

ROCKING THE ROAD FOR A CURE

Making Treatment Decisions

— JANUARY 11, 2010 —

Breast Cancer - Stage I, II, and III

[Source: the consumer website of the National Comprehensive Cancer Network.]

Cancer of the breast is the most frequently diagnosed cancer in U.S. women. *

If you have been diagnosed with stage I, II, or III breast cancer, you probably have many questions and concerns about treatment. This treatment summary, based on the [NCCN Clinical Practice Guidelines in Oncology™](#), will help you understand the best available treatments for stage I, II, or III breast cancer. Talk to your doctor about these options so that together you can decide on a treatment plan that is right for you.

Background

Stages I, II, and III breast cancer are known as [invasive cancers](#). This means they have spread beyond the breast [tissue](#) where the cancer started and into surrounding healthy breast tissue. In some cases, the cancer may also have spread to lymph nodes in or near the breast. This summary covers [ductal](#), [lobular](#), [metaplastic](#), adenoid cystic, [medullary](#), tubular, and colloid breast cancers.

Diagnosis

A breast lump, an abnormal [mammogram](#) or an abnormal [ultrasound](#) test each may suggest breast cancer, but only a [biopsy](#) of breast tissue can confirm or rule out the disease. Your biopsy sample provides the doctor with information about:

Where the breast the cancer began (e.g., the ducts, a network of tubes connecting the milk glands to the nipple, or the lobules, the milk glands themselves).

Whether the cancer is noninvasive (localized to the duct or lobe) or invasive (has spread beyond site of origin)

The [grade](#) of the tumor cells, i.e., how much the cancer cells resemble healthy cells under a microscope. Generally, Grade 1 breast cancer is most like normal breast tissue and grows slowly while Grade 3 does not look like normal breast tissue and grows more quickly.

Whether important breast cancer [tumor markers](#), which provide information that can predict how the tumor will respond to therapy, are present on the tumor cells. (See [Hormone Therapy](#) and [Targeted Therapy](#) sections below.)

Staging

[Staging](#) describes the extent or severity of a cancer diagnosis. Women with stage I breast cancer have small tumors that have not spread to either the lymph nodes or other distant sites. Women with stage II disease generally have smaller tumors and either no or minimal [lymph node](#) involvement and no [metastasis](#) (spread of the disease to distant organs).

Women with stage III breast cancer have larger tumors and/or tumors that have grown into surrounding organs, such as the skin, and/or have spread more extensively to the lymph nodes. However, in stage III cancer, the disease has not spread to distant organs (metastasized). For more information about stage IV or metastatic breast cancer, please see the [NCCN Treatment Summary for stage IV breast cancer](#).

Sometimes the stage of breast cancer is described with both a number and lettering system. For example, women with stage [IIA](#) breast cancer have more extensive disease (either larger tumor size or more extensive involvement of lymph nodes near the breast) than those with stage [IIB](#) breast cancer.

For a more detailed discussion of staging, see the [Cancer Staging Guide](#).

The Pathology Report

Your tumor will be tested for [estrogen and/or progesterone receptors](#) that may be found in tumor cells. If these receptors are present, the hormones estrogen and progesterone can stimulate the growth of breast cancer cells. This is important because there are drugs that can block the effects of these hormones on the breast cancer cells to help stop tumor growth.

Your tumor will also be tested to determine whether there are abnormally high levels of the HER2 protein (HER2-positive). Breast cancer cells with too many HER2 receptors are more aggressive and grow faster. The HER2 protein is responsible for sending instructions to your cells telling them to grow, divide, and repair themselves. Although the [HER2](#) gene that produces the protein is present in normal breast cells, it can be amplified (there are too many copies of the gene in the cell). This amplification increases the amount of the protein (HER2 is [overexpressed](#)). When the HER2 protein is overexpressed in the cancerous breast cell, it causes the cells to grow and divide too rapidly. Whether the cancer is HER2-positive is important because one of the drugs that can be taken to treat breast cancer is effective *only* for tumors that overexpress the HER2 protein.

To help ensure that you are receiving the treatment most effective for your type of tumor, ask your doctor whether the laboratory he or she will use is accredited by either the [College of American Pathologists](#) or [The Joint Commission](#). If your doctor doesn't know, you can call the head of the laboratory (often a [pathologist](#)) and ask about accreditation. If the laboratory is not accredited to perform HER2 testing, ask your doctor to send your tumor sample to a laboratory that is accredited by one of these bodies. Laboratories that are connected with large cancer centers and perform many HER2 tests may be more likely to meet the standards for accreditation. Learn more about [HER2 testing](#).

Treatment

Tumor stage, estrogen and/or progesterone receptor status, and HER2 expression are the three main factors that determine breast cancer treatment recommendations.

