	0	0	97
		89.8	14.9	83.3	1.8	0.0	1.8	0.0	0.0	85.1
Tadami	117	112	21	88	3	0	3	2	0	89
		95.7	18.8	78.6	2.7	0.0	2.7	1.8	0.0	79.5
Inawashiro	425	389	121	262	6	0	5	1	1	264
		91.5	31.1	67.4	1.5	0.0	1.3	0.3	0.3	67.9
Bandai	110	86	24	61	1	0	1	1	0	61
		78.2	27.9	70.9	1.2	0.0	1.2	1.2	0.0	70.9
Kitashiobara	105	98	20	77	1	0	1	1	0	77
		93.3	20.4	78.6	1.0	0.0	1.0	1.0	0.0	78.6
Aizumisato	566	479	134	341	4	0	4	5	0	344
		84.6	28.0	71.2	0.8	0.0	0.8	1.0	0.0	71.8
Aizubange	464	407	106	291	10	0	10	6	0	298
		87.7	26.0	71.5	2.5	0.0	2.5	1.5	0.0	73.2
Yanaizu	87	80	24	56	0	0	0	0	0	56
		92.0	30.0	70.0	0.0	0.0	0.0	0.0	0.0	70.0
Aizuwakamatsu	3,613	2,491	633	1,826	32	0	32	16	0	1,843
		68.9	25.4	73.3	1.3	0.0	1.3	0.6	0.0	74.0
Yugawa	127	107	34	68	5	0	5	0	0	73
		84.3	31.8	63.6	4.7	0.0	4.7	0.0	0.0	68.2
Subtotal	22,558	18,600	4,982	13,285	333	0	331	148	2	13,469
		82.5	26.8	71.4	1.8	0.0	1.8	0.8	0.0	72.4
Total	63,705	59,381	15,963	42,534	884	0	878	418	6	43,039
		93.2	26.9	71.6	1.5	0.0	1.5	0.7	0.0	72.5

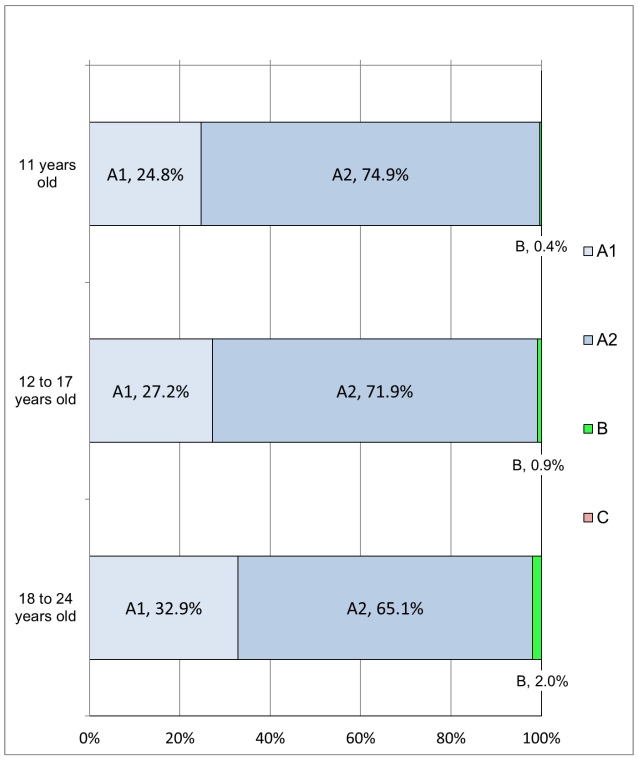
Appendix 4-1: TUE examination results by age and gender

