Radioactive contamination results when loose particles of radioactive material settle on surfaces, skin, or clothing. Internal contamination may result if these loose particles are inhaled, ingested, or absorbed through an open wound. External contamination can be decontaminated as quickly as possible. However, the level of radioactive contamination can increase if there is another contamination event.

Use of Universal Precautions will help prevent the spread of contamination to other individuals and medical equipment (e.g., gloves, instruments, stethoscope, and water).

PRECAUTIONS

Contamination: UNIVERSAL PRECAUTIONS should be used in any situation where the presence of radioactive material is suspected. Persons entering an area contaminated with radioactive material should be assessed and treated in a clinical setting (emergency department). It is extremely unlikely that the level of internal contamination would be sufficient to cause an external exposure hazard from the patient to EMS and other first responders. The amount of radioactive material has either inhaled and/or ingested radioactive material is very likely to also have external contamination (see the next item).

2. External contamination of the body surface and/or clothing by radioactive materials. Patients are not likely to exhibit any symptoms related to radiological exposure. However, if a relatively high activity gamma source (external exposure to unknown radiation source) is present at the emergency site, it is possible for an individual to receive a radiation dose that could pose a health risk. It is anticipated that hazardous materials (HAZMAT) personnel will have made an initial radiological assessment, and specific safety precautions will be given.

RADIOLOGICAL ASSESSMENT

First responders, fire fighters, or HAZMAT, may have performed an initial assessment or containment. Do not handle any contents or materials without appropriate protective clothing. Outside the radiological area, sometimes referred to as a “Hot Zone”, may be directed to wear overshoes and a dust mask. Rescuers (i.e., fire fighters) entering a radiological area, sometimes referred to as a “Hot Zone”, may be directed to wear overshoes and a dust mask. Rescuers (i.e., fire fighters) may have performed an initial assessment or containment. Do not handle any contents or materials without appropriate protective clothing (see the next item).
GUIDELINES FOR EMERGENCY MEDICAL MANAGEMENT

1. Use universal precautions to help prevent the spread of contamination from injured victims to emergency personnel.

2. Assess and treat life-threatening injuries immediately. Treat any such patients prior to all other activities, including decontamination. Do not delay advanced life support if victims cannot be moved, or to assess contamination status. Perform routine emergency care during evacuation procedures. Do not delay medical attention for victims with life-threatening injuries.

3. Move victims away from the radiation hazard area, using proper patient transfer techniques, to prevent further injury. Stay within the controlled zone if contamination is suspected.

4. Exposure wounds and cover with sterile dressings. Priority efforts should be directed to decontamination of open wounds.

5. Victims should be monitored at the control line for possible contamination only after they are medically stable. Radiation levels above background indicate the presence of contamination. Remove the contaminated person’s clothing, provide removal can be accomplished without causing further injury.

6. Contaminated patients who do not have life-threatening or serious injuries may be decontaminated on site. Removal of the patient’s clothing may reduce the contamination by up to 90%. Place such items in a plastic bag (double bag if possible) and label them, if available. These items may also be legal evidence. Do not use irritants or methods that may abrade the skin, as this could cause internal contamination. It is not necessary to collect the water that was used for decontamination as long as the controlled zone is not contaminated. Such items may reduce the contamination by up to 90%.

7. Flush eyes with water or sterile saline. Irrigation or washing should be avoided, as this could cause internal contamination. For eyes, flush with plenty of water. Thorough water rinse. It is important not to abrade the skin during washing or rinsing, as this could cause internal contamination. Avoid use of potassium iodide.

Decontamination guidelines

Proper decontamination of patients is important to prevent contamination of facilities and equipment and to prevent exposure to other individuals. Immediately prior to the patient’s clothing being removed, the patient should be instructed to discontinue taking potassium iodide. If a patient is suspected of having been exposed to radioactive iodine, it must be taken within the first few hours after exposure to be effective. Persons allergic to iodine or shellfish should not take KI.

Note: KI is only effective for protecting the thyroid gland from radioactive exposure.

DECONTAMINATION GUIDELINES

• Patient with life-threatening condition: treat, then decontaminate.
• Patient with non-life-threatening condition: decontaminate, then treat.
• Uninjured contaminated persons should be decontaminated. In most cases, decontamination of the skin can be accomplished by gently wiping with soap and water followed by a thorough water rinse. It is important not to abrade the skin during washing or rinsing, as this could cause internal contamination of the patient. For eyes, flush with plenty of water.

TREATMENT AND DECONTAMINATION RULES

1. Patient with life-threatening condition: treat, then decontaminate.
2. Patient with non-life-threatening condition: decontaminate, then treat.
3. Uninjured contaminated persons should be decontaminated. In most cases, decontamination of the skin can be accomplished by gently wiping with soap and water followed by a thorough water rinse. It is important not to abrade the skin during washing or rinsing, as this could cause internal contamination of the patient. For eyes, flush with plenty of water.

TREATMENT AND DECONTAMINATION RULES

1. Patient with life-threatening condition: treat, then decontaminate.
2. Patient with non-life-threatening condition: decontaminate, then treat.
3. Uninjured contaminated persons should be decontaminated. In most cases, decontamination of the skin can be accomplished by gently wiping with soap and water followed by a thorough water rinse. It is important not to abrade the skin during washing or rinsing, as this could cause internal contamination of the patient. For eyes, flush with plenty of water.

RADIOLOGICAL TERRORISM

In the event of a severe nuclear power plant accident, health officials may direct the use of potassium iodide (KI) tablets to protect the thyroid from exposure to radioactive iodine. KI saturates the thyroid with non-radioactive iodine thereby reducing uptake of radioactive isotopes. It must be taken within the first few hours after exposure to be effective. Persons allergic to iodine or shellfish should not take KI.

USE OF POTASSIUM IODIDE

KI is only effective for protecting the thyroid gland from radioactive exposure.

DECONTAMINATION GUIDELINES

Proper decontamination of patients is important to prevent contamination of facilities and equipment and to prevent exposure to other individuals. Immediately prior to the patient’s clothing being removed, the patient should be instructed to discontinue taking potassium iodide. If a patient is suspected of having been exposed to radioactive iodine, it must be taken within the first few hours after exposure to be effective. Persons allergic to iodine or shellfish should not take KI.

Note: KI is only effective for protecting the thyroid gland from radioactive exposure.

DECONTAMINATION GUIDELINES

Proper decontamination of patients is important to prevent contamination of facilities and equipment and to prevent exposure to other individuals. Immediately prior to the patient’s clothing being removed, the patient should be instructed to discontinue taking potassium iodide. If a patient is suspected of having been exposed to radioactive iodine, it must be taken within the first few hours after exposure to be effective. Persons allergic to iodine or shellfish should not take KI.