Treatment for stage I, II, and III breast cancers is managed by several different physicians working together to make sure you have the best chance of a full recovery. Treatments are divided between local and systemic therapies. Local treatment is surgery with or without radiation therapy to remove or kill the tumor. " [Systemic therapies](#)—drugs that travel throughout the body—are designed to kill any cancer cells that may have broken away from the main tumor and gone elsewhere in your body before they can grow into new tumors.

Women with very similar cancers may require or choose different types or combinations of treatments. In addition, certain treatment options may be appropriate at one point in treatment but not another. To make the best decisions for you, talk to your doctor about the benefits, risks, and possible side effects of the treatment options below.

Your doctor should provide you with a written care plan explaining:

What treatments you will have,

When they will occur,

How often they will occur (if treatment includes chemotherapy or radiation), and

What side effects you may experience.

Some [side effects](#) can be anticipated, but treatments are available that can reduce their severity.

You may be asked to sign an informed consent document indicating that you have been told about your treatment and what to expect.

It is very important that you ask your doctor or nurse every question you have. Cancer and its treatment are complicated, and most patients have questions.

Surgery

For many women with invasive breast cancer, surgery to remove the cancerous tumor is performed early in treatment, particularly for those with stage I or stage II disease. The options include one or more of the following:

[Lumpectomy](#): surgical removal of the tumor and a small amount of healthy tissue around the outside of the tumor. A lumpectomy is usually followed by radiation therapy, which is treatment of the breast area with high-energy beams to stop any remaining cancer cells from growing and dividing. If you are older than 70 years, have a small hormone receptor positive tumor, and are going to take hormone therapy, radiation therapy may not be recommended for you.

[Total mastectomy](#): removal of the entire breast.

Mastectomy plus radiation if the cancer has spread to the lymph nodes.

When choosing between lumpectomy and mastectomy, you and your doctor must consider:

The size of the tumor or tumors: A mastectomy may be needed to treat larger tumors, while smaller tumors can more likely be treated with lumpectomy.

The number of tumors: Mastectomy is often the best choice for women with numerous tumors or disease that affects many parts of the breast.

Clinical trial results: Studies have shown that women who are treated with lumpectomy plus radiation live as long as women who have a total mastectomy (but no radiation treatment).

Your personal preference is also important.

Generally, women who have tumors larger than 5 cm (a little smaller than 2 inches) are not candidates for lumpectomy. However, if you have a larger tumor and nevertheless want a lumpectomy, you will probably first be treated with preoperative chemotherapy to shrink the tumor and kill any cancer cells that may have spread beyond the tumor. Preoperative chemotherapy refers to cancer drugs given before surgery.

While you are receiving chemotherapy, your medical oncologist and your surgeon will work together to decide the best time for you to have surgery. This is sometimes a complex decision, and your doctors may suggest that you have surgery before you have completed the planned chemotherapy. If this happens, you will complete chemotherapy after surgery. If your cancer does not respond to the first chemotherapy regimen, your doctor may recommend trying a different regimen or giving you radiation therapy on your breast.

Depending on how the tumor responds to chemotherapy, your surgeon will perform either a lumpectomy or a mastectomy. Women treated with lumpectomy will most likely also receive radiation therapy after surgery. Women treated with mastectomy may or may not need radiation therapy. Learn more about [chemotherapy](#).

The [NCCN Clinical Practice Guidelines in Oncology™](#) for breast cancer recommend that women with stages IIIA, IIIB, or IIIC disease receive preoperative chemotherapy before mastectomy. Again, while you are receiving chemotherapy, your oncologist and surgeon will work together to decide the best time for surgery, which may be before you have completed the planned chemotherapy. If this happens, you should complete chemotherapy after surgery. If you are treated with mastectomy, you may or may not need radiation therapy.

Studies have shown that [adjuvant chemotherapy](#) (anti-cancer drugs given after surgery) may increase long-term survival for some women by preventing the cancer from recurring. However, not all women with breast cancer will need to receive chemotherapy. More information on [adjuvant therapy](#) is provided below and in the [Guide to Chemotherapy](#).

Sentinel Lymph Node Biopsy

During lumpectomy or mastectomy, the surgeon will remove one or more lymph nodes to check for the spread of cancer. All women with stage I or stage II breast cancer are candidates for [sentinel lymph node biopsy](#) (biopsy of the first lymph nodes to which the cancer cells may have spread), or the more extensive [axillary lymph node dissection](#) (in which lymph nodes are removed from the underarm area). Stage III tumors are usually not suitable for sentinel node biopsy, and a full axillary node dissection is usually performed. This is because stage III cancer is considered at high risk for having spread.

In a sentinel node biopsy, a blue dye and/or a radioactive substance is injected into the tumor at surgery. This dye and tracer travel through the lymphatic system to the lymph nodes in the armpit. The dye and tracer may be detected in the first lymph nodes they reach, which are the same nodes that cancer cells are expected to go to. These nodes are removed and evaluated. If no breast cancer is found in the sentinel node(s), no additional lymph node surgery is necessary.

