

# The Murderer of the Missoula Floods • G202 Winter 2015, SE Center

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## Radon's In The House

- Naturally occurring
- Only an issue when trapped in home
- Enters through water and small cracks
- Gets trapped and concentrated

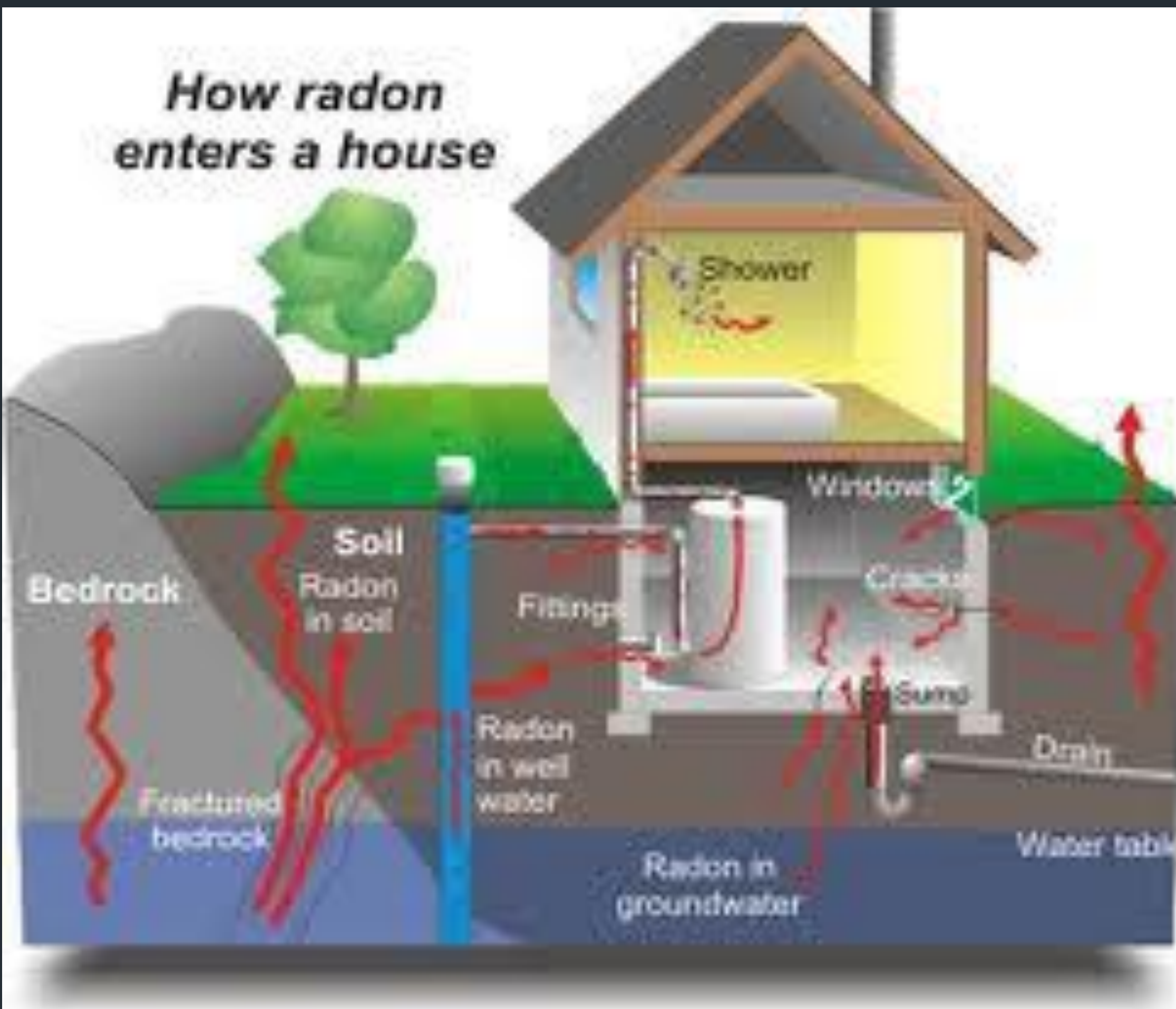


Figure 1 Radon gas entering a house through cracks, pipes, drains, and other small openings.  
[http://ohiohomeanswers.com/image\\_store/uploads/8/8/2/6/0/ar128560923706288.jpg](http://ohiohomeanswers.com/image_store/uploads/8/8/2/6/0/ar128560923706288.jpg)

