



# PUBLIC SAFETY INFORMATION

## Basic Radiation Information

- You cannot sense radiation.
- Radiation can only be detected using specialized instruments.
  - With the correct instruments, radiation is easily detected.
- Emergency responders are trained in using these instruments.
- Radiation from natural and man-made sources is always around us.
- We cannot eliminate radiation in our environment.
- We can reduce our health risks by controlling our exposure to it.
- There is no known safe amount of radiation.
- Low levels of radiation come from a number of sources.
  - These include natural background.
  - They also include sources such as medical x-ray.
- There may be some risk from low levels of radiation.
- To be safe, take all reasonable precautions to reduce exposure.
  - It may be difficult to reduce exposure to low-level radiation in our everyday lives.
- Follow safety instructions from public officials.
- Avoid areas where radiation levels are elevated.
- Exposure occurs when radiation energy interacts with the body.
- Exposure can be caused from external or internal sources.
  - Internal exposure happens when radioactive materials are eaten, inhaled or absorbed.
- Radioactive contamination occurs when radioactive material settles on a surface.
  - That surface could be your body or clothing, a structure, or an object.
- There are three major types of radiation.
  - Alpha and beta radiation can be stopped by a layer of clothing, but can be harmful if eaten, inhaled, injected or absorbed.
  - Gamma rays are much more difficult to stop. Several feet of concrete or several inches of lead may stop gamma rays.
    - They can be harmful to the body.
- Health effects from exposure vary depending on the amount of exposure.
  - This relates to the length of time exposed, and the distance from and shielding against the radiation source.
- The difference between contamination and exposure:
  - You can be exposed to radiation without contamination, such as during an x-ray.
  - You cannot be contaminated without being exposed.

- Skin burns, nausea and vomiting can result from large doses of radiation.
  - Seek medical attention immediately if you have these symptoms.
  - If you think you have been contaminated, shower and change into clean clothes.
    - Place contaminated clothing in a plastic bag and seal it.
    - Place the bag as far away as possible from humans and animals.
    - Bagged clothing can be examined later to determine if you were contaminated.
    - Take a long shower using lots of soap and water.
    - Be careful not to scratch or irritate your skin while washing.
    - Shampoo your hair.
    - Gently blow your nose and wash out your eyes, ears, and mouth.
    - Put on clean clothing.
    - Wash valuables and identification that may have been contaminated; wash your hands again.
- There are many causes of cancer, both environmental and genetic.
  - Radiation is a minor contributor to our overall cancer risk.
  - The risk of radiation causing cancer increases with the level of radiation exposure.