Thyroid Examination

Thyroid Examination: Purpose and Coverage

"We will promote the health of the children in Fukushima for the long term."

[Purpose]

Health effects of radiation due to the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS are considered to be extremely small, taking into consideration the expected internal and external exposure doses.

On the other hand, it has been reported that cases of thyroid cancer increased among children after the Chernobyl accident due to internal exposure to radioactive iodine. Therefore, the Thyroid Examination targeting children has been conducted since October 2011 with the aim of ascertaining their thyroid status and promoting their health for the long term.

[Coverage]

All people of Fukushima Prefecture who were aged zero to 18 as of March 11, 2011 (those born from April 2, 1992, to April 1, 2011) (approx. 368,000 people)

* The Full-scale Screening expanded coverage to include those born from April 2, 2011, to April 1, 2012 (approx. 382,000 people in total).

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Information on the Thyroid Examination"

It has been reported that cases of thyroid cancer increased among children after the Chernobyl accident due to internal exposure to radioactive iodine. Compared with the Chernobyl accident, the amount of radioactive materials discharged into the environment after the accident in Fukushima was much smaller and estimated internal and external doses of the residents were even smaller. Therefore, it is predicted that there would be no epidemiologically detectable thyroid health risks. However, as concerns remain about effects of radiation due to the accident on children's thyroid glands, the Thyroid Examination has been continued under the framework of the Fukushima Health Management Survey with the aim of ascertaining children's current thyroid status and promoting their health into the future.

Included in this reference material on March 31, 2013
Updated on March 31, 2017

Thyroid Examination

Thyroid Examination: Outline (1/3)

● Coverage and examination plan

	Screening category	Period	Coverage
First examination	**Initial Screening** (In order to ascertain children's thyroid status)	Oct. 2011 - March 2014	Residents who were residing in Fukushima Prefecture at the time of the earthquake and were approximately 18 years old or younger (those born from April 2, 1992, to April 1, 2011)
Second examination	**Full-scale Screening** (In order to make comparison with the results of the Initial Screening)	April 2014 - March 2016	In addition to those covered by the Initial Screening, those born from April 2, 2011, to April 1, 2012
Third examination		April 2016 - March 2018	In principle, those born from April 2, 1992, to April 1, 2012
Fourth examination -		Once every two years until becoming 20 years old, then once every five years after becoming 25 years old, for example, at the ages of 30, 35 and so on	

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Information on the Thyroid Examination"

Ascertaining the current thyroid status of the relevant group of people even though radiation effects are unlikely to be detected is very important for promoting their health for the long term. Therefore, the Thyroid Examination was conducted for all children in Fukushima Prefecture after the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS over a period of approximately two and a half years from October 2011 (Initial Screening).

Then, in FY2014, the coverage was expanded to include those born from April 2, 2011, to April 1, 2012, and the Full-scale Screening was conducted as the second examination.

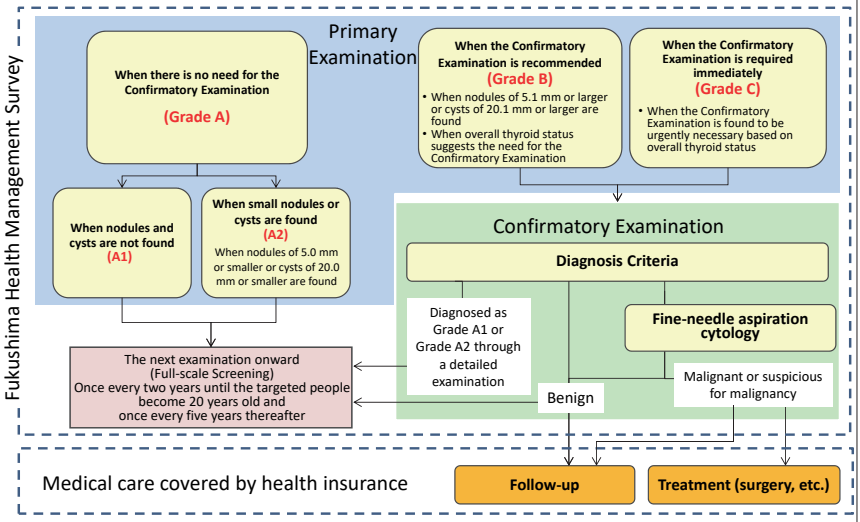
From the third examination onward, the targeted people receive examinations once every two years until they become 20 years old and once every five years thereafter.

