10 October, 2022
SYMPOSIUM “Anthropology of Tribulation and Hope from FUKUSHIMA”
Location：International Conference Center, Waseda University

The Childhood Thyroid Cancer Trial and the Present Situation of the Damage Caused by the Nuclear Power Plant Accident

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3/11 children’s thyroid cancer law suit

Today's topic

- Prologue（p.3～32)
- An account of the 3/11 children's thyroid cancer trial (p.33～63)
- (1) Outline of the suit
- (2) introducing the plaintiffs
- (3) Then court hearings so far
- (4) TEPCO's case and our criticism of it
- (5) Content of the depositions
- (6) The significance of this case
- Conclusion(p.64)

Part 1. PROLOGUE

(The Reality of Japan's Policy of Neglecting the Damage Caused by Radiation Exposure)

The Issue of Radiation Exposure and I

- March. 24, 2006: Judgment on injunction against operation of the Shiga Nuclear Power Plant Unit No. 2
- （The court granted the plaintiffs who were likely to be exposed to 1mSv or more due to the accident at the Shiga Nuclear Power Plant Unit No. 2 the right to demand an injunction against the operation of the plant.）
- March. 11, 2011: Fukushima nuclear power plant accident.
- April. 19, 2011: Ministry of Education, Culture, Sports, Science and Technology 20mSv notice.
- Jun. 2011: Joined the defense team for the class evacuation trial.

- May. 2014: “Oishinbo” issue
- Aug. 2014: Participated in the defense team for the children’s de-exposure trial
- Jan. 2022: Joined the defense team for the 3/11 thyroid cancer trial for children
- March. 2022: Joined the defense team for the right to housing trial for evacuees from nuclear power plant accident

What I learned
➡ the policy of ignoring the radiation exposure was thoroughly planned in advance.

Wakana, age 15 3/11 seen though the eyes of a middle school kid

ミツイパブリッシング(Mitsui Publishing), 2011

A Junior High School Teacher C's story : "On March 16th, the day of the acceptance announcement, right? On that day, I went to the principal to ask him not to announce the results. But the principal said, 'No, I'm going to do it. I asked him "why", and he said, "If you don't do it, my head will roll". I'm sorry I exposed you all that day..."

福島県内各地方　環境放射能測定値

月　日	測定時刻	県北・福島市
平常値		0.04
3月16日	11:10	18.70
（水）	11:20	18.80
	11:30	18.40
	11:40	18.50
	11:50	18.30
	12:00	18.40

400 times the normal level

Who put so much pressure on the principal and with what intention?

16 March Successful candidates announced.

20 March Yamashita speech tour begins (OK up to 100 mSv/year, 100 μSv/hour OK, let children play outside).

29 March Fukushima Prefecture's Director of Education notifies prefectural high schools in Nakadori and Aizu that the opening ceremony will be held on 8 April.
19 April 20 mSv notification by the Ministry of Education, Culture, Sports, Science and Technology

Fukuhima Mimpo 17 May, 2011

島民報 2011年（平成23年）3月17日（木曜日） 8版（6）

不安の中、笑顔咲く春

県立高合格発表 中通り、会津先行

今春の県立高校入試の一期、二期、連携型各選抜の合格発表が十六日、震災の影響により、中通り地区と会津地区の全日制六十校と定時制六校で先行して行われた。

このうち、郡山市の安積高体育館は避難所となっており、利用者へ配慮するため恒例の部活動への入部勧誘を実施しなかった。降りしきる雪の中、合格番号を見つけた受験生は家族や友人と喜びを分かち合った。郡山七中の四家武彦君は「（震災で）入学式を迎えられるのか不安だが、もっと深刻な被害を受けた人もいる。自分も頑張らないと」と気を引き締めていた。

同日に発表になった今春の合格者は、全日

抱き合って喜ぶ合格者たち＝安積高

「今日だけは喜びたい」

須賀川市長沼地域で避難所生活を送っている長沼中の江連文華さん（15）は長沼高普通科に合格した。合格者の掲示板に自分の番号を見つけると、「余震や原発は怖いし、避難所生活も不安があるけど、今日だけは素直に喜びたい」と笑顔を見せた。一緒に訪れた永山清美さん（15）も合格を確認すると、江連さんと抱き合い、感激を分かち合った。しかし、軟式庭球部の後輩の女子生徒が行方不明になっており、「合格はうれ

合格し、笑顔を見せる江連さんと永山さん＝長沼

12 March Unit 1 explosion
14 March Unit 3 explosion
15 March Unit 4 explosion, Unit 2 Containment vessel breached. Dose in Fukushima City exceeds 20 μSv/he
17 March Evacuation advisory for areas outside 80 km from the USA
25 March Shunsuke Kondo, Chairman of the Atomic Energy Commission, submits a worst-case scenario to the Prime Minister.

100mSv a year?
Cumulative 100mSv ?

Kahoku Shinp o 8 December, 2014
平成２６年（2014年）１２月８日（月曜日）

持論時論

滋賀弁護士会弁護士
井戸　謙一
（60歳・滋賀県彦根市）

被ばく量と健康被害

「１年に100ミリシーベルト」は誤解

政府は、福島第1原発事故で放出された放射性物質による年間積算線量が20ミリシーベルトを下回った地域の避難指示を解除し、住民の帰還を求める政策を着々と進めている。他方、福島県では小児甲状腺がん患者（疑いを含む）が103人も発見され、福島県や周辺地域で居住している人たちの間では長期低線量被ばくに対する不安も根強い。今わが国では、長期低線量被ばくによる健康被害の危険性をどう見るかが大きな社会問題となっている。

本稿は、危険性の有無を述べるのが目的ではない。その前提たる知識を多くの人が誤解していることを指摘し、前向きな議論を進めるために、その誤解を解くことを目的とするものである。

◇　◆　◇

長期低線量被ばくの危険性を軽視する人たちは「100ミリシーベルト以下の被ばくでは健康被害があるという証明がなされていない」と主張する。正しくは健康被害があるかどうか「証明されていない」であるのに、健康被害が「ない」かのような言説が広まっていることはひとまず置く。ここで言いたいのは、健康被害が証明されていないとされる被ばく量は「年100ミリシーベルト」ではなく「100ミリシーベルト」、すなわち累積線量（生涯において受ける線量）であるということである。

平成23年11月、内閣官房に「低線量被ばくのリスク管理に関するワーキンググループ」が組織された。同年12月22日付で公表された同グループの報告書では、「国際的な合意に基づく科学的知見によれば、放射線による発がんリスクの増加は、100ミリシーベルト以下の低線量被ばくでは、他の要因による発がんの影響によって隠れてしまうほど小さく、放射線による発がんのリスクの明らかな増加を証明することは難しい」と書かれている。「年100ミリシーベルト以下」ではないことに留意していただきたい。厚労省のホームページには、もっと分かりやすく「実際に放射線を被ばくした人々の実際の疫学データに基づいて、生涯における、自然放射線による被ばく以外の被ばく量が100ミリシーベルト未満で、健康上の影響が出ることは科学的には確かめられていません」と書かれている。

ところが、健康被害が証明されていないとされる線量について、一部の専門家と呼ばれる人たちが意図的に「年100ミリシーベルト」と述べたため、誤解している人が多い。新聞記事でも目立つし、裁判官や弁護士、原発反対の運動をしている市民の中にも誤解している人が多いのである。

◇　◆　◇

健康被害が証明されていないとされる被ばく量が「年100ミリシーベルト」以下であれば、政府が住民を帰還させようとしている「年20ミリシーベルト」以下の土地で生活しても健康被害のリスクはないという帰結になる。しかし「累積100ミリシーベルト」であれば、年20ミリシーベルトを下回った土地で5年余りの期間生活すれば、累積100ミリシーベルトに達するのだから、安全性を説明しなければならない。政府は、その場合の健康被害について、線量率効果（同じ100ミリシーベルトの被ばくでも長期間にわたって被ばくした場合は短期間で被ばくした場合よりも健康影響が小さい）を指摘するが、明確な数値を示しているわけではない。多くの市民が「年100ミリシーベルト」と誤解していることは政府にとって好都合なのである。

長期低線量被ばくは福島だけではなく、日本列島に住む全ての人の問題である。正しい知識を前提に、この問題を考えていきたい。

（投稿）

Testimony of Shunichi Yamashita ➡It was assumed that the years before and after the testimony were not exposed to radiation.

