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About Breast Cancer in Men

Overview and Types

If you have been diagnosed with breast cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Breast Cancer in Men?](#)

Research and Statistics

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

- [Key Statistics for Breast Cancer in Men](#)
 - [What's New in Research for Breast Cancer in Men?](#)
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What Is Breast Cancer in Men?

Breast cancer occurs mainly in women, but men can get it, too. Many people do not realize that men have breast tissue and that they can develop breast cancer. Cells in nearly any part of the body can become cancer and can spread to other areas.

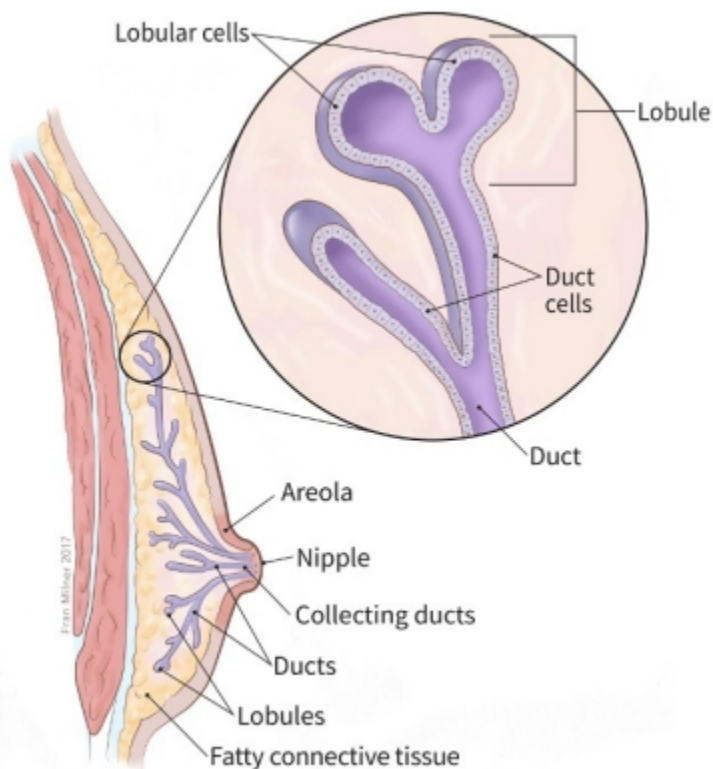
Breast cancer starts when cells in the breast begin to grow out of control. These cells usually form a tumor that can often be seen on an x-ray or felt as a lump. The tumor is malignant (cancer) if the cells can grow into (invade) surrounding tissues or spread

(metastasize) to distant areas of the body.

To learn more about how cancers start and spread, see [Cancer Basics](#)¹.

Male breast tissue

Until puberty (on average around age 9 or 10), young boys and girls have a small amount of breast tissue consisting of a few ducts located under the nipple and areola (area around the nipple). At puberty, a girl's ovaries make female hormones, causing breast ducts to grow and lobules to form at the ends of ducts. Even after puberty, boys and men normally have low levels of female hormones, and breast tissue doesn't grow much. Men's breast tissue has ducts, but only a few if any lobules.



Where breast cancer starts

Breast cancers can start from different parts of the breast. Most breast cancers begin in the ducts that carry milk to the nipple (ductal cancers). Some start in the glands that make breast milk (lobular cancers). Men have these ducts and glands, too, even though they aren't normally functional. There are also types of breast cancer that start in other

types of breast cells, but these are less common.

A small number of cancers start in other tissues in the breast. These cancers are called [sarcomas](#)² and [lymphomas](#)³ and are not really thought of as breast cancers.

Although many types of breast cancer can cause a lump in the breast, not all do. There are [other symptoms of breast cancer you should watch for](#)⁴ and report to a health care provider.

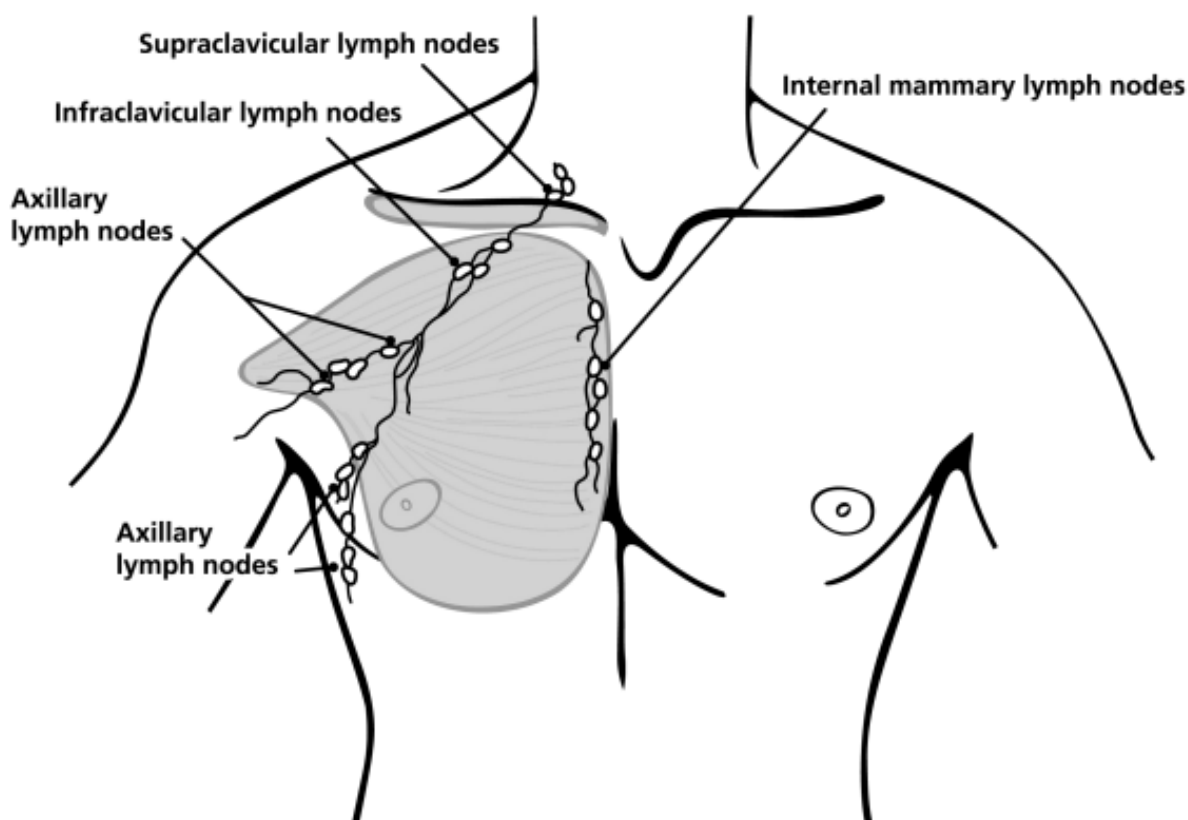
It's also important to understand that most breast lumps are benign and not cancer (malignant). Benign breast tumors are abnormal growths, but they do not spread outside of the breast and they are not life threatening. Any breast lump or change needs to be checked by a health care provider to determine whether it is benign or malignant (cancer) and whether it might impact your future cancer risk.

How breast cancer spreads

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

The lymph system is a network of lymph (or lymphatic) vessels found throughout the body. The lymph vessels carry lymph fluid and connect lymph nodes. Lymph nodes are small, bean-shaped collections of immune system cells. Lymph vessels are like small veins, except that they carry a clear fluid called lymph (instead of blood) away from the breast. Lymph contains tissue fluid and waste products, as well as immune system cells. Breast cancer cells can enter 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 nodes)
- Lymph nodes around the collar bone (supraclavicular [above the collar bone] and infraclavicular [below the collar bone] lymph nodes)
- Lymph nodes inside the chest near the breast bone (internal mammary lymph nodes)



If the cancer cells have spread to your lymph nodes, there is a higher chance that the cells could have also traveled through the lymph system and spread (metastasized) to other parts of your body. The more lymph nodes with breast cancer cells, the more likely it is that the cancer may be found in other organs. Because of this, finding cancer in one or more lymph nodes often affects your treatment plan. Usually, [surgery to remove one or more lymph nodes](#)⁵ will be needed to know whether the cancer has spread.

Still, not all men with cancer cells in their lymph nodes develop metastases to other areas, and some men can have no cancer cells in their lymph nodes and later develop metastases.

Benign breast conditions

Men can also have some benign (not cancerous) breast disorders.

Gynecomastia

Gynecomastia is the most common male breast disorder. It is not a tumor but rather an increase in the amount of a man's breast tissue. Usually, men have too little breast tissue to be felt or noticed. Gynecomastia can appear as a button-like or disk-like growth under the nipple and areola (the dark circle around the nipple), which can be felt and sometimes seen. Some men have more severe gynecomastia and they may appear to have small breasts. Although gynecomastia is much more common than breast cancer in men, both can be felt as a growth under the nipple, which is why it's important to have any such lumps checked by your doctor.

Gynecomastia is common among teenage boys because the balance of hormones in the body changes during adolescence. It is also common in older men due to changes in their hormone balance.

In rare cases, gynecomastia occurs because tumors or diseases of certain endocrine (hormone-producing) glands cause a man's body to make more estrogen (the main female hormone). Men's glands normally make some estrogen, but not enough to cause breast growth. Diseases of the liver, which is an important organ in male and female hormone metabolism, can change a man's hormone balance and lead to gynecomastia. Obesity (being extremely overweight) can also cause higher levels of estrogen in men.

Some medicines can cause gynecomastia. These include some drugs used to treat ulcers and heartburn, high blood pressure, heart failure, and psychiatric conditions. Men with gynecomastia should ask their doctors if any medicines they are taking might be causing this condition.

Klinefelter syndrome, a rare genetic condition, can lead to gynecomastia as well as increase a man's risk of developing breast cancer. This condition is discussed further in [Risk Factors for Breast Cancer in Men](#)⁶.

Benign breast tumors

There are many types of benign breast tumors (abnormal lumps or masses of tissue), such as papillomas and fibroadenomas. Benign tumors do not spread outside the breast and are not life threatening. Benign breast tumors are common in women but are very rare in men.

Types of Breast Cancer in Men

The most common types of breast cancer are ductal carcinoma in situ, invasive ductal carcinoma, and invasive lobular carcinoma.

Most breast cancers are **carcinomas**. In fact, breast cancers are often a type of carcinoma called **adenocarcinoma**, which starts in cells that make glands (glandular tissue). Breast adenocarcinomas start in the ducts (the milk ducts) or the lobules (milk-producing glands).

There are other, less common, types of breast cancers, too, such as **sarcomas**, phyllodes, Paget's disease and angiosarcomas which start in the cells of the muscle, fat, or connective tissue.

Sometimes a single breast tumor can be a combination of different types. And in some very rare types of breast cancer, the cancer cells may not form a lump or tumor at all.

When a biopsy is done to find out the specific type of breast cancer, the pathologist also will say if the cancer has spread in to the surrounding tissues. The name of the breast cancer type will change depending on the extent of the cancer.

- **In situ** breast cancers have not spread.
- **Invasive** or **infiltrating** cancers have spread (invaded) into the surrounding breast tissue.

These general kinds of breast cancer can be further described with the terms outlined above.

Ductal carcinoma in situ

Ductal carcinoma in situ (DCIS; also known as intraductal carcinoma) is considered non-invasive or pre-invasive breast cancer. In DCIS (also known as intraductal carcinoma), cells that lined the ducts have changed to look like cancer cells. The difference between DCIS and invasive cancer is that the cells have not spread (invaded) through the walls of the ducts into the surrounding tissue of the breast (or spread outside the breast). DCIS is considered a pre-cancer because some cases can go on to become invasive cancers. Right now, though, there is no good way to know for certain which cases will go on to become invasive cancers and which ones won't. DCIS accounts for about 1 in 10 cases of breast cancer in men. It is almost always curable with [surgery](#).⁷

Lobular carcinoma in situ

[Lobular carcinoma in situ \(LCIS\)](#)⁸ may also be called lobular neoplasia. In LCIS, cells that look like cancer cells are growing in the lobules of the milk-producing glands of the breast, but they haven't grown through the wall of the lobules. LCIS is not a true pre-

invasive cancer because it does not turn into an invasive cancer if left untreated, but it is linked to an increased risk of invasive cancer in both breasts. LCIS is rarely, if ever seen in men.

