

TREATMENT UPDATE:

Early-Stage Breast Cancer

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Treatment Update: Early-Stage Breast Cancer

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Each year in the United States, there are nearly 300,000 diagnoses of breast cancer. Approximately two-thirds of these cases are considered early-stage.

Early-stage breast cancer is breast cancer that has not spread beyond the breast or the axillary lymph nodes. This includes stage 0 (ductal carcinoma in situ), in which there is no evidence that the cancer has invaded neighboring tissue, and stages I, IIA, IIB and IIIA.

Types of Breast Cancer

Hormones and other chemical messengers in the bloodstream can attach to specialized proteins (called receptors) and fuel the growth of cancer cells. These receptors may lie within or on the surface of cancer cells.

There are four main subtypes of breast cancer, based on the presence or absence of specific receptors:

- **Hormone receptor (HR) positive.** Cancers that have receptors for estrogen (ER-positive) and/or progesterone (PR-positive) are considered hormone-positive. Nearly two-thirds of ER-positive cancers are also PR-positive.
- **HER2-positive.** This type of breast cancer contains an overabundance of a protein called human epidermal growth factor receptor 2 (HER2). About half of HER2-positive cancers are also HR-positive.

- **HER2-low.** Breast cancers that do not contain an overabundance of the HER2 protein.
- **Triple-negative (TNBC).** Breast cancers that do not have receptors for estrogen or progesterone and do not contain an overabundance of the HER2 protein.

Treatment Options

Treatment recommendations are individualized, taking into consideration the biology of the cancer, its stage and the overall health of the individual. Treatment for early-stage breast cancer usually includes a combination of surgery, radiation and drug therapy.

Surgery

In the past, doctors thought that mastectomy (full removal of the breast) was the best way to improve the chances that the cancer would not return. However, mastectomy does not completely eliminate the chances of the tumor coming back. For many, lumpectomy (removal of the tumor and surrounding tissue but preserving the breast) plus radiation is equally effective. Lumpectomy also has the advantage of offering a better cosmetic result and a shorter recovery time than mastectomy.



In either a mastectomy or a lumpectomy, the surgeon often removes one or more lymph nodes in the underarm near the affected breast to see if they contain cancer cells. In some cases, the surgeon will remove only the sentinel lymph node(s), the first few lymph node(s) into which breast cancer cells may have spread. If the sentinel lymph node is cancer-free, chances are that other lymph nodes are also unaffected and can be left in place, reducing the risk of lymphedema, a painful swelling of the arm that sometimes results from the removal of lymph nodes.

Radiation

Radiation to the entire breast, usually given over 6 weeks, has been the standard of care for those who have been treated with lumpectomy. Recent trials have shown that, in some cases, higher daily doses of radiation given over 3 weeks (with the same total combined dose of radiation) are as effective as the standard approach, with similar potential side effects.

There are other radiation options that can also be considered:

- Accelerated partial breast irradiation (APBI) is given only to the area of the breast in which the cancer is present. APBI delivers more radiation in a shorter treatment period.
- Brachytherapy uses tiny radioactive pellets or catheters, surgically inserted during a lumpectomy, to deliver a localized dose of radiation.

Some people who have undergone a mastectomy will require post-surgery radiation. Factors that increase the likelihood that radiation after a mastectomy will be required include larger tumor size, the presence of affected lymph nodes and positive margins (cancer cells at the edge of the removed tissue).

Drug Therapy

Drug therapy is an important treatment option for many who have early-stage breast cancer. These therapies work by traveling through the bloodstream to destroy cancer cells.

Chemotherapy

Chemotherapy can be an important part of treatment for early-stage breast cancer, particularly for triple-negative breast cancer (TNBC). Chemotherapy can be used before surgery (neoadjuvant) to try to shrink the tumor so the surgery can be less extensive, or after surgery (adjuvant) to try to kill any remaining cancer cells.