100mSv a year???

日本經濟新聞
Nihon Keizai Shinbun

朝刊・夕刊　ストーリー　Myニュース

トップ　速報　マネー　経済・金融　政治　ビジネス　マーケット　テクノロジー　国際　オピニオン　スポーツ　社会・く

“Radiation, 100 millisieverts per year, affects the human body.”

放射線、年100ミリシーベルトで人体に影響

2011年3月12日 19:43　12 May 2011

保存

放射線は大量に浴びると細胞の遺伝子が傷つきがんなどの病気を引き起こす。放射線を体に受けることを被曝（ひばく）といい、量はシーベルトと呼ぶ単位で表す。

地球上で生活していれば1年間に2.4ミリシーベルト前後の放射線を自然に受ける。医療でも、例えば胃のX線検診1回では0.6ミリシーベルトの放射線を受ける。これ以外に人間が1年間に浴びる放射線量の基準は1ミリシーベルトまでとされている。実際に人体に影響が及ぶのは年間100ミリシーベルト前後とされる。

東京電力福島第1原発1号機周辺で測定した1時間に1.015ミリシーベルトという量は年間の限度に相当する。1986年4月のチェルノブイリ原発事故では、原発作業従事者約20万人が100ミリシーベルト、発電所近くの27万人が50ミリシーベルトの放射線を受けたといわれる。

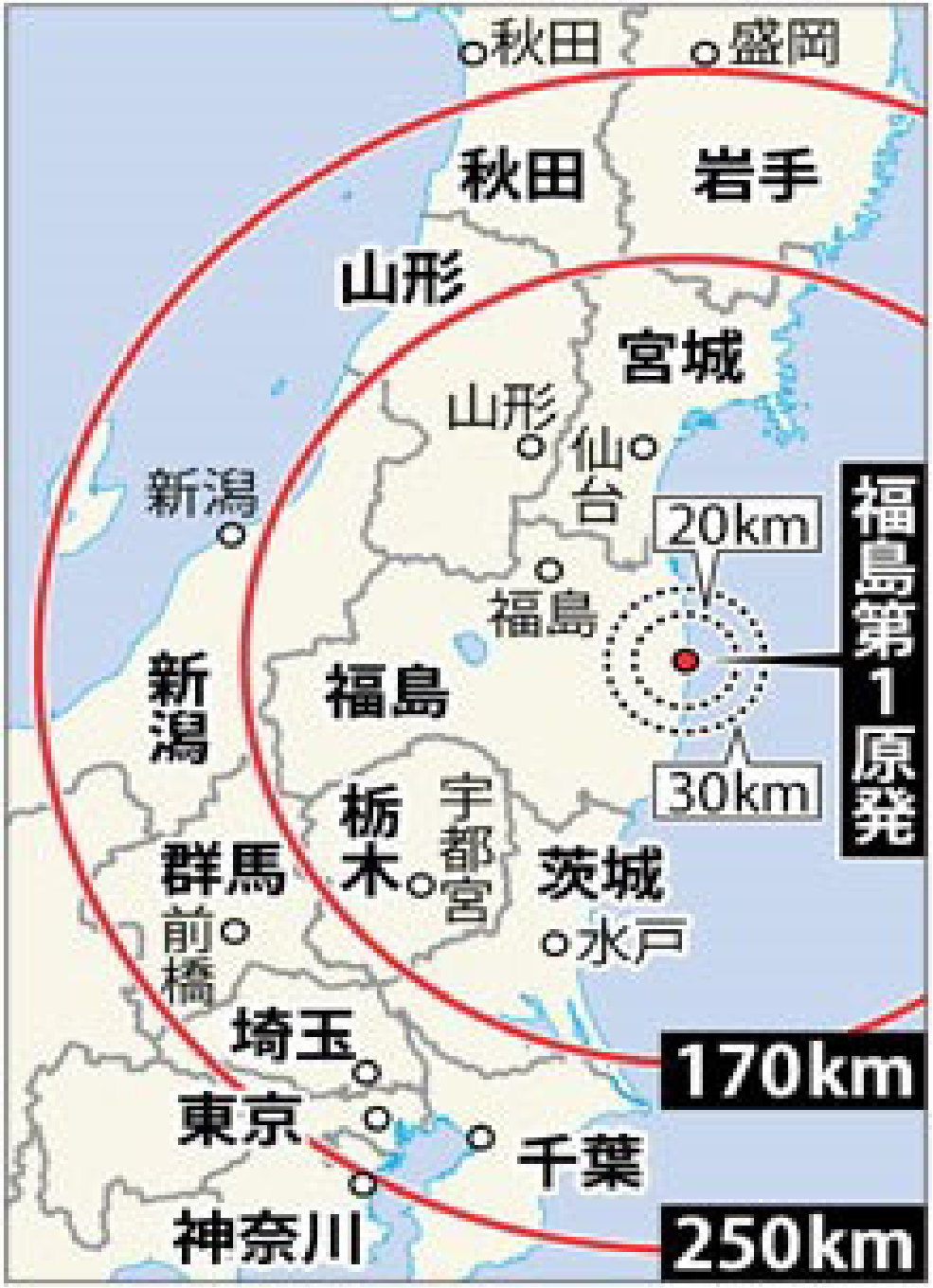
- **The standard for the amount of radiation a human being can be exposed to in a year is up to 1 millisievert.**
- **The actual impact on the human body is estimated to be around 100 millisieverts per year.**

A Draft of Fukushima Nuclear Power Plant Contingency Scenarios

By Atomic Force Commission Chairman,
近藤駿介 Shunsuke Kondo
【２０１１.３.２５】

170㎞Radius
1,480,000bq/㎡
Population:
approx. 10 million

250㎞Radius
555,000bq/㎡
Population:
approx. 35 million



The Story of Mizue Sugano

- On March 14, the Ministry of Education, Culture, Sports, Science and Technology stopped the dust sampling that had been conducted since March 12 (NHK Special "Blank Early Exposure").
- On March 30, the government discontinued direct thyroid measurements for 1080 children.
- On April 17, the government forced Fukushima Prefecture and the Hirosaki University team to stop direct thyroid measurements.

Around 4:00 p.m. on March 12, two men in white protective suits and gas masks drove up to Tsushima, Namie Town. They said, "Please. Please run away. Why are you here? It's not safe here." Their voices were desperate and tearful.

On March 15, Namie Town decides to evacuate the entire town on its own.
On April 11, the government designates the area outside the 20 km zone of Namie Town as a planned evacuation zone.

People who were not informed of the danger

- Children evacuated to Tsushima played outdoors, ate snow, and drank well water.
- Children were forced to stand in long lines for water trucks and at supermarkets.
- Children were sent to a nearby creek to fetch water.
- They took their children to visit graves.
- They dropped their infants off at the kindergarten yard to play.
- They ate vegetables from the family vegetable garden, and fed them to their friends. They ate bamboo shoots from their home in the danger zone. They let their children drink water from the well.
- They did not wear masks.

From the plaintiff's deposition in the Fukushima Thyroid Cancer Trial

SPEEDI data released on March 23

津島
Tsushima

内部被ばく臓器等価線量
日時＝ 2011/03/12 06:00 -
2011/03/24 00:00 の積算値

領域 ： 92km X 92km
核種名 ＝ ヨウ素合計
対象年齢 ＝ 1歳児
臓器名 ＝ 甲状腺

【凡例】
線量等価線 (mSv)
1： 10000
2： 5000
3： 1000
4： 500
5： 100

（評価）
本試算は、福島第一原子力発電所の事故発生後、連続して一日中屋外で過ごすという保守的な条件を仮定して、甲状腺の被ばく線量を試算した

出展：原子力安全委員会

Background leading up to the 20 mSv notice

- 4/6 Ministry of Education, Culture, Sports, Science and Technology(MEXT)➡Nuclear Safety Commission(NSC)「Requested advice on reopening schools」
- 4/7 NSC➡MEXT「Indicate your own standards. The public exposure limit is 1 mSv/year.」
- 4/9 MEXT➡NSC「20 mSv/year proposed」
- 4/9 NSC➡MEXT「Internal exposure should be evaluated equally (10 mSv/year for external exposure alone)」
- 4/19 MEXT➡「20 mSv notice issued (assuming internal exposure is negligible)」

Wasn't the "Ministry of Education" supposed to be a government agency that protects children?

