

What's Your Radiation Risk?

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How serious is the risk of radiation exposure from Japan? Get the facts about contamination of air, water and food – and read why experts say the chances of being harmed by overseas radiation still are minuscule. The crisis at Japan's Fukushima Daiichi nuclear power facility has raised many questions about radiation.

Some worry about poison wafting to the U.S. in a radioactive cloud. Others have stockpiled potassium iodide, a possible radiation antidote. But how dangerous is the fallout that's reached our shores? What are the chances of contamination? What preventive steps can you take?

Here's what you need to know:

Could I (or my family) be harmed by radiation coming from Japan?

A trace amount of radioactive iodine from Japan's crippled Fukushima Daiichi nuclear reactor was detected in milk from Washington state, U.S. regulators said on March 30. The amount is well below levels that would cause health concerns, they added. Iodine-131, a radioactive form of iodine, has been found in states along the Eastern seaboard, from Florida to Massachusetts. It's also shown up in Oregon, Colorado and California, according to sensors and state officials, but in tiny amounts.

The radiation detected in Washington milk was 5,000 times lower than the Federal Drug Administration's standard. But the U.S. Environmental Protection Agency said it will increase its nationwide monitoring of radiation in milk, rain, drinking water and other outlets.

"These findings are a minuscule amount compared to what people experience every day," FDA scientist Patricia Hansen said in a statement. Southern California's South Coast Air Quality Management District publishes daily updates about radiation levels on its website. The chance of fallout affecting U.S. residents is "very low," says **Kei Iwamoto, Ph.D., adjunct associate professor of radiation oncology at the University of California-Los Angeles (UCLA)**.

"The risk of developing cancer from breathing polluted air in Los Angeles is higher than the risk of radiation fallout from Japan." In fact, fear of radiation may be the bigger problem, because that leads to stress, Iwamoto says. "When we expose mice to stress – ringing bells, turning lights on and off, for example – their cancers increase dramatically," he explains. So stop worrying and "live your life normally," Iwamoto says.

What is potassium iodide and how does it protect the body from radiation risks?

Large-scale radiation exposure usually affects the thyroid gland. Located in the lower part of the neck, this gland uses iodine to make and store hormones that help regulate heart rate, blood pressure and body temperature.

"It's like a pump that pulls in iodine, both the healthful kind – an essential nutrient found in salt and sea products – and dangerous radioactive iodine," Iwamoto says. Radioactive iodine can be released into the air and contaminate local food supplies during a nuclear event. If it's ingested and absorbed by the thyroid, it can injure the gland and raise cancer risks, even years later. That's where potassium iodide comes in. A common form of salt, it saturates the thyroid gland with non-

radioactive iodine. “The good iodine takes up all the room and [radioactive] iodine is pushed out,” Iwamoto says.

Is potassium iodide an effective radiation antidote?

Only for people close to the exposure, according to the California Department of Public Health.

And taking the pills when you don't need them can cause other health problems if you have an existing thyroid condition. Those who are allergic to shellfish could also be allergic to iodine, which is found in sea life and seaweed.

What are the risks to people near a failing nuclear facility?

Although the threat of radioactive contamination is low globally, those near the facility in Japan have reason to worry – especially mothers and pregnant women. A fetus's growing thyroid is more likely to absorb radioactive iodine than an adult's. If subjected to severe radiation exposure in the first month and a half of pregnancy, when the embryo is developing, the fetus usually aborts, Iwamoto says.

(What's “severe”? About 2 million microsieverts over a short period of time. Ordinary background radiation, from radon gases and cosmic rays – the kind we're all exposed to – provides about 2,000-3,000 microsieverts per year.) Because children are developing, they're slightly more sensitive to radiation effects than adults, says Iwamoto. Studies of Ukraine's Chernobyl disaster in 1986 showed that children exposed to radiation in that accident have lower cognitive function.

How dangerous is it to inhale radiation in the air?

Many people mistakenly believe that the greatest risk is from inhaling airborne radioactive isotopes. Actually, what's more hazardous is when radiation reaches the ground and enters the crop supply.

About 98% of radiation exposure following a nuclear accident comes from milk produced by cows. The radioactive material hits the ground, cows eat it in grass, other feed and water, and then it's processed in the cow's body. Trace amounts show up in the milk we drink, says the California Department of Public Health. That means parents near the exposed area in Japan can help protect their children by avoiding milk or other dairy products.

Here in the U.S., people are advised to check the Environmental Protection Agency website for daily and breaking air-quality updates.

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