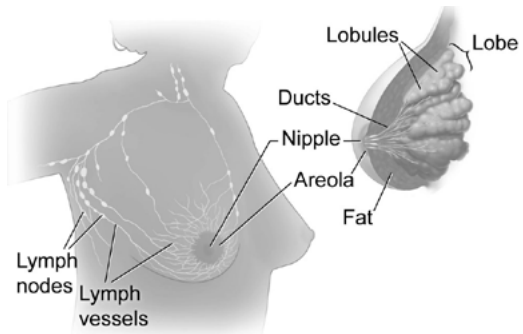


BREAST CANCER



Each year, more women in the United States are diagnosed with breast cancer than with any other cancer, with the exception of skin cancer. Breast cancer usually occurs in the ducts that transport milk to the nipple during breast feeding and less commonly in the lobules, the glands that produce milk.

Source: National Cancer Institute

Each breast cancer has its own characteristics. Some are slow-growing while others can be aggressive. Some are sensitive to the hormones estrogen and progesterone, while others produce very high levels of certain proteins that make them grow. The cancer's characteristics can affect treatment choices and the potential for the cancer to recur.

Testing performed by laboratory professionals helps diagnose breast cancer as well as provides information on your cancer's particular characteristics so that you can discuss treatment options with your healthcare practitioner and make informed decisions.



1 in 8

American women will develop invasive breast cancer in their lifetime.



270,000

New cases of invasive breast cancer are diagnosed in women in the U.S. each year.



42,000

Women die from the disease in the U.S. each year.

MEET MICHELE



Michele was diagnosed with stage 1 invasive ductal breast cancer in 2006, one month before her husband passed away. She underwent surgery, chemotherapy, and radiation and has been in remission since 2015. Michele is part of the Department of Pathology Patient and Family Advisory Council at University of Michigan to help patients through their entire care process.

“Understanding what tests are ordered and what the lab work means is empowering. Through understanding my lab work, I gained the confidence that I made the best choices for myself.”

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www.ascp.org/patients
www.labtestsonline.org

EARLY DETECTION IMPROVES TREATMENT SUCCESS



99% - 5 YEAR SURVIVAL RATE

When breast cancer is found in the early, localized stage, 99% of those individuals survive for at least five years after diagnosis.

Early breast cancer detection has a strong influence on breast cancer survival. The primary early detection tool is a mammogram, but there are some differences in the advice on how often it should be done or when it should be started. Most health organizations agree that women should work with their healthcare providers to assess their personal risk of developing breast cancer and to determine what is best for them.

BREAST CANCER DIAGNOSIS:

When a suspicious area is seen on a mammogram, or if a lump has been found during a clinical breast exam, a healthcare practitioner will frequently order one of the following:

Fine needle aspiration (FNA)—a thin needle and a syringe are used to remove a sample of cells from a suspicious area of the breast.

Core needle biopsy—a larger bore needle is used to remove a solid “core” of breast tissue; one or more core samples may be removed.

Surgical biopsy—a physician cuts out all or part of the breast lump.

In each case, a pathologist uses a microscope to examine the breast cells for signs of cancer and to determine whether the lesion is harmful (malignant). Malignant cells show changes from normal cells, such as changes in size, shape, and appearance. Pathologists can diagnose cancer based upon these changes, determine how abnormal the cells appear, and see whether there is a single type of change or a mixture of changes. These results help guide breast cancer treatment.

Additionally, breast cancer may be divided into several stages based on factors, such as tumor size and the extent to which the cancer has spread. Staging of a cancer can aid in treatment decisions as well as predict the course of the disease and the chances of remission and/or recurrence.



MEET CINDY



First diagnosed with breast cancer in 1999 at the age of 45, Cindy ended up battling cancer six more times. A certified laboratory professional by education and training, she understood the intricacies of the laboratory and knew what questions to ask her oncologist and physicians - questions that ended up elongating her life. Her passion for helping others to understand their lab results and the importance of the laboratory in patient care continues to inspire patients, caregivers, and advocates after her passing in 2017.

“What I hope that my message will do is to encourage patients to take control of their own situation. Do not let anyone tell you that this is the way it is and you just have to do it. You have to do research; you have to try to find out what questions to ask. If you don’t know, you find someone who can help you.”

