About Breast Cancer

Get basic information about breast cancer, such as the different types, where they start, important statistics, and current research topics.

Breast Cancer Basics

Get an overview of the different types of breast cancer and where they start.

- What Is Breast Cancer?
- What Causes Breast Cancer?

Types of Breast Cancer

There are several types of breast cancer. The type of breast cancer you have depends on where in the breast it started and other factors.

- Types of Breast Cancer Overview
- Ductal Carcinoma in Situ (DCIS)
- Invasive Breast Cancer (IDC/ILC)
- Triple-negative Breast Cancer
- Angiosarcoma of the Breast
- Inflammatory Breast Cancer
- Paget Disease of the Breast
- Phyllodes Tumors

Research and Statistics

See the latest estimates for new cases and deaths of breast cancer in the US and what research is being done.

- Key Statistics for Breast Cancer
- What's New in Breast Cancer Research?

What Is Breast Cancer?

Breast cancer is a type of cancer that starts in the breast. It can start in one or both breasts.

- How breast cancer starts
- Where breast cancer starts
- How breast cancer spreads
- Types of breast cancer

How breast cancer starts

Breast cancer occurs almost entirely in women, but men can get breast cancer[1], too.

Cancer starts when cells begin to grow out of control. (To learn more about how cancers start and spread, see What Is Cancer?[2])

It's important to understand that most breast lumps are benign and not cancer (malignant). Non-cancer breast tumors are abnormal growths, but they do not spread outside of the breast. They are not life threatening, but some types of benign breast lumps can increase a woman's risk of getting breast cancer.

Any breast lump or change needs to be checked by a health care professional to find out if it is benign or malignant (cancer) and if it might affect your future cancer risk. See Non-cancerous Breast Conditions[3] to learn more.

Where breast cancer starts

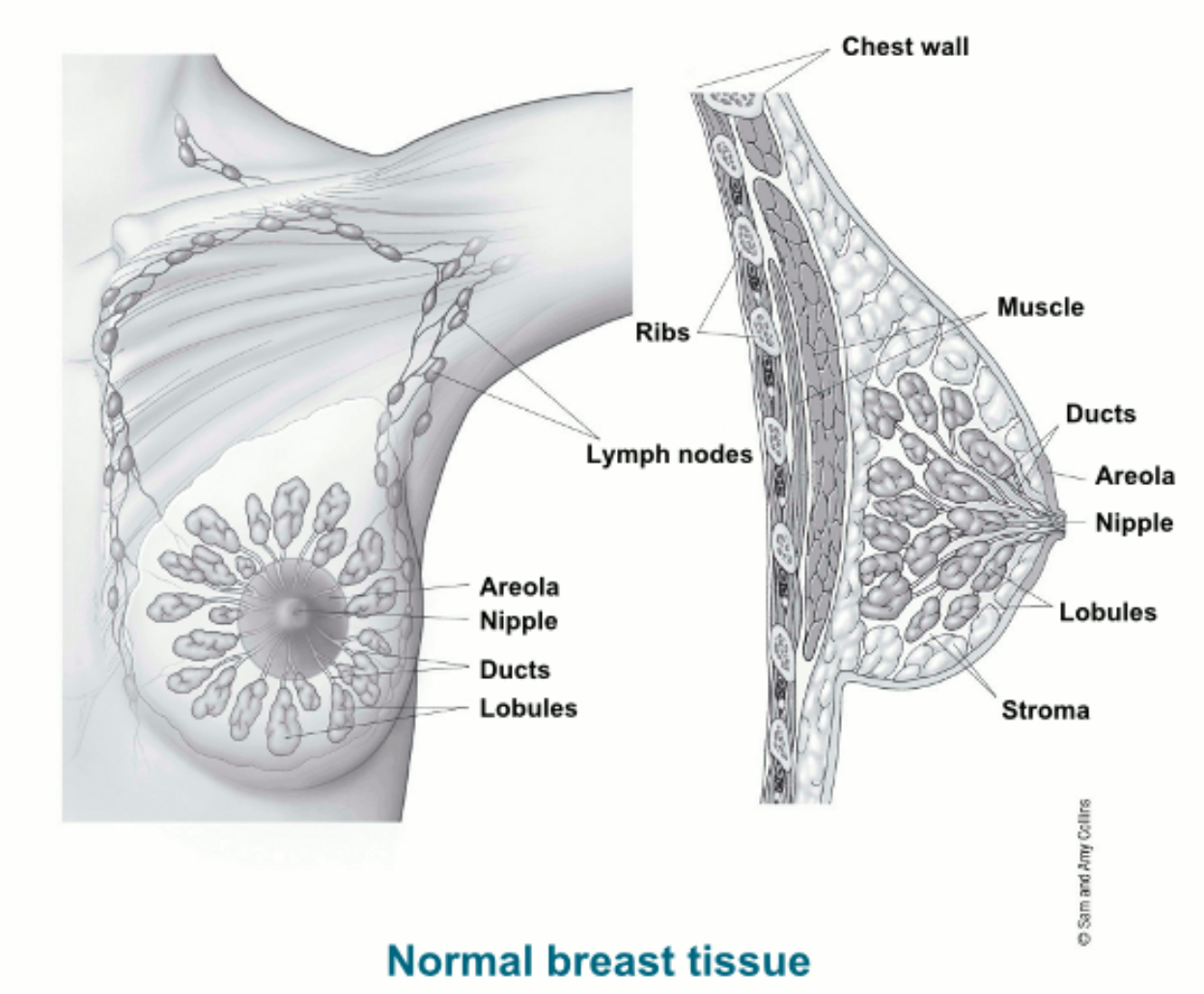
Breast cancers can start from different parts of the breast. The breast is an organ that sits on top of the upper ribs and chest muscles. There is a left and right breast and each one has mainly glands, ducts, and fatty tissue. In women, the breast makes and delivers milk to feed newborns and infants. The amount of fatty tissue in the breast determines the size of each breast.

The breast has different parts:

- **Lobules** are the glands that make breast milk. Cancers that start here are called **lobular cancers**.
- **Ducts** are small canals that come out from the lobules and carry the milk to the nipple. This is the most common place for breast cancer to start. Cancers that start here are called **ductal cancers**.
- The **nipple** is the opening in the skin of the breast where the ducts come together and turn into larger ducts so the milk can leave the breast. The nipple is surrounded by slightly darker thicker skin called the **areola**. A less common type of breast cancer called **Paget disease of the breast** can start in the nipple.
- The **fat and connective tissue (stroma)** surround the ducts and lobules and help keep them in place. A less common type of breast cancer called **phyllodes tumor**[4] can start in the stroma.
- **Blood vessels** and **lymph vessels** are also found in each breast. Angiosarcoma is a less common type of breast cancer that can start in the lining of these vessels. The lymph system is described below.

A small number of cancers start in other tissues in the breast. These cancers are called sarcomas[5] and lymphomas[6] and are not really thought of as breast cancers.

To learn more, see Types of Breast Cancer.