Included in this reference material on March 31, 2013
Updated on December 1, 2017

Thyroid Examination

Thyroid Examination: Outline (2/3)

● Examination procedures and diagnosis criteria



Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Information on the Thyroid Examination"

This shows the procedures for the Thyroid Examination.

The Primary Examination checks whether there are any nodules or cysts and measures the sizes thereof, if any. The Confirmatory Examination is recommended to those who are considered to require a more detailed examination.

In the Confirmatory Examination, a more accurate ultrasound examination, plus blood and urine tests are conducted, and fine-needle aspiration cytology is also conducted when a doctor considers it necessary.

The Thyroid Examination is completed at this point.

Then, individuals who are found to require treatment receive it from their regular healthcare provider, under the relevant medical insurance system.

Included in this reference material on March 31, 2016
Updated on December 1, 2017

Thyroid Examination

Thyroid Examination: Outline (3/3)

● Content of the examination

[Primary Examination]

An ultrasound examination assesses whether there are any nodules or cysts. The examination ordinarily finishes in three to five minutes with no pain involved.

The diagnosis panel, consisting of medical specialists, reviews the ultrasound images and makes diagnoses. The examination results are sent by post, but explanations are given at the examination venues or by phone upon examinees' requests.

[Confirmatory Examination]

When a more detailed examination is found to be necessary as a result of the Primary Examination, the Confirmatory Examination is conducted for the relevant person.
In the Confirmatory Examination, another ultrasound examination, plus blood and urine tests are conducted.

If a doctor considers it necessary as a result of these tests, fine-needle aspiration cytology of the thyroid may also be performed and interpreted.

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Information on the Thyroid Examination"

An ultrasound examination is conducted with an examinee lying on his/her back. A doctor places an ultrasonic probe with jelly on its tip over the examinee's thyroid (located around the base of the neck) and searches for cysts and nodules while moving the probe over the examinee's skin.

The examination ordinarily finishes in three to five minutes with no pain involved.

Definitive diagnoses from the Primary Examination are not made at the venues. In order to make comprehensive and objective judgments, ultrasound images are later reviewed by a panel of medical specialists. This is to ensure a consistently high level of diagnostic accuracy throughout the Fukushima Health Management Survey.

The sizes of nodules and cysts mentioned above are reference values for making diagnoses. If any nodules or cysts found in ultrasound images are suspected to be malignant, the case is designated as Grade B irrespective of the sizes of the nodules or cysts and the Confirmatory Examination is recommended.

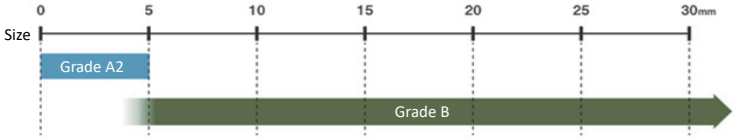
In the Confirmatory Examination, a more accurate ultrasound examination, plus blood and urine tests, are conducted. If, as a result of these tests, a doctor considers it necessary, fine-needle aspiration cytology, an examination of a sample tissue taken from the person's thyroid, may also be conducted.

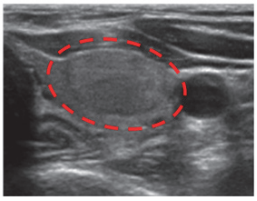
Included in this reference material on March 31, 2016
Updated on March 31, 2017

Thyroid Examination

Thyroid Examination: Nodules

A nodule, which might also be called a lump, is an irregular growth of thyroid cells.





- Nodules may be malignant (cancerous), but most are benign.