Infiltrating (or invasive) ductal carcinoma

This is the most common type of breast cancer. [Invasive \(or infiltrating\) ductal carcinoma](#)⁹ (IDC) starts in a milk duct of the breast, breaks through the wall of the duct, and grows into the fatty tissue of the breast. Once it breaks through the wall of the duct, it has the potential to spread to other parts of the body. Invasive (or infiltrating) ductal carcinoma (IDC) starts in a milk duct of the breast, breaks through the wall of the duct, and grows into the fatty tissue of the breast. At this point, it may be able to spread (metastasize) to other parts of the body through the lymphatic system and bloodstream. At least 8 out of 10 male breast cancers are IDCs (alone or mixed with other types of invasive or in situ breast cancer). Because the male breast is much smaller than the female breast, all male breast cancers start relatively close to the nipple, so they are more likely to spread to the nipple. This is different from Paget disease as described below.

Infiltrating (or invasive) lobular carcinoma

[Invasive lobular carcinoma](#)¹⁰ (ILC) starts in the milk-producing glands (lobules). Like IDC, it can spread to other parts of the breast and body. ILC is very rare in men, accounting for only about 2% of male breast cancers. This is because men do not usually have much lobular (glandular) breast tissue.

Paget disease of the nipple

[This type of breast cancer](#)¹¹ starts in the breast ducts and spreads to the nipple. It may also spread to the areola (the dark circle around the nipple). The skin of the nipple usually appears crusted, scaly, and red, with areas of itching, oozing, burning, or bleeding. There may also be an underlying lump in the breast.

Paget disease may be associated with DCIS or with infiltrating ductal carcinoma. It is rare and accounts for about 1-3% of female breast cancers and a higher percentage (5%) of male breast cancers.

Inflammatory breast cancer

Inflammatory breast cancer is an aggressive, but rare type of breast cancer. It makes the breast swollen, red, warm and tender rather than forming a lump. It can be mistaken

for an infection of the breast. This is very rare in men. See [Inflammatory Breast Cancer](#)¹² for more information.

Special types of invasive breast carcinoma

There are some special types of breast cancer that are sub-types of invasive carcinoma. They are much less common than the breast cancers named above.

Some of these may have a better or worse prognosis than standard infiltrating ductal carcinoma.

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

In general, these sub-types are still treated like standard infiltrating carcinoma.

Hyperlinks

1. www.cancer.org/cancer/cancer-basics.html
2. <https://www.cancer.org/cancer/soft-tissue-sarcoma.html>
3. <https://www.cancer.org/cancer/lymphoma.html>
4. www.cancer.org/cancer/breast-cancer-in-men/detection-diagnosis-staging/signs-symptoms.html
5. www.cancer.org/cancer/breast-cancer-in-men/treating/surgery.html
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Key Statistics for Breast Cancer in Men

The American Cancer Society estimates for breast cancer in men in the United States for 2019 are:

- About 2,670 new cases of invasive breast cancer will be diagnosed

- About 500 men will die from breast cancer

Breast cancer is about 100 times less common among white men than among white women. It is about 70 times less common among black men than black women. Like black women, black men with breast cancer tend to have a worse prognosis (outlook). For men, the lifetime risk of getting breast cancer is about 1 in 833.

Visit the [American Cancer Society's Cancer Statistics Center](#)¹ for more key statistics.

Hyperlinks

1. <https://cancerstatisticscenter.cancer.org/>

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What's New in Research for Breast Cancer in Men?

Breast cancer in men is rare and is often treated like breast cancer in women, but research is showing that there are some differences. More research is needed.

Research into the causes, prevention, and treatment of breast cancer is under way in many medical centers throughout the world. However, most breast cancer clinical trials and research are done in women. See [What's New In Breast Cancer Research? \(in women\)](#)¹ for more information on advances in breast cancer treatment.

Causes of breast cancer and breast cancer prevention

Studies continue to uncover lifestyle factors and habits that alter breast cancer risk. Ongoing studies are looking at the effect of exercise, weight gain or loss, and diet on breast cancer risk. Research is also looking to see if being overweight or obese as a teenager increases breast cancer risk in men as it does for breast cancer in women.

Research has identified several genetic variations associated with breast cancer risk. It shows that these genetic variations affect breast cancer risk in different ways for men and women. This suggests differences in the biology of breast cancer in men and women. More research is being done on this. Scientists are also exploring how common gene variations may affect breast cancer risk. Each gene variant has only a modest effect on risk (10% to 20%), but when taken together they may possibly have a large impact.

New laboratory tests

Circulating tumor cells/tumor DNA

Researchers have found that in many breast cancers, cells may break away from the tumor and enter the blood. These circulating tumor cells (CTCs) and the DNA from these cancer cells (circulating tumor DNA [ctDNA]) can be detected with sensitive lab tests. It is thought that these “liquid biopsies” may help monitor patients while they are getting treatment. This might also be an easy way to collect tumor cells to test for new drugs or sensitivities to currently available drugs before actually giving them. Although these tests are available for general use, and the research is promising, more studies are needed.

Treatment

Radiation therapy

Men with breast cancer tend to be diagnosed with larger tumors and often have mastectomies. But it's not clear whether these men should have radiation therapy after surgery, as well. Most doctors follow the same guidelines set for women with breast cancer who have mastectomies, but it is not clear if these recommendations should be the same for men. More studies are needed to define the role of radiation after mastectomy in men with breast cancer.

Immunotherapy

Recent studies in a few types of cancer have shown a promising new way to get immune cells called **T cells (a type of white blood cell)** to fight cancer by changing them in the lab so they can find and destroy cancer cells. Research for this type of treatment in breast cancer is being investigated.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/about/whats-new-in-breast-cancer-research.html

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Breast Cancer in Men Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for male breast cancer.

- [Risk Factors for Breast Cancer in Men](#)
- [What Causes Breast Cancer in Men?](#)

Prevention

There is no way to completely prevent cancer. But there are things you can do that might lower your risk. Learn more.

- [Can Breast Cancer in Men Be Prevented?](#)

Risk Factors for Breast Cancer in Men

A risk factor is anything that affects your chance of getting a disease, such as breast cancer.

But having a risk factor, or even many, does not mean that you are sure to get the disease. Some men with one or more breast cancer risk factors never develop the

disease, while most men with breast cancer have no apparent risk factors.

We don't yet completely understand the causes of breast cancer in men, but researchers have found several factors that may increase the risk of getting it. As with female breast cancer, many of these factors are related to your body's sex hormone levels.

Aging

Aging is an important risk factor for the development of breast cancer in men. The risk of breast cancer goes up as a man ages. On average, men with breast cancer are about 72 years old when they are diagnosed.

Family history of breast cancer

Breast cancer risk is increased if other members of the family (blood relatives) have had breast cancer. About 1 out of 5 men with breast cancer have a close relative, male or female, with the disease.

Inherited gene mutations

Men with a mutation (defect) in the *BRCA2* gene have an increased risk of breast cancer, with a lifetime risk of about 6 in 100. *BRCA1* mutations can also cause breast cancer in men, but the risk is lower, about 1 in 100.

Although mutations in these genes most often are found in members of families with many cases of breast and/or [ovarian cancer](#)¹, they have also been found in men with breast cancer who did not have a strong family history.

Mutations in *CHEK2*, *PTEN* and *PALB2* genes might also be responsible for some breast cancers in men.

Klinefelter syndrome

Klinefelter syndrome is a congenital (present at birth) condition that affects about 1 in 1,000 men. Normally the cells in men's bodies have a single X chromosome along with a Y chromosome, while women's cells have two X chromosomes. Men with Klinefelter syndrome have cells with a Y chromosome plus at least two X chromosomes (but sometimes more).

Men with Klinefelter syndrome also have small testicles and often are infertile because they are unable to produce functioning sperm cells. Compared with other men, they have lower levels of androgens (male hormones) and more estrogens (female hormones). For this reason, they often develop [gynecomastia](#)² (benign male breast growth).

Men with Klinefelter syndrome are more likely to get breast cancer than other men. Having this condition can increase the risk anywhere between 20 - 60 times the risk of a man in the general population.

Radiation exposure

A man whose chest area has been treated with [radiation](#)³ (such as for the treatment of a cancer in the chest, like [lymphoma](#)⁴) has an increased risk of developing breast cancer.

Alcohol

[Heavy drinking](#)⁵ (of alcoholic beverages) increases the risk of breast cancer in men. This may be because of its effects on the liver (see next paragraph).

Liver disease

The liver plays an important role in balancing the levels of sex hormones. In cases of severe liver disease, such as cirrhosis, the liver is not working well and the hormone levels are uneven, causing lower levels of androgens and higher levels of estrogen. Men with liver disease can also have a higher chance of developing benign male breast growth (gynecomastia) and also have an higher risk of developing breast cancer.

Estrogen treatment

Estrogen-related drugs were once used in hormonal therapy for men with [prostate cancer](#)⁶. This treatment may slightly increase breast cancer risk.

There is concern that transgender/transsexual individuals who take high doses of estrogens as part of sex reassignment could also have a higher breast cancer risk. Still, there haven't been any studies of breast cancer risk in transgendered individuals, so it isn't clear what their breast cancer risk is.

Obesity

Studies have shown that women's breast cancer risk is increased by [obesity](#)⁷ (being extremely overweight) after menopause. Obesity is also a risk factor for male breast cancer as well. The reason is that fat cells in the body convert male hormones (androgens) into female hormones (estrogens). This means that obese men have higher levels of estrogens in their body.

Testicular conditions

Certain conditions, such as having an undescended testicle, having mumps as an adult, or having one or both testicles surgically removed (orchiectomy) may increase male breast cancer risk.

Hyperlinks

1. www.cancer.org/cancer/ovarian-cancer.html
2. www.cancer.org/cancer/breast-cancer-in-men/about/what-is-breast-cancer-in-men.html
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What Causes Breast Cancer in Men?

Although [certain risk factors](#) may increase a man's chances of developing breast cancer, the cause of most breast cancers in men is unknown.

Hormone levels

Breast cells normally grow and divide in response to female hormones such as estrogen. The more cells divide, the more chances there are for mistakes to be made when they are copying their DNA. These DNA changes can eventually lead to cancer

(see below).

Factors that unbalance the levels of female and male hormones in the body can therefore have an effect on breast cancer risk. Many of these were described in [Risk Factors for Breast Cancer in Men](#).

Gene changes (mutations)

Researchers are making great progress in understanding how certain changes in DNA can cause normal cells to become cancerous. DNA is the chemical in our cells that makes up our *genes*, the instructions for how our cells function. We usually look like our parents because they are the source of our DNA. However, DNA affects more than how we look.

Some [genes](#)¹ contain instructions for controlling when our cells grow, divide, and die. Certain genes that speed up cell division are called *oncogenes*. Others that slow down cell division or cause cells to die at the appropriate time are called *tumor suppressor genes*. Cancers can be caused by DNA mutations (defects) that turn on oncogenes or turn off tumor suppressor genes.

Acquired gene mutations

Most DNA mutations related to male breast cancer occur during life rather than having been inherited from a parent before birth. It's not clear what causes most of these mutations. Radiation to the breast area is a factor in a small number of cases. Some acquired mutations of oncogenes and/or tumor suppressor genes may be the result of cancer-causing chemicals in our environment or diet, but so far studies have not identified any chemicals that are responsible for these mutations in male breast cancers.

Inherited gene mutations

Certain inherited DNA changes can cause a high risk of developing certain cancers and are responsible for cancers that run in some families.

Some breast cancers are linked to inherited mutations of the *BRCA1* or *BRCA2* tumor suppressor genes. Normally, these genes make proteins that help cells recognize and/or repair DNA damage and prevent them from growing abnormally. But if a person has inherited a mutated gene from either parent, the chances of developing breast cancer are higher.

Men with mutations in genes such as BRCA1 and BRCA2 have a higher lifetime risk for breast cancer as well as other cancers such as prostate and pancreatic cancer. There are also other hereditary cancer syndromes that can be associated with male breast cancer.

All men who have been diagnosed with breast cancer should consider [genetic testing](#)² because they can be at risk for other cancers such as prostate and pancreas and it might affect their family's chances of getting certain cancers.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/genetics/genes-and-cancer.html
2. www.cancer.org/cancer/cancer-causes/genetics.html

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Can Breast Cancer in Men Be Prevented?

There are some things a man can do to lower his risk of breast cancer:

- Maintain an ideal body weight
- Restricting alcohol consumption.

But since the cause of most breast cancers is not known, there is no known way to prevent them.