If you are a candidate for this procedure, ask your doctor whether the team that will do the surgery has performed many others, because the accuracy of the test is directly related to the team's experience. The most experienced surgical teams can often be found at large or highly specialized cancer centers. The [NCCN Breast Cancer Guidelines](#) recommend that you have an axillary lymph node dissection if a team experienced in sentinel lymph node biopsy is not available or if you are not a candidate for sentinel lymph node biopsy for another reason (for example, you have stage III disease). An axillary lymph node dissection is also recommended if cancer is found in the sentinel node(s).

A possible side effect of lymph node surgery is [lymphedema](#), which is swelling of the arm and hand on the side of the body where the surgery was performed. This condition may occur with either type of lymph node surgery, but is more common with axillary node dissection. Exercises and other interventions can help manage lymphedema if it develops.

Breast Reconstruction After Mastectomy

Breast reconstruction is an option for many women after mastectomy, depending on preference and overall health. The surgery to reconstruct the breast might be performed immediately after the mastectomy or in a separate operation at a later time. Reconstruction may be performed using tissue removed from the abdomen or another part of the body;

an artificial implant; or a combination of the 2 methods.

Breast reconstruction surgery has potential risks and complications. Doctors usually recommend it only for otherwise healthy women who do not have certain conditions (such as diabetes) or who do not smoke, because women with these conditions have an increased risk for experiencing complications from the surgery. If you think the procedure may be right for you, ask your doctor to refer you to a plastic surgeon before you schedule the mastectomy.

Radiation Therapy

[Radiation therapy](#), usually given for a period of weeks, uses high-energy beams to kill cancer cells that may still be present after surgery. In some cases, when there is a large tumor that does not shrink with preoperative chemotherapy, radiation therapy is used before surgery to reduce the size of the tumor.

Almost all women who undergo lumpectomy to treat invasive breast cancer should also have radiation therapy. Some women who are older than 70 years; have small, estrogen receptor–positive tumors; or will get hormone therapy may be able to avoid radiation therapy. Radiation therapy may also be given after mastectomy if the cancer has spread to the lymph nodes.

After radiation therapy, you may tire more easily or notice redness or swelling of the breast. These side effects are usually mild and do not last for long periods of time. For some women undergoing lumpectomy, the size of the breast may decrease after radiation therapy; these changes may be either temporary or permanent.

Adjuvant Therapy

Adjuvant therapy is treatment given to reduce the risk of breast cancer recurrence. Three different types of adjuvant therapy are available for breast cancer:

[Chemotherapy](#)

[Hormone therapy](#)

[Targeted therapy](#)

Depending on the size and characteristics of your breast cancer, your doctor may recommend one, two, or all three of these. On the other hand, if your tumor is very small, no lymph nodes are involved, and no metastasis occurred to other sites, your doctor may recommend no adjuvant therapy at all.

Chemotherapy: Drugs That Kill Cancer Cells

Women with stage I or stage II breast cancer sometimes need chemotherapy. The NCCN Breast Cancer Guidelines recommend chemotherapy for almost all women with stage III disease.

In general, women with breast cancer with estrogen receptor-negative and/or progesterone receptor-negative cancer (see section on [Hormone Therapy](#) below), women with HER2-positive disease, and women with cancer that has spread to the lymph nodes are more likely to need chemotherapy.

Oncotype DX is a test that evaluates 21 genes in the breast cancer tumor. It may be recommended by your doctor if you have estrogen receptor-positive breast cancer to determine whether you should receive chemotherapy.

The results of this test show whether you have a high, intermediate, or low risk for recurrence. If your risk is low, the adverse side effects of chemotherapy probably outweigh its benefits. Even for women with small estrogen receptor-positive/progesterone receptor-positive and HER2-negative tumors who have no lymph node involvement and who have not had the *Oncotype DX* test, the benefit of chemotherapy in addition to hormone therapy may be relatively small. Therefore, women in this situation may choose not to undergo chemotherapy.

Adjuvant chemotherapy is typically given through an intravenous (injected into a vein) infusion over 3 to 6 months after surgery. Chemotherapy may be given before, during, or after radiation therapy, depending on the treatment plan, although it is most frequently given before.

A list of the chemotherapy regimens that are preferred by the NCCN Breast Cancer Panel can be viewed in the [NCCN Breast Cancer Guidelines](#).

Some chemotherapy regimens have uncomfortable side effects, including hair loss, intestinal disturbances (including nausea and vomiting), and a decreased production of certain types of blood cells. Talk to your doctor or nurse about how to manage these effects.