< Thyroid cancer >

- In many cases, latent thyroid cancer has no symptoms or health effects over a lifetime.
- Latent thyroid cancer is usually small. It may be disadvantageous to force patients to receive treatment if such a cancer is found incidentally.
- Therefore, a detailed examination is not generally conducted for small nodules.

< Thyroid Examination conducted in the Fukushima Health Management Survey>

- The Confirmatory Examination is not conducted for nodules of 5 mm or smaller and follow-ups are to be made at the time of the next examination.
- However, when a detailed examination is found to be necessary, a case with nodules of 5 mm or smaller is diagnosed as Grade B and the Confirmatory Examination is recommended.

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Q&A on the Thyroid Examination"

A nodule, which might also be called a lump, is an irregular growth of thyroid cells. Some nodules are malignant, but most are benign.

Thyroid cancer has been known as a type of cancer that is latent, that is, having no symptoms or health effects over a lifetime. Thus, detecting all cancers and forcing patients to receive treatment may be sometimes rather disadvantageous, so a detailed examination, such as cytological diagnosis, is not generally conducted for small nodules. In the Thyroid Examination conducted through the Fukushima Health Management Survey, the Confirmatory Examination is not generally performed for nodules of 5 mm or smaller; instead, follow-ups are to be made at the time of the next regularly scheduled ultrasound examination (Primary Examination).

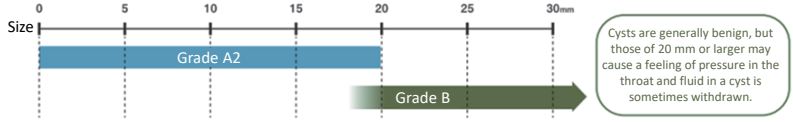
In some cases, a person once diagnosed as Grade A1 is diagnosed as Grade A2 or Grade B in the next examination, or conversely, a person once diagnosed as Grade A2 is subsequently diagnosed as Grade A1.

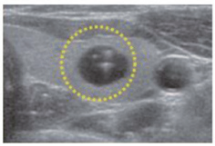
Included in this reference material on March 31, 2013
Updated on March 31, 2017

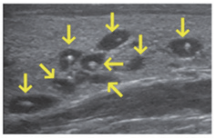
Thyroid Examination

Thyroid Examination: Cysts

A cyst, which resembles a bag filled with fluid, is generally benign, and is often found even in healthy people.







- Cysts often change in size or number.
- Many people have multiple cysts, and the estimated size of the largest one is told to each examinee in this examination.
- Cysts consisting only of fluid and containing no cells are not cancerous.
- Cysts found in the latest examination were all deemed to be benign.
- Cysts are seldom found in babies and infants but are rather found in primary and secondary school students.

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Q&A on the Thyroid Examination"

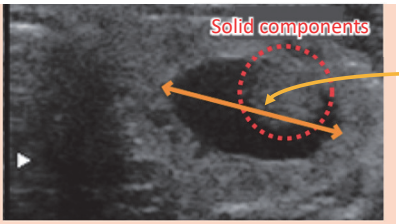
Cysts identified in the Thyroid Examination being conducted in Fukushima Prefecture are considered benign, consisting only of fluid and containing no cells. They are often found even in healthy people, especially among primary and secondary school students. Therefore, repeated examinations often find cysts as children grow up.

Included in this reference material on March 31, 2013
Updated on March 31, 2017

Thyroid Examination

Thyroid Examination: Handling of Cysts with Solid Components

Cysts with solid components are all judged as nodules.



Measure the entirety of a cyst

When the maximum size of a cyst with solid components (the length of the orange arrow) is 5.1 mm or larger, the examinee is diagnosed as Grade B.

- Cysts partially containing solid components (cells) are called cystic nodules or cysts with solid components.
- They are treated as equivalents to ordinary cysts in general medical examinations. Even when the Confirmatory Examination is conducted, they are deemed unlikely to cause problems and are placed under follow-up observations.