※ In 2001, the "Ministry of Education" and the "Science and Technology Agency" were merged to form the "Ministry of Education, Culture, Sports, Science and Technology".

My opinion

The government's radiation exposure measures were inadequate not because they were in a state of confusion, because they themselves were in a state of panic, or because they lacked knowledge.

Immediately after the Fukushima nuclear accident, it was deliberately pursued to avoid evacuating the residents as much as possible, even if it meant exposing them to a small amount of radiation.

To achieve this, the government deliberately brainwashed the population by advertising the safety of exposure, did not investigate exposure doses, and concealed information on exposure.

Presumably, the goal was to set the evacuation standard at 20 mSv/year, the upper reference level of the ICRP's existing exposure situation, and this was forcefully achieved.

Since there is no health risk at levels below 20 mSv/year, evacuees outside the zone have evacuated on their own, and support for them should be minimal and they should return home as soon as possible. There is no need for recreation. Citizens across the country should eat and support.

The Fukushima accident is not supposed to cause any health problems for the residents due to exposure to radiation.

If they do develop symptoms, it will become clear that the government's policy of exposing the population to radiation was a mistake.

The policy of understating radiation impacts had been prepared internationally. . .

- 1986, April: Chernobyl nuclear disaster
- 1996, April: IAEA publishes ONE DECADE AFTER CHERNOBYL
- 2007 ICRP published the 2007 Recommendations (Pub 103)
- Planned exposure status ➡Dose limit 1 mSv per year
- Existing exposure status ➡Reference level 1-20 mSv per year
- Emergency exposure situation ➡Reference level 20-100 mSv
- 2008 ICRP publishes 'Application of the Commission's recommendations on the protection of people living in long-term contaminated areas after a nuclear accident or radiological emergency' (Pub 111).

The IAEA1996 Report

- （p. 519）Normally, people are ready to accept risks in everyday life. They believe experts in such situations and do not question the legitimacy of the authorities.

  「通常、人々は日常生活の中でリスクを受け入れる準備ができている。彼らはそのような状況の中で専門家を信じており、当局の正当性に疑問を投げかけていない。」

- （p. 546）Classical post-accident management based on intervention criteria is not sufficient in order to deal appropriately with the complex social situation. We have to establish new framework conditions in order to respond to the psychological situation of people who have to live in lastingly contaminated regions.

  「被曝を軽減してきた古典的放射線防護は複雑な社会的問題を解決するためには不十分である。住民が永久的に汚染された地域に住み続けることを前提に、心理学的な状況にも責任を持つ、新しい枠組みを作り上げねばならない。」

The20mSv/year safety statement does not make sense.

- Radioactive substances are pollutants, but unlike other pollutants, they have been given special protection. Therein lies a major contradiction.
- People have not been informed about it.

History of pollution control in Japan (special treatment of radioactive materials)

- 3 August 1967 Basic Law on Pollution Control passed.
- Exemptions for radioactive substances (as provided for in the Atomic Energy Act).
- The State established environmental standards and emission control standards.
- November 1993 Basic Environment Law passed.
- The Basic Environment Law was passed in November 1993, taking over the provisions on exemptions for radioactive substances.
- June 2012.
- Basic Environment Law amended (radioactive material exemption clause deleted).
- ➡However, environmental standards for radioactive substances have not yet been established.

Concept of environmental standards for substances without threshold values

- Environmental standard for substances with no threshold value is set at a lifetime risk level of 10-5 (minus 5 to the power of 10).
- (e.g. soil elution standard for benzene ➡ 0.01 mg/l or less)
- ~1/100,000 incremental risk after drinking 2 litres of groundwater per day for 70 years ~1/100,000
- Air dose standard for benzene ➡0.003 mg/m3
- ~1/100,000 of incremental risk after inhalation of this air for 70 years
- This is an international standard.
- (e.g. WHO drinking water quality guidelines target a lifetime risk of 10-5.

What would be appropriate environmental standards for radioactive substances?

- Radioactive materials are poisons with no threshold.
- According to the ICRP (International Commission on Radiological Protection), exposure to a cumulative dose of 100 mSv (long-term low dose) increases the probability of cancer death by 0.5%.
- To reduce the increased rate of cancer death to 10-5 (1 in 100,000), the cumulative dose (lifetime dose) must be reduced to 0.2 mSv.
- 100 mSv x 0.001% / 0.5% = 0.2 mSv
- Lifetime dose of 0.2 mSv is 0.00285 mSv per year (2.85 μSv per year)
- 0.2 mSv ÷ 70 years = 0.00285 mSv/year = 2.85 μSv/year
- Incidentally:
- 1 mSv/year (70 mSv/life) 350 per 100,000 cancer deaths
- 20 mSv/year (1400 mSv/life), 7,000 cancer deaths per 100,000 people.

Overview of legislation to ensure children's safety in schools.

1 Article 26 of the Constitution The people's right to education (children's right to learning)

2 Basic Law on Education

Article 1 One of the aims of education is "the development of a healthy people, both physically and mentally"

Article 2 One of the goals of education is "to cultivate a healthy body".

3 School Education Law, Article 12: "In order to maintain and promote the health of pupils... necessary measures shall be taken for their health."

4 School Health and Safety Law

Article 1 Purpose: "To provide for necessary matters concerning health management in schools in order to maintain and promote the health of pupils and staff in schools".

Article 3, paragraph 2 Responsibilities of the State "In order to comprehensively and effectively promote safety-related efforts at each school, plans for the promotion of school safety shall be formulated and other necessary measures shall be taken".

Article 3, paragraph 3 Responsibilities of local governments "shall endeavour to take measures similar to those in the preceding paragraph taken by the State."

Article 6 Responsibilities of the Minister of Education, Culture, Sports, Science and Technology "to establish 'school environmental hygiene standards', standards that should be maintained to protect the health of pupils, etc. and staff".

School Environmental Health Standards, Ministry of Education, Culture, Sports, Science and Technology Notice No. 60 of 2009.

No stipulation on radioactive materials
➡ because it was not assumed that the school environment would be contaminated by radioactive materials
➡ should be stipulated now

検査項目			基準
換気及び保温等	(1) 換気		換気の基準として、二酸化炭素は、1500ppm 以下であることが望ましい。
	(2) 温度		10℃以上、30℃以下であることが望ましい。
	(3) 相対湿度		30%以上、80%以下であることが望ましい。
	(4) 浮遊粉じん		0.10mg／m^3以下であること。
	(5) 気流		0.5m／秒以下であることが望ましい。
	(6) 一酸化炭素		10ppm 以下であること。
	(7) 二酸化窒素		0.06ppm 以下であることが望ましい。
	(8) 揮発性有機化合物		
		ア．ホルムアルデヒド	100μg／m^3以下であること。
		イ．トルエン	260μg／m^3以下であること。
		ウ．キシレン	870μg／m^3以下であること。
		エ．パラジクロロベンゼン	240μg／m^3以下であること。
		オ．エチルベンゼン	3800μg／m^3以下であること。
		カ．スチレン	220μg／m^3以下であること。
	(9) ダニ又はダニアレルゲン		100 匹／m^2以下又はこれと同等のアレルゲン量以下であること。

Pollutant standards

Could you accept 7000 times the usual level?

Toxic benzene.
Environmental standard (air dose)
0.003 mg/m3

Toxic radionuclides.
Evacuation criteria (air dose)
20 mSv/year

Risk of death:
1 in 100,000

【According to the Ministry of the Environment.
Converts to a life span of 70 years】

Risk of death:
7,000 in 100,000

【According to ICRP recommendations.
Converts to a life span of 70 years】

What has happened because of the policy of allowing people to continue to live in such an environment as long as possible?

- Residents who have not evacuated and are staying put must be reassured
- ➡Risk communication turns into a one-sided safety propaganda forum.
- ➡No measures other than decontamination are taken to avoid even the slightest exposure (e.g. recreation, foodstuffs, etc.)
- ➡Do not provide generous support to those who have chosen to evacuate. Hunting them down. Encourage them to return to their homes if at all possible.
- Silence those who stir up fears of exposure. Attack them (rumour perpetrators).
- Pretend that everyone is living in safety (do not let them express their fears about exposure).
- What this has caused ➡ Division and isolation of those who believe the safety propaganda and those who do not.

Bizarre response to the "Oishinbo" problem

- End of April 2014 "Oishinbo ; Fukushima no Shinjitsu Hen" published in Big Comic Spirits.
- 7 May 2014 Letter of protest from Futaba Town & Fukushima City to Shogakukan(Publisher).
- 8 May 2014 Ministry of the Environment's opinion published.
- 9 May 2014 Minister of the Environment ISHIHARA expresses his displeasure.
- 12 May 2014 Governor of Osaka Prefecture and Osaka City ➡ Letter of protest to Shogakukan
- 13 May 2014 Minister of Reconstruction NEMOTO, Minister of Consumer Affairs MORI, Minister of Land, Infrastructure, Transport and Tourism OTA, Minister of Education SHIMOMURA and others criticised it one after another.
- 14 May 2014 The President of Fukushima University cautioned Associate Professor ARAKIDA (Who mentioned nosebleeds).
- 17 May 2014 Prime Minister ABE criticized.
- 21,23 May 2014 Citizens' Organization Holds Press Conference in Protest

Not only did they attack that radiation exposure was the cause, they also attacked the fact that nosebleeds were common as false information.

➡As a result, they could no longer even speak about the fact that they had experienced it.

21.May.2014 Fukushima mass evacuation trial team holds urgent press conference

From the appeal

If something like this, in which a cartoon depicting the fact that many people know that nosebleeds were common among the residents after the Fukushima Daiichi nuclear accident is heavily bashed not only by the private sector but also by the government and public authorities, goes unchallenged, parents in Fukushima will not only have to worry about radiation, but will also be unable to talk about the facts they have experienced in reality. They will not even be able to talk about the facts of their actual experiences, let alone their fears about radiation. The people of Fukushima are victims who bear no responsibility for the nuclear accident. The attacks on Mishinbo by the government, Fukushima Prefecture, Futaba Town and others have further oppressed the people of Fukushima, who have been forced to flee their homes, lose their jobs, lose their local communities, have their families broken up, are worried about their health, and are exhausted by a life with no clear future. We are firmly protesting against this. We are resolutely protesting against this!

- And I would like to ask the citizens whether they can allow such an abnormal society to emerge. This is not just a Fukushima problem. How is this country, where people cannot speak out about their fears of radiation because it would hinder reconstruction, different from the country 70 years ago, where people could not speak out about their fears that the war would be lost because it would hinder the morale of the soldiers?
- I think this is a question that confronts each and every one of us as to what kind of country we are going to make of this country.

2022.1.1 Severe criticism of a letter by five former Prime Ministers, including Junichiro Koizumi, to the European Commission.

'Many children suffer from thyroid cancer'

Bashing from Fukushima Governor, Environment Minister Yamaguchi, Reconstruction Minister Nishime, Prime Minister Kishida, LDP, Restoration Association, DPJ, etc.

What is the aim? ➡ Not to silence the five former prime ministers. The aim is to make the victims of radiation exposure give up speaking out by making a high profile move.

・According to a survey conducted by the “3/11 Thyroid Cancer Children‘s Fund”, the proportion of children and their families who have childhood thyroid cancer who think that the cancer is related to the nuclear accident is approximately 60%, including those who answered ’to a great extent‘ and ’a little’.

・Various other health problems are also noticeable, and many people suspect a link with radiation exposure.

・A society has been created in which it is difficult to voice such concerns.

Part 2

On the 3/11 children’s thyroid cancer

1. Outline of the suit

- Filed suit on 27.1.2022, Tokyo District Court, 2022 (wa) No. 1880, 3rd 2nd Civil Division
- Defendant is Tokyo Electric Power Company Holdings, Inc.
- Why were the national government and Fukushima Prefecture not named as defendants?
- The amount claimed is between 88 million yen and 110 million yen.
- 6 plaintiffs initially, 1 additional plaintiff (17-27 years old, 2 males and 5 people)
- 18 defence lawyers.

Introducing the plaintiffs

- 6-16 years old at the time of the accident in question (1 senior class, 1 primary 6, 1 junior high 1, 1 1 junior high school 2, 2 junior high school 3 and 1 high school 1)
- Place of living at the time: Soso area 1, Nakadori 5, Aizu 1
- 3 had unilateral thyroidectomy, 4 had total thyroidectomy (1 of them had 4 surgeries, 1 of them was diagnosed with lung metastasis, 1 was told that he may have to have another operation). One has been advised of the possibility of re-operation).
- Four were treated with RAI.
- One dropped out of university and one left his place of employment.
- Currently 3 company employees, 2 part-time workers, 1 high school student and 1 unemployed

They were innocent and naive

- School was out of session and he went out on his bicycle to the arcade, karaoke, bowling, etc.
- On 16 March Walked to junior high school and asked if he had passed or failed the high school entrance exam. Spent a lot of time talking with friends outdoors.
- Went out of doors to pick up assignments at the high school he had been accepted to, to take measurements for his uniform, to buy water, food, etc.
- He had no knowledge about radiation exposure and played outside. They were not even warned.
- I played with friends every day at friends' houses, supermarkets, karaoke places, etc.
- The family did not pay attention to the foodstuffs.
- At school, physical education classes were held without any change. In summer, there were no air-conditioners in the classrooms and the windows were opened all the way and fans were turned on.
- Parental regret: "We should have evacuated them for at least a week or a month."

Diagnosis and treatment of cancer

- Notification ➡One person in his/her 20s, one in his/her second year of university, two in his/her first year of university, two in his/her second year of high school and two in his/her second year of secondary school. 1 in 1st year.
- Fear of puncture cytology.
- 'I was told that if I didn't have the operation I wouldn't live to be 23.'
- Pain of surgery (so much pain that I thought it would be better to die) Mental instability and inability to sleep alone at night
- Shock of recurrence
- Pain of RAI treatment
- Need to take thyroid hormone preparations throughout life. Difficulty in adjusting dosage, resulting in ill health.

Impact, anxiety

- I dropped out of the university I wanted to enter.
- I was able to join the company I wanted but had to quit.
- Gave up the job I wanted. I want to become a stable civil servant.
- Poor physical condition (stiff shoulders, tiredness, swollen feet, numbness in hands and feet, rough skin, easy to catch cold. Pneumonia, asthma. Feeling depressed. (e.g. irregular menstruation)
- Anxiety about recurrence (two have been informed of the possibility of re-operation).
- Can't even talk to friends about cancer. Do not want to see friends.
- Anxiety about marriage and childbirth, unable to think about it.
- Anxiety about future finances (cannot get medical insurance, cannot get a mortgage, etc.).
- Worried about surgical scars on the neck. Cannot wear swimming costumes or T-shirts.

Developments in the court case

- 27.1.2022 Filed a lawsuit
- (Crowdfunding: 17 million yen raised, far exceeding the target of 10 million yen)
- 26.5.2022 First date for oral arguments (226 people tried to attend, though only 27 seats were available).
- (The plaintiff 2 made a statement of his opinion.
- 7.9.2022 Second date for oral argument (157 people tried to attend, though only 25 seats were available)
- (157 people tried to attend the hearing, though only 25 seats were available) (Statement of opinion by plaintiff 6)
- Immediate issues
- (The court promised to use the large courtroom from March next year.)
- Problem of plaintiffs' statements of opinion ➡Possible until next March. After that, undecided.

We now know the gist of TEPCO's claims.

- 1 Equivalent thyroid doses of 100 mSv or less do not cause thyroid cancer.
- 2 The equivalent thyroid doses of the plaintiffs are below 10 mSv (based on the UNSCEAR 2020/2021 report).
- 3 The thyroid cancers found in the Prefectural Health Surveys are overdiagnosed, not multiple thyroid cancers.
- Therefore, the thyroid cancer of the plaintiffs is not caused by radiation.