Some chemotherapy drugs, such as doxorubicin, can affect the heart, and you may need to undergo periodic testing to monitor how your heart is functioning when taking these drugs. In addition, some drugs are associated with a very rare but serious risk for leukemia.

If you have not yet gone through menopause, your menstrual periods may stop either temporarily or permanently after you receive chemotherapy, possibly resulting in permanent infertility. Talk to your doctor about what to expect from each treatment and what can be done to help you cope with these side effects.

Hormone Therapy

If you have breast cancer that has tested positive for the estrogen receptor and/or the progesterone receptor tumor markers, you may be a candidate for hormone therapy. Hormone therapies include tamoxifen, which blocks the hormonal stimulation of tumor growth, and drugs called [aromatase inhibitors](#), such as anastrozole, letrozole, or exemestane, which stop estrogen from being produced in postmenopausal women. Aromatase inhibitors are appropriate only for postmenopausal women, because premenopausal women produce much higher amounts of estrogen. Some breast cancers require estrogen to grow, and therefore lowering the estrogen levels can slow the growth of the cancer.

Hormone therapy is typically given after surgery and after chemotherapy has been completed. Hormone therapies are usually taken as pills and are often given for at least 5 years. It is important that you do not stop this therapy without informing your doctor, because these drugs are more effective when taken for long periods of time.

If your doctor initially recommends that you take tamoxifen, the NCCN Breast Cancer Guidelines can help your physician determine if and when making a switch to an aromatase inhibitor could be beneficial.

Hormone therapies have associated side effects, such as hot flashes and slightly increased risks for blood clots and cancer of the uterus for tamoxifen, and decreased bone mass and pain in the joints for aromatase inhibitors. If you have troublesome side effects with one of these drugs, talk with your doctor, because you may be able to change to an alternate drug that provides similar benefits. Strategies for early detection of these side effects include monitoring of bone health through periodic measurements of bone mineral density, and prompt investigation of abnormal uterine bleeding and symptoms/signs of venous thromboembolism (blood clots), such as swelling and pain in a leg or arm.

Hormone therapy has not been shown to be effective in women who have breast cancer that does not have estrogen receptor and/or progesterone receptor markers on the tumor cells. Thus, it is very important that tests for the estrogen receptor and progesterone receptor tumor markers are evaluated by laboratories experienced in reading these tests. Ask your doctor about the laboratory where the tests will be evaluated.

The production of estrogen may also be stopped by removing the ovaries (which make estrogen).

Targeted Therapy

Some treatments are directed toward certain markers on tumor cells or certain processes occurring in tumor cells. For example, drugs like Herceptin (trastuzumab) target cancer cells with high quantities of a protein called the [HER2 receptor](#).

The NCCN Breast Cancer Guidelines recommend that trastuzumab (Herceptin) be given as part of only certain chemotherapy regimens; you and your doctor can view the preferred regimens by viewing the NCCN Breast Cancer Guidelines. Trastuzumab (Herceptin) is most often given for 1 year and is commonly started close to the time that chemotherapy is first given and continued after chemotherapy has been completed. Trastuzumab is administered intravenously (e.g., through a vein).

Because trastuzumab (Herceptin) can affect the heart. You will need to undergo periodic testing to monitor your heart function if you are taking this drug.

Trastuzumab (Herceptin) has not been shown to be effective in women with breast cancer that does not have high quantities of HER2 on the tumor cells. Thus, it is very important that testing for the HER2 tumor marker is accurate.

Prognosis

In determining a [prognosis](#) (the likely course or outcome of a disease and its treatment), a doctor may look at breast cancer survival statistics taken from studies of large groups of patients. However, these statistics:

Are estimates only

Can vary widely with each cancer stage

Are sometimes based on older data that do not reflect recent advances in early detection and treatment

Cannot be used to precisely predict your survival

Your individual prognosis will be affected by many factors, including:

Your age

Your overall health

The type, stage, and grade of your cancer

The presence or absence of certain tumor markers, such as estrogen receptor, progesterone receptor and/or whether high levels of the HER2 receptor are present

Your response to the treatment(s) being used

Ask your doctor which treatment(s) he or she believe will give you the best life expectancy and quality of life. You may want see whether you are eligible to participate in a [clinical trial](#), in which new and experimental therapies are compared with standard therapies.

Life After Treatment

After completion of your treatment, you will begin a period called *follow-up*. During this period, you will visit your doctor at regular intervals to ensure your continued good health. These visits to your doctor will give you a chance to ask questions and share your concerns. You will need an annual mammogram to ensure that if you develop a new breast cancer, it can be found and treated at an early stage.

*Fewer than 1% of breast cancer cases occur in men. Because this summary is focused only on women's breast cancer, men in search of information about male breast cancer may want to begin by visiting the [National Cancer Institute's overview of male breast cancer](#).

<http://rockingtheroadforacure.tumblr.com/post/328215966/making-treatment-decisions>