How breast cancer spreads

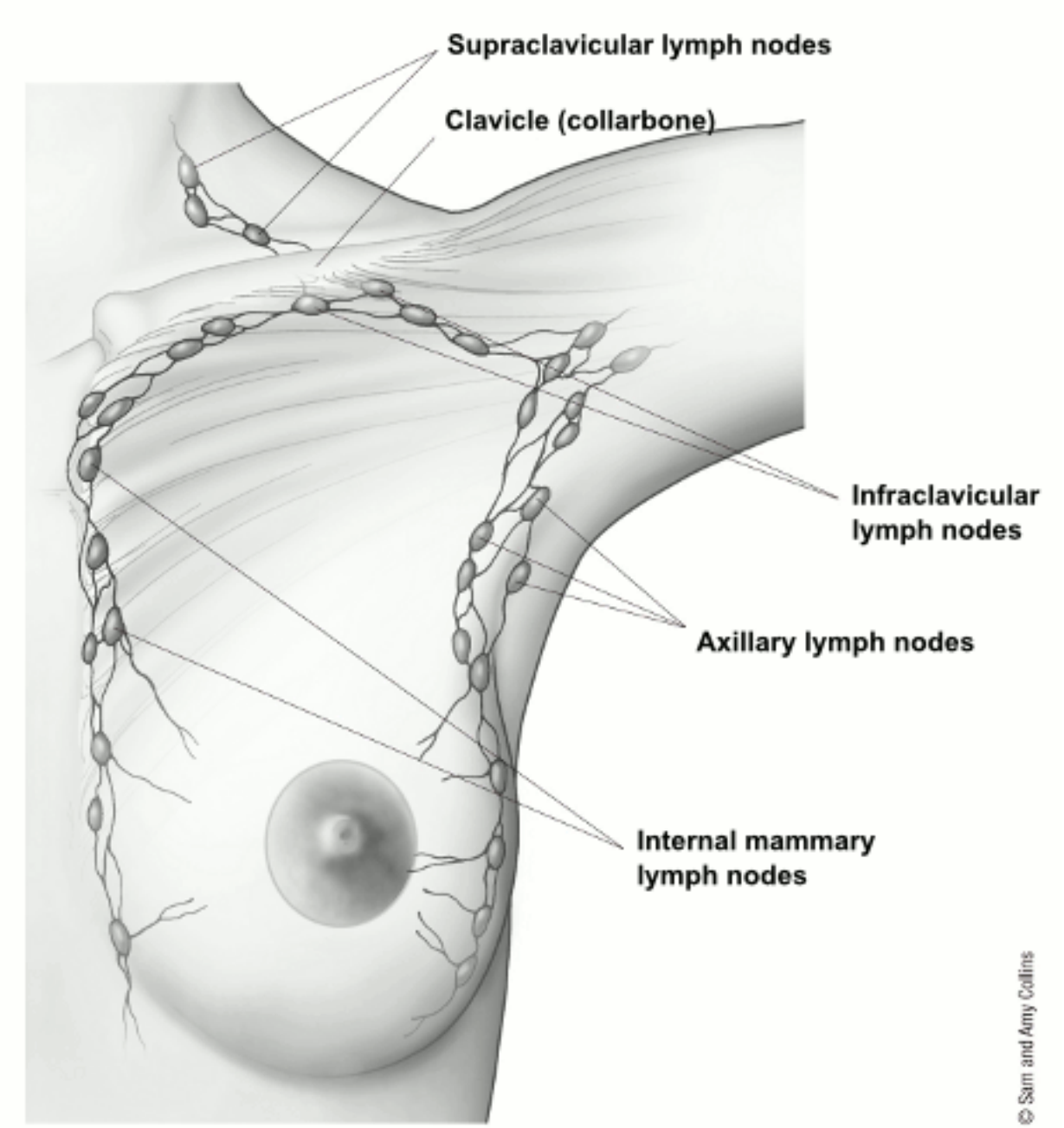
Breast cancer can spread when the cancer cells get into the blood or lymph system and then are carried to other parts of the body.

The lymph (or lymphatic) system is a part of your body's immune system. It is a network of lymph nodes (small, bean-sized glands), ducts or vessels, and organs that work together to collect and carry clear lymph fluid through the body tissues to the blood. The clear lymph fluid inside the lymph vessels contains tissue by-products and waste material, as well as immune system cells.

The lymph vessels carry lymph fluid away from the breast. In the case of breast cancer, cancer cells can enter those lymph vessels and start to grow in lymph nodes. Most of the lymph vessels of the breast drain into:

- Lymph nodes under the arm (**axillary** lymph nodes)
- Lymph nodes inside the chest near the breastbone (**internal mammary** lymph nodes)
- Lymph nodes around the collar bone (**supraclavicular** [above the collar bone] and **infraclavicular** [below the collar bone] lymph nodes)

If cancer cells have spread to your lymph nodes, there is a higher chance that the cells could have traveled through the lymph system and spread (metastasized) to other parts of your body. Still, not all women with cancer cells in their lymph nodes develop metastases, and some women with no cancer cells in their lymph nodes might develop metastases later.



Lymph nodes in relation to the breast

Types of breast cancer

There are many different types of breast cancer. The type is determined by the specific kind of cells in the breast that are affected. Most breast cancers are **carcinomas**. The

most common breast cancers such as ductal carcinoma in situ (DCIS) and invasive carcinoma are **adenocarcinomas**, since the cancers start in the gland cells in the milk ducts or the lobules (milk-producing glands). Other kinds of cancers can grow in the breast, like angiosarcoma or sarcoma[7], but are not considered breast cancer since they start in different cells of the breast.

Breast cancers are also classified by certain types of proteins or genes each cancer might make. After a biopsy is done, breast cancer cells are tested for proteins called estrogen receptors and progesterone receptors[8], and the HER2 gene or protein[9]. The tumor cells are also closely looked at in the lab to find out what grade[10] it is. The specific proteins found and the tumor grade can help decide the stage of the cancer and treatment options.

To learn more about the specific tests done on breast cancer cells, see Understanding a Breast Cancer Diagnosis[11].

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer-in-men.html
2. www.cancer.org/cancer/understanding-cancer/what-is-cancer.html
3. www.cancer.org/cancer/types/breast-cancer/non-cancerous-breast-conditions.html
4. www.cancer.org/cancer/types/breast-cancer/non-cancerous-breast-conditions/phyllodes-tumors-of-the-breast.html
5. www.cancer.org/cancer/types/soft-tissue-sarcoma.html
6. www.cancer.org/cancer/types/lymphoma.html
7. www.cancer.org/cancer/types/soft-tissue-sarcoma.html
8. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-hormone-receptor-status.html
9. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html
10. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-grades.html
11. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis.html

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What Causes Breast Cancer?

We don't know what causes each case of breast cancer. But we do know many of the **risk factors** for these cancers. We also know that normal breast cells can become cancer because of changes or mutations in **genes.** Hormones also seem to play a role in many cases of breast cancer, but just how this happens is not fully understood.

- Lifestyle-related risk factors
- Hormones
- Gene mutations
- How gene changes can lead to breast cancer
- Inherited gene changes
- Acquired gene changes

Lifestyle-related risk factors

Lifestyle-related risk factors, such as what you eat and how much you exercise, can increase your chance of developing breast cancer, but it's not yet known exactly how some of these risk factors cause normal cells to become cancer.

See Lifestyle-related Breast Cancer Risk Factors[1] and Breast Cancer Risk Factors You Cannot Change[2].

Hormones

Hormones also seem to play a role in many cases of breast cancer, but just how this happens is not fully understood.

Gene mutations

We do know that normal breast cells can become cancer because of changes or mutations in **genes**. But only about 1 in 10 breast cancers (10%) are linked with known abnormal genes that are passed on from parents (**inherited**). Many genes have not yet been discovered, so women with a family history of breast cancer might have inherited an abnormal gene that doesn't show on a genetic test[3]. Most breast cancers (about 90%) develop from **acquired** (not inherited) gene changes that have not yet been identified.