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Q&A on the Thyroid Examination"

Some cysts contain nodules. In the Thyroid Examination conducted in the Fukushima Health Management Survey, those cysts with solid components (nodules) are all judged as nodules and diagnosis criteria for nodules are applied.

For example, a 10 mm-cyst with a 4 mm-nodule is judged as a nodule and diagnosis criteria for nodules are applied. As the size is larger than 5.1 mm, the examinee is diagnosed as Grade B and is advised to receive the Confirmatory Examination.

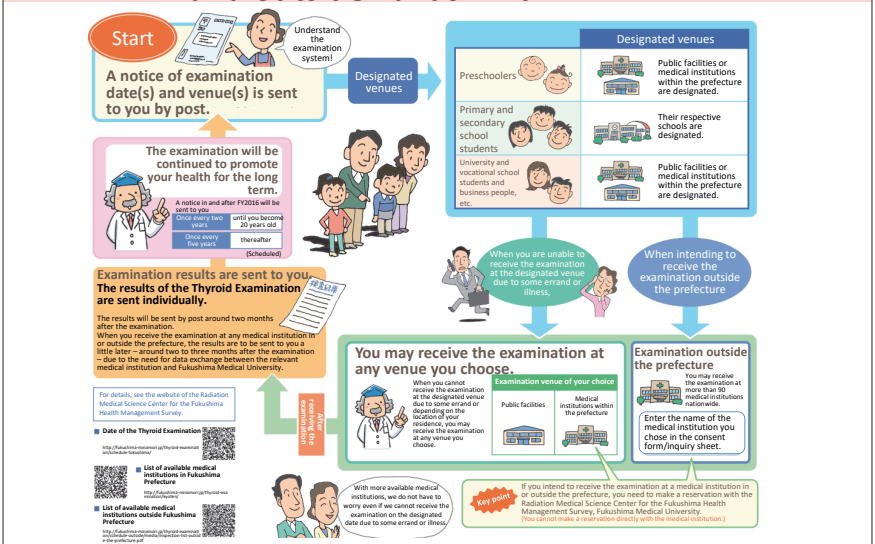
Items judged as fluid-only cysts are considered to be benign.

(Related to P.121, Vol. 2, "Thyroid Examination: Cysts")

Included in this reference material on March 31, 2016
Updated on March 31, 2017

Thyroid Examination

Thyroid Examination: System for Examinations in and outside Fukushima



Prepared based on Thyroid Report No. 3 of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University

The Thyroid Examination is conducted in collaboration between Fukushima Medical University and medical institutions in and outside Fukushima Prefecture. For more convenience to residents of the prefecture, efforts have been made to increase venues and opportunities with the aim of properly promoting the health of the people in Fukushima Prefecture for the long term.

Included in this reference material on March 31, 2015
Updated on March 31, 2017

Thyroid Examination

Thyroid Examination: Order of Full-scale Screening

The examination has been conducted sequentially, starting in areas where ambient dose rates were highest after the disaster.

- The first Full-scale Screening (the second one after the Initial Screening)
  - (white) Municipalities where the FY2014 Primary Examination was conducted (25 municipalities)
  - (grey) Municipalities where the FY2015 Primary Examination was conducted (34 municipalities)
- The second Full-scale Screening (the third one after the Initial Screening)
  - (white) Municipalities where the FY2016 Primary Examination was conducted (25 municipalities)
  - (grey) Municipalities where the FY2017 Primary Examination was conducted (34 municipalities)

Materials for the 22nd and 24th Prefectural Oversight Committee Meetings for Fukushima Health Management Survey

The Thyroid Examination has been conducted sequentially, starting in areas where ambient dose rates were highest at the time of the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS.

After the first Full-scale Screening, which was the second one after the Initial Screening, notices of the examination have been sent mostly in the same order so that the interval from the Initial Screening would not be prolonged. Since FY2016, the examination for those aged 20 or older has come to be conducted once every five years, but the examination plan is designed so that all targeted people will receive examinations regularly without more than a five-year gap between examinations through age 25.

