## Radiation Dose Chart This is a chart of the ionizing radiation dose a person can absorb from various sources. The unit for absorbed dose is "sievert" (\$v), and measures the effect a dose of radiation will have on the cells of the body. One sievert (all at once) will make you sick, and too many more will kill you, but we safely absorb small amounts of natural radiation daily. Note: The same number of sieverts absorbed in a shorter time will generally cause more damage, but your cumulative long-term dose plays a big role in things like cancer risk. EPA yearly release target for a nuclear power plant (30 µSv) ■ Sleeping next to someone (0.05 µSv) ■ Chest x-ray (20 µSv) Living within 50 miles of a nuclear power plant for a year (0.09 µSv) All the doses in the blue chart combined (~60 μSv) Dose from spending an Extra dose to Tokyo in weeks following Fukushima accident (40 mSv) Eating one banana (0.1 µSv) hour on the grounds at the Chernobyl plant in Living within 50 miles of a coal 2010 (6 mSv in one spot, Living in a stone, brick, or concrete building for a year (70 μSv) power plant for a year (0.3 µSv) but varies wildly) Using a CRT monitor Arm x-ray Average total dose from the Three Mile Island accident to someone living within 10 miles (80 µSv) (1 µSv) for a year (1 µSv) Chest Extra dose from spending one day in an area with higher-than-average CT scan (7 mSv)

Approximate total dose received at Fukushima Town Hall over two weeks following accident (100 µSv) natural background radiation, such as the Colorado plateau (1.2 µSv) EPA yearly release limit for a nuclear power plant (250 µSv) Maximum yearly dose permitted for US radiation workers (50 mSv) Dental x-ray (5 µSv) Yearly dose from natural potassium in the body (390 µSv) (400 µSV) Background dose received by an average person over Maximum EPA yearly limit on external dose from Three one normal day (10 µSv) radiation exposure to a single member of the public (1 mSv=1,000 µSv) Mile Island accident (1 mSv) Airplane flight from New York to LA (40 µSv) Typical dose over two weeks in Fuku-shima Exclusion Head CT Scan Zone (1 mSv, but areas northwest saw (2 mSv) far higher doses) Normal yearly background dose. About 85% is from natural sources. Nearly all of the rest is from medical scans (~4 mSv)

Using a cell phone (0  $\mu Sv$ )—a cell phone's transmitter does not produce ionizing radiation\* and does not cause cancer.

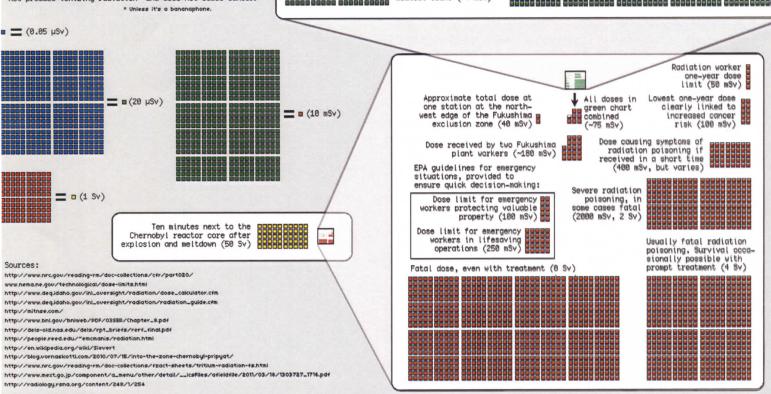


Chart by Randall Munroe, with help from Ellen, Senior Reactor Operator at the Reed Research Reactor, who suggested the idea and provided a lot of the sources. I'm sure I've added in lots of mistakes; it's for general education only. If you're basing radiation safety procedures on an internet PNG image and things go wrong, you have no one to blame but yourself.