How gene changes can lead to breast cancer

Genes[4] control how our cells function. They are made up of a chemical called DNA, which comes from both our parents. DNA affects more than just how we look; it also can influence our risk for developing certain diseases, including some kinds of cancer.

Normal cells have genes called **proto-oncogenes**, which help control when the cells grow, divide to make new cells, or stay alive. If a proto-oncogene is mutated (changed) in a certain way, it becomes an **oncogene**. Cells that have these mutated oncogenes can become cancer.

Normal cells also have genes called **tumor suppressor genes**, which help control how often normal cells divide in two, repair DNA mistakes, or cause cells to die at the right time**.** If a cell has a mutated tumor suppressor gene, then the cell can turn into cancer.

Cancers can be caused by gene changes that turn on oncogenes or turn off tumor suppressor genes. **Changes in many different genes are usually needed to cause breast cancer.**

Inherited gene changes

Some gene changes (mutations) are inherited or passed to you from your parents. This means the mutations are in all your cells when you are born.

Certain inherited gene changes can greatly increase the risk for developing certain

cancers and are linked to many of the cancers that run in some families. For instance, the *BRCA* genes (*BRCA1* and *BRCA2*) are tumor suppressor genes. When one of these genes changes, it no longer suppresses abnormal cell growth, and cancer is more likely to develop. A change in one of these genes can be passed from a parent to a child.

Women have already begun to benefit from advances in understanding the genetic basis of breast cancer. Genetic testing can identify some women who have inherited mutations in the *BRCA1* or *BRCA2* tumor suppressor genes as well as other less common genes such as *PALB2*, *ATM*, or *CHEK2*. These women can then take steps to reduce their risk of breast cancer by increasing awareness of their breasts and following appropriate screening recommendations[5] to help find cancer at an earlier, more treatable stage. Since these mutations are also often associated with other cancers (besides breast), women with these mutations might also consider early screening and preventive actions for other cancers.

Mutations in tumor suppressor genes like the *BRCA* genes are considered “high penetrance” because they often lead to cancer. Although many women with high penetrance mutations develop cancer, most cases of cancer (including breast cancer) are not caused by this kind of mutation.

More often, low-penetrance mutations or gene variations are a factor in cancer development. Each of these may have a small effect on cancer occurring in any one person, but the overall effect on the population can be large because the mutations are common, and people often have more than one at the same time. The genes involved can affect things like hormone levels, metabolism, or other factors that impact risk for breast cancer. These genes might also cause much of the risk of breast cancer that runs in families.

Acquired gene changes

Most gene mutations linked to breast cancer are acquired. This means the change takes place in breast cells during a person's life rather than having been inherited or born with them. Acquired DNA mutations take place over time and are only in the breast cancer cells.

These acquired mutations of oncogenes and/or tumor suppressor genes may result from other factors, like radiation or cancer-causing chemicals. But some gene changes may just be random events that sometimes happen inside a cell, without having an outside cause. So far, the causes of most acquired mutations that could lead to breast cancer are still unknown. Most breast cancers have several acquired gene mutations.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/lifestyle-related-breast-cancer-risk-factors.html
2. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/breast-cancer-risk-factors-you-cannot-change.html
3. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/genetic-testing.html
4. www.cancer.org/cancer/understanding-cancer/genes-and-cancer.html
5. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html

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Types of Breast Cancer

There are many types of breast cancer, and many different ways to describe them. It's easy to get confused.

A breast cancer's type is determined by the specific cells in the breast that become cancer.

- Ductal or lobular carcinoma
- Less common types of breast cancer

Ductal or lobular carcinoma

Most breast cancers are **carcinomas**, which are tumors that start in the epithelial cells that line organs and tissues throughout the body. When carcinomas form in the breast, they are usually a more specific type called **adenocarcinoma**, which starts in cells in the ducts (the milk ducts) or the lobules (glands in the breast that make milk).

In situ vs. invasive breast cancers

The type of breast cancer can also refer to whether the cancer has spread or not. **In situ** breast cancer (**ductal carcinoma in situ or DCIS**) is a pre-cancer that starts in a milk duct and has not grown into the rest of the breast tissue. The term **invasive (or infiltrating)** breast cancer is used to describe any type of breast cancer that has spread (invaded) into the surrounding breast tissue.

Ductal carcinoma in situ (DCIS)

Ductal carcinoma in situ (DCIS; also known as intraductal carcinoma) is a non-invasive or pre-invasive breast cancer.

Invasive breast cancer (ILC or IDC)

Invasive (or infiltrating) breast cancer has spread into surrounding breast tissue. The most common types are invasive ductal carcinoma and invasive lobular carcinoma. Invasive ductal carcinoma makes up about 70-80% of all breast cancers.

Special types of invasive breast cancers

Some invasive breast cancers have special features or develop in different ways that influence their treatment and outlook. These cancers are less common but can be more serious than other types of breast cancer.

Triple-negative breast cancer

Triple-negative breast cancer is an aggressive type of invasive breast cancer in which the cancer cells don't have estrogen or progesterone receptors (ER or PR) and also don't make any or too much of the protein called HER2. (The cells test "negative" on all 3 tests.) It accounts for about 15% of all breast cancers and can be a difficult cancer to treat.

Inflammatory breast cancer

Inflammatory breast cancer is an aggressive type of invasive breast cancer in which cancer cells block lymph vessels in the skin, causing the breast to look "inflamed." It is rare and accounts for about 1% to 5% of all breast cancers.

Less common types of breast cancer

There are other types of breast cancers that start to grow in other types of cells in the breast. These cancers are much less common, and sometimes need different types of treatment.

Paget disease of the breast

Paget disease of the breast is rare, accounting for only about 1-3% of all cases of breast cancer. It starts in the breast ducts and spreads to the skin of the nipple and then to the areola (the dark circle around the nipple).

Angiosarcoma

Sarcomas of the breast are rare making up less than 1% of all breast cancers. Angiosarcoma starts in cells that line blood vessels or lymph vessels. It can involve the breast tissue or the skin of the breast. Some may be related to prior radiation therapy in that area.

Phyllodes tumor

Phyllodes tumors are rare breast tumors. They develop in the connective tissue (stroma) of the breast, in contrast to carcinomas, which develop in the ducts or lobules. Most are benign, but there are others that are malignant (cancer).

