
External Beam Radiation Therapy

Female Patient

Radiation therapy involves delivering X-rays to the breast area to destroy microscopic cancer cells. Radiation treatment is designed and administered under the care of a radiation oncologist—a physician who specializes in using radiation to treat diseases. Cancer cells so small they can't be seen with the human eye may remain in the body after surgery. The goal of radiation therapy is to destroy any remaining cancer cells in the surgical area to prevent future recurrence. Radiation destroys these microscopic cancer cells by making them unable to divide and multiply. When these cells die, the body naturally eliminates them. Healthy tissue is able to repair itself in a way that cancer cells cannot.

Lumpectomy patients usually have radiation therapy to the breast for up to six weeks. Mastectomy patients may also receive radiation therapy if their pathology report shows certain characteristics, such as a large tumor, positive lymph nodes or a tumor close to the chest wall. Your radiation oncologist will review your pathology report and write a prescription for the dose of radiation and the exact area to be treated. If you require chemotherapy, radiation usually starts about four weeks after your last chemo treatment is given. If you do not require chemotherapy, radiation usually starts about three to six weeks after surgery, or when the breast has healed.

There are two methods to deliver radiation therapy for breast cancer—external and internal. External beam radiation is the most common type. Internal breast radiation, also called brachytherapy or partial breast radiation, is a newer method being used after lumpectomy. Internal breast radiation is being compared to whole breast external radiation in clinical trials.

External Beam Radiation

External beam radiation therapy is delivered by a machine called a linear accelerator that produces high-energy X-rays. Treatments are given daily, Monday through Friday, for up to six weeks.

Accelerated whole breast radiation administers a higher dose of radiation in a shorter period of time and reduces treatment time to three weeks.

External Radiation Therapy Preparation

Before treatment begins, you will be scheduled for an appointment to map the area to be treated. This visit will involve having X-rays and/or a CT scan to precisely identify the area to receive the therapy. When the area is identified, your therapist will make tiny marks, the size of a freckle, to outline the treatment area. The marks can be made with permanent ink (tattoo) or non-permanent ink. Your therapist will tell you which type you will receive. If permanent ink is used, you will feel a small pinch, like an insect bite, when the marks are being created with a needle and a drop of ink.



Receiving External Radiation Treatment

During external radiation therapy, you will lie on your back on a table with your arm above your head. The radiation device that delivers your treatment will be overhead. The therapist will use the marks on your chest to properly align the machine over the planned area of treatment. You will be alone in the room during the treatment, but a two-way communication system allows you and your technologist to talk. The therapist views your procedure on a screen from outside the room. Each treatment usually takes only 10 – 15 minutes in the treatment room but requires that you allow approximately 30 minutes for each visit. During the course of treatment, you will see your radiation oncologist weekly.

Undergoing External Radiation Therapy

During external radiation therapy, it is suggested that you wear loose-fitting, cotton clothing, without a bra, to prevent irritation to the radiated tissues. Breakdown of the tissues can result in discomfort and delay of treatment. The ideal garment to wear is a cotton camisole. Some camisoles are designed with mastectomy pockets to hold a prosthesis or a lightweight fiber-fill insert, which allows you to maintain your body image during treatment. Before radiation therapy starts, it is helpful to purchase at least two soft cotton camisoles. These camisoles are available at the American Cancer Society's online store (www.tlcdirect.org). Insurance may reimburse the cost.

Radiation therapy does not make you radioactive, nor does it make you a danger to your family. Throughout radiation therapy, your therapist and radiation oncologist will monitor side effects from treatment. The side effects from radiation are usually mild and well tolerated. However, it is common for side effects to increase for one to three weeks after treatment is completed.

Potential External Radiation Side Effects:

- Skin redness similar to a sunburn, which causes sensitivity and itching during treatment
- Tanning of the radiated area after redness subsides
- Breast swelling that is mild to moderate; potential for arm swelling
- Fatigue (mild) that begins during the third or fourth week; gradually improves after treatment ends
- Sore throat may occur during therapy
- Blisters and breaks in the skin, called wet desquamation, may occur and require that you stop radiation for a short period of time (more common after a mastectomy)
- Cough occurring six weeks to several months after treatment (uncommon)
- Increased risk for future arm lymphedema (swelling) if underarm lymph node area is radiated
- Increased risk for future breast lymphedema

Recently, a study of patients who received external beam radiation showed that 84 percent reported at the conclusion of treatment that their side effects were less than expected.

Skin Care During External Radiation Therapy:

- Avoid extremely hot water when bathing; use only mild soaps (Tone®, Dove®, Basis® or baby soap) on the area being treated; avoid scrubbing or vigorous wiping with a washcloth or towel.
- Avoid extremes of hot or cold to the skin: no heating pads, ice packs, hot-water bottles, sun lamps, tanning beds or sunbathing.
- Avoid shaving under your arm with a razor blade to avoid nicking the skin; use an electric razor.
- Avoid underarm deodorant, powder, perfumes, lotions or other scented or alcohol-containing skin preparations on the treated area during therapy.
- Ask your nurse if you may apply pure aloe vera gel or Lubriderm® lotion to dry or peeling skin.

- Report any painful areas or blisters that occur. Ask if you can apply cool compresses moistened with water or saline (salt) water to blisters that burst. If the area is being rubbed by clothing, ask about applying a sterile dressing such as Op-Site® or Tegaderm® (available in a pharmacy) while it heals. Expose the covered area to air for 10 – 15 minutes two or three times per day. Moist desquamation usually heals within one to two weeks after treatment ends.
- Wait until two weeks after treatment to wear your regular bras or prosthesis. If you have a breakdown of the skin, you will need to wait until you are completely healed.
- Avoid sun exposure to the treated area.

The key to dealing with radiation side effects is to talk with your therapist or radiation oncologist during your visit and report any troublesome symptoms so they can be addressed **early**.

Additional Information:
