The Asia-Pacific Journal: Japan Focus
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The Asia-Pacific Journal, Vol 11, Issue 22, No. 1, June 2, 2013.

Life and Death Choices: Radiation, children, and Japan's future 生死を分ける選択ー放射線、子どもの健康、そして日本の未来

Two years after the start of Japan's nuclear disaster, parents fear for their children's future.

David McNeill

Like most fathers, Fujimoto Yoji frets about the health of his young children. In addition to normal parental concerns about the food they eat, the air they breathe and the environment they will inherit, however, he must add one more: the radioactive fallout from a major nuclear disaster.

Three days after meltdown began at the Fukushima Daiichi nuclear plant on 11 March, 2011, Fujimoto moved his two daughters, then aged four and three, to safety hundreds of kilometers away. In December, 2012 the eldest of the two was diagnosed with adenoidal cysts, the prelude to a type of cancer that often strikes the salivary glands. "I was told by the doctor that it's very rare," he says.

Although Mr Fujimoto and his family were in Chiba Prefecture, over 100km (60 miles) from the nuclear plant and in the opposite direction from the worst of the fallout, he believes his daughter inhaled enough radiation to cause her illness. "I'm convinced this is because of the Fukushima accident."

On May 31, 2013 the United Nations said it did not expect to see elevated rates of cancer from Fukushima, though it recommended continued monitoring <link>. The report by the U.N. Scientific Committee on the Effects of Atomic Radiation said prompt evacuation meant the dose inhaled by most people was low. But that assessment was at odds with a report by the World Health Organization in February that warned of an elevated cancer risk.

Tokyo Electric Power Co., operator of the Daiichi plant, estimates the final tally for escaped radiation at 900,000 terabecquerels, about one-fifth the amount released by the Chernobyl accident in 1986. Most was vented in the first three weeks after the Fukushima meltdown began. Critics of the utility say the estimates are far too low. <link>

The precise impact of this radiation is bitterly contested, but at least one finding from Chernobyl seems consistent – elevated rates of thyroid cancer in children. *The Chernobyl Forum*, a 2003-05 United Nations-led study, cited close to 5,000 cases of thyroid cancers among those exposed under the age of 18 in the most affected areas, probably from drinking contaminated milk. Many scientists believe it takes four to five years before the cancers develop.<link>
Although rumors of a spike in cancers, birth defects and abnormalities have swirled in the quarter century since Chernobyl, the UN found "no clearly demonstrated" rise in other cancers among affected populations. But that assessment has been widely questioned. "There is extensive documentation of other effects," says Steve Wing, a renowned epidemiologist at the University of North Carolina.

Dr. Wing accepts that estimating the number of Chernobyl-induced cancers with any precision is not possible, "in large part because of a lack of monitoring of the radiation doses to downwind populations", and because cancer estimates are largely based on "highly flawed" studies of A-bomb survivors.

But he says parents like Mr. Fujimoto have reason to worry. "We know that doses to populations are both un-quantified by the official agencies, that evidence suggests relatively high doses, and that children and women are more vulnerable to radiation. So the questions and deep concerns for the people in Fukushima will continue for the rest of their lives."

That assessment is supported by Dr Alexey Yablokov, a Russian biologist who published "Chernobyl: Consequences of the Catastrophe for People and the Environment," a hotly disputed assessment of the disaster. <link>

Dr. Yablokov was in Japan in May to promote the Japanese translation of the book, which insists that the health impact of Chernobyl has been seriously underestimated. He didn't soften his message for his audience in Tokyo. "I expect a growth in the numbers of thyroid cancers in Japan from next year," he said. <link>

Critics say one problem with Chernobyl research is that the then Soviet government initially tried to play down the disaster, skewing the statistics. The government of Fukushima Prefecture has promised lifelong health checks for 360,000 people under-18 at the time of the disaster.

In February, the government said it had found just three cases of thyroid cancer after checking 38,000 people, a figure Suzuki Shinichi, Professor of thyroid surgery at Fukushima Medical University, said was statistically insignificant. "It's difficult to imagine that there is a relationship between the cancer and the nuclear accident," he said, to widespread scorn from parents.<link>

Nishitaka Kanako, a single mother of two, says many have no faith in government surveys. Born and raised in Fukushima city, about 60km from the nuclear plant, she moved away in May 2011 after doctors found cesium in her daughter Fuu's body. "I was told it was about the same amount as people exposed to nuclear bomb tests," she recalls. "The scientists who do these surveys tell us to move back home but I wonder if they would take their own children to Fukushima?"

Many parents point to a recent finding that over 40 per cent of nearly 95,000 children checked by Dr Suzuki's team had thyroid

Steven Wing

ultrasound "abnormalities". About 35 per cent had nodules or cysts on their thyroids.

The cysts and nodules are not cancers but they point to an inevitable spike in future health problems, says Mr Fujimoto – a view contested by the government. "I have absolutely no faith in what the Fukushima government is saying," he retorts. "They want people to go back and live there so they clearly want to keep a lid on the impact of the disaster."

Parents accuse government scientists of making their minds up before the survey began – Professor Suzuki's team said last July that their aim was "to calm the anxiety of the population."

Iwata Wataru, who heads a non-profit group that measures radiation, believes that's an abuse of science. "A scientific study is normally designed to detect an effect and lead the investigator to accept or reject a stated hypothesis," he said. "In this case, they have a strong prior belief that there is no physical effect of exposure." Iwata wants more independent testing.

In the absence of a consensus on the likely impact of the Fukushima accident, the debate has hardened into two sides: people like Fujimoto an Iwata who say the authorities are playing down or even covering up the disaster, and the increasingly vocal official view that their worries are overblown. Those who stray too far from the official line risk being accused of fear-mongering.

That criticism misses the point, says Mochizuki Iori, author of the blog Fukushima Diary. "I was exposed in the first week," he writes. "It's irreversible. Not so many people can share this feeling in the world. I check my thyroid, lymph and symptoms of other things that I don't even want to mention."

Doctors say children's thyroids, which help regulate the body's metabolism, are especially sensitive to radioactive iodine. The gland is very active during childhood development. A study published last year in the *International Journal of Cancer* found elevated risks of thyroid cancer in childhood survivors of Hiroshima and Nagasaki, 50 years after they were exposed to radiation. The study found over a third of 191 thyroid cancers in adults who were children at the time of the bombing were probably due to exposure. <link>

Whatever the scientists say, Mr. Fujimoto insists he won't be persuaded by government reassurances that it is safe to return to Fukushima. "There is so much information not getting out at the moment. It will be too late for my children when it is eventually released."

David McNeill *is the Japan correspondent for The Chronicle of Higher Education and writes for The Independent and Irish Times newspapers. He covered the nuclear disaster for all three publications, has been to Fukushima ten times since 11 March 2011, and has written the book* ***Strong in the Rain*** *(with Lucy Birmingham) about the disasters. He is an Asia-Pacific Journal coordinator.*

This is an expanded version of an article that appeared in The Independent on June 2, 2013.

Reccommended citation: David McNeill, "Life and Death Choices: Radiation, children and Japan's future," The Asia-Pacific Journal, Vol 11, Issue 22, No. 2, June 2, 2013.

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