



Health action in crises

FAQs: Japan nuclear concerns

5 April 2011

Food safety

The recent damage to the Daiichi nuclear power plant in Fukushima, Japan, and the subsequent detection of radioactivity in certain food samples from neighbouring areas have raised concerns about the safety of food from Japan. The Japanese authorities have regulations in place relating to provisional regulatory limits of radioactivity in food and food monitoring is being implemented. Measurements of radionuclide concentrations in food are now taking place and are being released by the Japanese authorities. The presence of radioactivity in some vegetables and milk has been confirmed and some of the initial food monitoring results show radioactive iodine detected in concentrations above the Japanese regulatory limits. Radioactive caesium has also been detected, but at lower activity concentrations.

The following questions and answers produced by the FAO and WHO address some of the growing international concerns over the safety of food produced in Japan.

What are the international implications of the recent reports of radioactivity in food in Japan?

- The findings suggest that some foods produced in Japan are likely to be contaminated by radionuclides at levels unsuitable for human consumption. Food producers and consumers in Japan are those most immediately affected and are being advised by their government on the implications of these findings. Currently, however, there is no evidence that radioactivity from the Fukushima Daiichi nuclear power plant has contaminated food produced in any other country.

What are the potential health effects of consuming contaminated food?

- Consuming food contaminated with radioactive material will increase the amount of radioactivity a person is exposed to and could increase the health risks associated with exposure to radiation. The exact effect will depend on which radionuclides have been ingested and the amount. According to data reported so far, radioactive iodine is the main contaminant and concentrations in some food samples have been detected at levels above the Japanese regulatory limits. Radioactive

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1. [Current risk](#)
 2. [Ionizing radiation](#)
 3. [Human exposure to ionizing radiation](#)
 4. [Travel advice](#)
 5. [Health effects](#)
 6. [Public health actions](#)
 7. [Personal protective measures](#)
 8. **Food safety**
 9. [Water contamination](#)
 10. [WHO's response](#)
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iodine has a half-life of eight days and decays naturally within weeks. If ingested, it can accumulate in the body, particularly the thyroid gland, increasing the risk of thyroid cancer, particularly in children.

- The ingestion of potassium iodide is an established method to prevent the accumulation of radioactive iodine in the thyroid.
- Radioactive caesium has also been detected in some foods. The situation has to be monitored carefully as ingestion of food contaminated with radioactive caesium can also have long-term health effects.

Is all food production in Japan affected by the nuclear emergency?

- No, not all foods will be affected. Food that was dispatched or commercially packaged before the emergency situation would not be affected. However, some food produced in areas where radioactive material has been deposited has been found to be contaminated. This is why the Japanese authorities have instituted monitoring and are taking measures to address the issue.

What impact will this have on food and food production in Japan?

- The impact on food and food production in Japan will depend upon the types of radionuclides and the amount of radioactivity deposited or present where food is being produced or harvested. Although radioactive iodine in food is of immediate concern, it has a relatively short half-life and will naturally decay over a short time frame. Radioactive caesium has also been detected in food. In contrast to radioactive iodine, radioactive caesium can linger in the environment for many years and could continue to present a longer term problem for food, and food production, and a threat to human health.

How do food products become radioactive?

- Foods can become contaminated with radioactive materials when they are released as the result of a nuclear or radiological emergency. In these circumstances, radioactive material falling from the air or carried in rain water or snow, can deposit on the surface of foods like fruits and vegetables or animal feed. Also, over time, radioactivity can build up within food, as radionuclides are transferred through soil into crops or animals. Radioactivity can also be washed into rivers, lakes and the sea where fish and seafood could take up the radionuclides. The severity of the risk depends on the radionuclide mix and the level of contaminant released.
- Radioactivity cannot contaminate food that is packaged; for example, tinned or plastic-wrapped food is protected from radioactivity as long as the food is sealed.

Why is food affected in areas beyond the evacuation zone?

- During a nuclear emergency, an evacuation zone is established to prevent people from being exposed to *immediate* and unacceptable levels of radiation posing a threat to human health. However, contamination of food can occur through uptake from soil to crops, or to animals through feed, even when levels of radioactive contamination are lower than those which might pose a direct threat to human health. The

standards for acceptable limits for radioactivity in food are set at low levels in order to take into account the possibility of contaminated food being eaten over an extended period of time and resulting in a cumulative dose.

Are there rules for radioactivity in foods for international trade?

- There are internationally agreed Codex Guideline Levels (GLs) for radionuclide levels in internationally traded food following a nuclear or radiological emergency. These GLs are published by the Joint FAO/WHO Codex Alimentarius Commission.
- Food with radioactivity levels below these GLs is safe for people to eat. When the GLs are exceeded, national governments must decide whether and under what circumstances the food should be allowed to be distributed within their territory or jurisdiction.
- Guideline Levels (GLs) for radionuclide levels can be found at the Joint FAO/WHO Codex Alimentarius Commission.

[Joint FAO/WHO Codex Alimentarius Commission](#)

What general advice can be given to food consumers and producers in the event of a nuclear emergency?

- The response to an emergency involving radioactivity should be the same as the response to any emergency involving any hazardous material contaminating food. In the early stages of an emergency, and if it is safe to do so, it is possible to take immediate actions to prevent or minimize the contamination of food by radiological materials. For example, it is possible to do the following:
 - protect food and animal fodder which is stored in the open; cover with plastic sheets or impermeable tarpaulins;
 - close the ventilation of greenhouses to protect growing vegetables;
 - bring livestock in from pastures and move animals into a shed or barn;
 - harvest any ripe crops and place under cover before any fallout has been recorded; and
 - don't harvest after fallout – wait for further instructions after contamination has been recorded.
- Many other short-, medium- and long-term actions need to be considered in areas confirmed to be seriously contaminated, such as:
 - avoid consumption of locally produced milk or vegetables;
 - avoid slaughtering animals;
 - avoid consumption and harvesting of aquatic animals and plants (including fish, shellfish, and algae); and
 - avoid hunting or gathering mushrooms or other wild or collected foods.

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