- If experiencing symptoms such as:
  - Pressure in chest
  - Trouble breathing
  - Dry, persistent cough
  - Feeling of drowning
- If symptoms persist or get worse
- If house is old or spend lots of time basement
- If radon levels in house 4pCi/L or higher
- pCi/L = picocuries per liter
- Used to measure radiation
- Curie (Ci) = 1 gram pure radium
- Pico (p) =  $1 \times 10^{-12}$
- 1pCi/L = 2.5 cigarettes a day

## Breasts vs. Lungs

- Third biggest killer in US behind Lymphoma and Leukemia
- Society is very focused on other forms of cancer, such as prostate and breast with lung cancers being left out of this movement.
- Gets under \$2,000 Federal funding/year
- Breast cancer + prostate cancer = 1/3 number of radon cancer deaths/year combined
- Each get over \$10,000 Federal funding/year alone

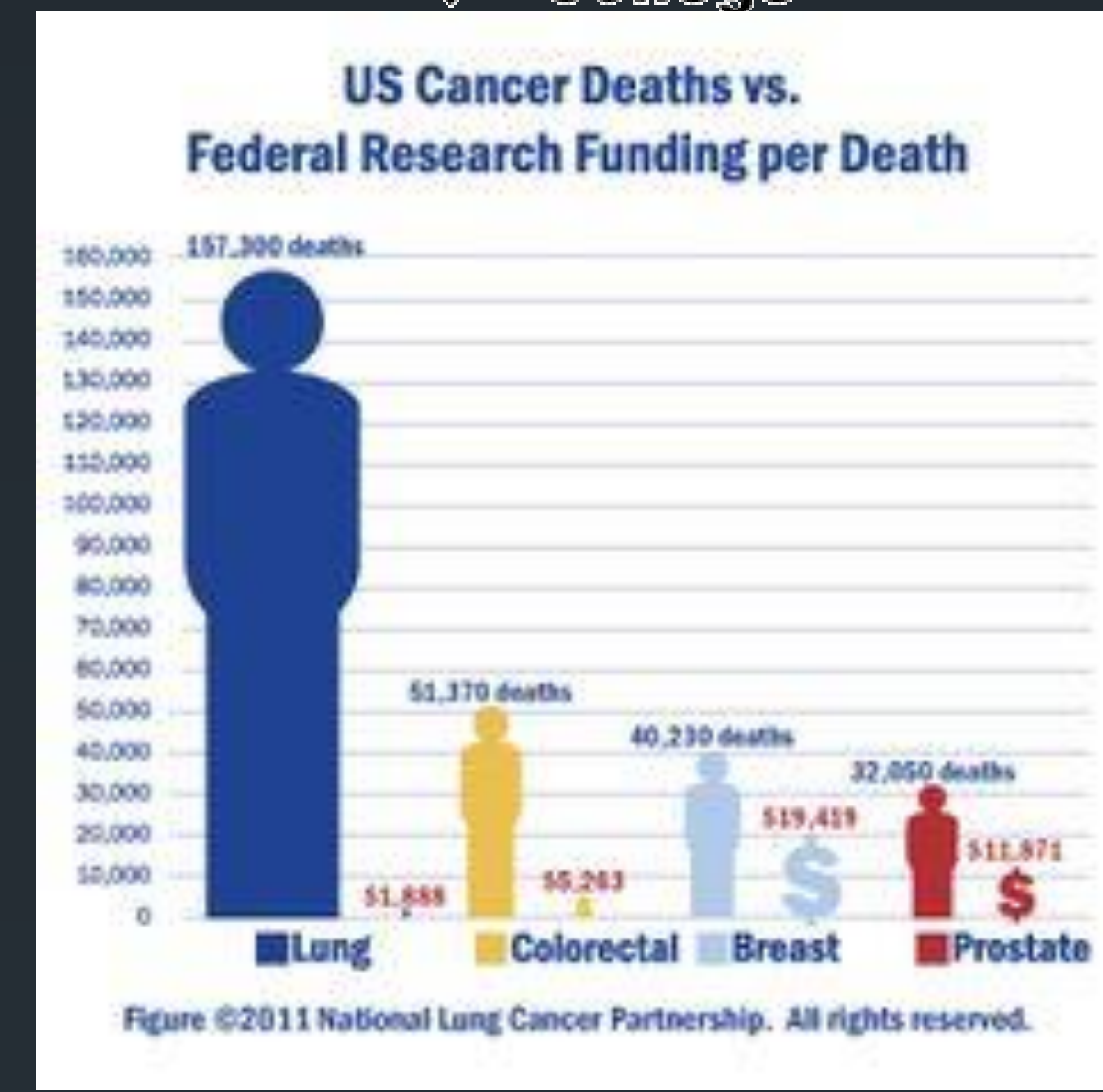


Figure 5. Amount of Federal funding per cancer per year.  
<https://s-media-cache-ak0.pinimg.com/236x/ff/e2/d5/ffe2d534a02f4e196a04da3cd4395a68.jpg>