DETERMINING TREATMENT OPTIONS AND MONITORING TREATMENT:

If you are diagnosed with breast cancer, there are several tests that may be performed on your biopsy sample to provide a prognosis and help your cancer specialist guide treatment.

HER2 test — this determines whether the cancer has extra copies of the *HER2* gene and excess amounts of the protein that it produces (*HER2*-positive). While *HER2*-positive tumors can be more aggressive, they are susceptible to treatment that specifically targets *HER2*. Women with *HER2*-positive tumors respond well to these drugs and have a good prognosis. About 20%-30% of breast cancers are *HER2*-positive.

Estrogen and progesterone receptor (ER and PR) status — many, but not all, breast cancer cells have receptors that bind to the hormones estrogen and/or progesterone and typically depend on the hormones to grow and divide. ER and PR testing of breast tumor tissue determines if one or both types of receptors are present. Hormone-dependent cancers frequently respond well to hormonal therapy that blocks estrogen or lowers estrogen levels.

Cancer antigen 15-3 (CA 15-3) — there is an increased production of the protein CA 15-3 in many women with breast cancer. CA 15-3 is elevated in only about 10% of women with early localized breast cancer but is elevated in about 80% of those with metastatic breast cancer. Blood tests for CA 15-3 may be ordered at intervals after treatment to help monitor a woman for breast cancer recurrence.

Breast cancer gene expression tests — there are several tests available, and many others being researched, that evaluate large numbers of genetic patterns in breast cancer tumor tissue. These tests are used primarily in women with early stage breast cancer to help evaluate their likely course of disease and risk of recurrence, and secondarily to help determine which patients may benefit from adjuvant chemotherapy.

Triple Negative — breast cancer cells that are *HER2*-negative and ER- and PR-negative are called “triple-negative.” This type of breast cancer occurs more often in younger women and in women of African or Hispanic descent. These cancers do not respond to targeted treatment or hormone-blocking therapy but they may be treated with other types of chemotherapy. Research is underway to evaluate new treatments for triple-negative breast cancers.

TO LEARN MORE, VISIT:
labtestsonline.org/breastcancer

MEET C.C.



C.C. was diagnosed with triple-negative breast cancer 11 years ago. The year she was diagnosed, her annual visit to the gynecologist went well and included a regular clinical breast exam. It was a routine mammogram a few months later that detected a suspicious area. Additional testing helped diagnose her cancer as triple-negative and determine treatment options. She believes knowledge empowers.

“While determining treatment options, I asked many questions to make sure I understood the tests that led to my diagnosis and risks associated with my treatment options. I underwent surgery and was successfully treated with both chemotherapy and radiation.”

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BREAST CANCER RESOURCES

DIAGNOSED WITH BREAST CANCER? QUESTIONS TO ASK YOUR HEALTHCARE PRACTITIONER:

1. What is the course of action based on my lab results?
2. How will the lab test results impact my treatment plan?
3. What are all my treatment options?
4. Why do you recommend this particular treatment option?
5. How do we know the procedure was successful/what lab tests and which results indicate a successful procedure?
6. What are the tumor markers we are monitoring? What are the levels we are hoping for? What happens if the tumor markers are higher than we would like to see?
7. What are the follow-up tests and what are we looking for?

BE BREAST AWARE

Breast self-awareness is important, and women of all ages should discuss breast self-awareness with their healthcare provider. You should immediately report any changes in your breasts' normal appearance and feel. These changes could include pain, a mass, nipple discharge other than breast milk, or redness.

1 – Know Your Risk

2 – Get Screened

3 – Know what is normal for you

WEB RESOURCES

Breast Cancer Support Groups

www.nationalbreastcancer.org/breast-cancer-support-groups

Lab Tests Online: Breast Cancer

labtestsonline.org/breastcancer

National Cancer Institute: Breast Cancer Risk Assessment Tool

bcrisktool.cancer.gov

Patient Champion Stories

www.ascp.org/patients

Susan G. Komen Breast Cancer Foundation: Inherited Gene Mutations

www5.komen.org/breastcancer/inheritedGeneticMutations.htm