As of December 31, 2024

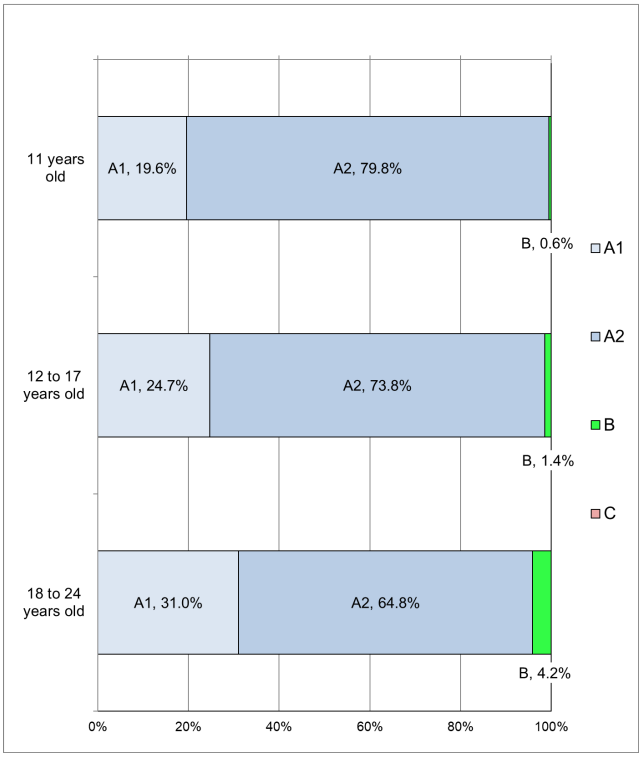
(persons)

Result / Gender / Age group	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
11 years old	278	202	480	841	823	1,664	4	6	10	0	0	0	1,123	1,031	2,154
12 to 17 years old	6,499	5,673	12,172	17,190	16,935	34,125	208	332	540	0	0	0	23,897	22,940	46,837
18 to 24 years old	1,511	1,800	3,311	2,988	3,757	6,745	92	242	334	0	0	0	4,591	5,799	10,390
Total	8,288	7,675	15,963	21,019	21,515	42,534	304	580	884	0	0	0	29,611	29,770	59,381

Results by age group (Male)



Results by age group (Female)