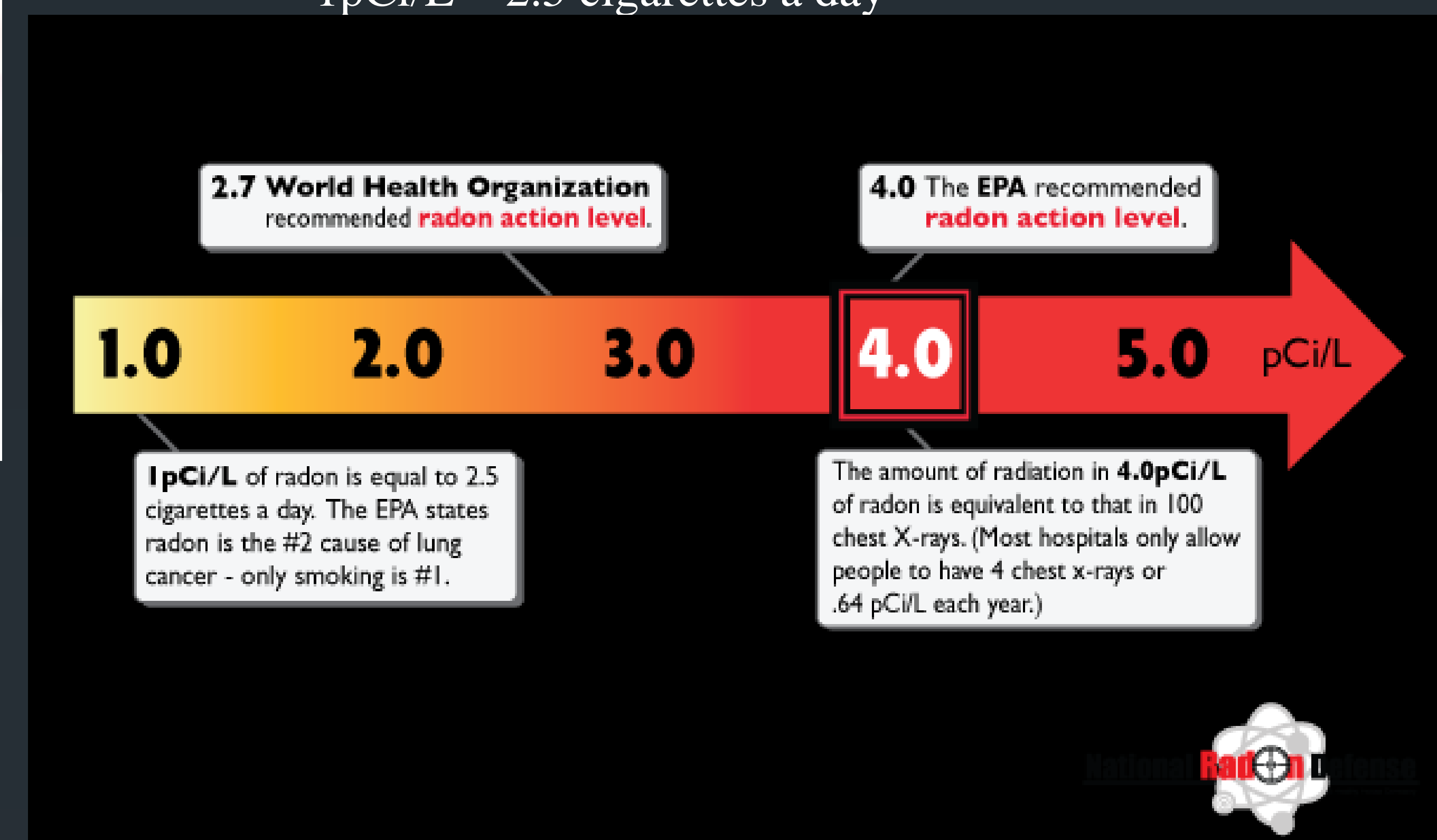


Figure 3. When-to-act chart,  
<http://www.portlandradonmitigation.com/core/images/radon-mitigation/radon-information/radon-levels/radon-graphic.png>