For now, the best strategies for reducing the number of deaths caused by this disease are early detection and prompt treatment. [Early detection](#)¹ has been a problem for men, who may not notice breast lumps or see their doctor only when the lumps have gotten large. In general, men are diagnosed with breast cancers at more advanced stages than are women.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer-in-men/detection-diagnosis-staging/detection.html

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Breast Cancer in Men Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- [Can Breast Cancer in Men Be Found Early?](#)
- [Signs and Symptoms of Breast Cancer in Men](#)
- [Tests for Breast Cancer in Men](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- [How Is Breast Cancer in Men Classified?](#)
- [Tests to Look for Breast Cancer Spread in Men](#)
- [Breast Cancer Stages in Men](#)
- [Breast Cancer Survival Rates in Men](#)

Can Breast Cancer in Men Be Found Early?

Finding breast cancer early improves the chances that male breast cancer can be treated successfully. However, because breast cancer is so uncommon in men, there is unlikely to be any benefit in screening men in the general population for breast cancer with mammograms or other tests.

Differences in early detection of breast cancers in men and women

There are many similarities between breast cancer in men and women, but there are some important differences that affect finding it early.

Breast size

The most obvious difference between the male and female breast is size. Because men have very little breast tissue, it is easier for men and their health care professionals to feel small masses (tumors). On the other hand, because men have so little breast tissue, cancers do not need to grow very far to reach the nipple, the skin covering the breast, or the muscles underneath the breast. So even though breast cancers in men tend to be slightly smaller than in women when they are first found, more often have already spread to nearby tissues or lymph nodes. The extent of spread is one of the most important factors in the prognosis (outcome) of a breast cancer.

Lack of awareness

Another difference is that breast cancer is common among women and rare among men. Women tend to be aware of this disease and its possible warning signs, but many men do not think that they can get it at all. Some men ignore breast lumps or think they are caused by an infection or some other reason, and don't get medical treatment until the mass has had a chance to grow. Some men are embarrassed when they find a breast lump and worry that someone might question their masculinity. This could also delay diagnosis and reduce a man's chances for successful treatment.

For men who are or may be at high risk

Careful breast exams might be useful for screening men with a strong family history of breast cancer and/or with *BRCA* mutations found by genetic testing. Screening men for breast cancer has not been studied to know if it is helpful, and mammography (x-rays of the breast) and ultrasound is usually only done if a lump is found. Men who are at [high risk for breast cancer](#)¹ should discuss how to manage their risk with their doctor.

Genetic counseling and testing

If you have a strong family history of breast cancer (in men or women), ovarian cancer, pancreatic cancer, and/or prostate cancer that might be caused by a *BRCA* mutation, and/or if someone else in your family is known to have a *BRCA* mutation, you might want to consider genetic testing to determine if you have inherited a mutated *BRCA* gene. If the test detects a mutated *BRCA* gene, you and your health care team can watch carefully for early signs of cancer. Other cancers including prostate cancer, pancreatic cancer, and testicular cancer have been linked to *BRCA* mutations. .

Because breast cancer in men can be caused by *BRCA* mutations, men with breast cancer should also consider [genetic testing](#)².

If you are thinking about having genetic testing, it is strongly recommended that you talk first to a professional qualified to explain and interpret these tests, such as a genetic counselor or a nurse or doctor with special training. It is very important to understand what genetic testing can and can't tell you, and to carefully weigh the benefits and risks of testing before having it done. Test results are not always clear cut, and even if they are, it's not always clear what should be done about them. There may be other concerns as well, such as what the results might mean for other family members.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer-in-men/causes-risks-prevention/risk-factors.html
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Signs and Symptoms of Breast Cancer in Men

Possible symptoms of breast cancer to watch for include:

- A lump or swelling, which is often (but not always) painless
- Skin dimpling or puckering
- Nipple retraction (turning inward)
- Redness or scaling of the nipple or breast skin
- Discharge from the nipple

Sometimes a breast cancer can spread to lymph nodes under the arm or around the collar bone and cause a lump or swelling there, even before the original tumor in the breast is large enough to be felt.

These changes aren't always caused by cancer, but if you notice any breast changes, you should see a health care professional as soon as possible.

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Tests for Breast Cancer in Men

Medical history and physical exam

If there is a chance you have breast cancer, your doctor will want to get a complete personal and family medical history. This may give some clues about the cause of any symptoms you are having and if you might be at increased risk for breast cancer.

A complete breast exam will be done to find any lumps or suspicious areas and to feel their texture, size, and relationship to the skin and muscle. The doctor may also examine the rest of your body to look for any evidence of possible spread, such as enlarged lymph nodes (especially under the arm).

Imaging tests for breast cancer in men

If you have signs or symptoms that could mean breast cancer or another breast disease, your doctor might recommend one or more of the following imaging tests.

Diagnostic mammogram

A [mammogram](#)¹ is a low dose x-ray exam of the breast that allows doctors called radiologists to look for changes in breast tissue. It is called a *diagnostic* mammogram when it is done because problems are present.

A mammogram uses a machine designed to look only at breast tissue. The breast is pressed between 2 plates to flatten and spread the tissue. The compression only lasts a few seconds and may be uncomfortable briefly, but it is necessary to get a better picture. In some cases, special images known as *cone* or *spot views with magnification* are taken to make a small area of abnormal breast tissue easier to evaluate.

The results of this test might suggest that a biopsy is needed to tell if the abnormal area is cancer. Mammography is often more accurate in men than women, since men do not have dense breasts or other common breast changes that might interfere with the test.

Breast ultrasound

[Breast ultrasound](#)² is often used to examine some types of breast changes.

Breast ultrasound uses sound waves to make a computer picture of the inside of the

breast. A gel is put on the skin of the breast, and a wand-like instrument called a **transducer** is moved over the skin. The transducer sends out sound waves and picks up the echoes as they bounce off body tissues. The echoes are made into a picture on a computer screen. You might feel some pressure as the transducer is moved across the breast, but it should not be painful.

This test does not expose you to radiation.

Breast ultrasound is often used to look at breast changes that are found during a mammogram or physical exam. It is useful because it can often tell the difference between fluid-filled [cysts](#)³ (which are unlikely to be cancer) and solid masses (which might need further testing to be sure they're not cancer).

In someone with a breast tumor, ultrasound can also be used to check if the lymph nodes under the arm are enlarged. If they are, ultrasound can be used to guide a needle to take a sample (a biopsy) to look for cancer cells there and in the breast tissue.

Nipple discharge test

Fluid leaking from the nipple is called *nipple discharge*. It can look clear, cloudy or bloody. If you have nipple discharge, you should have it checked by your doctor. If there is blood in this fluid, you might need more [tests](#)⁴. One test collects some of the fluid to look at it in the lab to see if cancer cells are there. This test is often not helpful, since a breast cancer can still be there even when no cancer cells are found in the nipple discharge. Other tests, such as a mammogram or breast ultrasound, may be more helpful. If you have a breast mass, you will probably need a biopsy, even if the nipple discharge does not contain cancer cells or blood.

Breast Biopsy

When other tests show that you might have breast cancer, you will probably need to have a [biopsy](#).⁵ Needing a breast biopsy doesn't necessarily mean you have cancer. Most biopsy results are not cancer, but a biopsy is the only way to find out. During a biopsy, a doctor will remove cells from the suspicious area so they can be looked at in the lab to see if cancer cells are present. It typically takes at least a few days for you to find out the results.

If your doctor thinks you don't need a biopsy, but you still feel there's something wrong with your breast, follow your instincts. Don't be afraid to talk to your doctor about this or go to another doctor for a second opinion. A biopsy is the only sure way to diagnose breast cancer.

There are different types of breast biopsies. The type you have depends on your situation.

[Fine needle aspiration biopsy \(FNA\)](#):⁶ This type of biopsy is often used to look for cancer spread in the nearby lymph nodes. The doctor uses a very thin, hollow needle attached to a syringe to withdraw (aspirate) a small amount of tissue or fluid from a suspicious area. A local anesthetic (numbing medicine) may or may not be used. The biopsy sample is then checked to see if there are cancer cells in it.

If the area to be biopsied can be felt, the needle can be guided into it while the doctor is feeling it. If the lump can't be felt easily, the doctor might watch the needle on an ultrasound screen as it moves into the area. This is called an **ultrasound-guided biopsy**.

An FNA biopsy is the easiest type of biopsy to have, but it can sometimes miss a cancer if the needle does not go into the cancer cells.

If the results of the FNA biopsy do not give a clear diagnosis, or your doctor still has concerns, you might need to have a second biopsy or a different type of biopsy.

[Core needle biopsy \(CNB\)](#):⁷ This is the most common type of biopsy used to make a breast cancer diagnosis. The doctor uses a wide, hollow needle to take out pieces of breast tissue from a suspicious area. The needle used in this technique is larger than that used for FNA and allows the doctor to remove larger cylinders (cores) of tissue. Several cylinders are often removed. The biopsy is done with local numbing medicine and with the doctor either feeling the abnormal area or using an imaging test (like ultrasound or MRI) to find the spot to biopsy.

In addition to the standard CNB, there are two other types of CNBs:

- [Stereotactic core needle biopsy](#)⁸
- [Vacuum-assisted core biopsy](#)⁹

If the results of the CNB do not give a clear diagnosis, or your doctor still has concerns, you might need to have a second biopsy or a different type of biopsy.

Surgical (open) biopsy: Most breast cancer can be diagnosed with a needle biopsy. Rarely, surgery is needed to remove all or part of the lump for testing. Most often, the surgeon removes the entire mass or abnormal area, as well as a surrounding margin of normal-appearing breast tissue.

There are 2 types of surgical biopsies:

- An **incisional biopsy** removes only part of the suspicious area, enough to make a diagnosis.
- An **excisional biopsy** removes the entire tumor or abnormal area, with or without trying to take out an edge of normal breast tissue (depending on the reason for the biopsy).

Lymph node biopsy: The doctor may also need to biopsy the lymph nodes under the arm to check them for cancer spread. This might be done at the same time as biopsy of the breast tumor, or during surgery to remove the breast tumor. This is done by needle biopsy, or with a [sentinel lymph node biopsy and/or an axillary lymph node dissection](#)¹⁰.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/mammograms.html
2. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
3. <https://www.cancer.org/cancer/breast-cancer/non-cancerous-breast-conditions/fibrosis-and-simple-cysts-in-the-breast.html>
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10. www.cancer.org/cancer/breast-cancer-in-men/treating/surgery.html

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How Is Breast Cancer in Men Classified?

Breast cancer is classified in different ways, based on the results of lab tests after biopsy or surgery. Breast cancer is given a type, based on the type of cells it started from; a grade, based on how the cells look and how quickly they grow; and other classifications based on the results of tests for different hormone receptors or genes in the cancer cells.

Breast cancer type

The tissue removed during the biopsy (or during surgery) is first looked at in the lab to see if cancer is present and whether it is a carcinoma or some other type of cancer (like a sarcoma). If there is enough tissue, the pathologist may be able to determine if the cancer is in situ (not invasive) or invasive. The biopsy is also used to determine the cancer's [type](#)¹, such as invasive ductal carcinoma or invasive lobular carcinoma.

Breast cancer grade

Cancer cells are given a **grade** when they are removed from the breast and checked in the lab. The grade is based on how much the cancer cells look like normal breast cells.

For invasive cancers, a lower grade number (1) usually means the cancer is slower-growing, and less likely to spread. A higher number (3) means a faster-growing cancer that's more likely to spread. The grade is used to help predict your outcome (prognosis) and help figure out what treatments might work best. Sometimes words such as "well differentiated," "moderately differentiated," and "poorly differentiated" are used to describe the grade instead of numbers:

- **Grade 1 or well differentiated:** The cells are slower-growing, and look more like normal breast tissue.
- **Grade 2 or moderately differentiated:** The cells are growing at a speed of and look like cells somewhere between grades 1 and 3.
- **Grade 3 or poorly differentiated:** The cancer cells look very different from normal cells and will probably grow and spread faster.

Our information about [pathology reports](#)^{2,3} can help you understand details about your breast cancer.

Ductal carcinoma in situ is also graded, but the grade is based only on how

abnormal the cancer cells look. Areas of **necrosis** (dead or dying cancer cells) are also noted. If there is necrosis, it means the tumor is growing quickly. See [Understanding Your Pathology Report: Ductal Carcinoma In Situ⁴](#) for more on how DCIS is described.

Tests to classify breast cancers

Estrogen receptor (ER) and progesterone receptor (PR)

Receptors are proteins in or on cells that can attach to certain substances in the blood. Normal breast cells and some breast cancer cells have receptors that attach to the hormones estrogen and progesterone, and depend on these hormones to grow. Cancers are called hormone receptor-positive or hormone receptor-negative based on whether or not they have these receptors (proteins). Knowing the [hormone receptor status⁵](#) is important in deciding treatment options. Keeping these receptors from attaching to the hormones can help keep the cancer from growing and spreading. There are [drugs that can be used to do this⁶](#).

