



Fact Sheet

Health Impacts of Iodine-131

(Last updated 3/23/11)

Iodine 131 is a fission product produced in a commercial reactor and used in medical treatments. It forms a vapor that can be transported in the air. Iodine 131 is released at minute levels from nuclear power facilities during normal operation, but it has been detected in Japan at higher levels after the accident at the Fukushima Daiichi plant. There is no health concern for U.S. residents.

Iodine 131 has an 8-day half life and decays fully after about two months. The use of potassium iodine can decrease the effects of radioactive iodine. Potassium iodine should be taken only after a recommendation of a physician or local health officials. When ingested, Iodine 131 is concentrated in the thyroid gland. In high concentrations, the primary health hazard is thyroid cancer, especially in children.

As part of U.S. emergency response capabilities, state and local officials closely monitor food and drinking water supplies and, if needed, quarantine any contaminated supplies to prevent public exposure. Officials use pre-established guidelines for safe consumption of food and water set by the U.S. Food and Drug Administration.

In Japan, one water sample taken March 23 in Tokyo showed that levels of Iodine 131 (5,700 picocuries per litre) were approximately twice the Japanese government limit. This resulted in the government advising the public to restrict the use of drinking water for infants; however water consumption is safe for older children and adults. A picocurie is 1/one-trillionth of a curie.

Background

The accident at Three Mile Island is believed to have released 17 curies of iodine from the core; however no Iodine was detected in cows or goat milk following the accident. The Chernobyl accident released approximately 7 million curies of I-131. Exposure of the population to iodine was the most significant radiological health impact of that accident.

- Adult consumption of 1,000 picocuries per liter concentration for 30 days will result in 24 millirem of radiation dose.
- Infant consumption of 1,000 picocuries per liter concentration for 30 days will result in 331 millirem.