

What is Radiation Dose?

Radiation dose, though it sounds simple, is more complex than a pharmaceutical dose as it can imply a number of different things such as: absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent. Though all of these terms are clinically relevant, they are not all used in the context of radiobiology experiments.

In the context of radiobiology experiments, the focus is on **absorbed dose**, which is the amount of energy absorbed per unit mass of irradiated material. The unit for this is the **Gray (Gy)**.

Why dose in Radiobiology is important

Delivering the correct radiation dose is critically important in radiobiology research. Not delivering enough radiation dose to a tumor could lead to it not reaching full necrosis, while delivering too much radiation dose to healthy tissues could induce radiation toxicity. Either of these would lead to a compromised animal or cell data and would not be publishable. It is therefore important that dose is measured accurately, and to have a **dosimetry** program in place.

References

1. *National Research Council (US) Committee on Evaluation of EPA Guidelines for Exposure to Naturally Occurring Radioactive Materials. Evaluation of Guidelines for Exposures to Technologically Enhanced Naturally Occurring Radioactive Materials. Washington (DC): National Academies Press (US); 1999. Appendix, Radiation Quantities and Units, Definitions, Acronyms.*

Available from: <https://www.ncbi.nlm.nih.gov/books/NBK230653/>