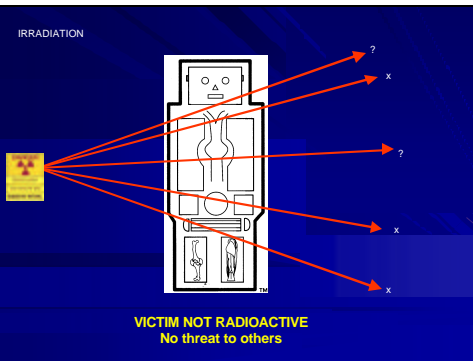


# Radiation Injuries

HARRT 2004

## Ionizing Radiation

- **γ rays**
  - No mass, but high energy
  - Neutral electrically
  - Highly penetrant
  - Uncharged
  - Travel long distances at speed of light
  - Can cause whole body exposure
- **Neutrons**
  - Uncommon
  - Major source: fission reactions associated with nuclear weapons, power plants, particle accelerators, & nuclear weapon assembly area
  - Uncharged
  - Emitted only during nuclear detonation
  - Not a fallout hazard
  - Interact with nuclei of atoms disrupting the atomic structures
  - Cause 10-20 times more tissue damage than γ rays
  - Has ability to be absorbed by stable element thereby making it radioactive (e.g. metallic objects worn by or implanted in victim)



## Acute Radiation Syndrome

- A complex of acute injury manifestations which occur once a significant percentage of a victim's body is exposed to ionizing radiation, typically gamma.
- Dependent upon:
  - Radiation dose
  - Penetrating radiation
  - Amount of body exposed
  - Duration of exposure
- Extent of symptoms will increase and the duration of each phase will decrease with increasing radiation

