Early/Moderate Stage Breast Cancer: Staging and Treatment

What is staging for cancer?

Staging is the process of learning how much cancer is in your body and where it is. Tests like biopsies, CTs and MRIs are done to help stage your cancer. Your providers need to know about your cancer and your health so that they can plan the best treatment for you.

Staging looks at the size of the tumor and where it is, and if it has spread to other organs. The staging system for breast cancer is called the “TNM system,” as described by the American Joint Committee on Cancer. It has three parts:

- T-describes the size/location/extent of the "primary" tumor in the breast.
- N-describes if the cancer has spread to the lymph nodes.
- M-describes if the cancer has spread to other organs (metastases).

Your healthcare provider will use the results of the tests you had to determine your TNM result and combine these to get a stage from 0 to IV.

How is breast cancer staged?

Breast cancer in men and women is staged the same, into five groups. This article will focus on early/moderate stage breast cancer in women. Learn more about male breast cancer [here](#).

Staging is based on:

- The size of your tumor on the mammogram and what is found after surgery.
- Any evidence of spread to other organs (metastasis).
- Surgery to test if your lymph nodes have cancer cells.

Staging is important because it helps guide your treatment options. Stages 0, I, and II are early or moderate stages.

The staging system is very complex. Below is a summary of the staging system. Talk to your provider about the stage of your cancer.

- **Stage 0** (called carcinoma in situ/non-invasive breast cancer):
  - *Lobular carcinoma in situ (LCIS):* abnormal cells line a gland in the breast. This is a risk factor for future cancer, but this is not thought to be cancer itself.
  - *Ductal carcinoma in situ (DCIS):* abnormal cells line a duct in the breast. Women with DCIS have a higher risk of getting invasive breast cancer in that breast. Treatment options are similar to patients with Stage I breast cancers.
- **Stage I:** early-stage breast cancer where the tumor is less than 2 cm and hasn't spread to lymph nodes or other parts of the body.
- **Stage II:** early-stage breast cancer where the tumor is either less than 2 cm and has spread to 1-3 lymph nodes under the arm; or the tumor is between 2 and 5 cm (with or without spread to the lymph nodes under the arm), or the tumor is greater than 5 cm and hasn't spread outside the body.
breast.

- **Stage III**: this is called locally advanced breast cancer. The tumor is greater than 5 cm and has spread to the lymph nodes under the arm; or the cancer is found in more than 3 underarm lymph nodes; or cancer has spread to lymph nodes near the breastbone or to other tissues near the breast.

- **Stage IV**: metastatic breast cancer in which cancer has spread outside the breast to other organs in the body.

Depending on the stage of your cancer, your provider may want more tests to see if the cancer has spread to any other organs outside of the breast and nearby lymph nodes. Your providers will talk with you about what is needed to properly stage your cancer.

This article will focus on treatment for “early” or “moderate” stage breast cancer (Stage 0, I, and II).

### How is early/moderate stage breast cancer treated?

Treatment for breast cancer depends on many factors, like your cancer stage, age, overall health, and testing results. If you have early or moderate stage breast cancer, your treatment may be different than someone who has advanced breast cancer. Your treatment may include some or all of the following:

- **Surgery**.
- **Chemotherapy**.
- **Radiation Therapy**.
- **Hormone Therapy**.
- **Targeted Therapy**.
- **Clinical Trials**.

### Surgery

Almost all women with early or moderate-stage breast cancer will have some type of surgery during treatment. Surgery is used to test lymph nodes for cancer and to remove as much of the cancer as possible. There are many ways that surgery can be done:

- **Lymph Node Removal and Testing**: If you have invasive breast cancer (any stage except stage 0), you should have lymph nodes removed and tested. This may be done with:
  - **Sentinel lymph node biopsy**: 1-3 lymph nodes are removed.
  - **Axillary dissection**: Many lymph nodes are removed.

- **Breast-Conserving Surgery (BCS)**: You may have the option to have breast-conserving surgery (BCS). If you have BCS, you may also need radiation therapy (discussed below). Radiation after BCS helps prevent the cancer from coming back in that breast (recurrence). BCS may refer to:
  - **Lumpectomy**: the tumor and a part of normal tissue is removed.
  - **Segmental/partial mastectomy**: a larger piece of tissue, but not the whole breast, is removed.

- **Modified radical mastectomy**: The whole breast is removed, along with some lymph nodes for testing. Many women who have modified radical mastectomies choose to also have breast reconstruction. If you would like reconstruction, you should try to meet with a plastic surgeon before your mastectomy to talk about reconstruction options. The reconstruction
process can be started at the same time as the mastectomy or done later. Learn more about breast reconstruction.

The breast tissue that is removed during BCS and any lymph nodes that are removed will be looked at by a pathologist under a microscope. A report will be written that has:

- The type of cancer cells that are seen.
- The size of the cancer.
- The number of lymph nodes that have cancer in them.
- Information about the cancer such as “grade” (how aggressive the cells look), if it has receptors for estrogen, progesterone (ER, PR), and HER2.

