



## 2. PUBLIC HEALTH: The daily news in Tokyo -- radiation levels

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**John J. Fialka, E&E reporter**

Television watchers and newspaper readers in Tokyo now have an addition to their daily weather reports. It is the daily radiation level, as measured in various parts of this sprawling city, which, according to the United Nations, is the most populated area in the world with more than 36 million people.

Just 150 miles to the northeast are the smoldering ruins of Fukushima No. 1, which was one of the world's largest complexes of nuclear power plants. The radiation levels there appear to have occasionally spiked to life-threatening levels, but so far the radiation readings in and around Tokyo have remained fairly close to normal background levels.

And so far heroic measures at Fukushima have prevented very large radiation releases that could occur among the four crippled plants. So the public health risks of Fukushima remain far below the world's worst nuclear accident, which occurred on April 26, 1986, at Chernobyl in the former Soviet Union. An explosion from that plant -- which had no protective containment structure and was designed to produce material for nuclear weapons -- sent a plume of radioactive debris over large parts of eastern and northern Europe.

Fifty deaths have been tied directly to Chernobyl, but radiation experts believe there was far more damage in terms of life-shortening diseases, such as cancer. "It is one of the more difficult things to know," explains Alan Lockwood, a neurologist who teaches nuclear medicine at the University at Buffalo of the State University of New York.

That is because there are few public health records or death certificates that emerge years later to trace the cause of death. "Confusion reigns supreme at times like this," explained Lockwood, who lists "time, distance and shielding" as the main factors that can reduce the health impact.

The prevailing winds at Fukushima take the radioactive smoke and steam from the crippled reactors out to sea and eventually this could reach the U.S. West Coast, but the risks there would be negligible because much of the debris would have become diluted or fallen out over the ocean.

### Misplaced panic in the U.S.

If the winds shifted in the direction of Tokyo, the best protection would be to remain indoors, Lockwood explained. The most potent chemical in the toxic mix from Fukushima would be iodine 131, an isotope of iodine that collects in the human thyroid gland and increases the risk of cancer.

Children are at the most risk from this and there is an antidote, potassium iodide, that can be taken to block the more harmful chemical from entering the thyroid.

Lockwood and other experts are not happy with reports of people in the United States buying up quantities of potassium iodide after hearing about Fukushima. "It should not be taken unless there is a genuine public health risk. You might die if you're allergic to iodine," he explains.



Right after the weather report, Tokyo television watchers get their daily radiation readings, expressed in microsieverts per hour. (Fifty microsieverts equals a chest X-ray.) The bull's-eye in the upper right is Fukushima 1. Photo courtesy [Flickr](#).

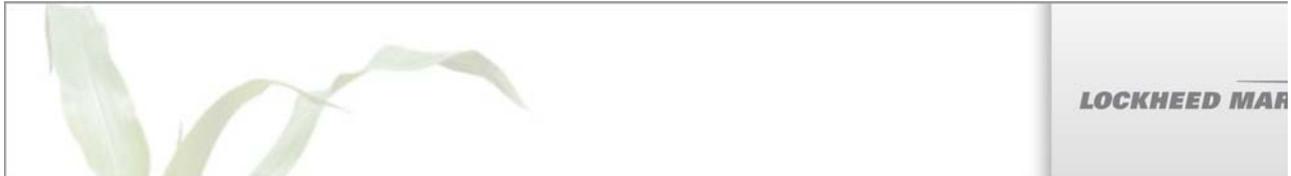
Compared to other radioactive isotopes in nuclear fallout, such as cesium and strontium 90, iodine 131 dissipates fairly quickly. It loses half of its radioactivity within eight days.

Yesterday, readers of the *Metropolis Magazine*, an English-language magazine in Japan, were introduced to its newest feature: "Tokyo Radiation Levels."

"Due to concerns about radiation in Tokyo from a number of our readers. Metropolis will publish daily radiation level (sometimes multiple times daily if relevant)," the magazine's editors explained.

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