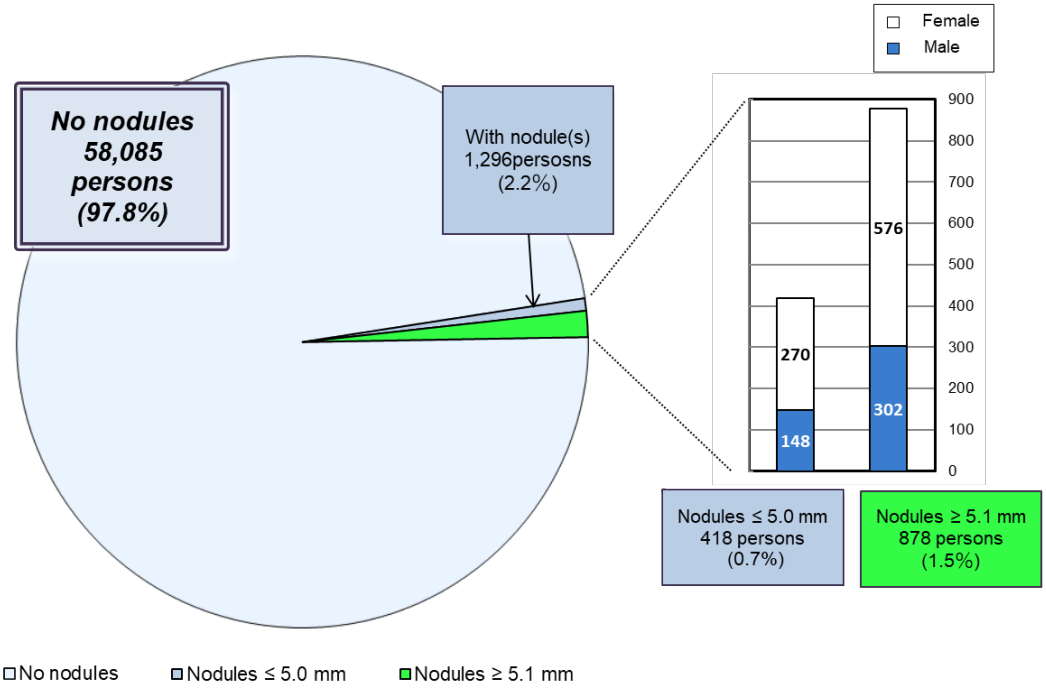


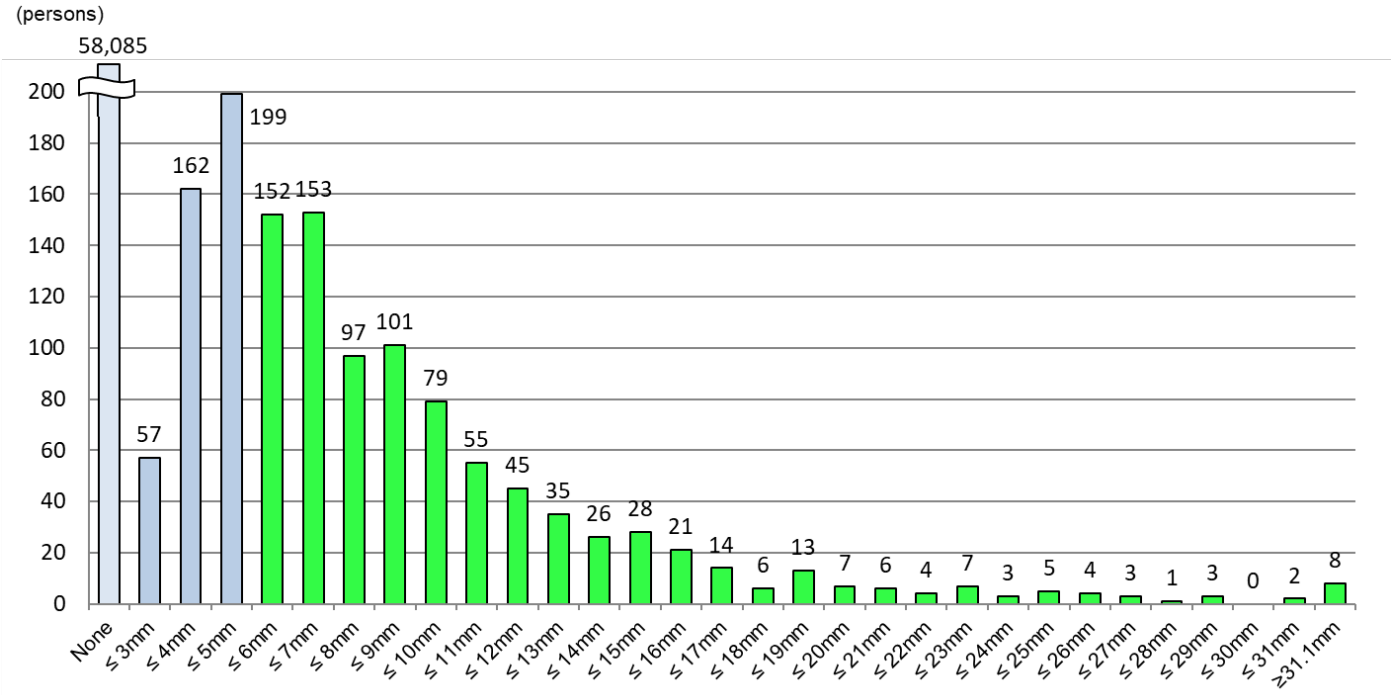
Appendix 4-2: Nodule characteristics

As of December 31, 2024

(persons)

Nodule size	Total	Male	Female	Grade	
None	58,085	29,161	28,924	A1	97.8%
≤ 3.0mm	57	21	36	A2	0.7%
3.1–5.0mm	361	127	234		
5.1–10.0mm	582	215	367	B	1.5%
10.1–15.0mm	189	55	134		
15.1–20.0mm	61	20	41		
20.1–25.0mm	25	8	17		
≥ 25.1mm	21	4	17		
Total	59,381	29,611	29,770		