Breast cancer cells may have one, both, or none of these receptors:

- **ER-positive (ER+) breast cancers** have estrogen receptors.
- **PR-positive (PR+) breast cancers** have progesterone receptors.

HER2/neu status

In a small number of breast cancers in men, the cells have too much of a growth-promoting protein called [HER2/neu⁷](#) (often just shortened to HER2). Tumors with increased levels of HER2/neu are referred to as *HER2-positive*. Cells become HER2-positive breast cancers by having too many copies of the HER2/neu gene (known as *gene amplification*). Cancer cells with greater than normal amounts of the HER2/neu protein tend to grow and spread more aggressively than other breast cancers.

All newly-diagnosed breast cancers should be tested for HER2/neu because the outlook for HER2-positive cancers is improved if drugs that target the HER2/neu protein, such as trastuzumab (Herceptin[®]) and lapatinib (Tykerb[®]) are used as part of treatment. See [Targeted Therapy for Breast Cancer in Men⁸](#) for more information on drugs that target this protein.

The biopsy or surgery sample is usually [tested⁹](#) in 1 of 2 ways:

- **Immunohistochemistry (IHC):** In this test, special antibodies that identify the HER2/neu protein are applied to the sample, which cause it to change color if abnormally high levels are present. The test results are reported as 0, 1+, 2+, or 3+.
- **Fluorescent in situ hybridization (FISH):** This test uses fluorescent pieces of DNA that specifically stick to copies of the HER2/neu gene in cells, which can then be counted under a special microscope.

Many breast cancer specialists think the FISH test gives more accurate results than IHC, but it is more expensive and takes longer to get the results. Often the IHC test is used first.

- If the results are 1+ (or 0), the cancer is considered **HER2-negative**. People with HER2-negative tumors are not treated with drugs that target HER2.
- If the test comes back 3+, the cancer is **HER2-positive**. People with HER2-positive tumors may be treated with drugs that target HER2.
- When the result is 2+, the HER2 status of the tumor is not clear and the tumor is then tested with FISH. Some institutions also use FISH to confirm HER2 status that is 3+ by IHC and some perform only FISH.

A newer type of test, known as *chromogenic in situ hybridization* (CISH), works similarly to FISH, by using small DNA probes to count the number of HER2 genes in breast cancer cells. But this test doesn't require a special microscope and looks for color changes (not fluorescence) which may make it less expensive. Right now, it is not being used as much as IHC or FISH.

Classifying breast cancer based on hormone receptors and HER2 status

Doctors often divide invasive breast cancers into groups based on the presence of hormone receptors (ER and PR) and whether or not the cancer has too much HER2.

Hormone receptor-positive: If the breast cancer cells contain either estrogen or progesterone receptors, they can be called hormone receptor-positive (or just hormone-positive). Breast cancers in men that are hormone receptor-positive can be treated with hormone therapy drugs that lower estrogen levels, block estrogen receptors, or affect androgen (male hormone) levels (see [Hormone Therapy for Breast Cancer in Men¹⁰](#)). This includes cancers that are ER-negative but PR-positive. Hormone receptor-positive cancers tend to grow more slowly than those that are hormone receptor-negative (and don't have either estrogen or progesterone receptors). Patients with these cancers tend to have a better outlook in the short-term, but cancers that are hormone receptor-

positive can sometimes come back many years after treatment. About 9 out of 10 male breast cancers are hormone receptor-positive.

Hormone receptor-negative: If the breast cancer cells don't have either estrogen or progesterone receptors, they are said to be hormone receptor-negative (or just hormone-negative). Treatment with hormone therapy drugs is not helpful for these cancers. These cancers tend to grow more quickly than hormone receptor-positive cancers. If they return after treatment, it is more often in the first few years.

HER2 positive: Cancers that have too much HER2 protein or gene are called HER2 positive. These cancers can be treated with [drugs that target HER2](#)¹¹.

HER2 negative: Cancers that don't have excess HER2 are called HER2 negative. These cancers do not respond to treatment with drugs that target HER2.

Triple-negative: If the breast cancer cells don't have estrogen or progesterone receptors and don't have too much HER2, they are called triple-negative (HER2 negative, ER negative, and PR negative). Triple-negative breast cancers tend to grow and spread more quickly than most other types of breast cancer. Because the tumor cells don't have hormone receptors, hormone therapy is not helpful in treating these cancers. Because they don't have too much HER2, drugs that target HER2 aren't helpful, either. [Chemotherapy](#)¹² can still be useful, though.

Triple-positive: This term is used to describe cancers that are ER-positive, PR-positive, and have too much HER2. These cancers can be treated with hormone drugs as well as drugs that target HER2.

Other lab tests

Tests of ploidy and cell proliferation rate

Finding out more information about the DNA in the breast cancer cells can help predict how fast the cancer cells are dividing and growing.

The **ploidy** of cancer cells refers to how much DNA they contain.

- If there's a normal amount of DNA in the cells, they are said to be *diploid*. These cancers tend to grow and spread more slowly.
- If the amount is abnormal, then the cells are described as *aneuploid*. These cancers tend to be more aggressive and grow and spread faster.)

Tests of ploidy may help determine prognosis (outcome), but they rarely change treatment and are considered optional. They are not usually recommended as part of a routine breast cancer work-up.

Cell proliferation is how quickly a cancer cell copies its DNA and divides into 2 cells. If the cancer cells are dividing more rapidly, it means the cancer is faster growing or more aggressive. DNA is copied when the cell is getting ready to divide into 2 new cells. The *S-phase fraction* is the percentage of cells in a sample that are copying their DNA. The rate of cancer cell division can also be estimated by a Ki-67 test. If the S-phase fraction or Ki-67 test is high, it means that the cancer cells are dividing more rapidly, which can indicate a more aggressive cancer.

Gene expression tests

Tests that look at the patterns of certain genes (sometimes referred to as *gene expression profiling*) can help predict if some early-stage (stage 1 or 2) breast cancer are likely to come back after initial treatment. Doctors can use this information to know who will most likely benefit from [chemotherapy](#)¹³¹⁴ after [breast surgery](#).¹⁵

The **Oncotype DX**[®] and the **MammaPrint**[®] are examples of tests that look at different sets of breast cancer genes. There are more tests in development. Tests like these are part of what's being called "personalized medicine" – learning more about your cancer to specifically tailor your treatment.

More information is needed to decide how useful this test is for breast cancer in men. But there is enough data that this test can help men with early stage breast cancer make decisions about chemotherapy after surgery. Ask your doctor if these tests might be appropriate.

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Tests to Look for Breast Cancer Spread in Men

If you have been diagnosed with breast cancer, you might need more tests if your doctor thinks the cancer might have spread based on your symptoms, the results of your physical exam, or the size of your tumor. Your doctor will talk with you about which (if any) of these tests you will need.

Chest x-ray

This test may be done to see if the breast cancer has spread to the lungs.

Computed tomography (CT) scan

A [CT scan](#)¹ uses x-rays taken from different angles, which are combined by a computer to make detailed pictures of the organs. This test is most often used to look at the chest and/or belly (abdomen) to see if breast cancer has spread to other organs. It can also be used to guide a biopsy needle into an area of concern.

Magnetic resonance imaging (MRI) scan

A [MRI scan](#)² makes detailed pictures using radio waves and strong magnets instead of x-rays. This test can be helpful in looking at your brain and spinal cord. MRIs can be more uncomfortable than CT scans because they take longer and you often need to lie in a narrow tube while the test is done.

Ultrasound

For an [ultrasound](#)³, a wand that gives off sound waves is moved over the skin to take pictures of the inside of the body. A gel is often put on your skin first. This test can be used to diagnose breast cancer but it can also be used to look for cancer that has spread to other parts of the body.

Abdominal ultrasound can be used to look for tumors in the liver or other abdominal organs.

Bone scan

A [bone scan](#)⁴ can help show if a cancer has metastasized (spread) to the bones. It can show all of the bones in the body at the same time and can find small areas of cancer spread not seen on plain x-rays.

Bone changes show up as "hot spots" on your skeleton. They attract the radioactivity. These areas may suggest metastatic cancer, but arthritis or other bone diseases can also cause the same pattern. To distinguish between these conditions, your cancer care team may use other imaging tests such as simple x-rays or CT, MRI or PET scans to get a better look at the abnormal areas or they may even take biopsy samples of the bone.

Positron emission tomography (PET) scan

For this test, a form of radioactive sugar is put into a vein and travels throughout the body. Cancer cells absorb high amounts of this sugar. A special camera then takes

pictures that show the areas where the sugar collected throughout the body.

A [PET scan](#)⁵ is useful when your doctor thinks the cancer may have spread but doesn't know where. The picture is not as finely detailed as a CT or MRI scan, but it can provide helpful information about your whole body. Some machines can perform both a PET and CT scan at the same time (PET/CT scan). The radiologist can compare areas of higher radioactivity on the PET with the appearance of that area on the CT.

This test can be useful in looking for cancer that has spread to distant organs, but it is not as helpful in looking for small deposits of cancer cells in the lymph nodes under the arm (axillary lymph nodes).

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/tests/ct-scan-for-cancer.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html
3. www.cancer.org/treatment/understanding-your-diagnosis/tests/ultrasound-for-cancer.html
4. www.cancer.org/treatment/understanding-your-diagnosis/tests/nuclear-medicine-scans-for-cancer.html
5. www.cancer.org/treatment/understanding-your-diagnosis/tests/nuclear-medicine-scans-for-cancer.html

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Breast Cancer Stages in Men

After someone is diagnosed with breast cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to treat it. Doctors also use a cancer's stage when talking about survival statistics.

The staging system used for breast cancer in men is the same as the one used for breast cancer in women.

The earliest stage breast cancers are stage 0 (carcinoma in situ). It then ranges from stage I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage.

How is the stage determined?

The staging system most often used for breast cancer is the American Joint Committee on Cancer (AJCC) TNM system, which is based on 7 key pieces of information:

- The extent (size) of the **tumor (T)**: How large is the cancer? Has it grown into nearby areas?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes? If so, how many?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant organs such as the lungs or liver?
- Estrogen Receptor (**ER**) status: Does the cancer have the protein called an estrogen receptor?
- Progesterone Receptor (**PR**) status: Does the cancer have the protein called a progesterone receptor?
- HER2/neu (**HER2**) status: Does the cancer make too much of a protein called HER2?
- Grade of the cancer (**G**): How much do the cancer cells look like normal cells?

[Oncotype Dx® Recurrence Score](#) results may also be considered in the stage in certain circumstances.

The most recent AJCC system, effective January 2018, has both clinical and pathologic staging systems for breast cancer. The **pathologic stage** (also called the **surgical stage**) is determined by examining tissue removed during an operation. Sometimes, if surgery is not possible right away or at all, the cancer will be given a **clinical stage** instead. This is based on the results of a physical exam, biopsy, and imaging tests. The clinical stage is used to help plan treatment. Sometimes, though, the cancer has spread further than the clinical stage estimates, and may not predict the patient's outlook as accurately as a pathologic stage.

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced. Once a person's T, N, and M categories, as well as ER, PR, HER2 status and grade of the cancer have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more information see [Cancer Staging](#).¹ Detailed explanations of the TNM categories are seen below. The addition of information about ER, PR, and HER2 status along with grade has made stage grouping complex, so, it is best to ask your doctor about your specific stage and what it means.

Details of the TNM staging system

T categories for breast cancer

T followed by a number from 0 to 4 describes the main (primary) tumor's size and if it has spread to the skin or to the chest wall under the breast. Higher T numbers mean a larger tumor and/or wider spread to tissues near the breast.

TX: Primary tumor cannot be assessed.

T0: No evidence of primary tumor.

Tis: Carcinoma in situ (DCIS, or Paget disease of the nipple with no associated tumor mass)

T1(includes T1a, T1b, and T1c): Tumor is 2 cm (3/4 of an inch) or less across.

T2: Tumor is more than 2 cm but not more than 5 cm (2 inches) across.

T3: Tumor is more than 5 cm across.

T4 (includes T4a, T4b, T4c, and T4d): Tumor of any size growing into the chest wall or skin. This includes inflammatory breast cancer.

N categories for breast cancer

N followed by a number from 0 to 3 indicates whether the cancer has spread to lymph nodes near the breast and, if so, how many lymph nodes are involved.

