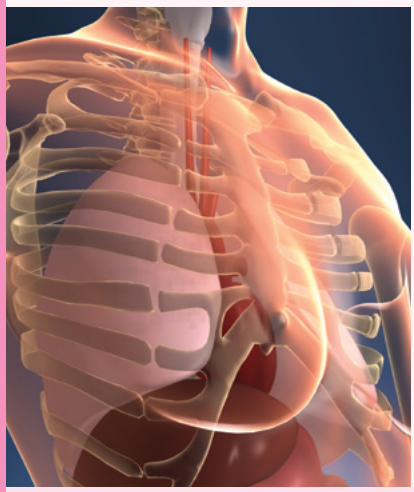
RADIATION THERAPY FOR BREAST CANCER



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AMERICAN SOCIETY FOR RADIATION ONCOLOGY

RADIATION THERAPY FOR BREAST CANCER

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Breast cancer is the most common type of cancer in American women, according to the American Cancer Society. This year, approximately 300,000 women and men will learn they have breast cancer. About 1 in 5 breast cancers will be noninvasive, or more commonly known as DCIS (ductal carcinoma in situ.) Breast cancer can often be cured, with about 80 percent of all patients with breast cancer living at least 10 years after their diagnosis.

TREATING BREAST CANCER

If you find out you have breast cancer, you should discuss your treatment options with your physician. Breast cancer treatment will vary depending on the stage and location of the cancer and will be individually tailored to your specific needs.

Breast cancer treatment options include:

Surgery has traditionally been the typical first step for treatment of localized breast cancer. However, some treatment practices have changed so that select cases start with chemotherapy to help shrink the tumor so that a less invasive surgery can be attempted. Surgery can often be followed by chemotherapy or radiation therapy to decrease the risk of cancer returning in the breast, chest wall and/or lymph nodes.

Some types of surgeries for breast cancer include:

Lumpectomy, or partial mastectomy, is the surgical removal of cancerous tissue along with a small rim of surrounding healthy breast tissue. This type of breast-conserving surgery is often followed by radiation therapy.

Mastectomy is the surgical removal of the entire breast. Sometimes, breast reconstruction can be performed after the mastectomy. In select cases, radiation therapy is recommended after mastectomy.

Depending on your risk factors, a lymph node biopsy may be performed. This will be discussed by your surgeon prior to surgery. A select number of lymph nodes near the breast may be removed during surgery to determine if they contain tumor cells. If one or more of the lymph nodes contain tumor cells, the removal of additional lymph nodes may be recommended.

Both mastectomy and breast-conserving therapy (lumpectomy/partial mastectomy and radiation therapy) can be equally effective approaches in curing breast cancer. Ask your surgeon and radiation oncologist about the risks and benefits of both treatment options.

Radiation Therapy after surgery can decrease the chance of cancer returning in the breast and may improve survival. Radiation therapy involves delivering focused radiation beams to the breast or chest wall, and sometimes the lymph nodes, to treat cancer cells not detected or removed by surgery. Radiation therapy kills cancer cells by destroying their ability to grow and multiply.

Medical Therapy is typically recommended to improve cure rates or prevent a new breast cancer from developing. A medical oncologist will evaluate you and determine what medications may be most helpful in accomplishing those goals.

- **Chemotherapy** has the ability to destroy cancer cells. Often, two or three different types of drugs may be combined to get the best outcome. While the dose and schedule for treatment varies, chemotherapy is usually delivered every two to three weeks over several months. When chemotherapy is given before surgery it is called neoadjuvant therapy.

- **Hormonal therapy** can block the effects of the female hormone, estrogen, in the body. Estrogen has been shown to cause tumors to grow if the tumor cells have receptors for estrogen. Usually taken as a daily pill, hormonal therapy may be started during or after radiation therapy. While the dose of the pill may change depending on the type of pill prescribed, this pill is usually taken daily for several years.
- **Immunotherapy** works by either stimulating your immune system to attack cancer cells or providing your immune system with what it needs, such as antibodies, to fight cancer. Immunotherapy can be given with chemotherapy and radiation therapy, and is often given over a course of many months.

Ask your medical oncologist what medications may be best for you.

WHOLE BREAST EXTERNAL BEAM RADIATION THERAPY AFTER LUMPECTOMY

After lumpectomy, the usual course of radiation therapy treats the whole breast and, if needed, nearby lymph node areas. The radiation beam comes from a machine called a linear accelerator, or linac. The radiation beam is a specialized X-ray, and is painless. Each treatment is brief; however, you may be in the treatment room for 15 – 30 minutes because

the setup for treatment needs to be very precise. Treatment is delivered every day, five days a week, Monday through Friday. The full course of treatment is usually delivered over one to seven weeks, depending on findings during surgery.