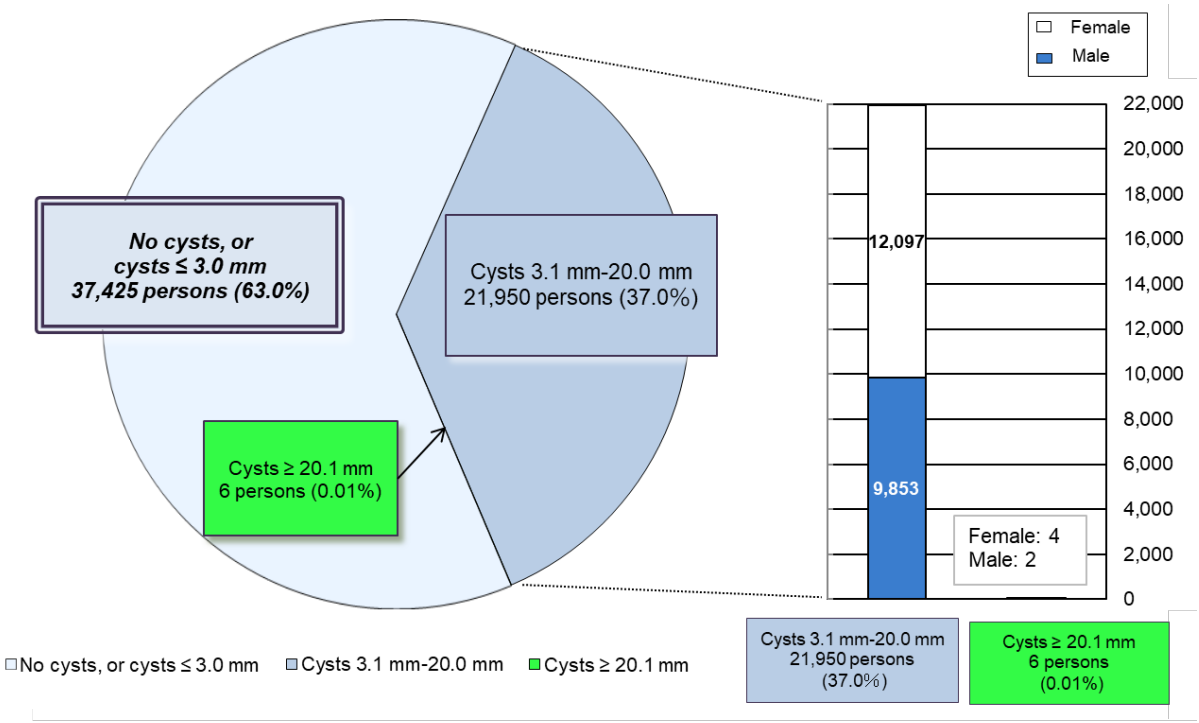


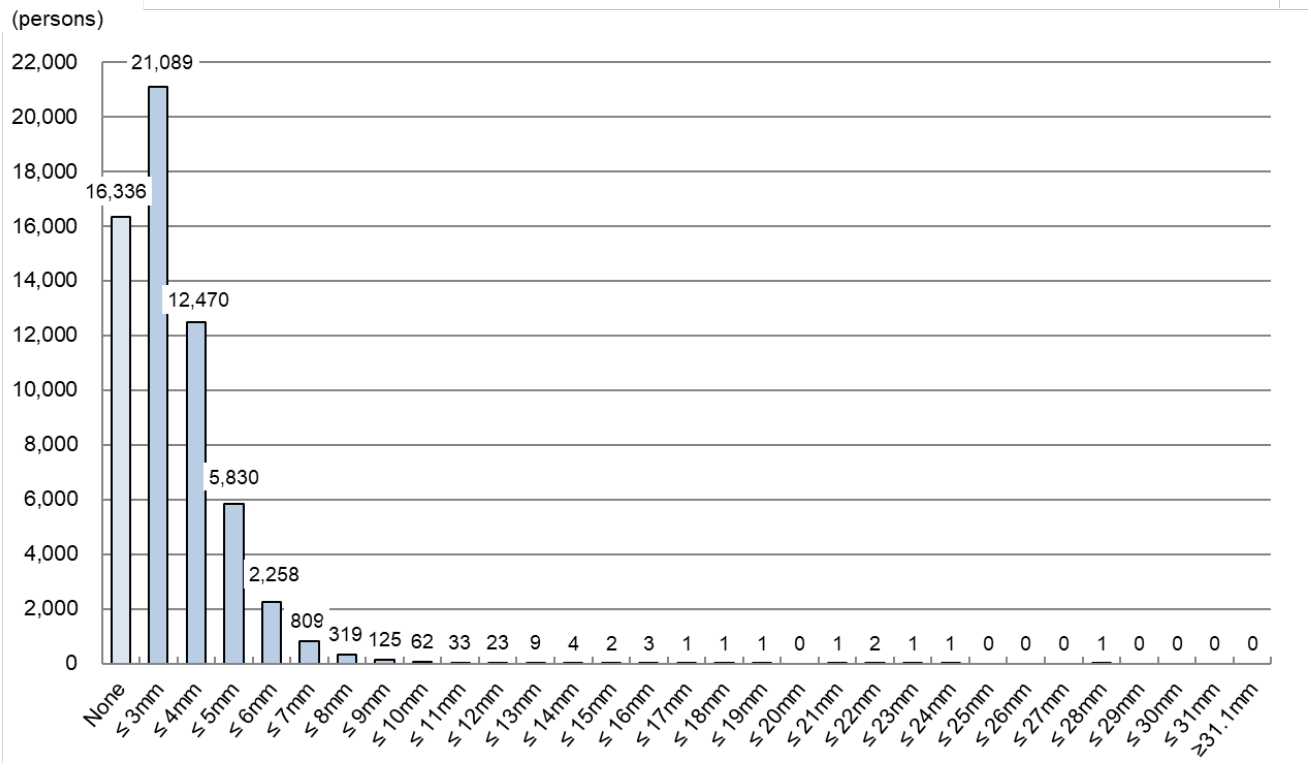
Appendix 4-3: Cyst characteristics

As of December 31, 2024

(persons)