## Uranium to Radon— Dude!

- Uranium in soil
- Goes through multiple transformations
- Ends up as radon

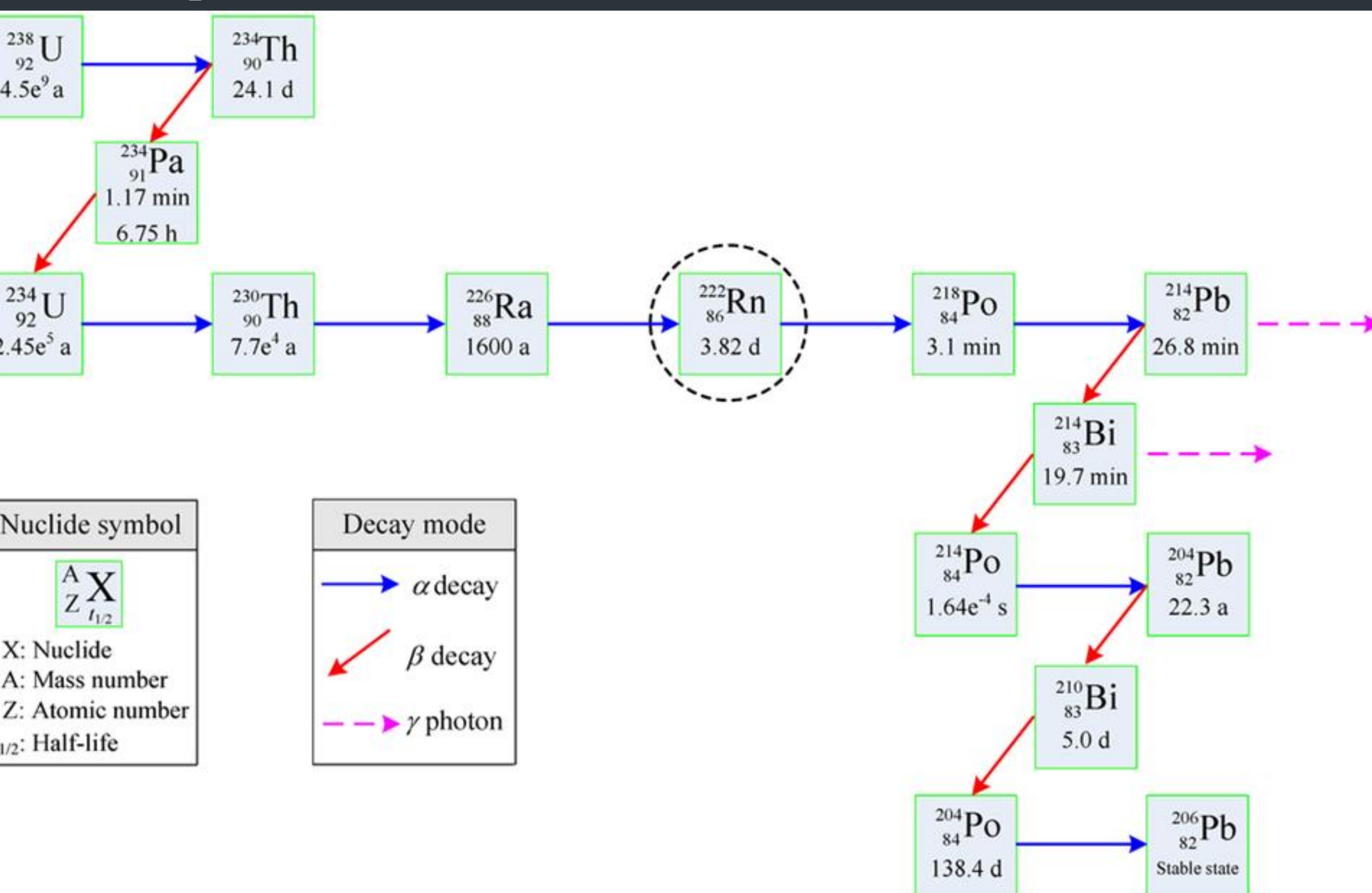
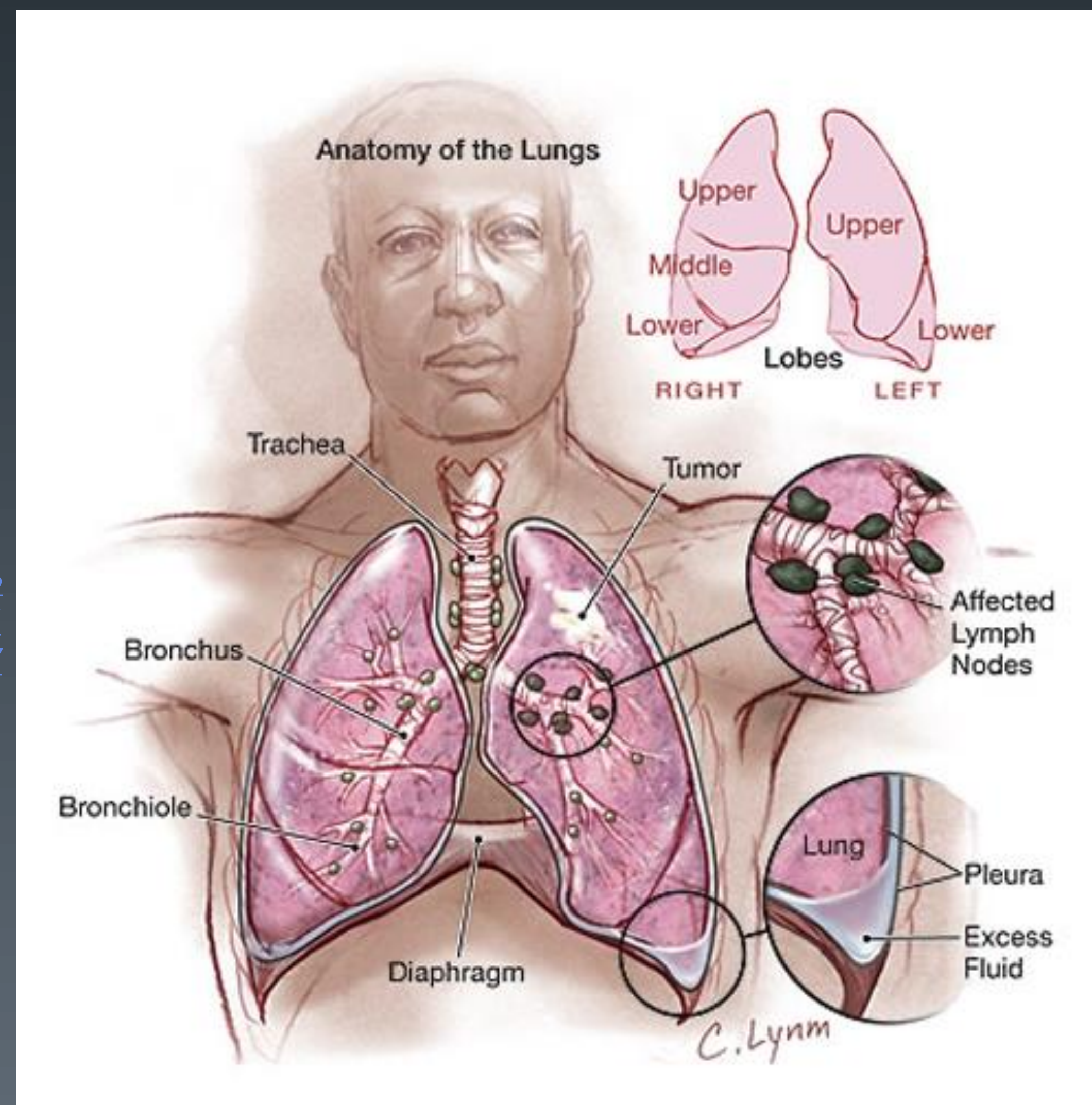