Before beginning treatment, you will be scheduled for a pre-treatment planning session to map out the area to treat. This involves having an initial CT scan.

Some centers will place tiny tattoo-like marks on your skin to help the radiation therapist precisely position you for daily treatment and other centers may use markers and stickers.

Typically, radiation therapy is done with high energy X-rays, or photons. If needed, electrons or protons may be used to treat the breast or chest wall in select cases.

Recent clinical trials focused on early-stage breast cancer have shown that whole breast radiation therapy courses may be safely shortened by treating the tumor with slightly higher daily doses over less time. You can ask your radiation oncologist if you might qualify for a shorter course of radiation therapy.

If you have left-sided breast cancer, breathing techniques may be used during your treatments to minimize heart dose.

PARTIAL BREAST IRRADIATION (PBI) AFTER LUMPECTOMY

Ongoing research suggests that in certain patients, it may be safe to give radiation treatment to only the part of the breast that had the tumor (instead of the whole breast), over a shorter period of time.

There are two approaches to PBI:

- External beam radiation therapy is delivered in a similar way to standard whole breast radiation using a linear accelerator. However, it is more focused on the area around the surgery and does not treat the whole breast. Treatment occurs over a one- to two- week period.
- Breast brachytherapy (internal radiation) involves placing flexible plastic tubes called catheters, or a balloon-like device (BLD), directly into the space where the cancer was removed. A small, radioactive seed is guided into the catheters or BLD and the device is left in place for several minutes based on the treatment plan designed by your radiation oncologist. The procedure is repeated two times a day for a period of five days, then the catheters or BLD is removed and the treatment is finished.

Check with your radiation oncologist for more information.

CHEST WALL RADIATION THERAPY AFTER MASTECTOMY

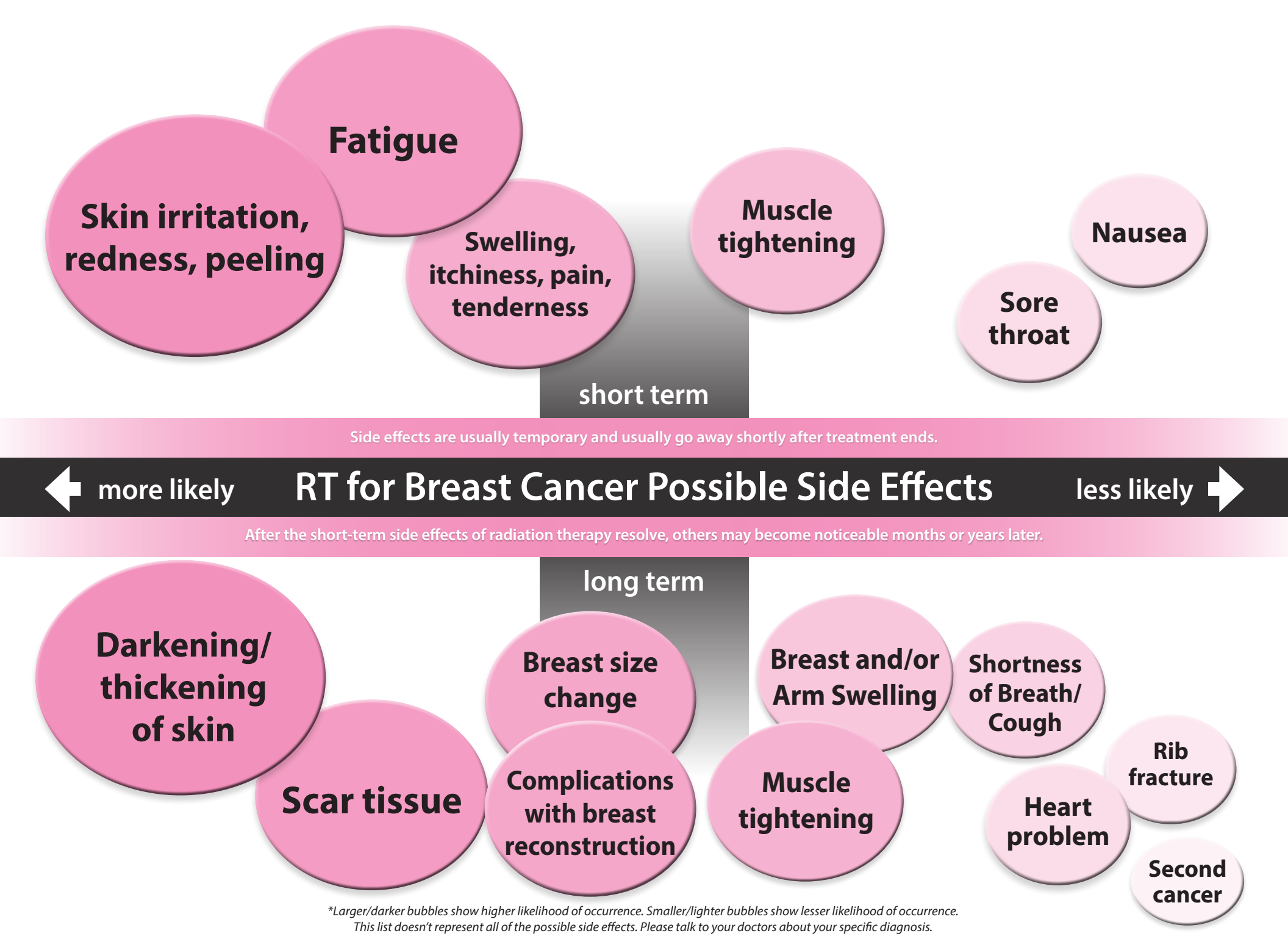
After a mastectomy, your doctor may suggest radiation therapy for the reconstructed and non reconstructed chest wall and nearby lymph node areas. Whether or not radiation therapy should be used may depend on several factors, such as the number of lymph nodes involved, tumor size and whether or not cancer cells were found near the edge of the surgical site. Women planning to undergo reconstruction should discuss the impact of post-mastectomy radiation with their surgeon and radiation oncologist.

