



Q: What is the health risk of radiation from the Fukushima incident to people in the United States?

A: There is no health risk of radiation from the Fukushima incident to people in the United States or its territories, as the United States (US) Centers for Disease Control and Prevention, the US Environmental Protection Agency (EPA), the US Food and Drug Administration (FDA), and the US Nuclear Regulatory Commission (NRC) have affirmed.

Q: But radiation from Fukushima has been detected within the United States?

A: Yes. That's because we are able to detect very small amounts of radiation. Through the use of extremely sensitive equipment, US laboratories have been able to detect [very minute quantities](#) of radioactive isotopes in air, precipitation, milk, and drinking water due to the Fukushima incident. These trace amounts are detectable even though they don't add to peoples' everyday exposure by more than one part in [100,000](#). The radiation from Fukushima, though detectable, is nowhere near the level of public health concern, according to the [EPA](#), the [CDC](#), and the [FDA](#). Monitoring will continue, however, to make sure nothing changes.

Q: Would taking potassium iodide tablets be a prudent precaution?

A: No. Potassium iodide provides some protection only if appreciable amounts of I-131 get into our food and water. However, food contaminated with I-131 is not being exported from Japan. Moreover, the short half-life of I-131 (8 days) means that I-131 that has escaped from the Japanese reactors is decaying rapidly and will be undetectable anywhere in a matter of weeks. Side effects from iodide tablets are not typical, but [iodine tablets can be risky](#) for pregnant women and people who are allergic or have certain skin disorders. They can pose a hazard for people with heart and blood pressure problems. Too much iodine can cause a thyroid disorder in infants. Iodine tablets can occasionally cause side effects like nausea and rashes. Note that iodized salt is of no value as an anti-radiation medicine, as it is not possible to ingest amounts approaching an effective dose.

Q: What about the radiation risk to people living in Japan?

A: Radiation risks to people living in Japan are very low, and no public ill health effects are expected from the Fukushima incident. However, the possibility of long-term exposure to elevated radiation levels in some areas outside the Fukushima plant warranted action by the Government of Japan. People living within 12 miles of the plant have been evacuated, and people living within 19 miles have been advised to leave the area or to stay indoors and try to make their homes airtight. Residents of Iitate village 24 miles northwest of the plant have been told to prepare for evacuation during the next month, for an expected duration of at least 12 months.

The Japanese government initially advised against using tap water for infant formula when levels of I-131 temporarily exceeded recommended safe levels, but those restrictions were [lifted](#) in all areas except a small scale water supply at one village. Also, tests for plutonium in the Fukushima area found levels indistinguishable from normal background, and thus pose no health risk. The samples are being tested to determine if any of them contain plutonium from the power plants rather than from old nuclear weapon tests.

In an [appearance](#) before a U.S. Senate Subcommittee on March 30, NRC Chair Gregory Jaczko stated that he believes a 20-mile evacuation zone around the Fukushima Daiichi nuclear plant in Japan represented a "safe distance," given radiation readings around the damaged plant. Although there is no imminent danger for anyone in the general public outside the affected facilities, a precautionary 50-mile advisory for US citizens remains in effect.

Q: What about the radiation risk to people working at the site?

A: The Fukushima nuclear power plant workers are at risk for radiation exposure. However, they have extensive knowledge of how to minimize their exposure, training in the principles and practice of radiation protection, and portable radiation measurement instruments and protective gear. They are monitored closely to keep their exposure well below internationally accepted standards. While radiation workers have higher limits for radiation exposure because of the type of work they do, none of the Fukushima workers are expected to have ill effects related to radiation exposure.

Q: Is Fukushima as bad as Chernobyl? Both are rated 7 on the International Nuclear and Radiological Event Scale (INES).

A: The Fukushima event rating was provisionally increased from level 5 to level 7 by Japanese officials on April 12, due to computer analyses indicating [total](#) discharged iodine-131 and caesium-137 in the early days of the event were sufficient to warrant an increased rating level. This rating increase did not reflect any new event. The radioactive release from Fukushima is very roughly estimated by Japanese officials to be about 10 percent of that released from the Chernobyl accident – with very important differences.

The most important difference between Chernobyl and Fukushima is no deaths or illness among the public are expected from the Fukushima incident. The Chernobyl accident emitted radioactive particles high into the atmosphere, which spread downwind across Europe, and a reactor fire continued this process for at least 10 days. Radiation from the Fukushima incident is mostly in the form of liquid runoff into the ocean and low-altitude particles that have frequently blown out into the ocean. At Fukushima, the reactor fuel remains inside the primary containment structures, whereas the Soviet Chernobyl design did not have a containment structure. The containment for the reactors at Fukushima performed as designed and continues to protect the workers and general public from direct exposure to the reactor. The reactors are probably damaged, but are not burning and are not emitting particles into the atmosphere.

The Soviet authorities did not take immediate action to protect the public, while the Government of Japan did so. In response to the April 12 increase in the INES rating level for Fukushima, World Health Organization Director of Public Health and the Environment, Maria Neira, [stated](#) the rating change from 5 to 7 did not require any new public health countermeasures in Japan.

Q: Is any level of exposure to radiation safe?

A: Yes. Safe levels of radiation are well understood and have been evaluated and agreed upon by many independent panels of experts. Daily exposure to low levels of radiation is a normal part of life on planet Earth. Everyday we are exposed to radiation that is produced by the sun, radioactive materials in the earth and the air, and even trace amounts of naturally radioactive potassium and carbon contained in our own bodies. In some areas of the world natural background radiation is higher than the limits currently set for the workers at the Fukushima plants, due to natural radioactive materials in the ground. Residents have experienced no ill effects from this increased radiation exposure.

Q: What is the risk of radioactivity getting into the US food supply?

A: Normally very little food from the Fukushima region is imported into the USA. Affected foods from the region around the Fukushima plant have been banned from export by the Government of Japan. Any food from that area not already restricted by the Government of Japan will be [detained for testing](#) by the U.S. Food and Drug Administration (FDA) and not allowed into the USA unless shown to be absolutely free of contamination. Food from areas further from the plant will also be diverted for testing by the FDA. The immense quantity of water in the Pacific Ocean rapidly and effectively dilutes radioactive material, so fish and seafood are likely to be unaffected. Nonetheless, all seafood from Japan will also be diverted for monitoring. Even if affected foods from the Fukushima region were *not* banned or monitored, one would need to eat enormous amounts exclusively to approach the normal exposure from everyday background radiation.

Q: So what preparations should I make to protect my health from Fukushima?

A: None are needed. The amount of radiation exposure you could receive from food or the environment from the Fukushima incident is so small it is very difficult to measure in the United States, even with very sophisticated measuring devices. You would be better served to consider other lifestyle factors which have proven, direct impacts upon human health, such as tobacco use, exercise and weight control.

Q: Where can I find more information?

A: Many people do not understand radioactive material and radiation very well, even though radiation and its effects on the human body have been studied extensively and are well understood by experts. Two excellent places to learn about radiation are the American Nuclear Society [interactive radiation chart](#) and the Health Physics Society [radiation answers](#). Good sources of information on radiation effects from the Fukushima incident include the Food and Drug Administration reports on Fukushima [food safety](#), the [US Environmental Protection Agency](#), the [International Atomic Energy Agency](#), the [US Nuclear Regulatory Commission](#), the [Centers for Disease Control and Prevention](#), and the [Health Physics Society](#). Also see the [joint statement](#) by the American Association of Clinical Endocrinologists, the American Thyroid Association, the Endocrine Society, and the Society of Nuclear Medicine.

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