

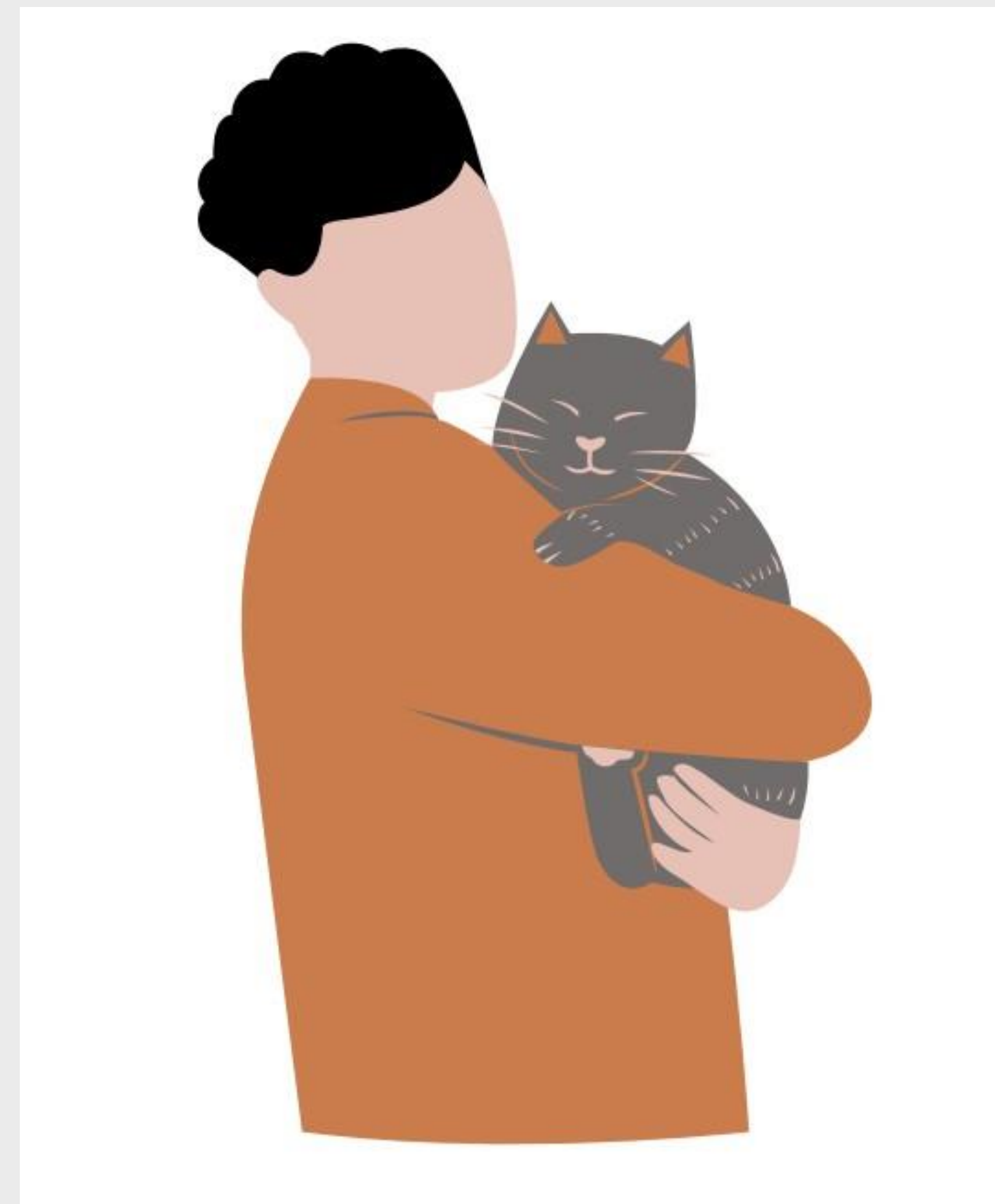
BACKGROUND

- 89% of Americans own a companion animal.
- Radionuclides are more commonly being used to treat cancer and diseases in animals.
- Hyperthyroidism is a very common disease in cats and is treated with I-131
- The current practice is to leave the feline in a room with little to no contact for a couple of weeks.



# MANAGEMENT OF RADIOACTIVE COMPANION ANIMALS DURING AN EMERGENCY EVACUATION

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## GENERAL PUBLIC

- **Mask, Gloves, Long sleeves and Long pants**
- **Pregnant women shall not be around any felines that have an active dose of Iodine-131**
- **Each owner shall have an emergency kit prepared before the first treatment**

## EVACUATION TEAMS

- **High Rubber Boots, N-95 mask, face shield, nitrile gloves with fabric gloves over, long pants and long sleeves**
- **The physical items shall be washed with water, soap and then sprayed radioactive decontaminant spray foam and whipped out then set out to dry for a minimum of three months post exposure to the feline.**

