

# Facts:

from the Colorado Department of Public Health and Environment



## Dirty Bombs: what you need to know

### What is a dirty bomb?

A dirty bomb is a mix of explosives, such as dynamite, with radioactive powder or pellets. When the dynamite or other explosives are set off, the blast spreads radioactive material into the surrounding area, mostly as dust and smoke.

### Is a dirty bomb like an atomic bomb?

No. The power of an atomic bomb comes from splitting atoms, which releases the energy and radiation that produce an atomic mushroom cloud. A dirty bomb *cannot create an atomic blast*. Instead, a dirty bomb uses dynamite or other explosives to scatter radioactive dust, smoke, or other material in order to cause radioactive contamination.

### What are the main dangers of a dirty bomb?

The explosion itself can cause serious injuries, property damage, and fires. The radioactive materials used in a dirty bomb would not create enough radiation exposure to cause immediate serious illness, except to those people who are very close to the blast site. Those closest to the blast site are at highest risk. The radioactive dust and smoke may spread and could be harmful, if inhaled.

### What should we do if we learn of a dirty bomb?

People cannot see, smell, feel, or taste radiation. You should take immediate steps to protect yourself and your loved ones by trying not to breathe in dust and smoke.

1. Cover your nose and mouth with a cloth to reduce the risk of breathing in radioactive dust or smoke.
2. Don't touch objects thrown off by an explosion.
3. Quickly go into a building where the walls and windows have not been broken. Stay in the building until public officials tell you to leave.
4. Take off your outer layer of clothing and seal it in a plastic bag. Put the cloth you used to cover your mouth in the bag, too.
5. Put the plastic bag where others will not touch it and keep it until authorities tell you what to do with it.

### If a dirty bomb explodes

1. **Cover your nose and mouth** with a cloth to avoid breathing in dust or smoke.
  2. **Stay inside** or quickly go into a building where the walls and windows have not been broken. Shut windows, outside doors, and fireplace dampers.
  3. **Remove outer clothes** and seal in a plastic bag.
  4. **Shower or wash** with soap and water.
  5. **Tune in** to the radio or television news for instructions.
6. Shower or wash with soap and water to remove remaining dust. Dress as you normally would, given the weather conditions.
  7. Shut windows, outside doors, and fireplace dampers. Turn off fans and heating and air-conditioning systems that bring in air from the outside. It is not necessary to put duct tape or plastic around doors or windows.
  8. Tune to the local radio or television news for instructions.

### Should I leave to find my children and family?

No. If your children or family are with you, stay inside together. If your children or family are in another home or building, they should stay there until you are told it is safe to travel.

Schools have emergency plans and shelters. If your children are at school, they should stay there until it is safe to travel. Do not go to the school until public officials say it is safe to travel.

### How do I protect my pets?

If you have pets outside, bring them inside if it can be done safely. Wash your pets with soap and water to remove any dust.

## Should I take potassium iodide?

No. Potassium iodide, also called KI, only protects a person's thyroid gland from exposure to radioactive iodine. KI will not protect a person from other radioactive materials or protect other parts of the body from exposure to radiation. Taking KI probably would not be beneficial since there is no way to know at the time of the explosion whether radioactive iodine was used in the explosive device.

KI may be recommended in states that have nuclear power plants. Colorado does not have a nuclear power plant and KI can be dangerous to some people.

## Will our food and water be safe?

Food and water supplies most likely will remain safe. However, any unpackaged food or water that was out in the open and close to the incident may have radioactive dust on it. Do not consume water or food that was out in the open. Food in cans and other sealed containers is safe to eat. Wash the outside of the container before opening it. Wash dishes and utensils before use.

Public health authorities will monitor food and water quality for safety and keep the public informed.

## How will I know if I've been exposed to radioactive materials?

People cannot see, smell, feel, or taste radiation. You may not know whether you have been exposed. If you are near the blast site, emergency responders will direct you to stations where you will be checked for radiation with special equipment. They can determine whether radiation is present, help you remove contaminated clothing, if necessary, and provide medical assistance, when needed.

Low levels of radiation exposure, like those expected from a dirty bomb, do not cause any symptoms. If you believe you may have been contaminated but are outside the immediate blast site, follow these instructions to reduce your potential exposure. Listen for further directions on local radio and television stations about radiation screening and disposal of your discarded clothing or other materials.

### Reliable sources of information

#### Colorado Department of Public Health and Environment

Radioactive Materials Unit

[www.cdphe.state.co.us/hm/rad/](http://www.cdphe.state.co.us/hm/rad/)

877-518-5608

#### Centers for Disease Control and Prevention (CDC)

[www.bt.cdc.gov/radiation/dirtybombs.asp](http://www.bt.cdc.gov/radiation/dirtybombs.asp)

800-CDC-INFO

888-232-6348 (TTY)

#### U.S. Department of Homeland Security

[www.ready.gov/america/beinformed/radiation.html](http://www.ready.gov/america/beinformed/radiation.html)

#### Federal Emergency Management Agency (FEMA)

[www.fema.gov/hazard/terrorism/rad/](http://www.fema.gov/hazard/terrorism/rad/)

800-621-FEMA

800-462-7585 (TTY)

#### U.S. Nuclear Regulatory Commission

[www.nrc.gov/reading-rm/doc-collections/fact-sheets/dirty-bombs.html](http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/dirty-bombs.html)

#### Environmental Protection Agency (EPA)

[www.epa.gov/radiation/pubs.htm](http://www.epa.gov/radiation/pubs.htm)



Colorado Department  
of Public Health  
and Environment