

External Decontamination Steps for a Patient Contaminated with Radioactive Materials

Preamble

- Patient stabilization is the priority. Do not delay urgent medical treatment in order to decontaminate the patient.
- Wear appropriate personal protective equipment (PPE) during decontamination (see the "PPE" summary sheet).
- Contact your hospital's Radiation Safety Officer (RSO) for guidance during the decontamination process.
- Refer to the summary sheet « How to Assess External Contamination Using a Geiger-Muller Counter » to evaluate the patient's contamination risk.
- If no radiation detection device is available, consider the patient contaminated and proceed with decontamination.

Decontamination steps

1. Remove all clothing and jewelry. Place items in double bags and store them in a designated area away from the treatment area.
2. Perform an external contamination assessment according to the sheet « How to Assess External Contamination Using a Geiger-Muller Counter ».
3. Gross decontamination : rinse the patient with lukewarm and soap.
4. If radioactive fragments are present :
 - a) Use forceps to remove shrapnel fragments; place both the fragments and the forceps in a lead container.
 - b) DO NOT handle the fragments with bare hands.
 - c) Contact your RSO to locate a lead container.
5. Contaminated wounds :
 - a) Cover intact skin surrounding the wound with waterproof dressings.
 - b) Irrigate the wound with saline or water.
 - c) Use a new cotton swab at the wound site to assess contamination after each irrigation attempt.
 - d) If contamination levels remain elevated after several irrigation attempts, surgical debridement may be considered.
 - e) Once the wounds have been decontaminated, apply waterproof dressings

6. Body orifices (if contamination is detected) :
 - a) Ears :
 - Check tympanic membrane integrity.
 - If intact, irrigate with room-temperature water using an ear syringe. (as done for cerumen impaction removal; do not direct the stream toward the eardrum).
 - Sample irrigation fluid for residual radioactivity.
 - b) Mouth :
 - Encourage tooth brushing and frequent rinsing.
 - If pharyngeal contamination is present, encourage gargling with 3% hydrogen peroxide or with water.
 - Sample irrigation fluid for residual radioactivity.
 - c) Nez :
 - Have patient blow their nose, then perform nasal irrigation.
7. Head-to-Toe decontamination :
 - a) Wash hair first, then the rest of the body.
 - b) Avoid skin abrasions.
 - c) Do not shave hair or use conditioner.
 - d) Prevent contaminated water from entering orifices.
8. Repeat the above steps until radiation levels are below twice the background radiation level, or according to the recommendations of the RSO.
9. Please note that this document does not address internal contamination.