

## FACTS ABOUT BREAST CANCER

**Breast cancer is the most common type of cancer in American women, according to the American Cancer Society.**

- This year, nearly 213,000 women and 1,700 men will learn they have breast cancer.
- Another 62,000 women will learn they have non-invasive (also called in situ) breast cancer.
- Nearly 41,000 women and 500 men will die from breast cancer this year.
- Breast cancer can often be cured. About 80 percent of all patients with breast cancer are free of the disease 10 years after their diagnosis.

## RISK FACTORS FOR BREAST CANCER

**Many women who develop breast cancer do not have known risk factors. Patient qualities that may increase the risk of developing the disease include:**

- Age is the biggest risk factor. More than 75 percent of women diagnosed with breast cancer are over age 50.
- Family history of breast cancer in your mother or sister.
- Early onset of periods.
- Having children later in life, or not at all.
- Hormone replacement therapy with estrogen and progesterone.

Being physically active, keeping a healthy weight, breast feeding and limiting alcohol intake may lower your risk for developing breast cancer.



## LEARNING ABOUT CLINICAL TRIALS

The radiation oncology team is always exploring new ways to improve treatment for cancer patients through studies called clinical trials. Today's radiation treatments are the result of clinical trials completed years ago proving that radiation therapy kills cancer cells and is safe long-term. For more information on current clinical trials, please visit:

**National Cancer Institute**  
[www.cancer.gov/clinicaltrials](http://www.cancer.gov/clinicaltrials)

**Radiation Therapy Answers**  
[www.rtanswers.org/treatment/clinical\\_trials.htm](http://www.rtanswers.org/treatment/clinical_trials.htm)

**Radiation Therapy Oncology Group**  
[www.rtog.org](http://www.rtog.org)

## HELPFUL WEB SITES ON BREAST CANCER

**People Living With Cancer**  
[www.plwc.org](http://www.plwc.org)

**Susan G. Komen Breast Cancer Foundation**  
[www.komen.org](http://www.komen.org)

**Y-ME National Breast Cancer Organization**  
[www.y-me.org](http://www.y-me.org)

## ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are cancer doctors who also oversee the care of each patient undergoing radiation treatment. Other members of the radiation oncology team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. To locate a radiation oncologist in your area, visit [www.rtanswers.org](http://www.rtanswers.org).

## ABOUT ASTRO

The American Society for Therapeutic Radiology and Oncology is the largest radiation oncology society in the world with more than 8,500 members who specialize in treating cancer with radiation therapies. ASTRO's mission is to advance the practice of radiation oncology by promoting excellence in patient care, promoting research and disseminating research results.



## RADIATION THERAPY for BREAST CANCER

### Understanding Your Treatment Options

# ASTRO

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## DIAGNOSING BREAST CANCER

Many breast tumors are found by a breast X-ray study called a mammogram. At age 40, women should begin having regular mammograms. If you have a family history of the disease or other risk factors, ask your healthcare provider about earlier screening.

- If you notice a lump in the breast or underarm, have it checked by a doctor. Breast swelling, skin discoloration, dimpling of the skin or nipple discharge should also be checked.
- In addition to a mammogram, your doctor may also recommend ultrasound or MRI scans.
- In some cases, a biopsy to see if you have breast cancer will be done if your mammogram is abnormal or you have a lump. Sometimes a small needle will be used to remove tissue from the lump and look at it under a microscope. Sometimes it is better to have a surgeon remove the entire lump to be sure about the diagnosis.

## TREATING BREAST CANCER

The main treatment for breast cancer is surgery. This is often followed by radiation therapy. Some patients will also need chemotherapy and/or hormone blocking therapy.

- Breast conserving surgery is surgical removal of only the cancerous tissue. This operation is called a **lumpectomy** and is usually followed by radiation.
- **Mastectomy** is surgical removal of the breast.
- Both surgeries may be done in combination with tests that check the lymph nodes near the breast for cancer.
- **Radiation therapy** involves a radiation oncologist delivering radiation to the breast to destroy cancer cells. Radiation therapy works within cancer cells to make them unable to multiply. When these cells die, the body naturally eliminates them. Healthy tissue is able to repair itself in a way cancer cells cannot.
- **Chemotherapy** is medication prescribed by a medical oncologist to destroy cancer cells that may have traveled elsewhere in the body.
- **Hormonal therapy** is medication prescribed by a medical oncologist to block the effects of hormones that may be helping your tumor grow.

## EXTERNAL BEAM RADIATION THERAPY

Painless radiation treatments are delivered in a series of sessions Monday through Friday, for five to eight weeks. Each treatment lasts less than 30 minutes.

- The usual course of radiation treats only the breast, although you may need to have nearby lymph node areas treated also.
- **3-dimensional conformal radiotherapy (3D-CRT)** combines multiple radiation treatment fields to deliver very precise doses of radiation to the breast and spare surrounding normal tissue.

Side effects can include fatigue, skin irritation similar to a moderate sunburn, and mild to moderate breast swelling. These changes are temporary and can be treated by skin creams and/or medications. Tell your radiation oncologist or nurse about any discomfort you may feel.

## ACCELERATED PARTIAL BREAST IRRADIATION

External beam radiation therapy over several weeks is the standard of care. In national clinical trials, doctors are studying if accelerated partial breast irradiation (or APBI) — where radiation is delivered to only part of the breast over four to five days — works as well. These techniques are only available in a few clinics and then only to a select group of patients.

- **Breast brachytherapy** involves placing flexible plastic tubes called catheters or a balloon into the breast. Twice a day for five days, the catheters or the balloon are connected to a brachytherapy machine, also called a high dose rate afterloader. Your radiation oncologist then directs a special computer to guide a small, radioactive seed into the breast tissue near where the tumor was removed. The radiation is left in place for several minutes. After the end of the five days, the catheters or balloon are removed.
- **3-D conformal partial breast irradiation** is where only part of the breast receives external beam radiation.
- **Intra-operative radiation therapy (IORT)** involves doctors delivering radiation to the breast during surgery.

The long-term results of these techniques are still being studied. Talk with your radiation oncologist for more information.

## AFTER MASTECTOMY RADIATION

After a mastectomy, your doctor may suggest radiation therapy for the chest wall and nearby lymph node areas.

- Whether or not radiation therapy should be used after removal of the breast depends on several factors. These factors include the number of lymph nodes involved, tumor size, and whether or not cancer cells were found near the edge of the tissue that was removed.

Many patients who have a mastectomy can safely skip radiation therapy. Ask your doctor for more information.