Included in this reference material on March 31, 2015
Updated on December 1, 2017

Thyroid Examination

Thyroid Examination: Results of the Initial Screening

Latest Examination Results: http://www.pref.fukushima.lg.jp/site/portal/kenkocyosa-kentoiinkai.html (in Japanese)

● Results of the Primary Examination

	Coverage (people)	Examinees (people)		Diagnosis rate (%)	Number of those diagnosed (people)			
		Percentage of examinees (%)	Those who received the examination outside the prefecture		Breakdown by grade (%)			
					A		Those requiring the Confirmatory Examination	
					A1	A2	B	C
Total	367,649	300,473 (81.7)	9,511	300,473 (100.0)	154,605(51.5)	143,574 (47.8)	2,293(0.8)	1 (0.0)

Grade A: 99.2%

● Number and percentage of those having nodules or cysts

	Number of those with determined results (people)	Number of those having nodules or cysts against number of those with determined results (people)			
		Nodules		Cysts	
		5.1 mm or larger	5.0 mm or smaller	20.1 mm or larger	20.0 mm or smaller
Total	300,473	2,275 (0.8)	1,713 (0.6)	12 (0.0)	143,899 (47.9)

Grade B

* Even when nodules were 5.0 mm or smaller or cysts were 20.0 mm or smaller, the relevant examinee may be diagnosed as Grade B depending on other factors.

● Results of the Confirmatory Examination

	Coverage (people)	Examinees (people)	Determination rate (%)	Number of those with determined results (people)			
				Next examination		Regular healthcare program, etc.	
		Percentage of examinees (%)		A 1	A 2		Those who received fine-needle aspiration cytology
Total	2,293	2,130 (92.9)	2,090 (98.1)	132 (6.3)	579 (27.7)	1,379 (66.0)	547 (39.7)

● Results of the fine-needle aspiration cytology

Malignant or suspicious for malignancy: 116 people; 39 males and 77 females

Average age: 17.3 ± 2.7 years old (8 to 22 years old); At the time of the earthquake: 14.9 ± 2.6 years old (6 to 18 years old)

Average tumor size: 13.9 ± 7.8 mm (5.1 to 45.0 mm)

● Out of 116 people whose tumors were diagnosed as malignant or suspicious for malignancy, 102 people had surgery (benign nodule: 1; papillary cancer: 100; poorly differentiated cancer: 1).

Prepared based on the material for the 27th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

These are the final results of the Initial Screening, which was the very first Thyroid Examination. Examinees diagnosed as Grade A in the Primary Examination accounted for 99.2% of the total, while those diagnosed as Grade B accounted for 0.8%. It became clear that most of those diagnosed as Grade A2 had cysts of 20 mm or smaller and that those diagnosed as Grade B had nodules of 5.1 mm or larger.

In the Confirmatory Examination, as a result of a more accurate ultrasound examination and other tests, 34%, or approximately one out of three who received the Confirmatory Examination, were diagnosed as being equivalent to Grade A and were recommended to receive the next periodic examination in the same manner as those diagnosed as Grade A in the Primary Examination. This is because those who were suspected to have any abnormalities were diagnosed as Grade B just to be safe in the Primary Examination, and such people include those eventually diagnosed as Grade A in the Confirmatory Examination as a result of comprehensive and objective judgments through a more detailed examination, etc.

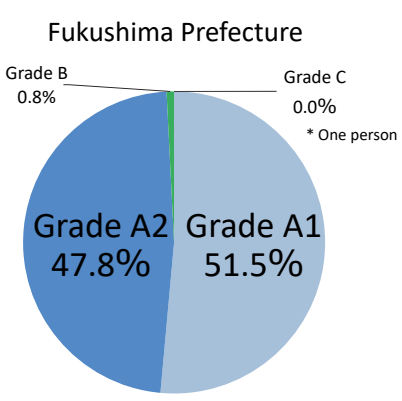
Among the examinees receiving the Confirmatory Examination, 66% were shifted to ordinary medical care covered by health insurance and most of them have been advised to receive another thyroid examination six months to one year later, as determined by the responsible doctor, based on individual findings and circumstances.