Lymph node staging for breast cancer is based on how the nodes look under the microscope, and has changed as technology has improved. Newer methods have made it possible to find smaller and smaller collections of cancer cells, but experts haven't been sure how much these tiny deposits of cancer cells affect outlook.

It's not yet clear how much cancer in the lymph node is needed to see a change in outlook or treatment. This is still being studied, but for now, a deposit of cancer cells must contain at least 200 cells or be at least 0.2 mm across (less than 1/100 of an inch) for it to change the N stage. An area of cancer spread that is smaller than 0.2 mm (or fewer than 200 cells) doesn't change the stage, but is recorded with abbreviations (i+ or mol+) that indicate the type of special test used to find the spread.

If the area of cancer spread is at least 0.2 mm (or 200 cells), but still not larger than 2 mm, it is called a **micrometastasis** (one mm is about the size of the width of a grain of rice). Micrometastases are counted only if there aren't any larger areas of cancer spread. Areas of cancer spread larger than 2 mm are known to affect outlook and do change the N stage. These larger areas are sometimes called **macrometastases**, but are more often just called metastases.

NX: Nearby lymph nodes cannot be assessed (for example, if they were removed previously).

N0: Cancer has not spread to nearby lymph nodes.

N0(i+): The area of cancer spread contains less than 200 cells and is smaller than 0.2 mm. The abbreviation "i+" means that a small number of cancer cells (called isolated tumor cells) were seen in routine stains or when a special type of staining technique, called immunohistochemistry, was used.

N0(mol+): Cancer cells cannot be seen in underarm lymph nodes (even using special stains), but traces of cancer cells were detected using a technique called *RT-PCR*. RT-PCR is a molecular test that can find very small numbers of cancer cells. (This test is not often used to find breast cancer cells in lymph nodes because the results do not influence treatment decisions.)

N1: Cancer has spread to 1 to 3 axillary (underarm) lymph node(s), and/or tiny amounts of cancer are found in internal mammary lymph nodes (those near the breast bone) on

sentinel lymph node biopsy.

N1mi: Micrometastases (tiny areas of cancer spread) in the lymph nodes under the arm. The areas of cancer spread in the lymph nodes are at least 0.2mm across, but not larger than 2mm.

N1a: Cancer has spread to 1 to 3 lymph nodes under the arm with at least one area of cancer spread greater than 2 mm across.

N1b: Cancer has spread to internal mammary lymph nodes on the same side as the cancer, but this spread could only be found on sentinel lymph node biopsy (it did not cause the lymph nodes to become enlarged).

N1c: Both N1a and N1b apply.

N2: Cancer has spread to 4 to 9 lymph nodes under the arm, or cancer has enlarged the internal mammary lymph nodes

N2a: Cancer has spread to 4 to 9 lymph nodes under the arm, with at least one area of cancer spread larger than 2 mm.

N2b: Cancer has spread to one or more internal mammary lymph nodes, causing them to become enlarged.

N3: Any of the following:

N3a: either:

Cancer has spread to 10 or more axillary lymph nodes, with at least one area of cancer spread greater than 2 mm,

OR

Cancer has spread to the lymph nodes under the collarbone (infraclavicular nodes), with at least one area of cancer spread greater than 2 mm.

N3b: either:

Cancer is found in at least one axillary lymph node (with at least one area of cancer spread greater than 2 mm) and has enlarged the internal mammary lymph nodes,

OR

Cancer has spread to 4 or more axillary lymph nodes (with at least one area of cancer spread greater than 2 mm), and tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy.

N3c: Cancer has spread to the lymph nodes above the collarbone (supraclavicular nodes) with at least one area of cancer spread greater than 2 mm.

M categories for breast cancer

M followed by a 0 or 1 indicates whether the cancer has spread to distant organs -- for example, the lungs, liver, or bones.

MX: Distant spread (metastasis) cannot be assessed.

M0: No distant spread is found on x-rays (or other imaging tests) or by physical exam.

cM0(i+): Small numbers of cancer cells are found in blood or bone marrow (found only by special tests), or tiny areas of cancer spread (no larger than 0.2 mm) are found in lymph nodes away from the underarm, collarbone, or internal mammary areas.

M1: Cancer has spread to distant organs (most often to the bones, lungs, brain, or liver).

Examples using the new staging system

Example #1

If the cancer size is between 2 and 5 cm (T2) but it has not spread to the nearby lymph nodes (N0) or to distant organs (M0) **AND** is:

- Grade 3
- HER2 negative
- ER positive
- PR positive

The cancer stage is IB.

Example #2

If the cancer is larger than 5 cm (T3) and has spread to 4 to 9 lymph nodes under the

arm or to any internal mammary lymph nodes (N2) but not to distant organs (M0) **AND** is:

- Grade 2
- HER2 positive
- ER positive
- PR positive

The cancer stage is IB.

Example #3

If the cancer is larger than 5 cm (T3) and has spread to 4 to 9 lymph nodes under the arm or to any internal mammary lymph nodes (N2) but not to distant organs (M0) **AND** is:

- Grade 2
- HER2 negative
- ER negative
- PR negative

The cancer stage is IIIB.

Hyperlinks

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Breast Cancer Survival Rates in Men

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 he or she is familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares people with the same type and stage of cancer to people in the overall population. For example, if the **5-year relative survival rate** for a specific stage of breast cancer in men is 80%, it means that men who have that cancer are, on average, about 80% as likely as men 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 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 men in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by [AJCC TNM stages](#) (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 or brain.

5-year relative survival rates for breast cancer in men

(Based on men diagnosed with cancer of the breast between 2008 and 2014.)

SEER stage	5-year relative survival rate
Localized	96%
Regional	83%
Distant	23%
All SEER stages combined	83%

Understanding the numbers

- **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 other factors, such as your age and overall health, whether the cancer cells have certain [gene or protein changes](#), and how well the cancer responds to treatment, can also affect your outlook.
- **Men now being diagnosed with breast cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on men who were diagnosed and treated at least 5 years earlier.

*SEER = Surveillance, Epidemiology, and End Results

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Treating Breast Cancer in Men

Local treatments

Some treatments are called *local therapies*, meaning they treat the tumor without affecting the rest of the body. These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations. Types of local therapy used for breast cancer include:

- [Surgery for Breast Cancer in Men](#)
- [Radiation Therapy for Breast Cancer in Men](#)

Systemic treatments

Breast cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called *systemic therapies* because they can reach cancer cells almost anywhere in the body. Depending on the type of breast cancer, several different types of drugs might be used, including:

- [Chemotherapy for Breast Cancer in Men](#)
- [Hormone Therapy for Breast Cancer in Men](#)
- [Targeted Therapy for Breast Cancer in Men](#)

Common treatment approaches

Most of the information about treating male breast cancer comes from doctors' experience with treating female breast cancer. Because so few men have breast cancer, it is hard for doctors to study the treatment of male breast cancer patients separately in clinical trials.

- [Treatment of Breast Cancer in Men, by Stage](#)

Adjuvant therapy

Patients who have no detectable cancer after surgery are often given **treatment to help keep the cancer from coming back**. This is known as *adjuvant therapy*. Even in the early stages of breast cancer, cancer cells may break away from the main breast tumor and begin to spread. These cells can't be felt on a physical exam or seen on x-rays or other imaging tests, and they cause no symptoms. But they can become new tumors in nearby tissues and other organs (and bones). The goal of adjuvant therapy is to kill these hidden cells. Systemic therapy and radiation can both be used as adjuvant therapy.

Not every patient needs adjuvant therapy. Whether or not you are likely to benefit depends on the stage and characteristics of your cancer and what type of surgery you had. Generally, if the tumor is larger or the cancer has spread to lymph nodes, it is more likely to have spread through the bloodstream, and you are more likely to benefit. But other features may determine if you should consider adjuvant therapy.

Neoadjuvant therapy

Some patients are given **treatment before surgery to shrink the tumor** in the hope it will allow a less extensive operation to be done. This often involves the same treatments used for adjuvant therapy, only giving them (or starting them) before surgery and not after. This is called *neoadjuvant therapy*.

Neoadjuvant therapy also lowers the chance of the cancer coming back later, so many patients who get neoadjuvant therapy will not need adjuvant therapy, or will not need as much.

Who treats breast cancer?

Doctors on your cancer treatment team might include:

- **A breast surgeon or surgical oncologist:** a doctor who uses surgery to treat breast cancer
- **A radiation oncologist:** a doctor who uses radiation to treat cancer
- **A medical oncologist:** a doctor who uses chemotherapy and other medicines to treat cancer

Many other specialists might be part of your treatment team as well, including physician assistants, nurse practitioners, nurses, psychologists, social workers, nutritionists, genetic counselors, and other health professionals.

- [Health Professionals Associated With Cancer Care¹](#)

Making treatment decisions

It's important to discuss all of your treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. It's also very important to ask questions if there's anything you're not sure about.

If time permits, it is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

- [Questions to Ask Your Doctor About Breast Cancer in Men](#)
- [Seeking a Second Opinion²](#)

Thinking about taking part in a clinical trial

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they're 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.

- [Clinical Trials³](#)

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular

medical care. Alternative treatments are used instead of a doctor's medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- [Complementary and Alternative Medicine](#)⁴

Help getting through cancer treatment

Your cancer care team will be your first source of information and support, but there are other resources for help when you need it. Hospital- or clinic-based support services are an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- [Find Support Programs and Services in Your Area](#)⁵

Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- [If Cancer Treatments Stop Working](#)⁶
- [Palliative or Supportive Care](#)⁷

The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask him or her questions about your treatment options.

Surgery for Breast Cancer in Men

Most men with breast cancer have some type of surgery as part of their treatment. There are different types of breast surgery, and it may be done for different reasons, depending on the situation. For example, surgery may be done to:

- Remove as much of the cancer as possible (breast-conserving surgery or mastectomy)
- Find out whether the cancer has spread to the lymph nodes under the arm (sentinel lymph node biopsy or axillary lymph node dissection)
- Relieve symptoms of advanced cancer

Your doctor may recommend a certain operation based on your breast cancer features and your medical history, or you may have a choice about which type to have. It's important to know your options so you can talk about them with your doctor and make the choice that is right for you.

Surgery to remove breast cancer

There are two main types of surgery to remove breast cancer:

Mastectomy – A surgery in which the entire breast is removed, including all of the breast tissue and sometimes other nearby tissues. Most men with breast cancer will undergo a mastectomy since men have a small amount of breast tissue. There are several different types of mastectomies:

- In a *simple* or *total mastectomy*, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from

beneath the breast.

- In a *modified radical mastectomy*, the surgeon extends the incision to remove the entire breast and lymph nodes under the arm as well.
- If the tumor is large and growing into the chest muscles, the surgeon must do a *radical mastectomy*, a more extensive operation removing the entire breast, axillary lymph nodes, and the chest wall muscles under the breast. This is only needed if the cancer has grown into the pectoral muscles under the breast.

Breast-conserving surgery (BCS) (also called a *lumpectomy*, *quadrantectomy*, *partial mastectomy*, or *segmental mastectomy*) – A surgery in which only the part of the breast containing the cancer is removed. The goal is to remove the cancer as well as some surrounding normal tissue. How much of the breast is removed depends on the size and location of the tumor and other factors.

BCS is commonly used to treat women with breast cancer. It is used much less often in men because most male breast cancers are located behind the nipple and many times has grown into the nipple which requires more extensive surgery such as a mastectomy. If BCS is done, it is typically followed by *radiation therapy*.

Possible side effects of breast surgery

Aside from post-surgical pain, temporary swelling, and a change in the appearance of the breast, possible side effects of surgery include bleeding and infection at the surgical site, *hematoma* (buildup of blood in the wound), and *seroma* (buildup of clear fluid in the wound).

Surgery to remove nearby lymph nodes

To find out if the breast cancer has spread to axillary (underarm) lymph nodes, one or more of these lymph nodes may be removed and looked at in the lab. This is an important part of figuring out the stage (extent) of the cancer.

Lymph nodes may be removed either as part of the surgery to remove the breast cancer or as a separate operation.

The two main types of surgery to remove lymph nodes are:

- **Sentinel lymph node biopsy (SLNB)** – A procedure in which the surgeon removes only the lymph node(s) under the arm to which the cancer would likely

spread first. Removing only one or a few lymph nodes lowers the risk of side effects from the surgery.

- **Axillary lymph node dissection (ALND)** – A procedure in which the surgeon removes many (usually less than 20) lymph nodes from under the arm. ALND is not done as often as it was in the past, but it might still be the best way to look at the lymph nodes in some situations

Either of these procedures can usually be done at the same time as mastectomy or lumpectomy, but they might also be done in a second operation.