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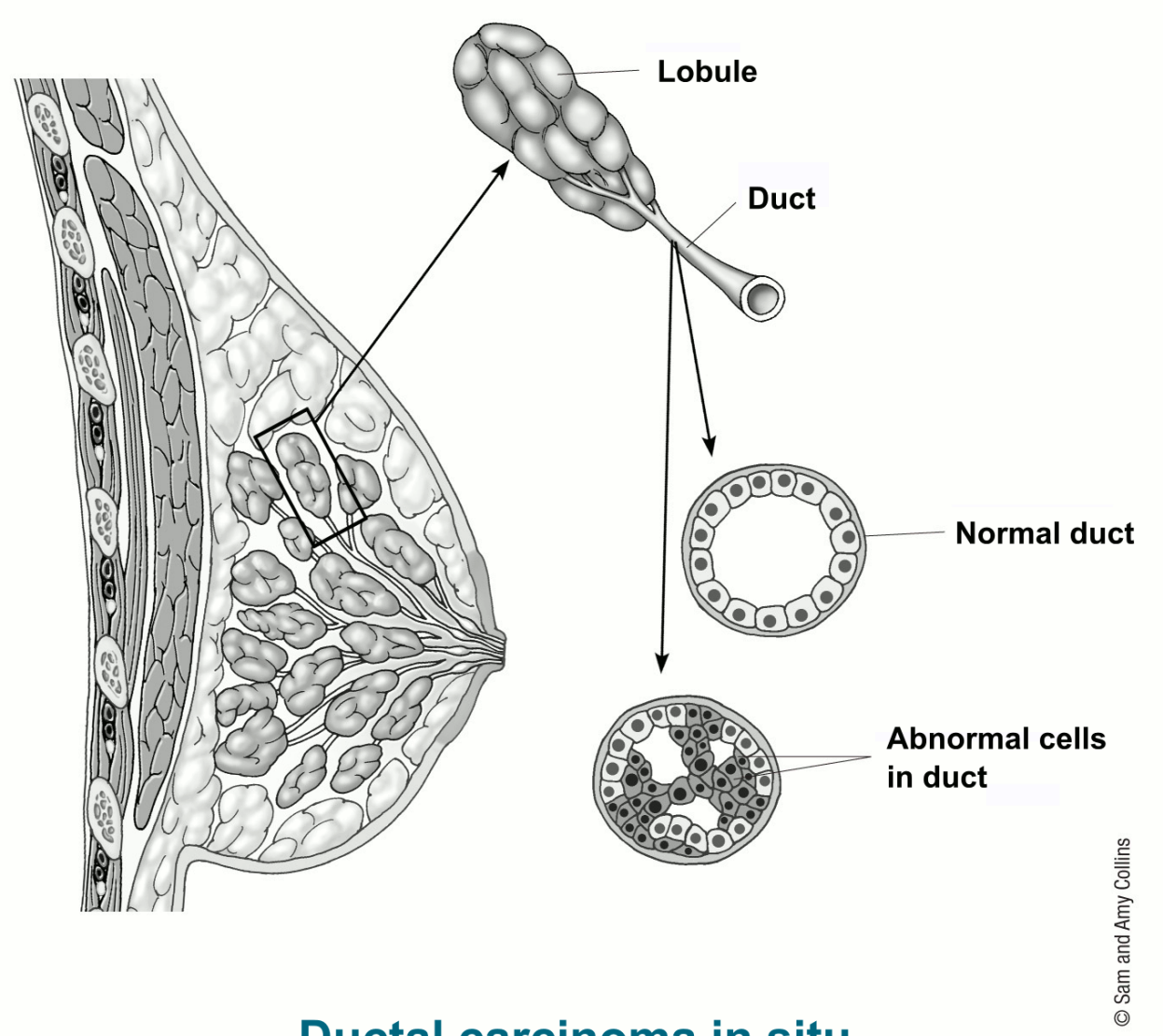
Ductal Carcinoma in Situ (DCIS)

Ductal carcinoma in situ (DCIS) is a non-invasive or pre-invasive breast cancer. It is also known as **intraductal carcinoma**.

- Treating DCIS

About 1 in 5 new breast cancers will be ductal carcinoma in situ (DCIS). Nearly all women with this early stage of breast cancer can be cured.

DCIS is also called **intraductal carcinoma** or **stage 0 breast cancer**. DCIS is a non-invasive or pre-invasive breast cancer. This means the cells that line the ducts have changed to cancer cells but they have not spread through the walls of the ducts into the nearby breast tissue.



Ductal carcinoma in situ

Because DCIS hasn't spread into the breast tissue around it, it can't spread (metastasize) beyond the breast to other parts of the body.

However, DCIS can sometimes become an invasive cancer. At that time, the cancer has spread out of the duct into nearby tissue, and from there, it could metastasize to other parts of the body.

Right now, there's no good way to know for sure which will become invasive cancer and which ones won't, so almost all women with DCIS will be treated.

Treating DCIS

In most cases, a woman with DCIS can choose between breast-conserving surgery (BCS) and simple mastectomy. Radiation is usually given after BCS. Tamoxifen or an aromatase inhibitor after surgery might also be an option if the DCIS is hormone-receptor positive[1].

See Treatment for Ductal Carcinoma in Situ (DCIS)[2] to learn more.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-hormone-receptor-status.html
2. www.cancer.org/cancer/types/breast-cancer/treatment/treatment-of-breast-cancer-by-stage/treatment-of-ductal-carcinoma-in-situ-dcis.html

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Invasive Breast Cancer (IDC/ILC)

Breast cancers that have spread into surrounding breast tissue are known as **invasive breast cancers**. Most breast cancers are invasive, but there are different types of invasive breast cancer. The two most common types are **invasive ductal carcinoma (IDC)** and **invasive lobular carcinoma (ILC)**.

Inflammatory breast cancer and **triple negative breast cancer** are also types of invasive breast cancer.

- Invasive (infiltrating) ductal carcinoma (IDC)
- Invasive lobular carcinoma (ILC)
- Less common types of invasive breast cancer
- Treating invasive breast cancer

Invasive (infiltrating) ductal carcinoma (IDC)

This is the most common type of breast cancer. About 8 in 10 invasive breast cancers are invasive (or infiltrating) ductal carcinomas (IDC).

IDC starts in the cells that line a milk duct in the breast. From there, the cancer breaks through the wall of the duct, and grows into the nearby breast tissues. At this point, it may be able to spread (metastasize) to other parts of the body through the lymph system and bloodstream.

Invasive lobular carcinoma (ILC)

About 1 in 10 invasive breast cancers is an invasive lobular carcinoma (ILC).

ILC starts in the breast glands that make milk (lobules). Like IDC, it can spread

(metastasize) to other parts of the body. Invasive lobular carcinoma may be harder to detect on physical exam and imaging, like mammograms, than invasive ductal carcinoma. And compared to other kinds of invasive carcinoma, it is more likely to affect both breasts. About 1 in 5 women with ILC might have cancer in both breasts at the time they are diagnosed.

Less common types of invasive breast cancer

There are some special types of breast cancer that are sub-types of invasive carcinoma. They are less common than the breast cancers named above and each typically make up fewer than 5% of all breast cancers. These are often named after features of the cancer cells, like the ways the cells are arranged.

Some of these may have a better prognosis than the more common IDC. These include:

- Adenoid cystic (or adenocystic) carcinoma
- Low-grade adenosquamous carcinoma (this is a type of metaplastic carcinoma)
- Medullary carcinoma
- Mucinous (or colloid) carcinoma
- Papillary carcinoma
- Tubular carcinoma

Some sub-types have the same or maybe worse prognoses than IDC. These include:

- Metaplastic carcinoma (most types, including spindle cell and squamous, except low grade adenosquamous carcinoma)
- Micropapillary carcinoma
- Mixed carcinoma (has features of both invasive ductal and invasive lobular)

In general, all of these sub-types are still treated like IDC.

Treating invasive breast cancer

Treatment of invasive breast cancer depends on how advanced the cancer is (the stage of the cancer) and other factors. Most women will have some type of surgery to remove the tumor. Depending on the type of breast cancer and how advanced it is, you might need other types of treatment as well, either before or after surgery, or sometimes both.

See Treating Breast Cancer[1] for details on different types of treatment, as well as

common treatment approaches based on the stage or other factors.

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Triple-negative Breast Cancer

Triple-negative breast cancer (TNBC) is an aggressive type of invasive breast cancer.

TNBC differs from other types of invasive breast cancer in that it tends to grow and spread faster, has fewer treatment options, and tends to have a worse prognosis (outlook).

The term **triple-negative breast cancer** refers to the fact that the cancer cells don't have estrogen or progesterone receptors[1] (ER or PR) and also don't have too much of the HER2[2] protein. (The cells test "negative" on all 3 tests.)

- How common is triple-negative breast cancer?
- Signs and symptoms of triple-negative breast cancer
- How is triple-negative breast cancer diagnosed?
- Survival rates for triple-negative breast cancer
- Treating triple-negative breast cancer

How common is triple-negative breast cancer?

Triple-negative breast cancer accounts for about 10-15% of all breast cancers. These cancers tend to be more common in women younger than age 40, who are Black, or who have a *BRCA1* mutation.

Signs and symptoms of triple-negative breast cancer

Triple-negative breast cancer can have the same signs and symptoms[3] as other common types of breast cancer.

How is triple-negative breast cancer diagnosed?

Once a breast cancer diagnosis has been made using imaging tests and a biopsy[4], the cancer cells will be checked for certain proteins. If the cells do not have estrogen or progesterone receptors (ER or PR), and also do not have too much of the HER2 protein, the cancer is considered to be triple-negative breast cancer.

Survival rates for triple-negative breast cancer

TNBC tends to grow quickly, is more likely to have spread at the time it's found, and is more likely to come back after treatment than other types of breast cancer. Because of this, the survival rates for TNBC are generally not quite as high as they are for other types of breast cancer.

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can't tell you how long you will live, but they may help give you a better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as they are familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares women with the same type and stage of breast cancer to women in the overall population. For example, if the **5-year relative survival rate** for a specific stage of breast cancer is 90%, it means that women who have that cancer are, on average, about 90% as likely as women who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the Surveillance, Epidemiology, and End Results Program (SEER) database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for breast cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by AJCC TNM stages[5] (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the breast.
- **Regional:** The cancer has spread outside the breast to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body such as the lungs, liver, or bones.

5-year relative survival rates for triple-negative breast cancer

These numbers are based on women diagnosed with TNBC between 2015 and 2021.

SEER Stage	5-year Relative Survival Rate
Localized	92%
Regional	67%
Distant	15%
All stages combined	78%

Understanding the numbers

- **Women now being diagnosed with TNBC may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on women who were diagnosed and treated at least 5 years earlier.
- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread, but your age and overall health, how well the cancer responds to treatment, tumor grade[6], and other factors can also affect your outlook.

Treating triple-negative breast cancer

Triple-negative breast cancer has fewer treatment options than other types of invasive breast cancer. This is because the cancer cells do not have the estrogen or progesterone receptors or enough of the HER2 protein to make hormone therapy or HER2-targeted drugs work. Because hormone therapy and anti-HER2 drugs are not choices for women with triple-negative breast cancer, chemotherapy is often used.

If the cancer has not spread to distant sites, surgery is an option. Chemotherapy might be given first to shrink a large tumor, followed by surgery. Chemotherapy is often recommended after surgery to reduce the chances of the cancer coming back. Radiation might also be an option depending on certain features of the tumor and the type of surgery you had.

In cases where the cancer has spread to other parts of the body (stage IV), platinum chemotherapy, targeted drugs like a PARP inhibitor or antibody-drug conjugate, or

immunotherapy with chemotherapy might be considered.

For details, see Treatment of Triple-negative Breast Cancer[7].

Triple-Negative Breast Cancer [8]
Get easy-to-read information about triple-negative breast cancer including risk factors, signs and symptoms, how to lower your risk, and recommended breast cancer screening tests.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-hormone-receptor-status.html
2. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-cancer-signs-and-symptoms.html
4. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection.html
5. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/stages-of-breast-cancer.html
6. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-grades.html
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Last Revised: June 25, 2025

Inflammatory Breast Cancer

Inflammatory breast cancer (IBC) is a rare and aggressive type of invasive breast cancer in which cancer cells block lymph vessels in the skin. This causes the breast to look "inflamed."

- What is inflammatory breast cancer?
- Signs and symptoms of inflammatory breast cancer
- How is inflammatory breast cancer diagnosed?
- Stages of inflammatory breast cancer
- Survival rates for inflammatory breast cancer
- Treating inflammatory breast cancer

What is inflammatory breast cancer?

Inflammatory breast cancer (IBC) is rare. It accounts for only 1% to 5% of all breast cancers. Although it is a type of invasive ductal carcinoma, its symptoms, outlook, and treatment are different. IBC causes symptoms of breast inflammation like swelling and redness, which is caused by cancer cells blocking lymph vessels in the skin causing the breast to look "inflamed."

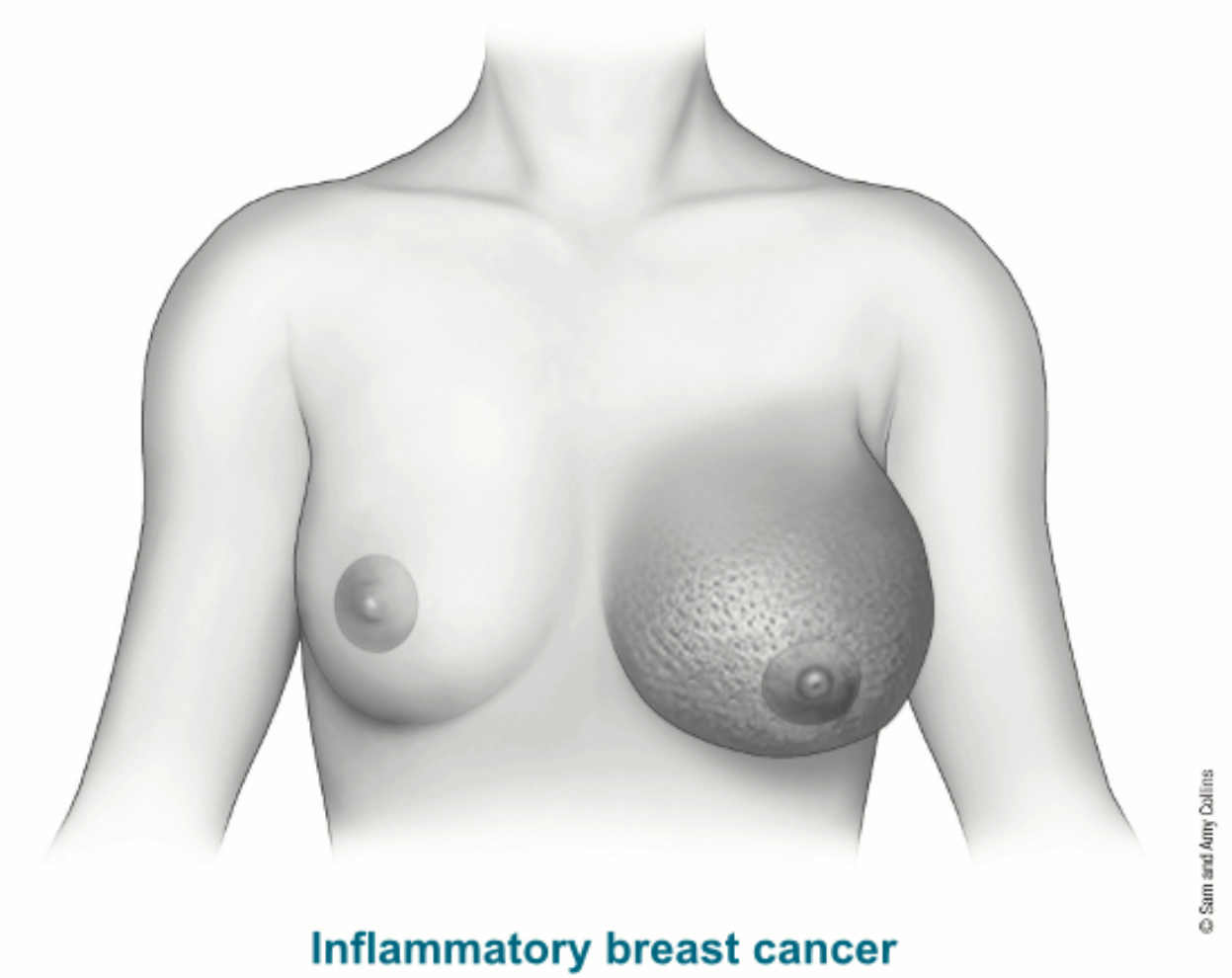
Inflammatory breast cancer (IBC) differs from other types of breast cancer in many ways:

- IBC doesn't look like a typical breast cancer. It often does not cause a breast lump, and it might not show up on a mammogram. This makes it harder to diagnose.
- IBC tends to occur in younger women (younger than 40 years of age).
- Black women appear to develop IBC more often than White women.
- IBC is more common among women who have excess body weight (overweight or obesity).
- IBC tends to be more aggressive—it grows and spreads much more quickly—than more common types of breast cancer.
- IBC is always at least at a locally advanced stage when it’s first diagnosed because the breast cancer cells have grown into the skin. (This means it is at least stage III.)
- In about 1 of 3 cases, IBC has already spread (metastasized) to distant parts of the body when it is diagnosed. This makes it harder to treat successfully.
- Women with IBC tend to have a worse prognosis (outcome) than women with other common types of breast cancer.

Signs and symptoms of inflammatory breast cancer

Inflammatory breast cancer (IBC) can cause a number of signs and symptoms, most of which develop quickly (within 3 to 6 months), including:

- Swelling (edema) of the skin of the breast
- Redness involving more than one-third of the breast
- Pitting or thickening of the skin of the breast so that it may look and feel like an orange peel
- A retracted or inverted nipple
- One breast looking larger than the other because of swelling
- One breast feeling warmer and heavier than the other
- A breast that may be tender, painful, or itchy
- Swelling of the lymph nodes under the arms or near the collarbone



Inflammatory breast cancer

If you have any of these symptoms, it does not mean that you have IBC, but you should see a doctor right away. Tenderness, redness, warmth, and itching are also common symptoms of a breast infection or inflammation, such as mastitis[1] if you're pregnant or breastfeeding. Because these problems are much more common than IBC, your doctor might suspect infection at first as a cause and treat you with antibiotics.

Treatment with antibiotics may be a good first step, but if your symptoms don't get better in 7 to 10 days, more tests need to be done to look for cancer. Let your doctor know if it doesn't help, especially if the symptoms get worse or the affected area gets larger. The possibility of IBC should be considered more strongly if you have these symptoms and are not pregnant or breastfeeding, or have been through menopause. Ask to see a specialist (like a breast surgeon) if you're concerned.

IBC grows and spreads quickly, so the cancer may have already spread to nearby lymph nodes by the time symptoms are noticed. This spread can cause swollen lymph

nodes under your arm or above your collar bone. If the diagnosis is delayed, the cancer can spread to distant sites.

How is inflammatory breast cancer diagnosed?

Imaging tests

If inflammatory breast cancer (IBC) is suspected, one or more of the following imaging tests may be done:

- Mammogram[2]
- Breast ultrasound[3]
- Breast MRI (magnetic resonance imaging) scan[4]

Often a photo of the breast is taken to help record the amount of redness and swelling before starting treatment.

Biopsy

Inflammatory breast cancer is diagnosed by a biopsy[5], taking out a small piece of the breast tissue and looking at it in the lab. This might mean a punch biopsy[6] of the breast skin that is abnormal. Your physical exam and other tests may show findings that are "suspicious for" IBC, but only a biopsy can tell for sure that it is cancer.

Tests on biopsy samples

The cancer cells in the biopsy will be examined in the lab to determine their grade[7].

They will also be tested for certain proteins that help decide which treatments will be helpful. Women whose breast cancer cells have hormone receptors[8] are likely to benefit from treatment with hormone therapy drugs.

Cancer cells that make too much of a protein called HER2[9] or too many copies of the gene for that protein may be treated by certain drugs that target HER2.

In certain cases, other gene mutations (changes) or proteins[10] might be tested for to see if specific drugs might be helpful.

Stages of inflammatory breast cancer

All inflammatory breast cancers start as **stage III (T4dNXM0)** since they involve the skin. If the cancer has spread outside the breast to distant parts of the body, it is **stage IV**.

For more information, read about breast cancer staging[11].

Survival rates for inflammatory breast cancer

Inflammatory breast cancer (IBC) tends to grow quickly, is more likely to have spread at the time it's found, and is more likely to come back after treatment than most other types of breast cancer. Because of this, the survival rates are generally not as high as they are for other types of breast cancer.

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can't tell you how long you will live, but they may help give you a better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Ask your doctor how these numbers may apply to you, as they are familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares women with the same type and stage of breast cancer to women in the overall population. For example, if the **5-year relative survival rate** for a specific stage of breast cancer is 70%, it means that women who have that cancer are, on average, about 70% as likely as women who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the Surveillance, Epidemiology, and End Results (SEER) database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for breast cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by AJCC TNM stages[12] (stage 1, stage 2, stage 3, etc.). Instead, it

groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the breast.
- **Regional:** The cancer has spread outside the breast to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body such as the lungs, liver, or bones.

5-year relative survival rates for inflammatory breast cancer

These numbers are based on women diagnosed with IBC between 2015 and 2021.

(There is no localized SEER stage for IBC since it has already reached the skin when first diagnosed.)

SEER Stage	5-year Relative Survival Rate
Regional	53%
Distant	22%
All SEER Stages	40%

Understanding the numbers

- **Women now being diagnosed with inflammatory breast cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on women who were diagnosed and treated at least 5 years earlier.
- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread, but your age and overall health, how well the cancer responds to treatment, tumor grade[13], and other factors can also affect your outlook.

Treating inflammatory breast cancer

Inflammatory breast cancer (IBC) that has not spread outside the breast is stage III. In

most cases, treatment is chemotherapy first to try to shrink the tumor, followed by surgery to remove the cancer. Radiation and often other treatments, like more chemotherapy or targeted drug therapy, are given after surgery. Because IBC is so aggressive, breast conserving surgery (lumpectomy) and sentinel lymph node biopsy are typically not part of the treatment.

IBC that has spread to other parts of the body (stage IV) may be treated with chemotherapy, hormone therapy, and/or targeted drugs.

For details, see Treatment of Inflammatory Breast Cancer[14].

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1. www.cancer.org/cancer/types/breast-cancer/non-cancerous-breast-conditions/mastitis.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
4. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/mri-for-cancer.html
5. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
6. www.cancer.org/cancer/types/skin-cancer/skin-biopsy-treatment-procedures/punch-biopsy.html
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Angiosarcoma of the Breast

Angiosarcoma is a rare cancer that starts in the cells that line blood vessels or lymph vessels. It is often a complication of previous radiation treatment to the breast. It can happen 8-10 years after getting radiation treatment to the breast.

- Signs and symptoms of angiosarcoma
- How is angiosarcoma of the breast diagnosed?
- Treating angiosarcoma

Signs and symptoms of angiosarcoma

Angiosarcoma can cause skin changes like purple colored nodules and/or a lump in the breast. It can also occur in the affected arms of women with lymphedema, but this is not common. (Lymphedema[1] is swelling that can develop after surgery or radiation therapy to treat breast cancer.)