The most common chemotherapy drugs used to treat early-stage breast cancer include:

- **Anthracyclines**, such as doxorubicin (Adriamycin), pegylated liposomal doxorubicin (Doxil, Caelyx) and epirubicin (Ellence).
- **Antimetabolites**, such as capecitabine (Xeloda) and gemcitabine (Gemzar).
- **Antimicrotubule agents**, such as ixabepilone (Ixempra), eribulin (Halaven) and vinorelbine (Navelbine).
- **Platinum agents**, such as platitinol (Cisplatin) and carboplatin (Paraplatin).
- **Taxanes**, such as paclitaxel (Taxol), docetaxel (Taxotere) and albumin-bound paclitaxel (Abraxane).

Hormone (Endocrine) Therapy

Hormone treatments work in different ways. Some are designed to prevent estrogen from attaching to receptors in breast cancer cells, while others are designed to reduce the level of hormones that circulate in the body. By blocking the effects of estrogen or lowering levels of estrogen, these treatments deprive tumor cells of the stimulation that fuels their growth.

The most common hormone therapies used to treat ER-positive or PR-positive early-stage breast cancer include:

- **Tamoxifen** (Soltamox, Nolvadex) is an estrogen-blocking treatment. It has also been approved as chemoprevention, reducing the chance of ER-positive breast cancer developing in healthy pre- or postmenopausal individuals who are at high risk for breast cancer.
- **Aromatase inhibitors (AIs)** are given to postmenopausal individuals with early-stage ER-positive breast cancer to help prevent cancer from returning after surgery. AIs block the action of an enzyme called aromatase, cutting off the supply of estrogen (estrogen can stimulate tumor growth). AIs have also shown effectiveness in breast cancer prevention. The AIs primarily used to treat early-stage breast cancer are anastrozole (Arimidex), letrozole (Femara) and exemestane (Aromasin).



Ovarian Suppression (Combined with Tamoxifen or Aromatase Inhibitors)

The estrogen produced by the ovaries can fuel tumor growth. Ovarian suppression uses drug therapy or surgery to stop the ovaries from producing estrogen. Some younger, premenopausal individuals with hormone receptor-positive early-stage breast cancer may benefit from treatment with ovarian suppression drugs, combined with tamoxifen or an aromatase inhibitor. Ovarian suppression drugs include leuprolide (Lupron) and goserelin (Zoladex).

Targeted Therapy

Targeted therapy focuses on specific molecules and cell mechanisms thought to be important for cancer cell survival and growth, taking advantage of what researchers have learned in recent years about how cancer cells grow.

Several targeted therapies have been developed for the treatment of early-stage breast cancer:

- **Trastuzumab** (Herceptin) is a standard treatment for HER2-positive breast cancer. It is typically taken for one year in the treatment of early-stage breast cancer.
- **Lapatinib** (Tykerb) is able to block HER2 signals from within cancer cells.
- **Pertuzumab** (Perjeta) is a neoadjuvant treatment option for HER2-positive breast cancer when used in combination with trastuzumab and chemotherapy (docetaxel or paclitaxel).
- **Ado-trastuzumab emtansine** (Kadcyla), an antibody drug conjugate also known as T-DM1, is a combination of trastuzumab and a chemotherapy.

- **Neratinib** (Nerlynx), a tyrosine kinase inhibitor, is given as an adjuvant therapy to further reduce recurrence in those with early-stage HER2-positive breast cancer who have finished at least one year of post-surgery therapy with trastuzumab.
- **Abemaciclib** (Verzenio) is a cancer growth blocker that targets the proteins CDK4 and CDK6. It was approved by the FDA in March 2023, in combination with tamoxifen or an aromatase inhibitor, for the treatment of HR-positive, HER2-negative early-stage breast cancer at high risk of recurrence.

Other therapies that have been developed for treatment of early-stage breast cancer include:

- **mTOR inhibitors.** Everolimus (Afinitor) is a targeted therapy that works inside cancer cells to restore their sensitivity to anti-estrogen therapies such as AIs.
- **Immunotherapy.** In July 2021, the FDA approved pembrolizumab for the treatment of high-risk, early-stage triple-negative breast cancer in combination with chemotherapy as a preoperative treatment and then continued as a monotherapy after surgery.