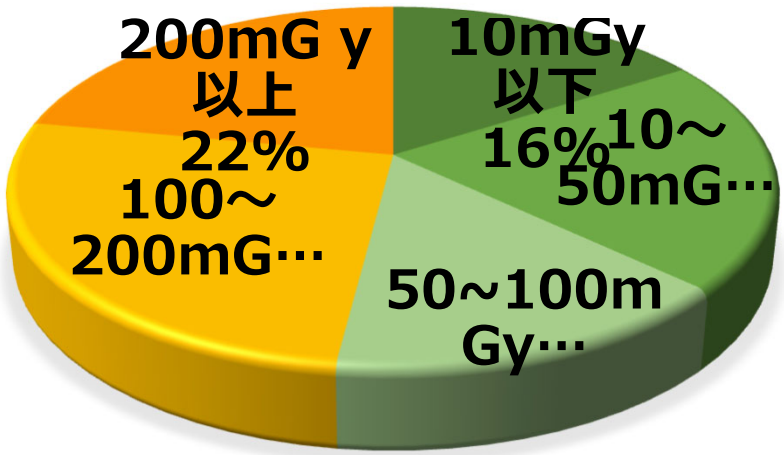
Discussion Point No. 1

The increase in childhood thyroid cancer is recognised by the equivalent thyroid dose (absorbed dose) from how many millisieverts? <Rationale 1>

<Rationale 1> Tronko paper (data on pediatric thyroid cancer patients in Ukraine) (Thyroid all 25)

❖Childhood thyroid cancer is caused by thyroid equivalent doses much lower than 100 mSv.

	1996-1999年		1990-1997年	
	人数	%	人数	%
10mGy以下	54	15.6	35	11.2
10-50mGy	71	20.6	62	19.9
50-100mGy	52	15.1	46	14.8
100mGy以上	168	48.7	168	54.1



Data source: 1999 paper by the Director of the National Institute of Endocrinology of Ukraine, Tronko.

Discussion Point No. 2

Have the plaintiffs been exposed to thyroid exposure to the extent that there is an increase in childhood thyroid cancer?

Actual measured data on equivalent thyroid doses are scarce.

The equivalent thyroid doses of the children are not known. **It is the responsibility of the State for not checking, not the responsibility of the plaintiffs. In the Chernobyl accident, the Soviet Union at the time directly measured hundreds of thousands of children. (Complaint, p. 27)**

"The 1080 tests" in Defendants' Argument 1 are not helpful because the tests were sloppy.

①Adopted an unrealistic continuous inhalation model for exposure patterns.

→The screening level was as high as "0.2 μSv/hour".

Assuming a realistic one-time inhalation model, it should be "0.066-0.10 μSv/hour".

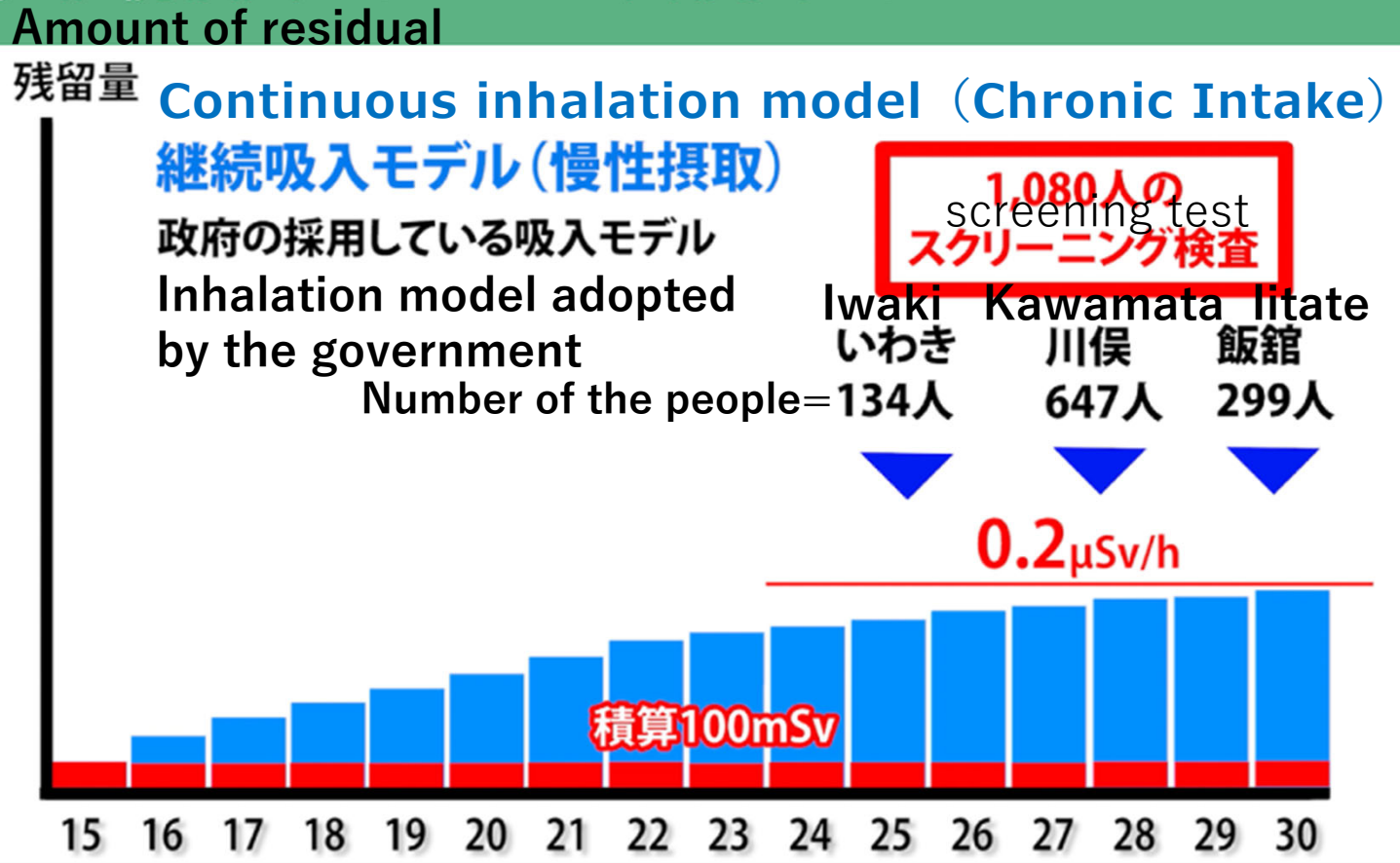
② Background values to be deducted

The air dose at the measurement location should be used. However, the measured values on the subject's clothed surface were used.