How is angiosarcoma of the breast diagnosed?

One or more of the following imaging tests may be done to check for breast changes:

- Diagnostic mammogram[2]
- Breast ultrasound[3]
- Breast MRI (magnetic resonance imaging) scan[4]

Angiosarcoma is diagnosed by a biopsy[5], removing a small piece of the breast tissue and looking at it closely in the lab. Only a biopsy can tell for sure that it is cancer.

Treating angiosarcoma

Angiosarcomas tend to grow and spread quickly. Treatment usually includes surgery[6] to remove the breast (mastectomy). The axillary lymph nodes are typically not removed. Radiation[7] might be given in certain cases of angiosarcomas that are not related to prior breast radiation. For more information on sarcomas, see Soft Tissue Sarcoma[8].

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/side-effects/swelling/lymphedema.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
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Paget Disease of the Breast

Paget disease of the breast is a rare type of breast cancer involving the skin of the nipple and the areola (the dark circle around the nipple).

- Signs and symptoms of Paget disease of the breast
- How is Paget disease of the breast diagnosed?
- Treating Paget disease of the breast

Signs and symptoms of Paget disease of the breast

The skin of the nipple and areola often looks crusted, scaly, and red. There may be blood or yellow fluid coming out of the nipple. Sometimes the nipple looks flat or inverted. It also might burn or itch. Your doctor might try to treat this as eczema first, and if it does not improve, recommend a biopsy.

Paget disease usually affects only one breast. In 80-90% of cases, it's usually found along with either ductal carcinoma in situ (DCIS) or infiltrating ductal carcinoma (invasive breast cancer).

How is Paget disease of the breast diagnosed?

Most people with Paget disease of the breast also have tumors in the same breast. One or more of the following imaging tests may be done to check for other breast changes:

- Diagnostic mammogram[1]
- Breast ultrasound[2]
- Breast MRI (magnetic resonance imaging) scan[3]

Paget disease of the breast is diagnosed by a biopsy[4], removing a small piece of the breast tissue and looking at it closely in the lab. In some cases, the entire nipple may be removed. Only a biopsy can show for sure that it is cancer.

Treating Paget disease of the breast

Paget disease can be treated by removing the entire breast (mastectomy[5]) or breast-conserving surgery[6] (BCS) followed by whole-breast radiation therapy[7]. If BCS is done, the entire nipple and areola area also needs to be removed. If invasive cancer is found,

the lymph nodes under the arm will be checked for cancer.

If no lump is felt in the breast tissue, and your biopsy results show the cancer has not spread within the breast tissue, the outlook (prognosis) is excellent.

If the cancer has spread within the breast tissue (is invasive), the outlook is not as good, and the cancer will be staged[8] and treated like any other invasive ductal carcinoma[9].

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
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9. www.cancer.org/cancer/types/breast-cancer/treatment/treatment-of-breast-cancer-by-stage.html

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Last Revised: November 19, 2021

Phyllodes Tumors of the Breast

- Who is most at risk for phyllodes tumors?
- Diagnosis of phyllodes tumors
- How do phyllodes tumors affect your risk for breast cancer?
- Treatment of phyllodes tumors

Who is most at risk for phyllodes tumors?

Phyllodes tumors are most common in women in their 40s, but women of any age can have them. Women with Li-Fraumeni syndrome[1] (a rare, inherited genetic condition) have an increased risk for phyllodes tumors.

Diagnosis of phyllodes tumors

Phyllodes tumors are usually felt as a firm, painless breast lump, but some may hurt. They tend to grow large fairly quickly, and they often stretch the skin.

Sometimes these tumors are seen first on an imaging test (like an ultrasound[2] or mammogram[3]), in which case they're often hard to tell apart from fibroadenomas[4].

The diagnosis can often be made with a core needle biopsy[5], but sometimes the entire tumor needs to be removed (during an excisional biopsy[6]) to know for sure that it's a phyllodes tumor, and whether it's malignant or not.

How do phyllodes tumors affect your risk for breast cancer?

Having a benign phyllodes tumor does not affect your breast cancer risk. If you have a malignant phyllodes tumor, it does not affect your risk of getting other types of breast cancer. Still, you may be watched more closely and get regular imaging tests after treatment for a phyllodes tumor, because these tumors can sometimes come back after surgery.

Treatment of phyllodes tumors

Phyllodes tumors typically need to be removed completely with surgery.

If the tumor is found to be **benign**, an excisional biopsy might be all that is needed, as long as the tumor was removed completely.

If the tumor is **borderline or malignant**, a wider margin (area of normal tissue around the tumor) usually needs to be removed as well. This might be done with breast-conserving surgery[7] (lumpectomy or partial mastectomy), in which part of the breast is removed. Or the entire breast might be removed with a mastectomy[8], especially if a margin of normal breast tissue can't be taken out with breast-conserving surgery. Radiation therapy[9] might be given to the area after surgery, especially if it's not clear that all of the tumor was removed.

Malignant phyllodes tumors are different from the more common types of breast cancer. They are less likely to respond to some of the treatments commonly used for breast cancer, such as the hormone therapy[10] or chemotherapy[11] drugs normally used for breast cancer. Phyllodes tumors that have spread to other parts of the body are often treated more like sarcomas[12] (soft-tissue cancers) than breast cancers.

Phyllodes tumors can sometimes come back in the same place. Because of this, close follow-up with frequent breast exams and imaging tests are usually recommended after treatment.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html
2. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ultrasound-for-cancer.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/mammogram-basics.html

4. www.cancer.org/cancer/types/breast-cancer/non-cancerous-breast-conditions/fibroadenomas-of-the-breast.html
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Key Statistics for Breast Cancer

The information below is an overview of the latest statistics for breast cancer in women in the United States in 2025.

- How common is breast cancer?
- Lifetime chance of getting breast cancer
- Trends in breast cancer incidence
- Trends in breast cancer deaths
- Differences by race and ethnicity
- Breast cancer survivors

How common is breast cancer?

Breast cancer is the most common cancer in women in the United States, except for skin cancers. It accounts for about 30% (or 1 in 3) of all new female cancers each year.

The American Cancer Society's estimates for breast cancer in the United States for 2025 are:

- About 316,950 new cases of invasive breast cancer will be diagnosed in women.
- About 59,080 new cases of ductal carcinoma in situ (DCIS) will be diagnosed.
- About 42,170 women will die from breast cancer.

Breast cancer mainly occurs in middle-aged and older women. The median age at the time of breast cancer diagnosis is 62. This means half of the women who developed breast cancer are 62 years of age or younger when they are diagnosed. A very small number of women diagnosed with breast cancer are younger than 45.

Lifetime chance of getting breast cancer

Overall, the average risk of a woman in the United States developing breast cancer sometime in her life is about 13%. This means there is a 1 in 8 chance she will develop breast cancer. This also means there is a 7 in 8 chance she will never have the disease.

Trends in breast cancer incidence

In recent years, incidence rates have increased by 1% per year. The rise in incidence rates is a little steeper in women younger than 50 (1.4%). This is thought to be due to risk factors of having excess body weight, not having children, or having a first child after age 30.

Trends in breast cancer deaths

Breast cancer is the second leading cause of cancer death in women. (Only lung cancer kills more women each year.) The chance that any woman will die from breast cancer is about 1 in 43 (about 2.3%).

Breast cancer death rates have been decreasing steadily since 1989, for an overall decline of 44% through 2022. The decrease in death rates is believed to be the result of finding breast cancer earlier through screening and increased awareness, as well as better treatments.