For a sentinel lymph node biopsy (the type done most often), the surgeon finds and removes the *sentinel node (or nodes)* — the first lymph node(s) into which a tumor drains, and the one(s) most likely to contain cancer cells if they have started to spread. To do this, the surgeon injects a radioactive substance and/or a blue dye into the area around the tumor, into the skin over the tumor, or into the tissues just under the areola (the colored area around the nipple). Lymphatic vessels will carry these substances into the sentinel node(s) over the next few hours. The doctor can use a special device to detect radioactivity in the nodes or can look for lymph nodes that have turned blue. (These are separate ways to find the sentinel node, but are often done together as a double check.) The doctor then makes an incision (cut) in the skin over the area in the armpit and removes the nodes. These nodes (often 2 or 3) are then looked at in the lab

The lymph node can sometimes be checked for cancer during surgery. If cancer is found in the sentinel lymph node, the surgeon may go on to do a full ALND. If no cancer cells are seen in the lymph node at the time of the surgery, or if the sentinel node is not checked during surgery, the lymph node(s) will be examined more closely over the next several days. If cancer is found in the lymph node, the surgeon may recommend a full ALND at a later time.

If there are no cancer cells in the sentinel node(s), it's very unlikely that the cancer has spread to other lymph nodes, so no further lymph node surgery is needed. This lets you avoid some of the potential side effects of a full ALND.

A sentinel lymph node biopsy is not always appropriate. If an underarm lymph node looks large or abnormal by touch or by a test like ultrasound, it may be checked by fine needle aspiration. If cancer is found, a full ALND is recommended and a sentinel node biopsy is not needed.

Sentinel lymph node biopsy is a complex technique that requires a great deal of skill. It should only be done by a surgical team experienced with this technique. If you are thinking about having this type of biopsy, ask your health care team if this is something

they do regularly.

Possible side effects of lymph node surgery

As with other operations, pain, swelling, bleeding, and infection are possible.

Lymphedema: A possible long-term effect of removing axillary lymph nodes is lymphedema (swelling) of the arm. This occurs because any excess fluid in the arms normally travels back into the bloodstream through the lymphatic system. Removing the lymph nodes sometimes blocks the drainage from the arm, causing this fluid to build up.

This side effect has not been studied well in men, but the risk is thought to be in the range of 3-7% in women who have a SLNB and around 20-30% in women who have a ALND. Lymphedema seems to be more common if radiation is given after surgery. Sometimes this starts soon after surgery, but it can take a long time to develop. For some people, the swelling lasts for only a few weeks and then goes away. Other times, the swelling lasts a long time. If your arm is swollen, tight, or painful after lymph node surgery, be sure to tell someone on your cancer care team right away. For more information about ways to prevent or manage lymphedema after breast surgery, see [Lymphedema](#)¹.

Limited arm and shoulder movement: You may also have limited movement in your arm and shoulder after surgery. This is more common after an ALND than a SLNB. Your doctor may give you exercises to ensure that you do not have permanent problems with movement (a frozen shoulder).

Some patients notice a rope-like structure that begins under the arm and can extend down toward the elbow. This, sometimes called *axillary web syndrome* or *lymphatic cording*. It is more common after an ALND than SLNB. Symptoms might not appear for weeks or even months after surgery. It can cause pain and limit movement of the arm and shoulder. This often goes away without treatment, although some people seem to find physical therapy helpful.

Numbness: Numbness of the skin of the upper, inner arm is another common side effect because the nerve that controls sensation here travels through the lymph node area.

Chronic pain after breast surgery

Some patients have problems with nerve (neuropathic) pain in the chest wall, armpit, and/or arm after surgery that doesn't go away over time. This is called post-mastectomy

pain syndrome (PMPS) because it was first described in women who had mastectomies, but it occurs after breast-conserving therapy, as well.

PMPS is thought to be linked to damage done to the nerves in the armpit and chest during surgery. But the causes are not known. Between 20% and 30% of women develop symptoms of PMPS after surgery. It isn't clear how common this is in men after breast cancer surgery. It seems to be more common in younger patients, those who had a full ALND (not just a SLNB), and those who were treated with radiation after surgery. Because ALNDs are done less often now, PMPS is less common than it once was.

Symptoms of PMPS include:

- Pain and tingling in the chest wall, armpit, and/or arm
- Pain in the shoulder or surgical scar
- Numbness
- Burning or shooting pain
- A "pins and needles" sensation
- Severe itching

Most patients with PMPS say that their symptoms are not severe, but PMPS can cause you to not use your arm the way you should, and over time you could lose the ability to use it normally. Tell your doctor if you are having pain or other symptoms of PMPS. Nerve pain requires different treatment from other types of pain. See [Cancer Pain](#)² for more information.

More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)³.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁴.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/pain.html
3. www.cancer.org/treatment/treatments-and-side-effects/treatment-

[types/surgery.html](#)

4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Radiation Therapy for Breast Cancer in Men

Some men with breast cancer will need radiation, often in addition to other treatments. The recommendations for radiation therapy in men with breast cancer is largely taken from those for female breast cancer because not enough studies have been done in men. The need for radiation depends on what type of surgery you had or whether your cancer has spread to the lymph nodes or somewhere else in your body. Tumors that are large or involve the skin might also need radiation. You could have just one type of radiation, or a combination of different types.

Radiation therapy is treatment with high-energy rays (such as x-rays) or particles that destroy cancer cells. The most common type of radiation therapy for men with breast cancer is called *external beam radiation*. A machine focuses the radiation on the area affected by the cancer.

When might radiation therapy be used?

Not all men with breast cancer need radiation therapy, but it may be used in several situations:

- After [breast-conserving surgery](#) (BCS), to help lower the chance that the cancer will come back in the remaining breast tissue or nearby lymph nodes. Radiation is needed less often for men with breast cancer than it is for women, mainly because breast-conserving surgery (BCS) isn't done as much.
- After a [mastectomy](#), especially if the cancer is larger than 5 cm (about 2 inches), attached to the skin, or if cancer is found in the lymph nodes.
- If cancer has spread to other parts of the body, such as the bones or brain.

Which areas need radiation depends on whether you had a mastectomy or breast-conserving surgery (BCS) and whether or not the cancer has reached nearby lymph nodes.

- If you had a mastectomy and no lymph nodes had cancer, radiation is focused on the chest wall, the mastectomy scar, and anywhere drains had been placed after surgery.
- If you had BCS, you will most likely have radiation to the entire breast (called whole

breast radiation), and an extra boost of radiation to the area in the breast where the cancer was removed (called the tumor bed) to help prevent it from coming back in that area. The boost is often given after the treatments to the whole breast have ended. It uses the same machine, with lower amounts of radiation, but the beams are aimed at the tumor bed.

- If cancer was found in the lymph nodes under the arm (axillary lymph nodes), this area may be given radiation, as well. In some cases, the area treated might also include the nodes above the collarbone (supraclavicular lymph nodes) and the nodes beneath the breast bone in the center of the chest (internal mammary lymph nodes).

When will I get radiation therapy?

If you will need external radiation therapy after surgery, it is usually not started until your surgery site has healed, which is often a month or longer. If you are getting chemotherapy as well, radiation treatments are usually delayed until chemotherapy is complete.

Breast radiation is most often given 5 days a week (Monday thru Friday) for about 6 to 7 weeks.

Preparing for external beam radiation therapy

Before your treatment starts, the radiation team will carefully figure out the correct angles for aiming the radiation beams and the proper dose of radiation. They will make some ink marks or small tattoos on your skin to focus the radiation on the right area. Check with your health care team whether the marks they use will be permanent.

External radiation therapy is much like getting an x-ray, but the radiation is stronger. The procedure itself is painless. Each treatment lasts only a few minutes, but the setup time—getting you into place for treatment—usually takes longer.

Possible side effects of radiation therapy

The main short-term side effects of external beam radiation therapy to the breast are:

- Swelling in the breast or chest wall
- Skin changes in the treated area similar to a sunburn (redness, skin peeling,

- darkening of the skin)
- Fatigue

Your health care team may advise you to avoid exposing the treated skin to the sun because it could make the skin changes worse. Most skin changes get better within a few months. Changes to the breast tissue usually go away in 6 to 12 months, but it can take longer.

External beam radiation therapy can also cause side effects later on:

- Radiation to the breast or chest wall can sometimes damage some of the nerves to the arm. This is called **brachial plexopathy** and can lead to numbness, pain, and weakness in the shoulder, arm, and hand.
- Radiation to the underarm lymph nodes can cause lymphedema, a type of pain and swelling in the arm or chest.
- In rare cases, radiation therapy may weaken the ribs, which could lead to a fracture.
- In the past, parts of the lungs and heart were more likely to get some radiation, which could lead to long-term damage of these organs in some women. Modern radiation therapy equipment allows doctors to better focus the radiation beams, so these problems are rare today.
- A very rare complication of radiation to the breast or chest wall is the development of another cancer called an angiosarcoma.

More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)¹.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)².

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Chemotherapy for Breast Cancer in Men

Chemotherapy (chemo) is treatment with cancer-killing drugs that may be given intravenously (injected into your vein) or by mouth. The drugs travel through the bloodstream to reach cancer cells in most parts of the body. Occasionally, chemo might be given directly into the spinal fluid which surrounds the brain and spinal cord.

When is chemotherapy used?

Not all men with breast cancer will need chemo, but there are several situations in which chemo might be recommended:

- **After surgery (adjuvant chemotherapy):** When treatment is given to patients who have no evidence of cancer after [surgery](#), it is called *adjuvant therapy*. Adjuvant chemo is used to try to kill any cancer cells that might have been left behind or have spread but can't be seen, even on [imaging tests](#)¹. If these cells were allowed to grow, they could form new tumors in other places in the body. Adjuvant chemo can lower the risk of breast cancer coming back. [Radiation](#) and [hormone therapy](#) can also be used as adjuvant treatments.
- **Before surgery (neoadjuvant chemotherapy):** *Neoadjuvant therapy* is like adjuvant therapy, except you get the treatments (or at least start them) before surgery instead of after. Neoadjuvant chemo can be used to try to shrink the tumor so it can be removed with less extensive surgery. Because of this, neoadjuvant chemo is often used to treat cancers that are too big to be removed by surgery at the time of diagnosis (called *locally advanced cancers*). Also, by giving chemo before the tumor is removed, doctors can better see how the cancer responds to it. If the first set of chemo drugs doesn't shrink the tumor, your doctor will know that other drugs are needed. It should also kill any cancer cells that have spread but can't be seen. Just like adjuvant chemo, neoadjuvant chemo can lower the risk of breast cancer coming back. In terms of survival and the chances of cancer coming back, there is no difference between getting chemo before or after surgery.
- **For advanced breast cancer:** Chemo can also be used as the main treatment for men whose cancer has either already spread beyond the breast and underarm area when it is diagnosed, or if it spreads after initial treatments. The length of treatment depends on how well the chemo is working and how well you tolerate treatment.

Sometimes it's not clear if chemotherapy will be helpful. There are tests available, such as Oncotype DX and Mammaprint, that can help determine which men will most likely benefit from chemo after breast surgery. See [How is Breast Cancer in Men Classified?](#)² for more information.

Which chemotherapy drugs are used for breast cancer?

In most cases (especially as adjuvant or neoadjuvant treatment), chemo is most effective when combinations of drugs are used. Today, doctors use many different combinations, and it's not clear that any single combination is clearly the best.

The most common drugs used for adjuvant and neoadjuvant chemo include:

- Anthracyclines, such as doxorubicin (Adriamycin) and epirubicin (Ellence)
- Taxanes, such as paclitaxel (Taxol) and docetaxel (Taxotere)
- 5-fluorouracil (5-FU)
- Cyclophosphamide (Cytoxan)
- Carboplatin (Paraplatin)

Most often, combinations of 2 or 3 of these drugs are used.

Chemo drugs useful in treating breast cancer that has spread include:

- Taxanes, such as paclitaxel (Taxol), docetaxel (Taxotere), and albumin-bound paclitaxel (Abraxane)
- Anthracyclines (Doxorubicin, pegylated liposomal doxorubicin, and Epirubicin)
- Platinum agents (cisplatin, carboplatin)
- Vinorelbine (Navelbine)
- Capecitabine (Xeloda)
- Gemcitabine (Gemzar)
- Ixabepilone (Ixempra) Albumin-bound paclitaxel (nab-paclitaxel or Abraxane)
- Eribulin (Halaven)

Although drug combinations are often used to treat early breast cancer, advanced breast cancer more often is treated with single chemo drugs. Still, some combinations, such as paclitaxel plus carboplatin, are commonly used to treat advanced breast cancer.

