



# **BREAST CANCER 101 2025**

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## BREAST CANCER TERMINOLOGY

**Atypical Ductal Hyperplasia** - this is considered a precancerous condition of the breast. Once it is confirmed by biopsy, your doctor may recommend a surgical excision to completely remove the area since underlying malignancy will be found in 20% of the cases. (That means that cancer cells are all ready there)

**Ductal Carcinoma in situ (DCIS)** - This is an early form of cancer which arises from the duct cells in the breast. This abnormal proliferation of cancer cells is confined to the walls of the duct structure and therefore, usually does not spread outside of the breast. It is also referred to as Noninvasive Duct Cell Carcinoma or Intraductal Carcinoma.

**Lobular Carcinoma in situ (LCIS)** - Also commonly referred to as Lobular Neoplasia, this is a premalignant condition that forms in the milk-producing lobules of the breast. This diagnosis places the patient at a higher risk of developing breast cancer in the future, but in itself, is not treated as a malignant condition.

**Invasive (Infiltrating) Duct Cell Carcinoma** - This is a form of cancer that arises from the duct cells in the breast but has spread to the surrounding tissues. This type of tumor is capable of spreading to other parts of the body.

**Invasive (Infiltrating) Lobular Carcinoma** - This is a form of cancer that arises from the milk-producing lobules of the breast, but has spread to the surrounding tissues. This type of tumor is capable of spreading to other parts of the body.

**Aromatase Inhibitor** - An anti-estrogen pill used to treat postmenopausal women who have estrogen and/or progesterone receptor positive invasive cancer (Arimidex, Femara, Aromasin)

**Tamoxifen (Nolvadex)** – This is an "anti-estrogen" pill often given to slow or stop tumor growth. It is commonly used for treatment of patients with breast cancers that express estrogen and/or progesterone receptor activity. Tamoxifen is also used as a "chemoprevention" agent to reduce the risk of developing breast cancer in some women who have not been diagnosed with the disease.

## BIOLOGIC FEATURES OF BREAST CANCER

These are used to characterize the “aggressiveness” of the tumor cells, to help make decisions on how to treat patients after surgery, and to predict responses to certain medications/therapies.

### **Proliferation Index** - (MIB-1, Ki-67)

Measures how fast the tumor cells are dividing

These values do not translate into “time”

An elevated value signifies a more aggressive tumor

### **Estrogen and Progesterone Receptor Assay** -

This reveals the amount of estrogen and progesterone receptors that are expressed on the tumor cells

It predicts the response of the tumor to treatment with anti-estrogen drugs (Tamoxifen, Arimidex, Femara, Aromasin)

It does not determine that the tumor was “caused” by estrogen

### **Her-2Neu Oncogene** -

When there is an over-expression of this oncogene, it indicates a more aggressive tumor.

Present in only 15%-20% of all breast tumors

These types of tumors are often treated with the drug Herceptin

## STAGING OF BREAST CANCER

The purpose of staging is to define the extent of the tumor -

**local** (in the breast area), **regional** (around the breast area) and **distant** (other parts of the body). This information determines what treatments can be offered and what the prognosis after treatment will be.

**TMN Staging System** - based on the size of the invasive component of the tumor in the breast (T), spread to the lymph nodes (N), and metastasis (M) which means spread to other parts of the body.

**\* Most breast cancers cannot be completely staged until after surgery.**

## SENTINEL LYMPH NODE BIOPSY (lymph node mapping)

This is a selective removal of lymph nodes to determine whether cancer has spread outside of the breast.

The procedure utilizes a weak radioactive substance along with a blue dye that is injected around the breast tumor to identify the most likely place tumor cells will go in the armpit if they have left the breast.

Doing this reduces the need for a full removal of your lymph nodes which can leave patients with the complication of lymphedema (arm swelling).

There is usually more than one sentinel lymph node. The number the surgeon will need to remove can only be determined in surgery, not before.

If your doctor can feel an abnormal lymph node on your physical exam or sees one on an imaging study, lymph node mapping is unnecessary. You will need a standard lymph node dissection with your breast surgery.

## SURGICAL OPTIONS

### Breast Conservation Terms

**Lumpectomy** - to remove tumor and get clear margins

**Axillary Lymph Node Sampling** - needed to stage invasive tumors or large areas of DCIS

**Radiation Treatment** - involves 6-7 weeks of x-ray treatments delivered to the breast area (treatments are daily, 5 days/week) and are designed to kill microscopic residual tumor in the breast.

### Mastectomy Terms

**Simple or Modified Mastectomy** - removes only the breast and nipples

**Modified Radical Mastectomy** - removes nipple, breast, and some axillary lymph nodes

**Skin Sparing Mastectomy** - any of the above with the intent to preserve as much skin as possible to facilitate a better cosmetic outcome with reconstruction.

**Radiation treatment** is usually not necessary unless the tumor is large, an inflammatory type cancer or has spread to a large number of lymph nodes.

## Breast Reconstruction Terms

**Immediate or Primary Reconstruction** - accomplished at the same time as the mastectomy

**TRAM/DIEP Flap** - skin, fat, and muscle tissue from the abdomen are moved to the mastectomy site. Implants are not required

**Latissimus Dorsi Flap and Implant** - skin and muscle tissue from the back area is transposed to the mastectomy site and covers an expander/implant

**Tissue expander/Implant**

## Summary of Benefits vs Risks

LUMPECTOMY	MASTECTOMY
Removes tumor, leaves rest of breast intact	Removes entire breast
Lymph node sampling in cases of invasive disease	Lymph node sampling in cases of invasive disease
Radiation therapy required	Radiation therapy usually NOT required
Reconstruction usually not necessary	Reconstruction may be an option
Chance of breast cancer returning - 6%	Chance of breast cancer returning - 2%-4%
Overall survival is the same as mastectomy	Overall survival is the same as lumpectomy plus radiation therapy

## DR. KINNEY'S ADVICE ON DECISION MAKING , ETC

Don't be in a hurry to make a decision. The initial stages of treatment should occur over a period of weeks not hours or days. You have time to decide what is best for you.

The decision to do a lumpectomy vs a mastectomy for most women will be a personal, not medical, decision.

Avoid comparing the treatment for your cancer to others or letting someone else compare their treatment to yours. Cancer treatments vary from patient to patient.

If people ask you questions about your cancer or treatment that you don't know the answer to, don't feel uninformed or bad if you cannot answer their questions. Many people just don't know what to say to a cancer patient.