If you have left-sided breast cancer, breathing techniques may be used during your treatments to minimize heart dose.

CARING FOR YOURSELF DURING TREATMENT

- Get plenty of rest during treatment, and don't be afraid to ask for help.
- Follow your doctor's advice. Ask questions if you are unsure about anything.
- Tell your doctor about any medications, vitamins or supplements you are taking to make sure they are safe to use during radiation therapy.
- Eat a balanced diet and drink plenty of fluids. If you're having trouble eating, tell your doctor, nurse or dietitian.
- Treat the skin exposed to radiation with special care. Stay out of the sun, avoid hot or cold packs, swimming pools and saunas. Only use lotions and ointments after checking with your team. Clean the treated area gently with warm water and mild soap.

Coping with the stress of a cancer diagnosis and treatment can be tough. It may be helpful to seek out help from support groups and friends – ask your cancer team about available support groups.



*Larger/darker bubbles show higher likelihood of occurrence. Smaller/lighter bubbles show lesser likelihood of occurrence.
This list doesn't represent all of the possible side effects. Please talk to your doctors about your specific diagnosis.

SUGGESTED QUESTIONS TO ASK YOUR TEAM

What stage is the cancer?

What are the treatment options?

Do I need to see any other physicians?

What are the benefits, risks, and alternatives of having this treatment?

What is my life going to look like (e.g., number of visits, types of visits)?

What can I do to prepare for this treatment?

How many treatments will I have?

How long will it take to get treatment started?

What are the potential short-term and long-term treatment side effects?

Who can I contact if I have questions or concerns during the treatment?

How will the cancer be monitored after treatment?

What can be done if the cancer comes back after treatment?

What kind of follow-up will I have with your team?

If you have any questions about your diagnosis, treatment or side effects, please contact your doctor or other members of your treatment team. To locate a radiation oncologist in your area, or for additional cancer treatment information, please visit www.rtanswers.org.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are doctors who 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.

RTAnswers
ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

I Have Cancer. Now What?

Receiving a diagnosis of cancer can be frightening and confusing. **RTAnswers.org** provides detailed information and resources for cancer patients and their caregivers, including:

- Treatment information by disease site.
- Videos walking you through the radiation therapy treatment process.
- Stories from patients and caregivers sharing their experiences from diagnosis and treatment to survivorship.
- A "Find a Radiation Oncologist" portal where you can search by city, state and disease site specialty.

RTAnswers
ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

THE AMERICAN SOCIETY FOR RADIATION ONCOLOGY

(ASTRO) is the largest radiation oncology society in the world, with more than 10,000 members who specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, biology and physics, ASTRO's mission is to advance the specialty of radiation oncology through promotion of equitable, high-quality care for people with cancer, cultivating and educating a diverse workforce, fostering research and innovation, and leading policy development and advocacy. Visit www.astro.org for more information.

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