



Clinical Update

For Telephone Triage Nurses

March-April 2011

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Japan March 11th, 2011 Earthquake, Tsunami, and Nuclear Plant Radiation Leak

March 11th, 2011: A severe earthquake (9.0 magnitude) occurred with an epicenter 81 miles (130 kilometers) off the east coast of Japan. This triggered tsunami waves up to 33 feet (10 meters) tall. This was the most severe earthquake that Japan has ever experienced.

The combination of the earthquake and tsunami caused thousands of deaths and injuries. There was severe damage to buildings, roads, and railways. At least three nuclear power plants sustained damage. Over 4 million homes were left without electricity or water.



March 13th, 2011: Japanese authorities state that a partial melt-down might be occurring in reactors at the Fukushima I nuclear plant.

March 14th, 2011: An explosion occurred in reactor 3 at the Fukushima I nuclear plant. People living within a 12 mile (20 km) radius were evacuated by the government.

March 15th, 2011: Another explosion occurred at the Fukushima I nuclear plant. The government reports that reactors experienced partial meltdowns. Radiation levels were reported as being elevated.

March 18th, 2011: The United States Nuclear Regulatory Commission (NRC), recommended: All U.S. citizens who live within 50 miles (80 kilometers) of the Fukushima Daiichi Nuclear Power Plant evacuate. (Similar guidelines were announced by governmental agencies in Australia, Canada, and elsewhere.) Individuals should avoid non-essential travel to Japan.

Acute Radiation Sickness

Acute radiation sickness is the illness that results from being exposed to too much radiation at one time. It is also called acute radiation syndrome and radiation poisoning.

- ♦ *Symptoms:* The most common and first symptoms that appear are nausea and vomiting. Skin redness, diarrhea, bleeding, and more serious symptoms can occur if one is exposed to moderate to high radiation levels.
- ♦ *Onset:* Symptoms can start immediately or not show up until days or weeks later. The earlier the symptoms start, the higher the probable radiation dosage. *Reassurance:* Individuals who have symptoms that start more than 2 hours after radiation exposure probably will only have mild radiation sickness.
- ♦ *Prognosis:* The severity of the symptoms and the prognosis are determined by the type, amount and duration of radiation exposure.



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Medical Call Center - General Advice for Callers

As of March 25th, 2011

Callers Currently in Japan

- ◆ All individuals within 50 miles (80 km) of the Fukushima 1 reactor should move out of the area (evacuate).
- ◆ You should follow all recommendations from the Japanese government. These recommendations may include evacuation from an area, sheltering-in-place, decontamination, or taking potassium iodide, depending on the circumstances and your location.
- ◆ Symptoms of radiation exposure can include nausea, vomiting, diarrhea, and skin redness.

Callers Returning from Japan:

- ◆ It is highly unlikely that you were exposed to significant radiation or that you were contaminated. It is possible that you may have had a very low radiation exposure -- however, there is no specific test that can measure such a low exposure nor is there any medical treatment needed.
- ◆ You do not need to be checked for radiation.
- ◆ You do not need to take Potassium Iodide tablets.
- ◆ If you have any other questions or unusual symptoms you should contact your physician.

Callers Who Have Not Been to Japan

- ◆ You do not need to take Potassium Iodide because of what has happened in Japan. You only need Potassium Iodide if there is a radiation emergency that involves the release of radioactive iodine AND you are definitely exposed or contaminated.
- ◆ Do not take Potassium Iodide unless you have been directed to do so by a healthcare professional or government officials.

Callers Considering Travel to Japan:

- ◆ You should avoid non-essential travel to Japan at this time.
- ◆ If you go to Japan, you should stay at least 50 miles (80 km) from the Fukushima I nuclear power plant.

Internet Resources

Radiation Fact Sheets are available from the Centers for Disease Control and Prevention (CDC; <http://www.bt.cdc.gov/radiation/factsheets.asp>). Topics include:

- ◆ *Acute Radiation Syndrome, Decontamination*
- ◆ *Evacuation During a Radiation Emergency, Potassium iodide*
- ◆ *Radiation and Pregnancy, Sheltering in Place During an Emergency*

References:

- ◆ Mettler FA, Voelz GL. Major radiation exposure - what to expect and how to respond. *N Eng J Med.* 002; 346:1554-61.
- ◆ No authors listed. Potassium iodide for thyroid protection in a nuclear accident or attack. *Med Lett Drugs Ther.* 2002 Nov 11;44(1143):97-8.
- ◆ Rojas-Palma C, et.al. Triage, Monitoring, and Treatment [Book]. Handbook for management of the public event of malevolent use of radiation. A consortium of CK-CEN, NRPA, HPA, STUK, WHO, Enviro and CLOR.
- ◆ Wolbarst AB, Wiley AL Jr, Nemhauser JB, Christensen DM, Hendee WR. Medical response to a major radiologic emergency: a primer for medical and public health practitioners. *Radiology.* 2010 Mar;254(3):660-77.

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