① CONTINUOUS INHALATION MODEL AND ONE-TIME INHALATION MODEL

① 継続吸入モデルと１回吸入モデル

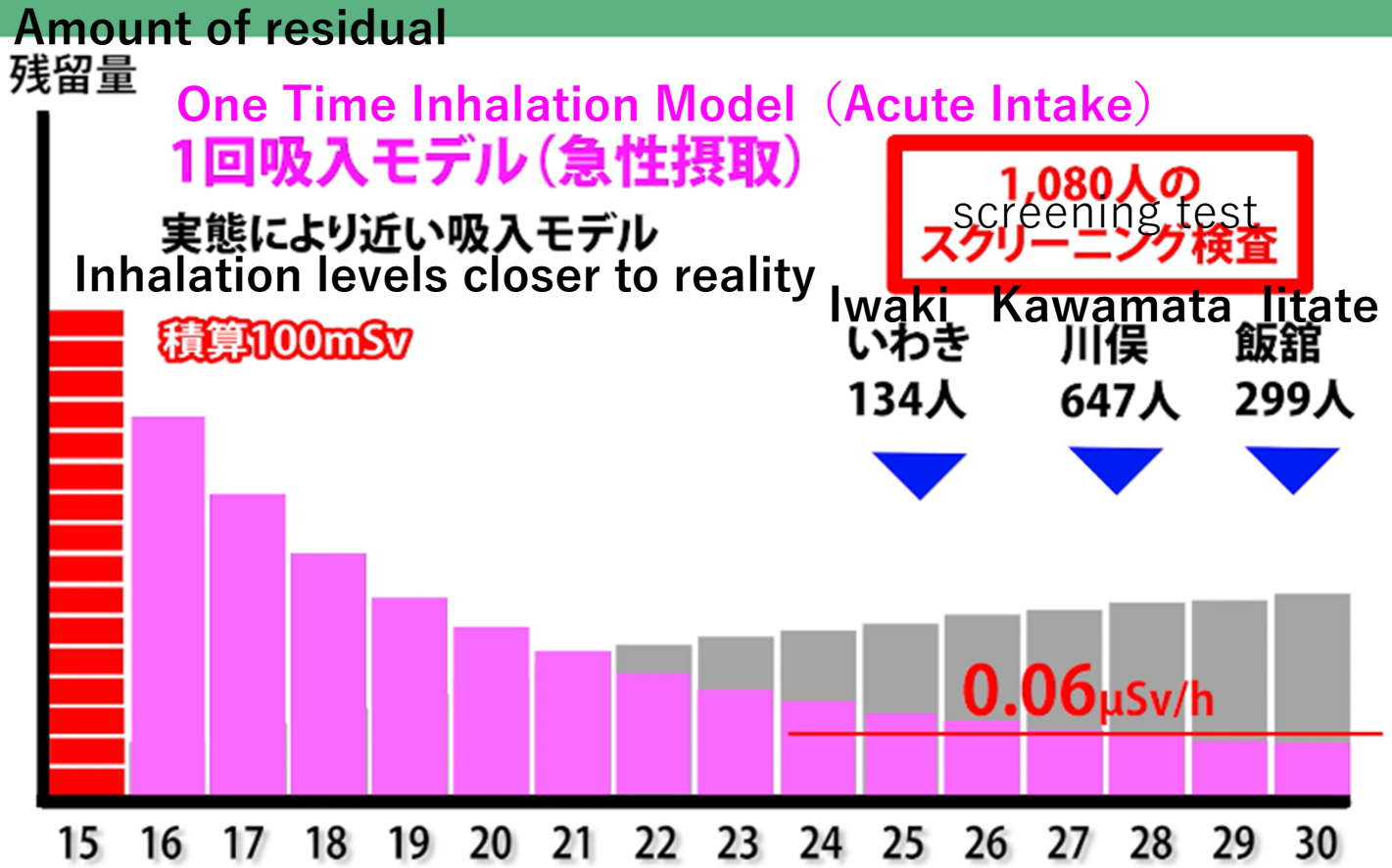
動画



① CONTINUOUS INHALATION MODEL AND ONE-TIME INHALATION MODEL

① 継続吸入モデルと１回吸入モデル

動画



② EXCESSIVE BACKGROUND VALUES

Where air dose at the measurement location should have been used, the

The measured values on the subject's clothed surface were used, whereas the air dose at the measurement location should have been used.

→Æ Background values became too large.

➡ A number of children had zero exposure.

Some children were even exposed to a negative value.

Thyroid exposure study
'Background information on the investigation of childhood thyroid exposure.'
(Nuclear Safety Commission), p. 4/5 of Appendix 13.
(Measurement data from Kawamata Town Community Centre on 28 March)

実測値	バックグラウンド値	正味値
0.10	0.10	0
0.10	0.10	0
0.10	0.10	0
0.10	0.10	0
0.10	0.11	−0.01
0.09	0.09	0
0.12	0.12	0
0.10	0.10	0
0.10	0.10	0
0.09	0.09	0
0.10	0.10	0
0.11	0.11	0
0.09	0.09	0
0.09	0.09	0
0.09	0.09	0
0.11	0.11	0
0.11	0.11	0

Is the radiation dose in Fukushima low?

Soil contamination of primary school grounds - Japan Atomic Energy Agency.

福島県の小学校校庭のヨウ素131およびセシウム134、セシウム137の土壌汚染濃度

土壌採取日　2011年4月5日または6日

施設番号	地点名	名称等	土壌汚染濃度 土壌汚染 【ベクレル／kg】 I-131	Cs134	Cs-137	土地汚染 (1) 【ベクレル／m2】 I-131	Cs-134	Cs-137	沈着核種による外部被ばく mSv 屋外	遮蔽有	再浮遊核種による内部被ばく	合計（2） mSv
1	県北1	福島市立第一小学校	8,190	2,950	3,600	533,000	192,000	234,000	9.30	0.25	0.62	6.20
2	県北2	福島市立大久保小学校	5,950	3,520	4,100	386,000	229,000	267,000	10.80	6.50	0.53	7.03
3	県北3	二本松市立岳下小学校	6,220	5,300	6,730	404,000	345,000	437,000	16.70	10.00	0.66	10.7
4	県北4	伊達市立保原小学校	5,650	3,890	4,390	367,000	253,000	285,000	11.83	7.10	0.53	7.63
5	県北5	川俣町立山木屋小学校	29,900	13,000	16,100	1,950,000	845,000	1,050,000	41.00	24.60	2.40	27.0
6	県中1	郡山市立金透小学校	3,100	2,650	3,110	201,000	172,000	202,000	8.13	4.88	0.32	5.20
7	県中2	郡山市立熱海小学校	1,700	1,200	1,490	111,000	78,100	96,600	3.76	2.26	0.16	2.42
8	県中3	須賀川市立第二小学校	1,240	2,290	2,750	80,300	149,000	178,000	7.04	4.23	0.20	4.43
9	県中4	田村市立船引小学校	1,570	777	898	102,000	50,500	58,400	2.39	1.43	0.13	1.56
10	県中5	平田村立蓬田小学校	597	741	947	38,800	48,200	61,600	2.34	1.40	0.08	1.48
11	県南1	白河市立白河第一小学校	717	358	401	46,600	23,300	26,100	1.09	0.65	0.06	0.71
12	会津1	会津若松市立鶴城小学校	497	445	535	32,300	28,900	34,800	1.38	0.83	0.05	0.88
13	会津2	喜多方市立第一小学校	259	264	351	16,800	17,200	22,800	0.85	0.51	0.03	0.54
14	南会津1	南会津町立田島小学校	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	相双1	南相馬市立原町第一小学校	2,820	2,050	2,260	183,000	134,000	147,000	6.18	3.71	0.27	3.98
16	相双2	相馬市立中村第一小学校	1,590	1,270	1,260	103,000	82,800	81,800	3.70	2.22	0.16	2.38
17	相双3	浪江町立津島小学校	20,400	8,510	10,000	1,330,000	553,000	653,000	26.40	15.90	1.60	17.5
18	いわき1	いわき市立平第一小学校	4,850	451	462	315,000	29,300	30,000	1.43	0.86	0.28	1.14
19	いわき2	いわき市立勿来第一小学校	1,260	272	287	81,600	17,700	18,700	0.83	0.50	0.08	0.58
20	いわき3	いわき市立四倉小学校	6,180	637	770	402,000	41,400	50,100	2.11	1.27	0.37	1.63

ヨウ素131　185万－555万ベクレル／m2
37万－185万ベクレル／m2
18.5万－37万ベクレル／m2

【出典】福島県小学校等に関する線量評価　日本原子力研究機構　安全研究センター　2011年4月14日
表1 各施設の土壌汚染濃度と積算線量の推定値(1年間での積算実効線量)
(1) Bq/kgをBq/m2に換算する際には、土壌密度1.3g/cm3、採取厚さ5cmを仮定した。
(2) 積算実効線量の合計値は、遮へい有りの場合の外部被ばくと内部被ばくを合計してまるめた値である。

http://www.nsr.go.jp/archive/nsc/info/20120413/siryo_set.pdf　p.56

【編集】　川根　眞也

iodine-131 is comparable to Mogilyov in Belarus。

iodine-131 is comparable to Gomeli in Belarus.

施設番号	地点名	名称等	土壌汚染濃度			
			土壌汚染 【ベクレル／ｋｇ】			土地汚染
			I-131	Cs134	Cs-137	I-131
1	県北1	福島市立第一小学校	8,190	2,950	3,600	533,000
2	県北2	福島市立大久保小学校	5,950	3,520	4,100	386,000
3	県北3	二本松市立岳下小学校	6,220	5,300	6,730	404,000
4	県北4	伊達市立保原小学校	5,650	3,890	4,390	367,000
5	県北5	川俣町立山木屋小学校	29,900	13,000	16,100	1,950,000
6	県中1	郡山市立金透小学校	3,100	2,650	3,110	201,000
7	県中2	郡山市立熱海小学校	1,700	1,200	1,490	111,000
8	県中3	須賀川市立第二小学校	1,240	2,290	2,750	80,300
9	県中4	田村市立船引小学校	1,570	777	898	102,000
10	県中5	平田村立蓬田小学校	597	741	947	38,800
11	県南1	白河市立白河第一小学校	717	358	401	46,600
12	会津1	会津若松市立鶴城小学校	497	445	535	32,300
13	会津2	喜多方市立第一小学校	259	264	351	16,800
14	南会津1	南会津町立田島小学校	nd	nd	nd	nd
15	相双1	南相馬市立原町第一小学校	2,820	2,050	2,260	183,000
16	相双2	相馬市立中村第一小学校	1,590	1,270	1,260	103,000
17	相双3	浪江町立津島小学校	20,400	8,510	10,000	1,330,000
18	いわき1	いわき市立平第一小学校	4,850	451	462	315,000
19	いわき2	いわき市立勿来第一小学校	1,260	272	287	81,600
20	いわき3	いわき市立四倉小学校	6,180	637	770	402,000

Radioactive contamination in Belarus
Outside I.I. Matviyenko (10.5.1986).