Figure 2. Diagram showing Uranium to Radon decay chain,  
[http://www.mdpi.com/energies/energies-07-08483/article\\_deploy/html/images/energies-07-08483-g020-1024.png](http://www.mdpi.com/energies/energies-07-08483/article_deploy/html/images/energies-07-08483-g020-1024.png)

## Cancerous effects of Radon

- Over 20,000 USA deaths/year due to radon gas
- Second leading cause of lung cancer next to smoking
- IS RADIATION!
- Alpha particle
- Have to breath in to get sick
- EVERYONE has to breathe

Figure 4. Radon Lung Cancer,  
[http://ohiohomeanswers.com/image\\_store/uploads/3/7/1/9/5/ar128560886459173.jpg](http://ohiohomeanswers.com/image_store/uploads/3/7/1/9/5/ar128560886459173.jpg)



## I Will Survive

- Survivable with early detection
- Tumors can be removed
- Smoking increases risk DRASTICALLY
- If smoking, stopping can save you life
- Live in older building or basement? GET A CHECK-UP AND X-RAY!

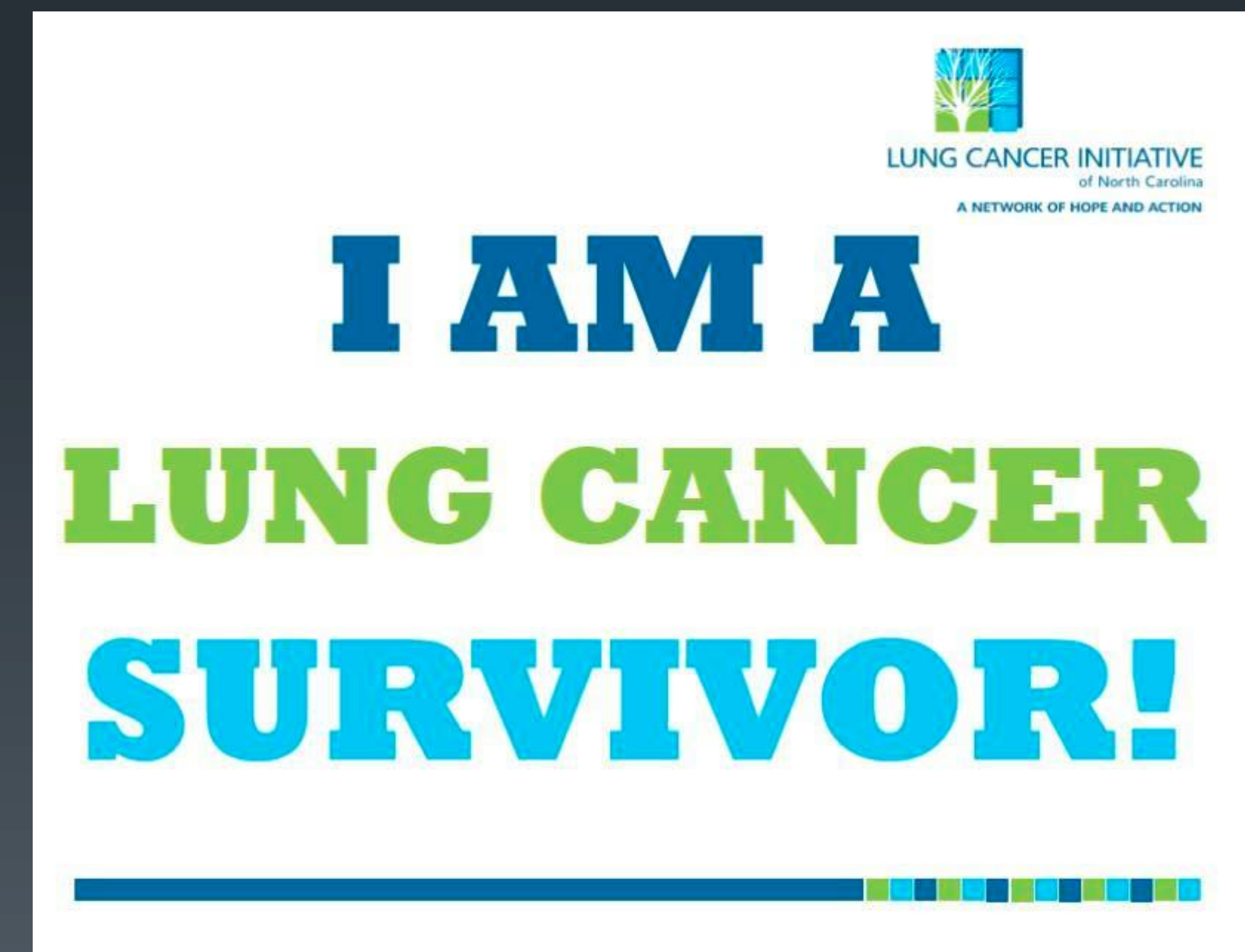


Figure 6. Quote from a lung cancer survivor,  
<https://a248.e.akamai.net/akamai-cache.trustedpartner.com/images/library/LungCancerInitiative2013/Cancer%20Survivor%20Day%20Sign%20Survivors.jpg>