The Importance of Clinical Trials

Clinical trials are the standard by which we measure the worth of new treatments and the quality of life of individuals as they receive those treatments. For this reason, doctors and researchers urge people with cancer to take part in clinical trials.

Your doctor can guide you in making a decision about whether a clinical trial is right for you. Here are a few things that you should know:

- Often, people who take part in clinical trials gain access to and benefit from new treatments.
- Before you participate in a clinical trial, you will be fully informed as to the risks and benefits of the trial, including any possible side effects.
- Most clinical trials are designed to test a new treatment against, or in combination with, a standard treatment to find out whether the new treatment has any added benefit.
- You can stop taking part in a clinical trial at any time for any reason.

Treatment Side Effects

All cancer treatments can cause side effects. It's important that you report any side effects that you experience to your health care team so they can help you manage them. Report them right away—don't wait for your next appointment. Doing so will improve your quality of life and allow you to stick with your treatment plan. It's important to remember that not all patients experience all side effects, and patients may experience side effects not listed here.

There are certain side effects that may occur across different treatment approaches. Following are tips and guidance for managing these side effects.

Managing Digestive Tract Symptoms

Nausea and vomiting

- Avoid food with strong odors, as well as overly sweet, greasy, fried or highly seasoned food.
- Eat meals that are chilled, which often makes food more easily tolerated.
- Nibble on dry crackers or toast. These bland foods are easy on the stomach.
- Having something in your stomach when you take medication may help ease nausea.



Diarrhea

- Drink plenty of water. Ask your doctor about using drinks such as Gatorade that provide electrolytes. Electrolytes are body salts that must stay in balance for cells to work properly.
- Over-the-counter medicines such as loperamide (Imodium A-D and others) and prescription drugs are available for diarrhea but should be used only if necessary. If the diarrhea is bad enough that you need medicine, contact a member of your health care team.
- Choose foods that contain soluble fiber, like beans, oat cereals and flaxseed, and high-pectin foods such as peaches, apples, oranges, bananas and apricots.
- Avoid foods high in refined sugar and those sweetened with sugar alcohols such as sorbitol and mannitol.

Loss of appetite

- Eating small meals throughout the day is an easy way to take in more protein and calories, which will help maintain your weight. Try to include protein in every meal.
- To keep from feeling full early, avoid liquids with meals or take only small sips (unless you need liquids to help swallow). Drink most of your liquids between meals.
- Keep high-calorie, high-protein snacks on hand such as hard-boiled eggs, peanut butter, cheese, ice cream, granola bars, liquid nutritional supplements, puddings, nuts, canned tuna or trail mix.
- If you are struggling to maintain your appetite, talk to your health care team about whether appetite-building medication could be right for you.

Managing Fatigue

Fatigue (extreme tiredness not helped by sleep) is one of the most common side effects of many cancer treatments. If you are receiving a cancer-directed medication, your doctor may lower the dose of the drug, as long as it does not make the treatment less effective. If you are experiencing fatigue, talk to your doctor about whether taking a smaller dose is right for you.

There are a number of other tips for reducing fatigue:

- Take several short naps or breaks during the day.
- Take walks or do some light exercise, if possible.
- Try easier or shorter versions of the activities you enjoy.
- Ask your family or friends to help you with tasks you find difficult or tiring.

There are also prescription medications that may help, such as modafinil. Your health care team can provide guidance on whether medication is the right approach for your individual circumstances.

Managing Pain

There are a number of options for pain relief, including prescription and over-the-counter medications. It's important to talk to a member of your health care team before taking any over-the-counter medication to determine if it is safe and to make sure it will not interfere with your treatment. Many pain medications can lead to constipation, which may make your pain worse. Your doctor can prescribe medications that help to avoid constipation.