Furthermore, 39.7% received fine-needle aspiration cytology, and out of 116 examinees whose tumors were diagnosed as malignant or suspicious for malignancy, 102 had surgery. It is not that all patients whose tumors are diagnosed as malignant or suspicious for malignancy have surgery. Whether to have surgery or not is decided depending on the individuals' situations on a case-by-case basis through consultations among doctors in charge, patients themselves, and their families.

Included in this reference material on March 31, 2016
Updated on December 1, 2017

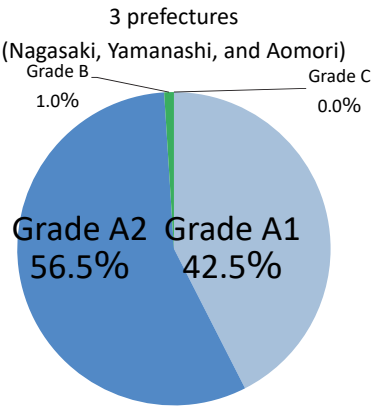
Thyroid Examination

Thyroid Examination: Comparison between the Initial Screening and the Examination in Other Prefectures



300,476 residents of Fukushima Prefecture who were aged 18 or younger at the time of the earthquake

Prepared based on the material for the 20th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey



4,365 children ranging from kindergarteners to high school students in Nagasaki, Yamanashi and Aomori Prefectures (young children aged under 3 were not covered)

Prepared based on the "Survey Results on Detection Rates of Thyroid Abnormalities in the Examination in Three Prefectures Other than Fukushima Prefecture" (March 29, 2013) released by the Ministry of the Environment

When the Thyroid Examination commenced, many people were concerned about a relatively high percentage of examinees diagnosed as Grade A2. Therefore, in FY2012, the Ministry of the Environment (MOE) conducted the Thyroid Examination targeting approx. 4,300 children in Nagasaki, Yamanashi and Aomori Prefectures (3-prefecture examination) in the same manner as the examination conducted in Fukushima Prefecture.

The examination in Fukushima Prefecture covered children aged zero to 18, while the 3-prefecture examination excluded children aged under 3 and covered only those aged 3 to 18. As the cohort was much smaller in the 3-prefecture examination, a simple comparison cannot be made, but the results show that those diagnosed as Grade A2 were not greater in number among the children of Fukushima Prefecture. The figures above show that the percentage of those diagnosed as Grade A2 in Fukushima Prefecture was actually smaller by 9 points than in the three prefectures and, conversely, the percentage of those diagnosed as Grade A1 was larger by 9 points. The report of the 3-prefecture examination made the following observations: "It is generally known that the detection rate of nodular lesions is lower in the group of examinees aged 3 to 5 than in the group of examinees aged 6 or older, and that females show higher detection rate than males. Therefore, there is the possibility that a detection rate tabulated based on simple descriptive statistical methods as in this case may be higher than the actual rate."* The gaps in the percentages of those diagnosed as Grade A1 and Grade A2 between the examination in Fukushima Prefecture and the 3-prefecture examination are considered to be due to differences in the cohort sizes and examinees' ages (the 3-prefecture examination excluded children aged under 3).

* Source: "Report on the Outcome of the FY2012 Survey on Detection Rates of Thyroid Abnormalities" (commissioned by MOE), The Japan Association of Breast and Thyroid Sonology (March 2013)

Included in this reference material on March 31, 2014
Updated on December 1, 2017

Thyroid Examination

Thyroid Examination: Results of the Full-scale Screening (2nd Examination)

Latest Examination Results: http://www.pref.fukushima.lg.jp/site/portal/kenkocyosa-kentoiinkai.html (in Japanese)

● Results of the Primary Examination

	Coverage (people)	Examinees (people)		Diagnosis rate (%)	Number of those diagnosed (people)			
		Percentage of examinees (%)	Those who received the examination outside the prefecture		Breakdown by grade (%)			
					A		Those requiring the Confirmatory Examination	
					A 1	A 2	B	C
Total	381,256	270,516(71.0)	15,647	270,515 (100.0)	108,710(40.2)	159,578(59.0)	2,227(0.8)	0 (0.0)

