

# Radiation

**Radiation is a form of energy. It comes from man-made sources such as x-ray machines, from the sun and outer space, and from some radioactive materials such as uranium in soil.**

## **How could I be exposed to radiation?**

Small quantities of radioactive materials occur naturally in the air we breathe, the water we drink, the food we eat, and in our own bodies. Radiation that goes inside our bodies causes what we refer to as **internal** exposure. The exposure that is referred to as **external** comes from sources outside the body, such as radiation from sunlight and man-made and naturally occurring radioactive materials. Scientists estimate that eighty percent of typical human exposure comes from natural sources and the remaining 20 percent comes from artificial radiation sources, primarily medical x-rays.

## **What happens when people are exposed to radiation?**

Radiation can affect the body in many ways, and adverse health effects may not be apparent for many years. These adverse health effects can range from mild, such as skin reddening, to serious such as cancer and death, depending on the amount of radiation absorbed by the body (the dose), the type of radiation, the route of exposure, and the length of time a person was exposed. Exposure to very large doses of radiation may cause death within a few days or months. Exposure to lower doses of radiation may lead to an increased risk of developing cancer or other adverse health effects later in life.

## **How can I minimize my exposure to radiation?**

There are three factors that minimize radiation exposure to your body:

- ◆ Distance – The more distance between you and the source of radiation, the less radiation you will receive. In a serious nuclear accident, local officials will likely call for an evacuation, thereby increasing the distance between you and the radiation.
- ◆ Shielding – Like distance, the more heavy, dense materials between you and the source of the radiation, the better. This is why local officials could advise you to remain indoors if a radiological accident occurs. In some cases, the walls in your home would be sufficient shielding to protect you.
- ◆ Time – Most radioactivity loses its strength fairly quickly. Limiting the time spent near the source of radiation reduces the amount of radiation you will receive. Following a radiological accident, local authorities will monitor any release of radiation and determine when the threat has passed.

**Kalamazoo County Public Health  
Emergency Information Line:  
269-373-5300**

## **How can I protect myself during a radiation emergency?**

After a release of radioactive materials, local authorities will monitor the levels of radiation and determine what protective actions need to be taken. As in any emergency, tune to the local emergency response network or news station for information and instructions.

If a radiation emergency involves the release of large amounts of radioactive materials, you may be advised to “shelter in place,” or you may be advised to move to another location. If you are advised to shelter in place you should do the following:

- ◆ Close and lock doors and windows
- ◆ Turn off fans, air conditioners, and forced-air heating units that bring in fresh air from the outside. Only use units to re-circulate air that is already in the building.
- ◆ Close fireplace dampers.
- ◆ If possible, bring pets inside.
- ◆ Move to an inner room or basement.
- ◆ Keep your radio tuned to the emergency response network or local news to find out what else you need to do.

If you are advised to evacuate, follow the directions that your local officials provide. Leave the area as quickly and as orderly as possible. In addition:

- ◆ Take a flashlight, portable radio, batteries,
- ◆ first-aid kit, supply of sealed food and water, hand-operated can opener, essential medicines, and cash and credit cards.
- ◆ Take pets only if you are using your own vehicle and going to a place you know will accept animals. Emergency vehicles and shelters usually will not accept animals.

For more information visit [www.fema.gov](http://www.fema.gov).

**Kalamazoo County  
Health & Community Services**

3299 Gull Road; PO Box 42

Nazareth, MI 49074-0042

Phone: 269-373-5200 Fax: 269-373-5363

Web: [www.kalcounty.com](http://www.kalcounty.com)