Differences by race and ethnicity

Some variations in breast cancer can be seen in racial and ethnic groups. For example:

- Black women have the highest death rate from breast cancer. This is thought to be

partially because Black women have a higher risk of triple-negative breast cancer, more than any other racial or ethnic group.
- At every age, Black women are more likely to die from breast cancer than any other race or ethnic group.
- White, Asian, and Pacific Islander women are more likely to be diagnosed with localized breast cancer than Black, Hispanic, American Indian, and Alaska Native women.
- Asian and Pacific Islander women have the lowest death rate from breast cancer.

Breast cancer survivors

At this time there are more than 4 million breast cancer survivors in the United States. This includes women still being treated and those who have completed treatment.

Survival rates are discussed in Survival Rates for Breast Cancer[1].

Visit the American Cancer Society's Cancer Statistics Center[2] for more key statistics.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-survival-rates.html
2. cancerstatisticscenter.cancer.org/#/

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Last Revised: May 5, 2025

What's New in Breast Cancer Research?

Researchers around the world are working to find better ways to prevent, detect, and treat breast cancer, and to improve the quality of life of patients and survivors.

- Research studies
- Breast cancer causes
- Breast cancer prevention
- New tests to personalize your treatment
- New imaging tests
- Breast cancer treatment
- Supportive care

Research studies

Current guidance on preventing and treating breast cancer as well as what might cause it (among other things) has come mainly from information discovered from **research studies**. Research studies can range from studies done in the lab to clinical trials done with hundreds of thousands of people. Clinical trials are carefully controlled studies that can gather specific information about certain diseases as well as explore promising new treatments.

Clinical trials are one way to get the latest cancer treatments that are being investigated. Still, they are not right for everyone. If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials, or see Clinical Trials[1] to learn more.

Breast cancer causes

Studies continue to look at how certain lifestyle factors, habits, and other environmental

factors, as well as inherited gene changes, might affect breast cancer risk. Here are a few examples:

- Several studies are looking at the effects of physical activity, weight gain or loss, and diet on breast cancer risk.
- Some breast cancers run in families, but many of the gene mutations (changes) that cause these breast cancers are not yet known. Research is being done to identify these gene changes.
- Several studies are focusing on the best use of genetic testing for inherited breast cancer gene mutations.
- Scientists are exploring how common gene variants (small changes in genes that are not as significant as mutations) may affect breast cancer risk. Gene variants typically have only a modest effect on risk by themselves, but when combined they could possibly have a large impact.
- Possible environmental causes of breast cancer have also received more attention in recent years. While much of the science on this topic is still in its earliest stages, this is an area of active research.

Breast cancer prevention

Researchers are looking for ways to help reduce breast cancer risk, especially for women who are at high risk. Here are some examples:

- Studies continue to look at whether certain levels of physical activity, losing weight, or eating certain foods, groups of foods, or types of diets might help lower breast cancer risk.
- Some hormonal medicines[2] such as tamoxifen, raloxifene, exemestane, and anastrozole have already been shown to help lower breast cancer risk for certain women at higher risk. Researchers continue to study which groups of women might benefit most from these drugs.
- Clinical trials are also looking at whether some non-hormonal drugs might lower breast cancer risk, such as drugs used to treat blood or bone marrow disorders, like ruxolitinib.
- Studies are looking at vaccines that might help prevent certain types of breast cancer in people who are at high risk for breast cancer (due to presence of hereditary gene mutations or breast cancer in the family).

New tests to personalize your treatment

Biomarkers

Breast cancer tissue is routinely tested for the biomarkers ER[3], PR[4], and HER2[5] to help make treatment decisions. A biomarker[6] is any gene, protein, or other substance that can be measured in blood, tissues, or other body fluids. Some studies are looking at whether testing for other biomarkers, such as HER3, might also be helpful, but research on this is still in early phases.

Circulating tumor DNA (ctDNA) is DNA that is released into the bloodstream when cancer cells die. Identifying and testing the ctDNA in the blood for biomarkers is a rapidly growing area of study.

Some ways ctDNA might potentially be used in breast cancer include:

- Looking for new biomarkers in the tumor cells that might mean the cancer has become resistant to specific treatments (like chemo or targeted drug therapy)
- Determining if a certain drug will work on a tumor before trying it
- Predicting if the breast cancer will recur (come back) in women with early-stage breast cancer
- Predicting if neoadjuvant treatment is working to destroy the tumor instead of using imaging tests like a CT scan or US
- Determining if breast cancer or a high-risk breast condition is present before changes are found on an imaging test like a mammogram

New imaging tests

Newer types of tests are being developed for breast imaging. Some of these are already being used in certain situations, while others are still being studied. It will take time to see if they are as good as or better than those used today. Some of these tests include:

- Scintimammography (molecular breast imaging)
- Positron emission mammography (PEM)
- Electrical impedance imaging (EIT)
- Elastography
- New types of optical imaging tests

For more on these tests, see Newer and Experimental Breast Imaging Tests[7].

Breast cancer treatment

New kinds of treatments for breast cancer are always being studied. For example, in recent years, several new targeted drugs[8] have been approved to treat breast cancer.

More and better treatment options are needed, especially for cancers like triple-negative breast cancer, where chemotherapy is the main option.

Some areas of research involving breast cancer treatment include:

- Treating patients who have hormone-positive and HER2 negative advanced breast cancer with a drug that targets the estrogen receptor (ie. camizestrant) if tumor cells were to who develop an *ESR1* mutation.
- Studying if shorter courses of radiation therapy for very early-stage breast cancers are at least as good as the longer courses now often used
- Testing if different types of radiation therapy, such as proton beam radiation, might be better than standard radiation.
- Combining certain drugs (like 2 targeted drugs, a targeted drug with an immunotherapy drug, or a hormone drug with a targeted drug) to see if they work better together
- Trying to find new drugs or drug combinations that might help treat breast cancer that has spread to the brain
- Testing different immunotherapy drugs to treat triple-negative breast cancer
- Giving cancer vaccines to see if this helps keep the cancer from either worsening or coming back after treatment. There are many ways in which cancer vaccines work. For example, protein vaccines stimulate the immune system to recognize and attack specific cancer proteins. DNA vaccines contain DNA instructions so that once the vaccine is given, the DNA will instruct your body to make protein(s) to help the immune system recognize and attack cancer cells.
- Finding new ways to treat women with hereditary breast cancer, since they have a higher chance of the cancer recurring (coming back)
- Determining if chemotherapy is needed to treat every woman with HER2-positive breast cancer
- Finding new treatment options when breast cancer becomes resistant to current treatments

Supportive care

Supportive care helps patients and caregivers manage the symptoms of cancer and side effects of cancer treatment. Clinical trials are looking at different medicines and techniques to try to improve supportive care for people with breast cancer. For example, some studies are investigating:

- If there are better medicines or ways to prevent the damage to nerves[9] that sometimes happen with certain chemotherapy drugs

- If drugs or other treatments might be helpful in limiting memory problems and other brain symptoms after chemotherapy[10]
- If certain heart or blood pressure drugs, can help prevent the heart damage sometimes caused by common breast cancer drugs such as doxorubicin and trastuzumab
- If there are medicines that might be able to help treat the tired feeling that cancer can cause

Breast Cancer Research Highlights [11]
The Society's research program has played a crucial role in saving lives from breast cancer. See examples of our current research.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html
2. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/deciding-whether-to-use-medicine-to-reduce-breast-cancer-risk.html
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Written by

The American Cancer Society medical and editorial content team (https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as editors and translators with extensive experience in medical writing.

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