Grade A: 99.2%

● Number and percentage of those having nodules or cysts

	Number of those with determined results (people)	Number of those having nodules or cysts against number of those with determined results (%)			
		Nodules		Cysts	
		5.1 mm or larger	5.0 mm or smaller	20.1 mm or larger	20.0 mm or smaller
Total	270,515	2,219(0.8)	1,570(0.6)	6 (0.0)	160,357(59.3)

Grade B

* Even when nodules were 5.0 mm or smaller or cysts were 20.0 mm or smaller, the relevant examinee may be diagnosed as Grade B depending on other factors.

● Results of the Confirmatory Examination

	Coverage (people)	Examinees (people)	Determination rate (%)	Number of those with determined results (people)			
		Percentage of examinees (%)		Next examination		Regular healthcare program, etc.	
				A1	A2		Those who received fine-needle aspiration cytology
Total	2,227	1,844(82.8)	1,788(97.0)	63(3.5)	360(20.1)	1,365(76.3)	205(15.0)

* The total of percentages with one decimal place may not be 100% due to rounding.

● Results of the fine-needle aspiration cytology

Malignant or suspicious for malignancy: 71people; 32 males and 39 females
Average age: 16.9 ± 3.3 years old (9 to 23 years old); At the time of the earthquake: 12.6 ± 3.3 years old (5 to 18 years old)
Average tumor size: 11.1 ± 5.7 mm (5.3 to 35.6 mm)

● Out of 71 people whose tumors were diagnosed as malignant or suspicious for malignancy, 50 people had surgery (papillary cancer: 49; other types of thyroid cancer: 1).

Prepared based on the material for the 28th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

These are the interim results of the Full-scale Screening, which was the second round of the Thyroid Examination.

Examinees diagnosed as Grade A in the Primary Examination accounted for 99.2% of the total, while those diagnosed as Grade B accounted for 0.8%. Most of those diagnosed as Grade A2 had cysts of 20 mm or smaller and those diagnosed as Grade B had nodules of 5.1 mm or larger. This tendency was the same as that observed in the Initial Screening.

In the Confirmatory Examination, as a result of fine-needle aspiration cytology, 71examinees were diagnosed that their tumors were malignant or suspicious for malignancy.

Included in this reference material on March 31, 2016
Updated on December 1, 2017

Thyroid Examination

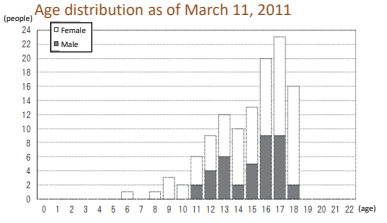
Thyroid Examination: Results of the Initial Screening and the Full-scale Screening (Details of Fine-needle Aspiration Cytology)

Latest Examination Results: http://www.pref.fukushima.lg.jp/site/portal/kenkocyosa-kentoiinkai.html (in Japanese)

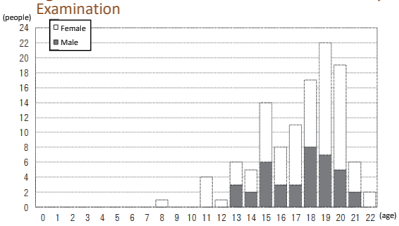
- Age distribution of examinees whose tumors were diagnosed as malignant or suspicious for malignancy as a result of fine-needle aspiration cytology

Results of the Initial Screening (116 examinees)

Age distribution as of March 11, 2011

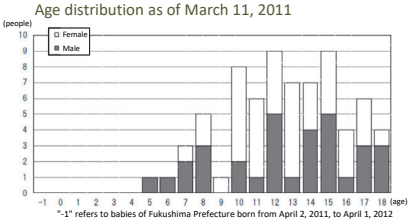


Age distribution as of the time of the Confirmatory Examination



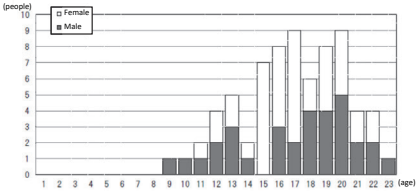
Results of the Full-scale Screening (2nd examination) (71 examinees)