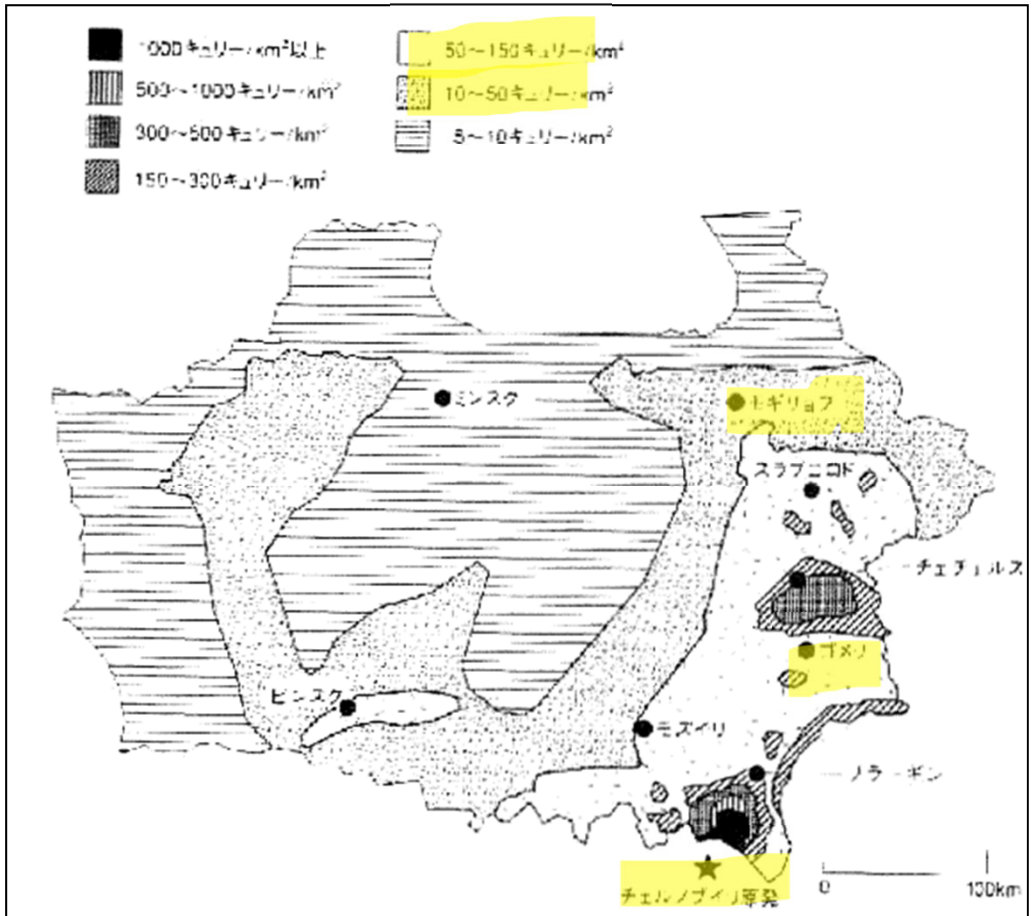


図2　ヨウ素131によるベラルーシの地表汚染密度（1986年5月10日）

50-150 curies/㎢ = 1.85-5.55 million bq/㎡

10-50 curies/㎢ = 370,000-1,850,000 bq/ ㎡

This data is 14 days after the accident, while the Fukushima data is 21-22 days after 15 March, when a large amount was released. Therefore, for comparison, the Fukushima data must be doubled. (Iodine-131 has a half-life of 8 days)

Increase in decontamination standard to 100,000 cpm

- The decontamination standard was set at 13,000 cpm on the body surface.
- The figure was derived on the basis that in such an environment, inhaled radioactive iodine would be equivalent to an equivalent thyroid dose of 100 mSv for a one-year-old child.
- However, Fukushima Prefecture raised the decontamination standard to 100,000 cpm.
- According to Fukushima Prefecture's announcement, 102 people exceeded 100,000 cpm, or 10,000 from 13,000 cpm to 100,000 cpm. 901 people were over 100,000 cpm.

Is intake from food underestimated
(from Kusa Shiraishi, 'Verifying 'oral intake' thyroid exposure', in Iwanami Kagaku 2021/9)

- The government set provisional regulation values (2000 becquerels for vegetables and 500 becquerels for drinking water and milk for iodine) on 17 March.
- The first shipment restrictions were imposed on 21 March (only spinach and kakina from Fukushima, Ibaraki, Tochigi and Gunma prefectures and raw milk from Fukushima Prefecture).
- After that, foodstuffs that were not measured were still in circulation.
- Distribution continued to function within Fukushima Prefecture after 3/11.
- Data were hidden.

【 18 - 19 March. 】

48,000Bq/kg of iodine-13 from chives in Fukushima City. 1, 76,000Bq/kg iodine-132, 64,000Bq/kg cesium-134,64,000Bq/kg caesium-137

43,000Bq/kg of iodine13 from spinach in Otama Village 1,73,000Bq/kg iodine-132

Variety of information

1　Local task force radiation team meeting 25 March

（1）256,000 becquerels/kg of iodine-131 in soil in Iitate village (equivalent to 16.64 million becquerels/m2)

（2）Iodine-131 in weeds 1.1 million becquerel/kg

2　Ministry of the Environment environmental data measurement results

（1）16 March Weeds in Tsushima, Namie Town 1.44 million becquerel/kg

（2）16 March Weeds in Iwaki city 1.31 million becquerel/kg

Open-air vegetables at that time may have been contaminated to the same extent as these weeds.

Detection in breast milk

In late March 2011, radioactive iodine was detected in breast milk of mothers in Ibaraki and Chiba prefectures.

(1) Mother in Kashiwa, Iodine-131 36.3 becquerel/kg

(2) Mother in Moriya City Iodine-131 31.8 becquerel/kg

(3) Two mothers in Tsukuba City 8.7 becquerel/kg and 6.4 becquerel/kg

•MHLW tested breast milk of 7 mothers in Ibaraki and Chiba prefectures from 24.4.2011 to 5.9.2011. 2.2-8.0 becquerel/kg detected.

➡ NIRS calculations Equivalent thyroid doses are 119-432 mSv for mothers and 345-1199 mSv for infants under the 'acute intake scenario'.

Radioactive iodine in the air

- Monitoring data from Momijiyama, Fukushima City

Plume attacked Fukushima City between 15:00 on 15 March and 3:00 on 16 March.

Iodine-131 in the air between 17:00 and 18:00 on 15 March 10,000 9,100 becquerel/m3

Breathing rate of a 10 year old child is about 15 m3 per day

Then, a 10-year-old child would have inhaled 12,000 becquerels of iodine-131 just by being outside the door for one hour. （19100Bq×15m^3/24）＝11937bq

This plume alone would result in a thyroid equivalent dose of several tens of mSv.

(Discussion Point 3) Is the large number of childhood thyroid cancers found in the Prefectural Health Survey an overdiagnosis?

•Basis for overdiagnosis ➡ Many latent cancers, Korean experience.

The design of the Fukushima Prefectural People's Health Survey is carefully crafted to prevent overdiagnosis.

(1) Even if there are nodules smaller than 5 mm, they are not sent for secondary examination (the majority of latent cancers are smaller than 5 mm).

(2) Nodules larger than 5.1 mm are sent for secondary examination, but only a fraction of them are subjected to puncture cytology (initially around 40%, recently no more than 10%)

(3) Suspected malignancy by puncture cytology does not mean immediate surgery. Surgery is performed only in cases that meet the indications for surgery, taking into consideration the speed of progression, presence or absence of extracapsular invasion, presence or absence of metastases to lymph nodes, etc., size, location (proximity to the recurrent nerve and trachea), etc.

