Estimate Your Personal Radiation Dose

Radiation is measured in terms of millirems (mrems). The average annual dose per person from all sources is about 360 mrems per year, but it is not uncommon for any of us to receive far more than that in a given year (largely due to medical procedures we may have had done). International standards allow up to 5000 mrems per year exposure for those who work with and around radioactive material.

Factors	Common sources of radiation	Your annual dose (mrems)
Where you live	**Cosmic radiation** (from outer space) Exposure depends on your elevation. Amounts are in millirems per year. At sea level .....26 mrem 0–1000 ft .....28 1000–2000 .....31 2000–3000 ..... 35 3000–4000 .....41 4000–5000 ft .....47 mrem 5000–6000 ....52 6000–7000 .....66 7000–8000 .....79 8000–9000 96	_____ mrem
	Terrestrial (from the ground) If you live in a state that borders the Gulf or Atlantic coasts, add 16 mrem. If you live in the Colorado Plateau (around Denver), add 63 mrem. If you live anywhere else in the continental United States, add 30 mrem.	_____ mrem
	House construction If you live in a stone, adobe, brick or concrete building, add 7 mrem.	_____ mrem
	Power plants If you live within 50 miles of a nuclear power plant, add 0.009 mrem. If you live within 50 miles of a coal-fired power plant, add 0.03 mrem.	_____mrem
Food, Water, Air	**Internal radiation** (based on average values) From food (Carbon-14 and Potassium-40) and from water (radon dissolved in water)	40 mrem
	From air (radon)	200 mrem
How you live	Weapons test fallout (less than 1) — 1 mrem	1 mrem
	Travel by jet plane — 0.5 mrem per hour in the air	_____ mrem
	If you have porcelain crowns or false teeth — 0.07 mrem	_____ mrem
	If you wear a luminous wristwatch — 0.06 mrem	_____ mrem
	If you go through security inspection at airport (each time) — 0.002 mrem	_____ mrem
	If you watch TV — 1 mrem	_____ mrem
	If you use a video display (computer screen) — 1 mrem	_____ mrem
	If you have a smoke detector — 0.008 mrem	_____ mrem
	If you use a gas camping lantern — 0.2 mrem	_____ mrem
	If you wear a plutonium-powered pacemaker — 100 mrem	_____ mrem
Medical Tests	**Medical diagnostic tests** *Number of millirems per procedure* X-Rays: Extremity (arm, hand, foot, or leg) .....1 Dental .....1 Chest .....6 Pelvis/hip .....65 Skull/neck .....20 Barium enema .....405 Upper GI .....245 CAT Scan (head and body) .....110 Nuclear Medicine (e.g., thyroid scan) 14	_____ mrem
	Your Estimated Annual Radiation Dose	_____ mrem

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Article Radioactivity It's Natural

Directions: Write answers in sentences on a separate sheet of paper

1. Define radiation.
2. List 2 types of radiation necessary for life on this planet.
3. Define radioactivity.
4. Why does nuclear radiation get the name ionizing radiation?
5. Who invented the Geiger counter?
6. List the particles released from the nuclei undergoing radioactive decay.
7. Explain how radiation is different from radioactivity.
8. What makes radioactivity dangerous?
9. Why did Marie Curie win the Nobel Prize?
10. Why was radium popular in the early 20th century?
11. What 2 elements were used to make glow in the dark paint?
12. What made people's attitude toward radioactivity change?
13. List 2 places in the home where radioactive elements are found.
14. How does smoke effect a smoke detector?
15. List 5 food sources that contain radioactive potassium.
16. How much greater is a smokers annual exposure to radioactivity than a nonsmoker?
17. What 2 things can increase your exposure to cosmic rays?
18. Why does radon tend to not travel upward?
19. How does carbon-14 get into our bodies?
20. What radioactive element is found in the liver?