

# Radiation's Health Effects

Name \_\_\_\_\_

1. Which is emitting more radiation, a chunk of New England granite emitting 250,000 Bq or a deposit of coal emitting 0.1 Ci?
2. Bq and rad measure radiation in different ways. Explain.
3. Which source of radiation is giving off more energy, a piece of uranium releasing 1.5 Gy or a piece of plutonium releasing 125 rad?
4. Two twins, Tammy and Tracy, are separated at birth. Tammy is exposed to 1,000 rad of radiation per year. The primary source of this radiation produces alpha particles. Tracy is also exposed to 1,000 rad of radiation per year. However, the primary source of this radiation produces gamma rays. According to this description, which of the twins will probably suffer the most grievous health effects? Why?

5. What is “background radiation,” estimate your exposure in mrem per year?

6. Pierre lives in France. France gets 78% of its electricity from nuclear power. Pierre has lived for twenty years outside a nuclear power plant. Pierre has never owned, or watched a TV. Joe lives in America. He is twenty-five years old, and since the age of five has watched, on average, two hours of television every day. Is Pierre or Joe more vulnerable to health effects from radiation?

7. In 1986, the Chernobyl Nuclear power plant experienced a meltdown. Residents who lived within 30 km of the power plant were evacuated by bus and train. Despite the evacuation, the residents who lived within 30 km of the power plant experienced a dose of radiation at a level of 15 mSv. Predict the typical health symptoms, if any, experienced by these residents.