Physical therapy, acupuncture and massage may also be of help in managing your pain. Consult with a member of your health care team before beginning any of these activities.

Hot Flashes

Breast cancer treatments can lead to menopausal symptoms, such as hot flashes and night sweats. If you are experiencing these side effects, speak with your health care team about ways to cope with them. There are several medications that potentially help decrease hot flashes. Talk to your doctor to determine if medication is an option for you.

The following tips may also help:

- Identify the triggers for your hot flashes. For many, hot flashes can be triggered by stress, a hot shower, caffeine or spicy foods.
- Change your lifestyle habits to cope with your specific triggers. That may mean regular exercise, using relaxation techniques and changing your diet.
- Dress in layers so that you can remove clothing if needed.
- Keep ice water handy to help you cool off.
- Avoid synthetic materials, especially at nighttime. Wear pajamas and use sheets made of cotton.
- Take a cool shower before going to bed.

Lymphedema

People with breast cancer who have undergone lymph node removal and/or radiation as part of their treatment are at risk for developing lymphedema, a condition in which the body's lymphatic fluid is unable to circulate properly. The lymphatic fluid builds up in soft tissues (usually in an arm or a leg), causing painful swelling. In addition to swelling of the affected limb, the most common problems associated with lymphedema are pain, hardening of the skin and loss of mobility.

Here are some things you can do to ease the discomfort of lymphedema:

- **Get help for your symptoms as soon as possible.** Contact your health care team at the first sign of lymphedema symptoms. If left untreated, the swelling can get worse and may cause permanent damage.
- **Consider undergoing manual lymphatic drainage (MLD).** This is a type of massage that helps move the fluid from where it has settled. Afterward, the affected limb is wrapped in low-stretch bandages that are padded with foam or gauze.
- **Learn exercises that can help prevent swelling due to fluid build-up.** Your health care team can refer you to a program of special lymphedema exercises, taught and monitored by a physical therapist.
- **Wear a compression sleeve.** This can help drain the lymphatic fluid. It's important to always wear a compression garment when flying, even on short flights.
- **Be kind to your body.** Carrying heavy packages, luggage or shoulder bags puts stress on your affected limb and could cause additional swelling and pain. Ask that any blood draws or insertion of intravenous (IV) lines be avoided on the affected arm.

Vaginal Dryness

Treatments for breast cancer can lead to vaginal dryness and a lowered sex drive. Use of a personal lubricant (such as Astroglide) and/or a moisturizer (such as Replens) can often help. If vaginal dryness persists, talk to your doctor about whether a prescription medicine is right for you. These medicines include hormone creams and suppositories (medicines inserted into the vagina). You may wish to ask for a referral to a health care professional who specializes in these issues.

Treatment-Specific Side Effects

Chemotherapy

The side effects of chemotherapy depend on the type and dose of drugs given and the length of time they are used, and can include:

- Hair loss
- Increased risk of infection (from having too few white blood cells)
- Easy bruising or bleeding
- Changes in memory or thinking
- Peripheral neuropathy (numbness or tingling in hands and feet)

Radiation

Changes to the skin are the most common side effects of radiation therapy. Those changes can include dryness, swelling, peeling, redness and blistering. If a reaction occurs, contact your health care team so the appropriate treatment can be prescribed. It's especially important to contact your health care team if there is any open skin or painful area, as this could indicate an infection. Infections can be treated with an oral antibiotic or topical antibiotic cream.

Targeted Therapy and Hormone Therapy

Targeted therapy and hormone therapy don't have the same effect on the body as do chemotherapy drugs, but they can still cause side effects.

Side effects of certain targeted therapies can include diarrhea, liver problems (such as hepatitis and elevated liver enzymes), problems with blood clotting and wound healing, high blood pressure, mouth sores, high blood sugar, and reduced white blood cell count. Nerve damage may also occur.

The side effects of hormone therapy are dependent on the specific type of therapy and include hot flashes (seen more with tamoxifen) and joint pain (seen more with aromatase inhibitors).