These findings will help decide what treatment will work best for you.

**Chemotherapy**

Even when tumors are removed by surgery, tiny cancer cells can still be left behind. These cancer cells can spread to other parts of the body. Chemotherapy helps rid your body of these cancer cells and can help prevent the cancer from coming back (recurring). Chemotherapy is the use of anti-cancer medicines that go through your whole body.

Chemotherapy can be beneficial if you have early or moderate-stage disease. Your age and overall health, as well as the biological makeup of your breast tumor, help your team decide whether you should have chemotherapy. In most cases, the genetic makeup of your tumor (tested with OncoType Dx and MammaPrint) may be used to see if you will benefit from chemotherapy.

There are many different chemotherapy medicines. They are often given in combinations (called a regimen) for 3 to 6 months after surgery for early/moderate stage breast cancer. Most chemotherapies used for breast cancer are given through a vein, so they need to be given in an oncology clinic or infusion center.

Medications that are commonly used in early/moderate stage breast cancer treatment include adriamycin (doxorubicin), cyclophosphamide, taxanes (taxol and taxotere), methotrexate, and 5-FU. Your oncology team will go over the best regimen for your cancer. You can work with your providers to choose the best regimen for you.

**Radiation**

You may need radiation therapy. Radiation therapy uses high-energy x-rays to kill cancer cells. Radiation therapy is recommended for nearly all early-stage breast cancer patients who have breast-conserving surgery. Radiation helps lower the risk of the cancer coming back in the same breast (local recurrence). Your radiation oncologist can answer questions about the benefits, process, and side effects of radiation therapy. In general:

- You will need to go to a radiation therapy treatment center 5 days a week for up to 6 weeks to receive treatment.
- For early/moderate stage breast cancer, you will receive treatment to the whole breast for 4-5 weeks; the final 1-2 weeks of treatment often involve a “boost” of radiation that is only delivered to the area in the breast where the tumor was.
- The treatment is painless and takes just a few minutes.

Some other ways to deliver radiation for early/moderate-stage breast cancers are:

- More radiation is given per day to the whole breast so that the treatment takes only 4 weeks (called hypofractionation).
- Brachytherapy or Mammosite. This reduces the treatment time to 1 week but is not an option for many patients.

These techniques are only helpful for some patients. Your radiation oncologist will talk with you about the best course of treatment for your cancer.

**Hormone Therapy**

If your tumor has estrogen (ER) and/or progesterone (PR) receptors, it may be treated with hormone therapy. Hormone therapies include tamoxifen and medications called aromatase inhibitors (anastrozole, letrozole, exemestane). These
medications are taken in pill form for 5-10 years after breast cancer surgery. They have been shown to lower your risk of recurrence if your tumor has estrogen receptors.

These medications can have side effects. When taking tamoxifen you may have:

- Weight gain.
- Hot flashes.
- Vaginal dryness and discharge.

Taking tamoxifen may raise your risk of serious medical issues, such as blood clots, stroke, and uterine cancer.

When taking aromatase inhibitors (AIs), you may have:

- Bone or joint pain.
- Thinning of the bones (osteopenia or osteoporosis).

Patients taking AIs should have bone density testing before starting treatment and as needed.

**Targeted Therapy**

Targeted therapies are medications that target something specific to the cancer cells, stopping them from growing and dividing.

HER-2 is a receptor that is found in about 25% of breast cancers. These are called HER2-positive breast cancers. These tumors may grow faster and are more likely to spread. There are medications that target the HER2 protein. The most common is trastuzumab (Herceptin®), which may be given to treat the cancer or prevent it from coming back (recurring). Pertuzumab (Perjeta), neratinib (Nerlynx), and ado-trastuzumab emtansine (Kadcyla) also treat some early-stage HER2 positive cancers.

Other targeted therapies are:

- **Everolimus**: Targets mTor.
- **Abemaciclib** (Verzenio®) and **ribociclib**: CD4/CD6 kinase inhibitors.
- **Olaparib** (Lynparza®): PARP inhibitor.

Talk with your healthcare provider about if targeted therapies may work on your tumor.

**Clinical Trials**

You may be offered a clinical trial as part of your treatment plan. To find out more about current clinical trials, visit the OncoLink Clinical Trials Matching Service.

**Making Treatment Decisions**

Your care team will make sure you are included in choosing your treatment plan. This can be overwhelming as you may be given a few options to choose from. It feels like an emergency, but you can take a few weeks to meet with different providers and think about your options and what is best for you. This is a personal decision. Friends and family can help you talk through the options and the pros and cons of each, but they cannot make the decision for you. You need to be comfortable with your decision – this will help you move on to the next steps. If you ever have any questions or concerns, be sure to call your team.

You can learn more about breast cancer at [OncoLink.org](http://www.oncolink.org).