Age distribution as of March 11, 2011



"-1" refers to babies of Fukushima Prefecture born from April 2, 2011, to April 1, 2012

Age distribution as of the time of the Confirmatory Examination



Materials for the 27th and 28th Prefectural Oversight Committee Meetings for Fukushima Health Management Survey

These graphs show the age distribution, as of March 11, 2011, of examinees who subsequently had thyroid lesions diagnosed as malignant or suspicious for malignancy by fine-needle aspiration cytology, and their ages at the time of the Confirmatory Examination. So far, the situation is that thyroid cancer is not found more frequently among young children (aged zero to 5), who are considered to have higher sensitivity to radiation, than among people in the other age brackets.

These are only interim results and will be updated later.

Included in this reference material on March 31, 2014
Updated on December 1, 2017

Thyroid Examination

Thyroid Examination: Remarks on the Results of the Initial Screening

● The Thyroid Examination, which had no precedent for childhood screening, revealed thyroid cancers that might have otherwise gone unnoticed.

Percentage of examinees whose tumors were diagnosed as malignant or suspicious for malignancy as a result of fine-needle aspiration cytology (against the total examinees of the Primary Examination)

FY2011	FY2012	FY2013
0.03%	0.04%	0.04%

Material for the 20th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

● Evaluation of thyroid cancers found in the Initial Screening, the Interim Report by the Prefectural Oversight Committee Meeting for Fukushima Health Management Survey (March 2016)

"Comprehensively considering that: exposure doses due to the accident at the Fukushima Daiichi NPS were generally lower than those caused by the Chernobyl accident; the period of time from the exposure to the detection of cancers is short (mostly from one to four years); cancers have not been detected in those aged 5 or younger at the time of the accident; and there is no significant regional difference in detection rates, it can be concluded that thyroid cancers found so far through the Thyroid Examination cannot be attributed to radiation discharged due to the accident.

However, the possibility of radiation effects may be small but cannot be completely denied at this point in time. Additionally, it is necessary to accumulate information in the long term for accurate evaluation of the effects. Therefore, the Thyroid Examination should be continued, while meticulously explaining the disadvantages of receiving the examination and obtaining the understanding of examinees."

○The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) reiterated in its 2015 White paper* that excessive thyroid cancer risks due to radiation exposure do not need to be taken into consideration.

*Developments since the 2013 UNSCEAR Report on the levels and effects of radiation exposure due to the nuclear accident following the great east-Japan earthquake and tsunami (A 2015 White Paper to guide the Scientific Committee's future programme of work)

In order to ascertain radiation effects, it is necessary to monitor developments over a long term. Please receive the examination continuously from the viewpoint of managing your own health as well.

Thyroid cancers found so far through the Thyroid Examination being conducted in Fukushima Prefecture are considered to be unrelated to the radiation discharged due to the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS.

This evaluation is based on a comprehensive judgment of the following facts:

(i) Exposure doses due to the accident at the Fukushima Daiichi NPS were generally lower compared with those caused by the Chernobyl accident.

(ii) The period of time from the exposure to the detection of cancers is short, mostly from one to four years.

(iii) Cancers have not been detected in those who were 5 years old or younger at the time of the accident.

(iv) Age distribution of patients significantly differs in Fukushima Prefecture and Chernobyl (p.132 of Vol. 1, "Comparison between the Chernobyl Accident and the Accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS (Ages at the Time of Radiation Exposure)").

(v) There are no significant differences in detection rates among different regions.

However, it is necessary to monitor developments over a long term to ascertain radiation effects, so the Thyroid Examination program should continue.

Included in this reference material on March 31, 2015
Updated on March 31, 2017