For cancers that are [HER2-positive](#)³ one or more drugs that target HER2 may be used with chemo. See [Targeted Therapy for Breast Cancer in Men](#) for more information about these drugs.

How is chemotherapy given?

Chemo drugs for breast cancer are typically given into a vein (IV), either as an injection over a few minutes or as an infusion over a longer period of time. This can be done in a doctor's office, chemotherapy clinic, or in a hospital.

Often, a slightly larger and sturdier IV is required in the vein system to administer chemo. They are known as [central venous catheters](#)⁴ (CVCs), central venous access devices (CVADs), or central lines. They are used to put medicines, blood products, nutrients, or fluids right into your blood. They can also be used to take out blood for testing.

Many different kinds of CVCs are available. The 2 most common types are the port and the PICC line. For breast cancer patients, the central line is typically placed on the opposite side of the breast that had surgery.

Doctors give chemo in cycles, with each period of treatment followed by a rest period. Chemo begins on the first day of each cycle, but the schedule varies depending on the drugs used. For example, with some drugs, the chemo is given only on the first day of the cycle. With others, it is given every day for 14 days, or weekly for 2 weeks. Then, at the end of the cycle, the schedule of chemo repeats to start the next cycle.

Cycles are most often 2 or 3 weeks long, but they vary according to the specific drug or combination of drugs. Some drugs are given more often. Adjuvant and neoadjuvant chemo is often given for a total of 3 to 6 months, depending on what drugs are used. Treatment is often longer for advanced breast cancer, and is based on how well it is working and what side effects you have.

Dose-dense chemotherapy: Doctors have found that giving the cycles of certain chemo agents closer together can lower the chance that the cancer will come back and improve survival in some patients. This usually means giving the same chemo that is normally given, but giving it every 2 weeks instead of every 3 weeks. A drug (growth factor) to help boost the white blood cell count is given after the chemo to make sure the white blood cell count returns to normal in time for the next cycle. This approach can be used for both adjuvant and neoadjuvant chemo. It can lead to more problems with low blood counts, though, so it isn't for everyone.

Possible side effects of chemotherapy

Chemo drugs attack cells that are dividing quickly, which is why they work against cancer cells. But other cells in the body, such as those in the bone marrow, the lining of the mouth and intestines, and the hair follicles, also divide quickly. These cells are likely to be affected by chemo too, which can lead to side effects. Some men have many side

effects while other men may have few.

The side effects of chemotherapy depend on the type of drugs, the amount taken, and the length of treatment. Some of the most common possible side effects include:

- Hair loss
- Mouth sores
- Loss of appetite (or increased appetite)
- Nausea and vomiting
- Low blood cell counts

Chemo can affect the blood-forming cells of the bone marrow, which can lead to:

- Increased chance of infections (from low white blood cell counts)
- Easy bruising or bleeding (from low blood platelet counts)
- Fatigue (from low red blood cell counts or other reasons)

These side effects are usually short-term and go away after treatment is finished. Let your cancer care team know if you have any side effects, because there are often ways to lessen them. For example, drugs can be given to help prevent or reduce nausea and vomiting.

Several other side effects are also possible. Some of these are only seen with certain chemotherapy drugs. Ask your cancer care team about the possible side effects of the specific drugs you are getting.

Nerve damage (neuropathy): Many drugs used to treat breast cancer, including the taxanes (docetaxel and paclitaxel), platinum agents (carboplatin, cisplatin), vinorelbine, erubulin, and ixabepilone, can damage nerves outside the brain and spinal cord. This can sometimes lead to symptoms (mainly in the hands and feet) such as numbness, pain, burning or tingling sensations, sensitivity to cold or heat, or weakness. In most cases this goes away once treatment is stopped, but it might last a long time in some men. See [Peripheral Neuropathy Caused By Chemotherapy](#)⁵ to learn more about neuropathy and how it can be treated.

Heart damage: Doxorubicin, epirubicin, and some other drugs may cause permanent heart damage (called *cardiomyopathy*). The risk is highest if the drug is used for a long time or in high doses. Most doctors check your heart function with a test like a MUGA or echocardiogram (an ultrasound of the heart) before starting one of these drugs. They also carefully control the doses and watch for symptoms of heart problems, and may

repeat the heart test to monitor heart function during treatment. If the heart function begins to worsen, treatment with these drugs will be temporarily or permanently stopped. Still, in some people, signs of damage might not appear until months or years after treatment stops. Damage from these drugs happens more often if other drugs that can cause heart damage (such as those that target HER2) are used also, so doctors are more cautious when these drugs are used together.

Hand-foot syndrome: Certain chemo drugs, such as capecitabine and liposomal doxorubicin, can irritate the palms of the hands and the soles of the feet. This is called *hand-foot syndrome*. Early symptoms include numbness, tingling, and redness. If it gets worse, the hands and feet can become swollen, uncomfortable, or even painful. The skin may blister and peel. There is no specific treatment, although some creams or steroids given before chemo may help. These symptoms gradually get better when the drug is stopped or the dose is lowered. The best way to prevent severe hand-foot syndrome is to tell your doctor when early symptoms come up, so that the drug dose can be changed or other medications can be given .

Chemo brain: There is very little research on chemo brain in men, but many women who are treated for breast cancer report a slight decrease in mental functioning. There may be some long-lasting problems with concentration and memory. Although many women have linked this to chemo, it also has been seen in women who did not get chemo as a part of their treatment. Also, most women do function well after chemotherapy. In studies of chemo brain as a side effect of treatment, the symptoms most often go away within a few years. Even though most research was done in women, there's no reason to expect any differences in men being treated for breast cancer. For more information, see [Chemo Brain](#)⁶.

Increased risk of leukemia: Very rarely, certain chemo drugs can cause diseases of the bone marrow such as [myelodysplastic syndrome](#)⁷ or even [acute myeloid leukemia](#)⁸, a cancer of white blood cells. When this happens it is usually within 10 years of treatment. For most men though, chemo's benefits of helping to prevent breast cancer from coming back or extending life are likely to far exceed the risk of this serious but rare complication.

Feeling unwell or tired: Many people do not feel as healthy after chemotherapy as they did before. There is often a residual feeling of body pain or achiness and a mild loss of physical functioning. These may be very subtle changes that happen slowly over time.

[Fatigue](#)⁹ is often another common (but often overlooked) problem for those who have had chemo. This may last up to several years. It can often be helped, so it is important to let your doctor or nurse know about it. Exercise, naps, and conserving energy may be

recommended. If there are problems with sleep, these can be treated. Sometimes there is [depression](#)¹⁰, which may be helped by counseling and/or medicines.

More information about chemotherapy

For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](#)¹¹.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)¹².

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html
2. www.cancer.org/cancer/breast-cancer-in-men/detection-diagnosis-staging/classifying.html
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4. www.cancer.org/treatment/treatments-and-side-effects/central-venous-catheters.html
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Hormone Therapy for Breast Cancer in Men

Hormone therapy (sometimes called endocrine therapy) is a way to treat cancer by using hormones or drugs or other treatments that affect hormones. Hormone therapy is a form of systemic therapy, like [chemotherapy](#). It can be used after surgery (adjuvant therapy) to help lower the risk of cancer coming back, or before surgery (neoadjuvant treatment). It is also used to treat cancer that has spread, or cancer that has come back after treatment (recurred).

Some breast cancers grow in response to the hormones estrogen or progesterone. Estrogen and progesterone are usually thought of as female hormones, but men have them in their bodies also, just at lower levels. About 9 of 10 breast cancers in men are hormone receptor-positive. This makes them more likely to respond to hormone treatments. Breast cancers can be estrogen receptor (ER)-positive, or progesterone receptor (PR)-positive, or both. Hormone therapy does not help people whose tumors are both ER- and PR-negative.

What types of drugs are used in hormone therapy?

Several approaches to blocking the effects of estrogen or lowering estrogen levels are used to treat breast cancer in women. Although many of these may work in men as well,

they often haven't been studied well, if at all.

Tamoxifen and toremifene (Fareston®)

These drugs block estrogen receptors on breast cancer cells. By blocking these estrogen receptors, these drugs stop estrogen from joining to the cancer cells, and the cells stop growing. Both drugs are taken daily as a pill.

Tamoxifen is the best studied hormone drug for breast cancer in men and is most often used first. If tamoxifen doesn't work (or stops working), other hormone drugs may be tried, but this is largely based on how well they work in women with breast cancer. Large studies of women with hormone receptor-positive cancers removed completely with surgery show that taking tamoxifen after surgery for 5 years reduces the chances of the cancer coming back by about half. Taking it for 10 years may help even more. Studies in men with breast cancer have been smaller, but indicate that taking tamoxifen after surgery for early-stage breast cancer can lower the chance of the cancer coming back and improve survival. Tamoxifen can also be used to treat metastatic breast cancer.

Toremifene works like tamoxifen, but is not used as often and is only approved for patients with metastatic breast cancer. It is not likely to work if tamoxifen has already been used and has stopped working.

The most common side effects of tamoxifen and toremifene are:

- Hot flashes
- Sexual problems
- Fatigue

Some men with cancer spread to the bones may have a **tumor flare** with pain and swelling in the muscles and bones. This usually decreases quickly, but in some rare cases a man may also develop a high calcium level in the blood that is hard to control. If this happens, the treatment may need to be stopped for a time.

Rare, but more serious side effects are also possible:

- **Blood clots** are another uncommon, but serious side effect. They usually form in the legs (called **deep vein thrombosis** or DVT), but sometimes a piece of clot may break off and end up blocking an artery in the lungs (**pulmonary embolism** or PE). Call your doctor or nurse right away if you develop pain, redness, or swelling in

your lower leg (calf), shortness of breath, or chest pain, because these can be symptoms of a DVT or PE.

- Rarely, tamoxifen has been associated with **strokes** in post-menopausal women. The risk in men is not clear. Tell your doctor if you have a sudden severe headache, confusion, or trouble speaking or moving.

Tamoxifen may also increase the risk of heart attacks in some patients, however this link is not clear.

Aromatase inhibitors

This group of drugs includes anastrozole (Arimidex[®]), letrozole (Femara[®]), and exemestane (Aromasin[®]). These drugs stop estrogen production by blocking an enzyme (aromatase) in fat tissue that converts male hormones from the adrenal glands into estrogen. Aromatase inhibitors are taken daily as pills. They have been very effective in treating breast cancer in women, but they have not been well-studied in men. Still, some doctors use them to treat advanced breast cancer in men, often combined with a *luteinizing hormone-releasing hormone (LHRH) analog* to turn off hormone production by the testicles (these drugs are discussed later on). These drugs are generally used if tamoxifen stops working. The main side effects are **thinning of the bones** and **pain in muscles and joints**.

Fulvestrant (Faslodex[®])

Fulvestrant is a drug that also acts on estrogen receptors, but instead of blocking the receptors, this drug destroys them. Fulvestrant is used to treat metastatic breast cancer, most often after other hormone drugs (like tamoxifen and often an aromatase inhibitor) have stopped working. It is given by injection into the buttocks every 2 weeks for a month, then monthly. The most common side effects are **hot flashes, mild nausea, headache, and pain at the injection site**.

Luteinizing hormone-releasing hormone (LHRH) analogs and anti-androgens

In men, *LHRH analogs* such as leuprolide (Lupron[®]) and goserelin (Zoladex[®]) affect the pituitary gland, which regulates testosterone production in the testicles. These drugs cause the pituitary gland to turn off production of the male hormone testosterone by the testicles, leading to lower testosterone levels. They are given as shots either monthly or every few months. These drugs may be used by themselves, or combined with aromatase inhibitors or anti-androgens to treat advanced breast cancer in men.

Anti-androgens such as flutamide and bicalutamide work by blocking the effect of male hormones on breast cancer cells. These drugs are taken daily as pills.

Megestrol

Megestrol (Megace[®]) is a progesterone-like drug. It is unclear how it stops cancer cells from growing, but it appears to compete for hormone receptor sites in the cells. This is an older drug that is usually reserved for men who are no longer responding to other forms of hormone therapy. Megestrol may **increase the risk for blood clots** and **frequently causes weight gain** by increasing appetite.