Immunotherapy

Immunotherapy travels through the bloodstream, helping to prompt what is called an “immune response.” Because immunotherapy can attack healthy cells as well as cancer cells, certain side effects may be experienced.

Pembrolizumab is currently the only immunotherapy approved by the FDA for the treatment of breast cancer. Common side effects include digestive tract symptoms, fatigue, shortness of breath, joint pain and thyroid dysfunction.

Communicating With Your Health Care Team

As you manage your early-stage breast cancer, it’s important to remember that you are a consumer of health care. The best way to make decisions about health care is to educate yourself about your diagnosis and get to know the members of your health care team, including doctors, nurses, nurse practitioners, physician assistants, dietitians, social workers and patient navigators.

Here are some tips for improving communication with your health care team:

Start a health care journal. Having a health care journal or notebook (either on paper or in a digital format) will allow you to keep all of your health information in one place. You may want to write down the names and contact information of the members of your health care team, as well as any questions for your doctor.

Prepare a list of questions. Before your next medical appointment, write down your questions and concerns. Because your doctor may have limited time, ask your most important questions first and be as specific as possible.

Bring someone with you to your appointments or have them be present during telehealth sessions. Even if you have a journal and a prepared list of questions or concerns, it's always helpful to have support when you go to your appointments. The person you bring may also think of questions to ask your doctor or remember details about your symptoms or treatment that you may have forgotten.

Write down your doctor's answers. Taking notes will help you remember your doctor's responses, advice and instructions. You can also ask the person who accompanies you to take notes for you, either in your journal or on a tablet or smartphone.

Record your visit if your doctor allows it. Recording the conversation with your doctor gives you a chance to hear specific information again or share it with family members or friends.

Incorporate other health care professionals into your team. Your medical oncologist is an essential member of your health care team, but there are other health care professionals who can help you manage your diagnosis and treatment:

- Your primary care physician should be kept updated about your cancer treatment and any test results.
- Your local pharmacist is a great source of knowledge about the medications you are taking. Have all of your prescriptions filled at the same pharmacy to avoid the possibility of harmful drug interactions.
- Make sure your oncologist knows of any other medical conditions you have or any pain you are experiencing so that they can consult with your primary care physician or specialist as needed.

CancerCare's Free Support Services and Programs

It can be very difficult to receive a diagnosis of early-stage breast cancer, and adjusting to the necessary changes in your life can be challenging.

CancerCare® can help. We are a national nonprofit organization providing free, professional services to anyone affected by cancer. Our licensed oncology social workers can provide support and education, help in navigating the complicated health care system and offer information on support groups and other resources.

To learn more about how CancerCare helps, call us at 800-813-HOPE (4673) or visit www.cancercares.org.

You will likely also build your own personal support network composed of family and friends. In doing so, it's best to take some time to think about the people in your life and how they are best suited to help. Match the task to their strengths—ask a family member who loves to shop to pick up something for you at the store, or ask a friend who's a good listener to come over for a chat.



Frequently Asked Questions

Q: My doctor suggested I see a genetic counselor. Why?

A: Genetic counseling can help people make informed decisions about genetic testing. In a genetic counseling session for breast cancer, the counselor will typically collect a detailed family and medical history and discuss genetic mutations, such as those in BRCA1 and BRCA2 genes, which can increase the chance of developing breast cancer.

Q: My early-stage breast cancer is being treated with chemotherapy. What can I do to preserve my fertility?

A: Chemotherapy may induce a temporary or permanent menopause among younger patients. For many of these individuals, preserving their fertility (the ability to have a child) plays a large part in their treatment decisions.