(4) Dr Shinichi Suzuki ➡There is no overdiagnosis.

Number of pediatric thyroid cancer patients in Fukushima Prefecture

(284 + 43 not counted = 327)

検討委員会で公表された甲状腺がんの人数

	対象者数	受診者数	B・C判定	2次検査受診者	診断確定	A判定以外	穿刺細胞診			手術済み
							受診者数	経過観察	悪性疑い	がん
1巡目	367,637	300,472	2,294	2,130	2,019	1,380	547	431	116	102
		81.7%	0.62%	92.9%	98.2%	66.0%	39.6%	78.7%	21.2%	101
2巡目	381,237	270,552	2,230	1,877	1,834	1,404	207	136	71	56
		71.0%	0.8%	84.2%	97.7%	76.6%	14.7%	65.7%	34.3%	56
3巡目	336,667	217,992	1,502	1,104	1,068	959	79	48	31	29
		64.7%	0.7%	73.5%	96.7%	89.8%	8.2%	60.8%	39.2%	29
4巡目	294,228	183,407	1,392	1,036	1,013	919	91	52	39	34
		62.3%	0.8%	74.4%	97.8%	90.7%	9.9%	57.1%	52.4%	34
5巡目	252.902	74,964	869	517	435	385	32	21	11	6
		29.6%	1.2%	59.5%	84.1%	88.5%	8.3%	65.6%	34.3%	6
節目	108,713	9,841	504	353	345	320	31	15	16	10
		9.1%	5.3%		97.7%	92.8%	9.7%	58.0%	42.9%	10
合計						5,367	987	703	284	がん237

1巡目は2018年3月30日、3巡目は2021年3月31日、2、4、5巡目、節目は2022年3月31日現在のデータ

2022.8.15 Study committee announcement, from Awaplanet TV website.

Original number of childhood thyroid cancer patients

[data compiled by the Regional Cancer Registry 1998-2007, Literature Ido] [per million people].

Age 年齢	Male 男	Female 女	Total male/female 男女計
0～4歳	0	0.5	0.2
5～9歳	0.1	0.3	0.2
10～14歳	1.7	2.8	2.3
15～19歳	2.8	8.7	5.7
0～19歳			2.3

From 380,000 people in Fukushima Prefecture, there would normally be only one person per year

Furthermore, even the UNSCEAR 2020/2021 report, which the defendant claims is based on speculated on the development of thyroid cancer (B No. 4).

“The Committee estimates that the municipal average of absorbed thyroid doses in the year immediately following the accident is a maximum of approximately 30 mGy for infants who were evacuated, and a maximum of approximately 20 mGy for infants who remained in areas not subject to evacuation." （**para 220, p. 82**）

“Women who were from foetus in utero to five years of age at the time of initial exposure constitute the most sensitive subgroup. For this subgroup, the assumed risk model could estimate that around 16-50 cases of thyroid cancer could be attributed to radiation from the estimated exposure doses ”
（**para222, p. 83** ）

Recent developments among young people

- Many are not in good physical condition. Some young people have poor thyroglobulin levels (tumour markers). The situation is not optimistic.
- Encouraged by the support of many people through crowdfunding, listening, signatures and others.
- There is a growing realisation that it is not just their problem.
- Struggle for statements of opinion. Facing up to painful feelings that had been sealed away and weaving words out of them. The satisfaction of having done it all.

Statement of opinion by plaintiff2

- I used to think that I would do my best in treatment to get better, but now I hope that the disease does not progress as far as possible.
- But I didn't really want to quit university. I wanted to graduate. I wanted to graduate from university and get a job in a field I was good at. I wanted to try 'job hunting' as a new graduate. I wanted to have casual conversations with friends, like "How was your job hunting? I wanted to spend my university life having casual conversations with my friends, like "How was your job hunting? Now it is an unfulfilled dream, but I can't give up. My friends who graduated from junior high and high school together have already graduated from university, found jobs and are leading stable lives. I can't help but look at them with envy. I don't want to be jealous of my friends, but it's hard to feel that way.

Statement of opinion by plaintiff 6

- Everything has changed, my way of thinking, my character and my dreams for the future, while I still don't have a clear idea of what I want to do in the future. So I don't really know what I want to do in the future. I just want to become a civil servant who can lead a financially stable life. I believe that love, marriage and childbirth are out of the question for me.
- For me, high school life is not so much about enjoying my youth, but more about getting school recommendations for a stable future and for university entrance. I keep my distance from my friends, as deep relationships are troublesome. Still, sometimes I have trouble sleeping because of the pressure to study and the anxiety about the future
- I am worried about my future. In particular, I am most anxious about my finances. What will happen to my future medical expenses if I turn 18 and cannot even afford medical insurance? What will I do with my life if my illness worsens? I am really anxious.

Plaintiffs' thoughts(1)

- At the very least, they should be compensated to the extent that they are able to adequately pay for the financial uncertainty caused by having thyroid cancer.
- I feel bitter that I have placed a financial burden on my family as a result of having thyroid cancer and would like to seek compensation. I would like medical support to be provided as a system. By bringing the case to court, we hope that we can help change the current situation in Japan, which stubbornly denies any causal link between the nuclear accident and childhood thyroid cancer and is trying to reduce the number of thyroid tests. I sincerely hope that society will become a place where the children of Fukushima, who have a future, can live in safety and security.
- If there are people who have thyroid cancer after the nuclear accident but are unable to say anything and keep it to themselves, I hope to be able to help them. Through contact with other plaintiffs, I found out that there are people who feel the same way as me and who are carrying more painful feelings than me. I want people to understand that there are people suffering from thyroid cancer. Many children in Fukushima Prefecture have thyroid cancer. I believe that the cause of my thyroid cancer is none other than the nuclear accident.

Plaintiffs' thoughts(2)

- Many people who were children, including myself, are suffering from thyroid cancer. I want it to be acknowledged that thyroid cancer was caused by the nuclear accident. I wish to help those who are suffering alone without being able to raise their voices.
- It was a major accident of global scale, but I think the situation was extremely unnatural that we, the people concerned, were living a normal life without proper recognition of the risks, even though we were in an environment that was heavily affected by the accident. I believe that there should have been minimum things that each of TEPCO, the national government and local authorities should have done or could have done in response to the accident. Without correct information about the accident and a proper understanding of the dangers of radioactive materials among the population, it is impossible to properly deal with the situation that has occurred. They should have been able to decide for themselves how to deal with the situation, but they were deprived of the opportunity to even make that decision. I want to clarify whether there is a causal link between my thyroid cancer and the Fukushima nuclear accident.
- Many people say it has nothing to do with the nuclear power plant, but I am not convinced at all. I feel anger that I have nowhere to go. Not only for myself, but also for many other thyroid cancer patients, I want to clarify the causes and clarify where the responsibility lies through this lawsuit in order to provide relief to the patients.

Significance of this trial

•Significance for the plaintiffs

Instead of being devastated by the damage or giving up, they can look forward and live from that point onwards.

•Significance for the victims

To make a breakthrough in getting the government to recognise the health damage caused by the Fukushima nuclear accident. To use the trial as leverage for a support framework similar to the Atomic Bomb Survivors Relief Law.

•Significance for Japan's and the world's radiation exposure policy

Clarify that Japan's extreme policy of underestimating radiation exposure (1 mSv ➡ 20 mSv, etc.) was a mistake. This will have an impact on global exposure policies.

Conclusion

- More than 300 pediatric thyroid cancers
- According to the cancer registry, various cancers are also increasing in Fukushima. According to reimbursement-based data (DPC Data), other diseases are also increasing. Some people think there is a relationship with radiation exposure, some think there is not, and some think they don't know.
- There are still tens of thousands of evacuees who have not returned.(The government does not even have the exact number.)
- I can understand that reconstruction is important.
- Instead of assuming that there is no health damage due to radiation exposure, and cutting the victims off, isolating them, and dividing people, we should investigate the facts, not hide information, discuss openly, respect and support various thoughts and ideas about radiation exposure, and then move forward with the recovery process with everyone involved.
- The idea that "exposure should be avoided as much as possible" should be reinstated.