## Radiation Therapy for **Breast Cancer**

Radiation therapy (also called Radiotherapy) improves breast cancer outcomes in women treated with lumpectomy and in some patients who receive mastectomy. It is often the last step of active treatment for breast cancer patients who had surgery and when indicated, chemotherapy. Radiation therapy causes biological effects in the cancer cells that cause them to die. After surgery, radiation may be used to stop the growth of any cancer cells that remain. Radiation therapy dose is calculated ahead of time by a team of radiation oncologists, physicists, and dosimetrists. The therapy is based on an individual's specific case, as well as health and body type. The dose is enough radiation to kill a cancer cell, while still allowing normal cells to recover before the next dose.

In patients who are treated with chemotherapy first and then surgery, or surgery without chemotherapy, radiation typically begins 6 to 8 weeks after surgery. In patients who are treated with surgery first and then chemotherapy, radiation typically begins 4 to 6 weeks after the last cycle of chemotherapy.

Before beginning radiation therapy, a simulation known as a "marking" procedure, will take place. During the simulation, a non-contrast CT scan is performed of the patient in the treatment position. The patient will leave that session with non-permanent marks on their skin. This allows the radiation therapists to accurately align and set up the patient, delivering precise treatment on a daily basis.

Radiation therapy is typically given once daily, Monday-Friday, for 3 to 6 weeks depending on a patient's stage of disease. Occasionally, patients with specific types of breast cancer may be offered Accelerated Partial Breast Irradiation (APBI) treatment for one week given twice daily with the use of a catheter placed inside of the breast. Another option for select patients is a one-time intraoperative treatment performed at the time of lumpectomy (IORT – intraoperative radiotherapy).





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