There are steps that can be taken if you are concerned about your ability to have children after treatment:

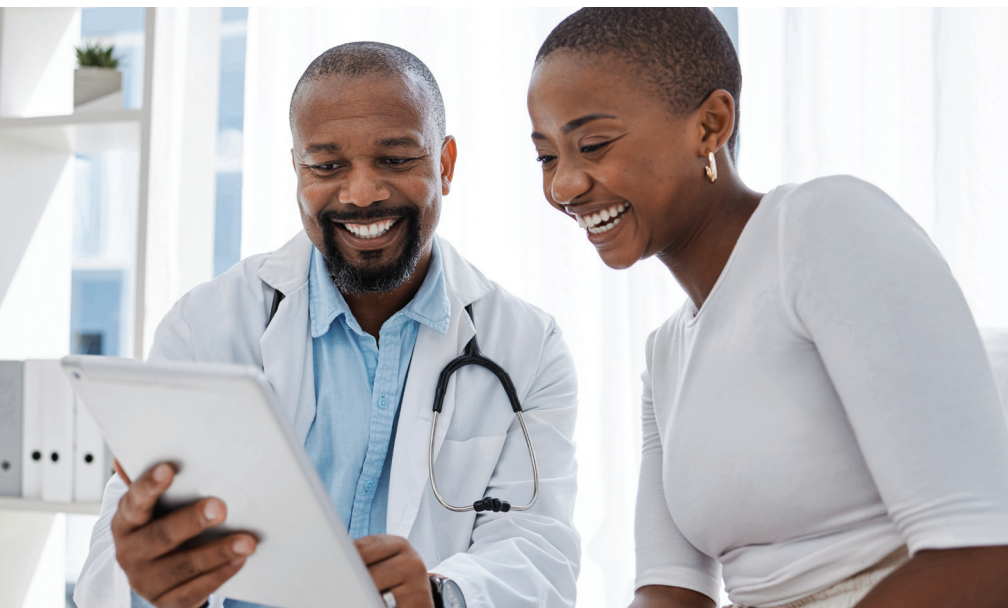
- Discuss treatment plans with members of your health care team. The discussion should include the coverage provided by your health insurance plan.
- Consider consulting with a specialist in reproductive medicine, who can help weigh the benefits and risks of a specific treatment.
- Ask about newer options for preserving fertility, such as oocyte cryopreservation, also known as egg freezing. In this process, the patient's eggs are removed, frozen and stored for later use. Another option includes freezing fertilized eggs. You can discuss which option is best for you with your fertility specialist.

Fertility-preserving alternatives are most often used before the beginning of chemotherapy.

Q: Am I at higher risk of osteoporosis while being treated for breast cancer?

A: Some hormone therapies and chemotherapy can cause bone loss, which increases the risk of osteoporosis (a condition in which bones become weak and brittle). Talk with your health care team about how exercise and changes in your diet may help keep your bones healthy, and about the medications available for bone health:

- Bisphosphonates such as zoledronic acid (Zometa and others) slow the process that causes bone to wear away and break down. These medications belong to a class of drugs called osteoclast inhibitors.
- The RANK ligand inhibitor denosumab (Xgeva, Prolia) blocks a factor in bone development known as RANK ligand, which stimulates cells that break bone down. By blocking RANK ligand, these drugs increase bone density and strength. Like bisphosphonates, RANK ligand inhibitors are a type of osteoclast inhibitor.



Resources

CancerCare®

800-813-HOPE (800-813-4673)

www.cancercares.org

American Cancer Society

800-227-2345

www.cancer.org

Cancer.Net

Patient information from
the American Society of
Clinical Oncology

888-651-3038

www.cancer.net

National Cancer Institute

800-422-6237

www.cancer.gov

Cancer Support Community

888-793-9355

www.cancersupportcommunity.org

**National Coalition for
Cancer Survivorship**

877-622-7937

www.canceradvocacy.org

Breastcancer.org

610-642-6550

www.breastcancer.org

Living Beyond Breast Cancer

855-807-6386

www.lbbc.org

Susan G. Komen

877-465-6636

www.komen.org

**Triple Negative
Breast Cancer Foundation**

877-880-8622

www.tnbcfoundation.org

Medicine Assistance Tool

www.medicineassistancetool.org

CLINICAL TRIALS WEBSITES**ClinicalTrials.gov**

www.clinicaltrials.gov

EmergingMed

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