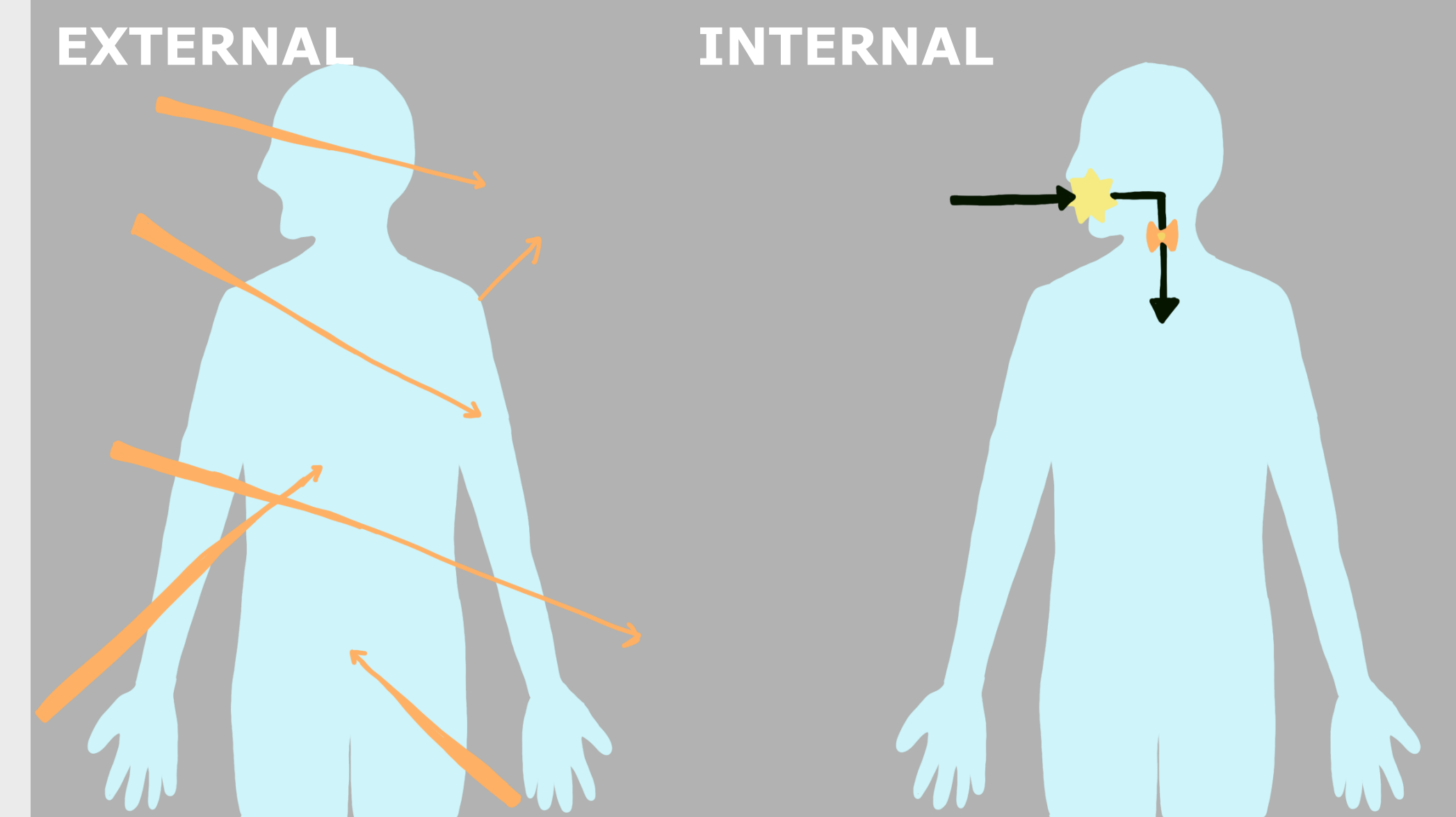
## WASTE MANAGEMENT



The waste created by the feline shall be bagged and left outside away from humans and food sources until the emergency has passed and then exposed effectively in a landfill that has radiation detectors. While handling the waste PPE shall be worn.

## RISK ASSESSMENT:

- **HAZARD: Iodine-131**
- **EXPOSURE METHODS**



- **EXPOSURE CONSEQUENCES: Cancer**
- **AT RISK GROUPS: Pregnant Women and Children**

## OUR DOSE CALCULATIONS:

$$X_0(R) = \frac{A \cdot G}{R^2}$$

Where:  
 $X_0(R)$  is the attenuated exposure rate, absorbed dose rate, or dose rate in terms of Roentgen.  
 A is the source activity = 1.9 mci  
 G is the gamma constant = 0.22 mr/h at 1 meter per mci  
 R is the distance from point source 0.2 meter

$$X_0(R) = \frac{1.9 \text{mci} \cdot 0.22 \text{mr/h at 1 m per mci}}{0.2^2 \text{m}} = \frac{0.418}{0.04^2} = 2.61 \text{mr/hour per a meter}$$

- **CONCLUSION: There is a risk for of exposure to I-131 for a person evacuating with their radioactive animal. To ensure the lowest dose possible for humans felines shall be kept in a crate as far from the owners as possible when evacuating in a car.**