Cyst size	Total	Male	Female	Grade	
None	16,336	8,430	7,906	A1	63.0%
≤ 3.0mm	21,089	11,326	9,763	A2	37.0%
3.1–5.0mm	18,300	8,548	9,752		
5.1–10.0mm	3,573	1,288	2,285		
10.1–15.0mm	71	16	55		
15.1–20.0mm	6	1	5		
20.1–25.0mm	5	2	3	B	0.01%
≥ 25.1mm	1	0	1		
Total	59,381	29,611	29,770		





Appendix 5: Surgery for cases malignant or suspicious for malignancy

For TUE (the sixth-round full-scale survey)
Malignant or suspicious for malignancy: 14
(surgical cases: 10, papillary thyroid carcinomas: 10)

Progress of Institutional Verification for the Provision of Fukushima Health Management Survey Data to Third Parties for Academic Research Purposes

May 16, 2025
Citizens Healthcare Survey Division,
Fukushima Prefecture

1 Progress

1-1 Prior consultation and application submission (April 2023 - January 2025)
Following the 47th Oversight Committee meeting (held in March 2023), researchers who would cooperate with institutional verification developed a research plan. This plan and an application for data provision were subsequently submitted to the Fukushima Prefectural Government. The prefectural government confirmed the plan in advance for the review meeting.

1-2 Holding of the Review Committee for providing Fukushima Health Management Survey data (February and March 2025): The application was reviewed, and results were reported to the prefectural government.

1-3 Approval of data provision (April 2025)
Based on the results of the review, the prefectural government approved the data provision.

1-4 Opt-out implementation (May-June 2025)
With consideration for the research participants, we will accept refusal requests from those who do not wish their information to be provided for research.

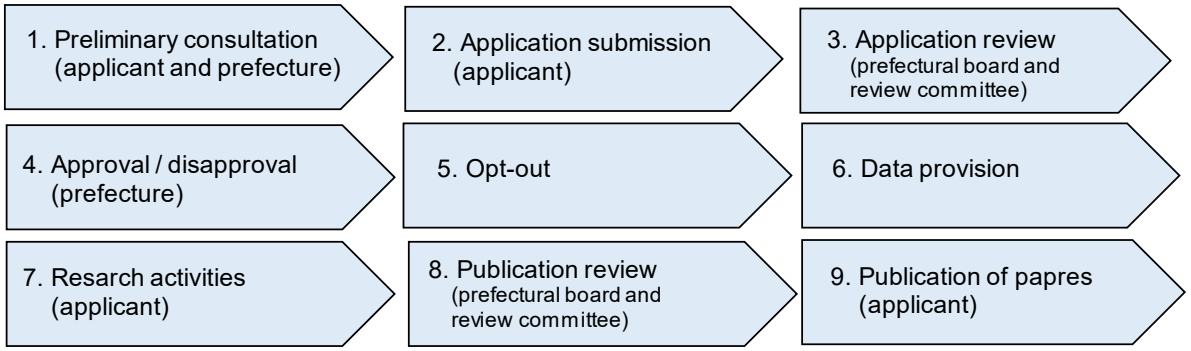
2 Future Plans

2-1 Data will be provided after excluding the information of those who have chosen to opt out.

2-2 After providing data, “publication status” shall be confirmed as appropriate. (Not only the final confirmation at the time of publication of the paper, but also the presentation of the progress of the research to persons other than the user, such as reporting within the university, shall be considered as "publication.”)

2-3 On-site audits and other matters stipulated in the Guidelines will also be verified as necessary during the research period.

○ Reference
Implementation Flow



(Cooperating Researcher for Institutional Verification)

Researcher	Professor IMANO Hironori, Department of Public Health, KINDAI University Faculty of Medicine
Research project name	Association between evacuation, radiation doses, and the results of the Comprehensive Health Check and Mental Health and Lifestyle Survey of the Fukuhara Health Management Survey (Survey research on cardiovascular disease and its risk factors: trend analysis at the prefectural level and the regional level in Fukushima prefecture)