

Super Radiation Saves the Day!

By: Lara Maclang

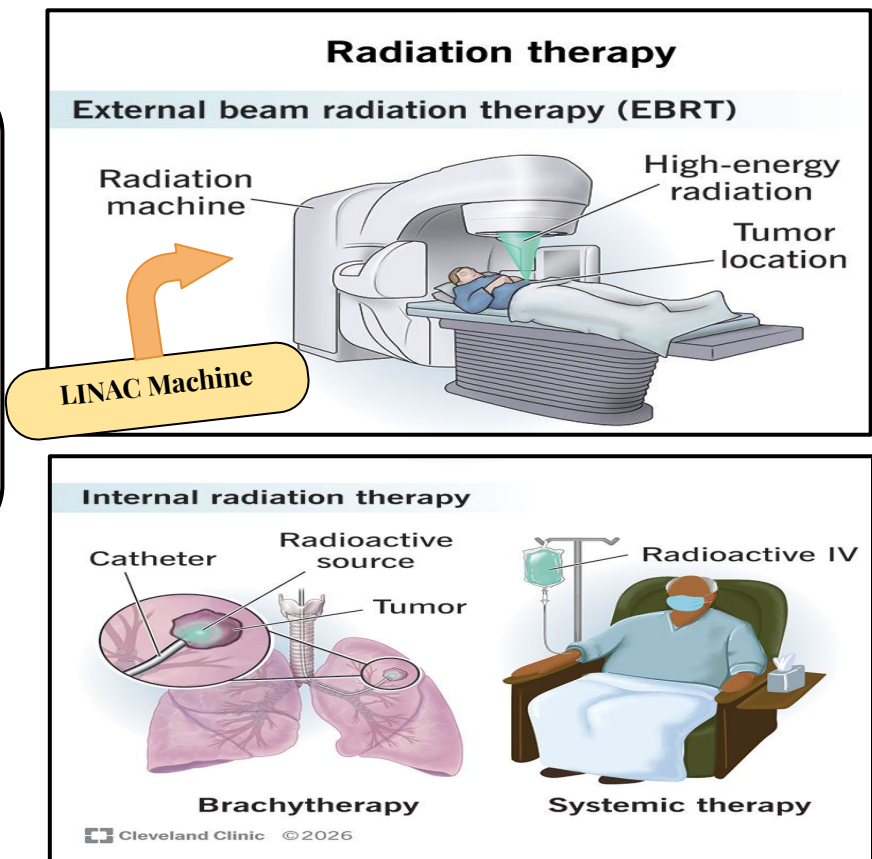
What is Radiation therapy? and what it teaches us about scientific collaboration using tools and technologies.

1.) What is Radioactive Therapy

Radiation therapy is a form of cancer treatment in which radioactive isotopes are used to target cancer cells by destroying their DNA, thereby slowly inhibiting their growth. It can be used to treat cancers such as liver, thyroid, lung, and breast cancer (National Cancer Institute, 2025). Furthermore, the treatment type will also vary depending on the patient's cancer, as there are two main types of radioactive therapy administered: external and internal (National Cancer Institute, 2025). External therapy will directly target the cancer site, while internal radioactive therapy will be in the form of a capsule, in which the whole body is radioactive.

2.) Nature of Science Link

Since Marie Curie's discovery in the radiology field, chemist Emil Grubbe conducted the first known experiment using radioactive X-rays to treat breast cancer in the late 1800s (Gianfaldoni et al., 2017). There were many uncertainties when it started, such as radioactive penetration level and dosage amount. Currently, with the help of a collaborative specialized team of oncology experts such as nurses, oncology techs, physicians, and dosimetrists, patients can get the proper care, radioactive treatment, and dosage they need. Furthermore, tools such as LINAC machines, which were trialed in 1953, allow patients to this day to safely get the proper external radioactive therapy while decreasing the risk of damage to healthy cells of the patients (Huh et al., 2020). Better equipment also decreases radioactive exposure to health care workers, allowing better working conditions with the help of better medical machines.



5.) References

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- Gianfaldoni, S., Gianfaldoni, R., Wollina, U., Lotti, J., Tchernev, G., & Lotti, T. (2017). An Overview on Radiotherapy: From Its History to Its Current Applications in Dermatology. *Open Access Macedonian Journal of Medical Sciences*, 5(4), 521–525.
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3.) Why this Matters.

As the scientific field continues to collaborate and build upon existing knowledge and data, it is important to learn about the history and who the first pioneers were in the field of not only oncology but also radiology. Through the published works of Marie Curie and following doctors and experts, humans were able to develop methods and tools to minimize the damage cancer cells do to the human body. This discovery allows learners to think about how we can even improve further on the tools and research in the field.

4.) Use in Classroom/Lectures

This can serve as a case study for biochemistry, anatomy, and cell physiology classes, offering a brief introduction to how scientists have improved cancer treatment over the centuries using knowledge of DNA and cell replication. This presentation can also be used to discuss any misconceptions and inaccurate beliefs when it comes to radiation and cancer treatment types. It can raise a larger question about how information shared about medical treatments can often lead to misinformation.