



Ron Chapman, MD, MPH
Director & State Health Officer

State of California—Health and Human Services Agency
California Department of Public Health



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Governor

Nuclear Explosion Fact Sheet

Nuclear Explosion: The danger from the explosion of a nuclear bomb would be the blast itself, fires, and exposure to radioactive materials. People close to the explosion may see a blast, bright light, and/or a mushroom-shaped cloud of dust high in the sky. If you are a few miles away, you may not be aware that a nuclear explosion has occurred. After a nuclear explosion, particles in the explosive cloud will cool and fall out of the sky; this is known as “fallout.” Fallout is dangerous because it contains radioactive material. The radioactive material in fallout can be carried long distances by wind before it falls back to the earth.

Radiation Exposure: Your exposure to radiation depends on how close you were to the nuclear explosion and the resulting fallout. If you were near the explosion or in the path of the fallout, you may have been exposed to radiation and/or contaminated by radioactive material. Exposure to harmful levels of radiation can cause life-threatening illness and increase the risk of cancer later in life. You can reduce your risk of exposure by following instructions to go inside, stay inside, and stay tuned to emergency broadcasts.

Where to Go: If you are near the explosion, go inside and stay inside until you are told that it is safe to leave by officials unless you have immediate life-threatening injuries. Go to the center-most part of the building away from windows, doors and outside walls. This will help protect you from the radioactive material. Stay tuned for the latest information because instructions will change as conditions change.

What to Do: The most important actions to take after a nuclear explosion will be to go inside, stay inside, and tune in to emergency broadcasts for information. Tune in to your television news, radio, or internet for more information about the areas where dangerous radiation may have fallen and specific instructions on what to do if you were in these areas. Plan to stay sheltered indoors until officials tell you that it is safe to leave.

Remove Radioactive Material: If you were outside near the explosion you may have been contaminated with radioactive material. Removing radioactive particles from your body and clothing can reduce your risk of experiencing harmful health effects from radiation. To remove radioactive particles from your body, remove clothing and take a shower. Use lukewarm water and lots of soap to wash skin and hair. Do not use conditioner in your hair. Avoid scratching your skin. If you cannot take a shower, carefully remove your clothing and put on clean clothes. If you cannot shower or do not have clean clothes, remove clothing and brush away any loose particles before putting your clothes back on. Blow your nose and wipe your eyes, nose and ears with a clean cloth. Seal wash cloths and discarded clothes in a plastic bag and store it away from people and animals.

Children: If your children were outside in an area near the explosion they may have been contaminated with radioactive material. Follow the instructions above. If your children were at school when the nuclear explosion occurred, do not leave to pick them up. Going outside will increase your exposure to radiation. Children in schools



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will be kept inside and will not be allowed to leave until it is safe to do so. Pregnant women should follow the same protective action steps as everyone else. In addition, pregnant women should see a doctor as soon as possible after they can safely leave their home or shelter.

Pets: If pets were outside they may have come in contact with radioactive material. Bring your pets indoors. Wash your pet with shampoo and water and rinse completely. Wear waterproof gloves and, if possible, a dust mask to protect yourself from radioactive particles.

Food and Water: Food in sealed containers and in your refrigerator or freezer is safe to eat. Bottled water will be free of radioactive contamination. You can drink tap water if no other water is available. Boiling tap water does not get rid of radioactive material. Radiation can be passed through breast milk. If possible, infants should be fed baby formula until you are able to contact a doctor for further instructions or advice. You may continue to breastfeed if there is no other source of food available. Use a damp towel or cloth to clean all food cans, bottles, packaged foods, counters, plates, pots and utensils before using them. Seal cleaning cloths in a plastic bag and place them away from people and animals.

Potassium Iodide (KI): Self-medicating with potassium iodide (KI) in advance is not likely unless a credible terrorist threat is made prior to the nuclear explosion. Therefore, prophylactic KI will need to be taken, when indicated, in the first few hours after the blast. When used correctly, KI can prevent or reduce the uptake of radioiodine by the thyroid gland. KI provides the best protection when administered immediately prior to or in conjunction with the passage of the fallout cloud.

Note: A nuclear explosion may also be described as a nuclear detonation. IND means “improvised nuclear device” and is used to describe a bomb that can cause great damage and release radioactive material which makes it more dangerous than other types of explosions.

For information on preparing for disasters, please visit:

Cal OES website www.calema.ca.gov/PlanningandPreparedness/Pages/How-You-Should-Prepare.aspx

For information on radiation emergencies, Centers for Disease Control and Prevention’s website at visit www.bt.cdc.gov/radiation at 1-800-CDC-INFO (1-800-232-4636)

Or contact the following organizations:

- **CDPH Radiologic Health Branch** www.cdph.ca.gov/programs/pages/radiologichealthbranch.aspx at 916-327-5106
- **Federal Emergency Management Agency (FEMA)** www.fema.gov at 202-646-4600
- **Radiation Emergency Assistance Center/Training Center** www.orau.gov/reacts at 865-576-3131
- **Conference of Radiation Control Program Directors** www.crcpd.org at 502- 227-4543
- **U.S. Environmental Protection Agency** www.epa.gov/radiation/emergency-response-overview.html at 202-343-9290
- **Nuclear Regulatory Commission** www.nrc.gov at 301-415-8200