

Radiation Contamination: Diagnose and Manage

ASSESS EXTERNAL CONTAMINATION

- Contact radiation safety officer
- Put on [Personal Protective Equipment](#)
- [Assess contamination pattern](#) with [radiation survey meter](#)
- Evaluate for [radioactive shrapnel](#)
- Document contamination pattern on a [body diagram](#)
- [Swab each nostril separately](#) to help estimate level of internal (lung) contamination

CAUTION: MANAGEMENT MODIFIERS

- [Burns](#)
- [Trauma](#)
- [Mass casualty](#)
- [Timing of surgery](#)
- [Blood products use](#)
- [At-risk/special needs populations](#)

DECONTAMINATE WHOLE BODY

- Decontaminate on-site or at other designated areas
- Follow [decontamination procedures](#)
- [Re-scan patient](#) with [radiation survey meter](#)
- Repeat decontamination until successful ([Understand target levels for decon](#))
- Do not exceed 3 attempts (decon cycles)
- [Special issues for infants and children](#)

EVALUATE IF ALL ARE TRUE:

- Decontamination successful ([Understand target levels for decon](#))
- Absent or minimal physical injury

YES

- Send home with [follow-up instructions](#)
- Register in incident database

[On-site / Prehospital](#)
[Medical Facility / Hospital](#)

NO

- Evaluate at medical facility

EVALUATE AT MEDICAL FACILITY

- Treat life- or limb-threatening injuries first
- Obtain [sequential CBCs with differential](#) to rule out whole-body exposure and ARS
- [Remove any remaining radioactive shrapnel](#) and shield it safely

ASSESS INTERNAL CONTAMINATION

- [Scan patient with radiation survey meter \(caveat\)](#)
- Incident responders or radiation safety officer will identify the isotope(s)
- [Swab each nostril separately](#) to help estimate level of internal (lung) contamination
- Collect ≥ 70 mL spot urine sample for isotope measurement
 - [Instructions for sample collection, labeling, packaging and shipping](#)
- [Consider total body radiation survey with modified hospital nuclear medicine equipment](#)

TREAT INTERNAL CONTAMINATION OF SPECIFIC ISOTOPE

- [Isotopes of Interest Table](#)
- [Countermeasures Table](#)
- Decision to treat will depend on
 - [Level of internal contamination](#)
 - Size of radiation event
 - Availability of resources/personnel
 - Likelihood that patient will survive

DECEASED

- [Management of decedents with contamination](#)
- Register decedent in incident database

SURVIVORS

- Discharge with appropriate [follow-up instructions](#)
- [Register patient in incident database](#)
- Radiation follow-up considerations
 - Whole body dose
 - Immune status
 - Risk of cancer
 - Risk of specific organ dysfunction

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