Orchiectomy (castration)

Surgical removal of the testicles (orchiectomy) is another way to regulate hormones that might affect breast cancer growth. Removing the testicles greatly lowers the levels of testosterone and other androgens (male hormones). Most male breast cancers have androgen receptors that may cause the cells to grow. Androgens can also be converted into estrogens in the body. Orchiectomy shrinks most male breast cancers, and may help make other treatments like tamoxifen more likely to work. This was once a common treatment for breast cancer in men, but it is now used less often because of new non-surgical approaches to lowering androgen levels, such as the LHRH analogs.

Possible side effects of hormone therapy

Although some of these drugs have unique side effects (see descriptions above), in general they can cause **loss of sexual desire, trouble having an erection, weight gain, hot flashes, and mood swings**. Be sure to discuss any such side effects with your cancer care team because there may be ways to treat them. See [Managing Cancer-related Side Effects](#)¹ for more information.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Targeted Therapy for Breast Cancer in Men

As researchers have learned more about changes in cancer cells that cause them to grow out of control, they've developed new types of drugs that target some of these cell changes. These targeted drugs are designed to block the growth and spread of cancer cells. These targeted drugs work differently from [chemotherapy](#) drugs, which attack all cells that are growing quickly (including cancer cells).

Targeted drugs sometimes work even when chemo drugs do not. Some targeted drugs can help other types of treatment work better. Targeted drugs also tend to have different side effects than chemo. There are many targeted therapies being studied for use in breast cancer. Several of these therapies have been approved for use in treating breast cancer, though many studies have included very few men, if any. Using targeting therapies in men is often based on how well they work in women.

Targeted therapy for HER2-positive breast cancer

In some men with breast cancer, the cancer cells have too much of a growth-promoting protein known as HER2/neu (or just HER2) on their surface. These cancers, known as *HER2-positive breast cancers*, tend to grow and spread more aggressively.

A number of drugs have been developed that target this protein.

Trastuzumab (Herceptin)

This is a [monoclonal antibody](#)¹, which is a man-made version of a specific immune system protein. It attaches to HER2 and can help slow the growth of cancers that are HER2-positive. Trastuzumab may also stimulate the immune system to more effectively attack the cancer.

Trastuzumab is injected into a vein (IV), usually once a week or at a larger dosage once every 3 weeks.

Trastuzumab can be used to treat both early- and late-stage breast cancer. When started before or after surgery to treat early breast cancer, this drug is usually given for a total of a year. For advanced breast cancer, treatment is often given for as long as the drug is helpful. Trastuzumab is often combined with chemo, but might also be used alone.

The side effects of trastuzumab are rare and relatively mild. They may include **fever and chills, weakness, nausea, vomiting, cough, diarrhea, and headache**. These side effects are less common after the first dose.

A more serious potential side effect is **heart damage** that can lead to a problem called *congestive heart failure*. For most (but not all) people, this effect is temporary and improves when the drug is stopped. The risk of heart problems is higher when trastuzumab is given with chemo drugs that also cause heart damage such as doxorubicin (Adriamycin) or epirubicin (Ellence). Because this drug can cause heart damage, your heart function will be checked before treatment with a test like an echocardiogram or a MUGA. It will be checked again every few months during treatment with trastuzumab. Major symptoms of congestive heart failure are leg swelling, shortness of breath, and severe fatigue. Tell your doctor right away if you have any of these symptoms.

Ado-trastuzumab emtansine (TDM-1, Kadcyla)

Ado-trastuzumab emtansine is a type of drug known as an antibody-drug conjugate. It is made up of the same monoclonal antibody found in trastuzumab attached to a chemo drug known as DM-1. In this type of drug, the antibody acts as a homing device, taking the chemo drug directly to the cancer cells.

This drug is injected into a vein (IV) every 3 weeks. Common side effects include **fatigue, nausea, muscle and bone pain, low platelet counts, headache, and constipation**. This drug can also cause more serious side effects, such as **severe allergic reactions, liver damage, heart damage, and lung problems**.

Pertuzumab (Perjeta)

Like trastuzumab, pertuzumab is a monoclonal antibody that attaches to the HER2 protein. It seems to target a different part of the protein than trastuzumab does. This drug can be used along with docetaxel (Taxotere) and trastuzumab to treat patients with advanced breast cancer. This 3 drug combination can also be used to treat earlier-stage breast cancers before [surgery](#) (as neoadjuvant therapy).

This drug is injected into a vein (IV) every 3 weeks. When given with trastuzumab and docetaxel, common side effects included **diarrhea, hair loss, nausea, fatigue, rash, and low white blood cell counts (sometimes with fever)**. Many side effects, such as hair loss, nausea, and fatigue occur at about the same rate as in those who get just docetaxel and trastuzumab. Like trastuzumab, pertuzumab can weaken the heart and cannot be taken if you already have poor heart function. Your doctor will check your heart function before starting this drug and again every few months during treatment with pertuzumab.

Lapatinib (Tykerb)

Lapatinib is another drug that targets the HER2 protein. This drug is taken as a pill, most often along with the chemo drug capecitabine (Xeloda). It is used to treat advanced, HER2-positive breast cancer that is no longer helped by chemotherapy and trastuzumab. It is usually given with chemo.

The most common side effects with this drug include **diarrhea, rash, and hand-foot syndrome**. (See [Chemotherapy for Breast Cancer in Men](#) for more information about hand-foot syndrome.) Diarrhea is a common side effect and can be severe, so it is very important to let your health care team know about any changes in bowel habits as soon as they happen. In rare cases lapatinib may cause **liver problems** or a **decrease in heart function** (that can lead to shortness of breath), but this seems to go away once treatment is finished.

Neratinib (Nerlynx)

This is a drug that targets the HER2 protein. It is a pill that is taken daily. Neratinib is used to treat early-stage breast cancer after a woman has completed one year of trastuzumab and is usually given for one year. Some clinical trials show that it may also be effective in advanced breast cancer, as well.

Targeted therapy for hormone receptor-positive breast cancer

About 9 out of 10 men with breast cancer will have breast cancer that is affected by hormones in the blood. These breast cancer cells have a protein on the outside that can attach to hormones, like estrogen or progesterone, to help them grow. This is called hormone receptor-positive (HR-positive) breast cancer. Sometimes these are called ER- (estrogen receptor-) positive or PR- (progesterone receptor-) positive breast cancers. These cancers are commonly treated with [hormone therapy](#), but there are also some targeted therapies approved for use in men with hormone receptor-positive breast cancer.

CDK4/6 inhibitors

Abemaciclib (Verzenio) is a drug that block proteins in the cell called cyclin-dependent kinases (CDKs), particularly CDK4 and CDK6. Blocking these proteins in hormone receptor-positive breast cancer cells helps stop the cells from dividing. This can slow cancer growth. Abemaciclib is approved for use in men with HR-positive, HER2-negative advanced breast cancer that has gotten worse after treatment with hormone therapy and chemotherapy. Abemaciclib is taken as pills, typically twice a day.

Palbociclib (Ibrance) and **ribociclib (Kisqali)** are also drugs that block the CDK4 and CDK6 proteins. They can be used along with certain hormone therapy drugs such as fulvestrant or an aromatase inhibitor (such as letrozole) in patients who have advanced HR-positive, HER2-negative breast cancer (although ribociclib is not approved specifically for use in men). These drugs are taken as pills, typically once a day for 3 weeks at a time, with a week off before starting again.

Side effects of these drugs tend to be mild. The most common side effects are **low blood cell counts** and **fatigue**. **Nausea and vomiting, mouth sores, hair loss, diarrhea, and headache** are less common side effects. **Very low white blood cell counts** can increase the risk of **serious infection**.

Everolimus (Afinitor)

Everolimus is a pill taken once a day to block mTOR, a protein in cells that normally helps them grow and divide. By blocking this protein, everolimus can help stop cancer cells from growing. Everolimus may also stop tumors from developing new blood vessels, which can help limit their growth. In treating breast cancer, this drug seems to help hormone therapy drugs work better.

This drug is approved to treat advanced hormone receptor-positive, HER2-negative, breast cancer in women who have gone through menopause. It is meant to be used with exemestane (Aromasin) in these women if their cancers have grown while they

were being treated with either letrozole or anastrozole (or if the cancer started growing shortly after treatment with these drugs was stopped). It has also been studied for use with other hormone therapy drugs.

Everolimus is also being studied for use for earlier stage breast cancer and combined with other treatments. Although most of the people with breast cancer in studies of everolimus are women, some studies have included men.

Common side effects of this drug include **mouth sores, diarrhea, nausea, fatigue, feeling weak or tired, low blood counts, shortness of breath, and cough**. Everolimus can also **increase blood lipids** (cholesterol and triglycerides) and **blood sugars**, so your doctor will check your blood work periodically while you are on this drug. It can also increase your risk of **serious infections**, so your doctor will watch you closely for infection while you are on treatment.

Targeted therapy for breast cancers with BRCA mutations

Olaparib (Lynparza) is a type of drug known as a *PARP inhibitor*. PARP proteins normally help repair damaged DNA inside cells. The *BRCA* genes (*BRCA1* and *BRCA2*) also help repair DNA (in a slightly different way), but mutations in one of those genes can stop this from happening. PARP inhibitors work by blocking the PARP proteins. Because tumor cells with a mutated *BRCA* gene already have trouble repairing damaged DNA, blocking the PARP proteins often leads to the death of these cells.

Olaparib can be used to treat metastatic, HER2-negative breast cancer in patients with a *BRCA* mutation who have already gotten [chemotherapy](#) (and [hormone therapy](#) if the cancer is hormone receptor-positive). If you are not known to have a *BRCA* mutation, your doctor will test your blood to be sure you have one before starting treatment with this drug.

This drug comes in pills that are taken once a day.

Side effects can include **nausea, vomiting, diarrhea, fatigue, loss of appetite, taste changes, low red blood cell counts (anemia), belly pain, and muscle and joint pain**. Rarely, some people treated with a PARP inhibitor have developed a **blood cancer**, such as [myelodysplastic syndrome](#)² or [acute myeloid leukemia \(AML\)](#)³.

More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see [Targeted Cancer Therapy](#)⁴.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁵.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy/monoclonal-antibodies.html
2. www.cancer.org/cancer/myelodysplastic-syndrome.html
3. www.cancer.org/cancer/acute-myeloid-leukemia.html
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Treatment of Breast Cancer in Men, by Stage

This information is based on AJCC Staging systems prior to 2018 which were primarily based on tumor size and lymph node status. Since the updated staging system for breast cancer now also includes the ER, PR and HER2 status, the stages may be

higher or lower than previous staging systems. Whether or not treatment strategies will change with this new staging system are yet to be determined. You should discuss your stage and treatment options with your physician.

Because there have been few [clinical trials](#)¹ on treatment of male breast cancer, most doctors base their treatment recommendations on their experience with the disease and on the results of studies of breast cancer in women. With some minor variations, breast cancer in men is treated the same way as breast cancer in women.

The [stage \(extent\) of your breast cancer](#)² is an important factor in making decisions about your treatment options. In general, the more the breast cancer has spread, the more treatment you will likely need. But [other factors](#)³ can also be important, such as:

- If the cancer cells contain hormone receptors (that is, if the cancer is ER-positive or PR-positive)
- If the cancer cells have large amounts of the⁴HER2 protein (that is, if the cancer is HER2-positive)
- Your overall health and personal preferences
- How fast the cancer is growing (measured by grade or other measures)

Talk with your doctor about how these factors can affect your treatment options.

Stage 0 (ductal carcinoma in situ)

Stage 0 cancer means that the cancer is limited to the inside of the milk duct and is a non-invasive cancer. Stage 0 breast tumors include ductal carcinoma in situ (DCIS).

It is treated with [surgery](#) to remove the cancer. Most often in males, a mastectomy is done. If breast-conserving surgery is done, it is followed by [radiation therapy](#) to the remaining breast tissue.

Sometimes DCIS can contain an area of invasive cancer. The chance that an area of DCIS contains invasive cancer goes up with tumor size and how fast the cancer is growing. If there is concern of invasive cancer, the lymph nodes under the arm may be checked for spread, most often with a sentinel lymph node biopsy. If cancer cells are found in the sentinel lymph node, it means the tumor must contain some invasive cancer, and the man will be treated based on his invasive cancer stage.

Stage I

These cancers are still relatively small and either have not spread to the lymph nodes (N0) or there is a tiny area of cancer spread in the sentinel lymph node (N1mi).

The main treatment for stage I breast cancer is to remove it with [surgery](#). This is usually done by mastectomy, but breast-conserving surgery (BCS) might occasionally be an option. If breast-conserving surgery is done, it is usually followed by [radiation therapy](#).

The lymph nodes under the arm will be checked for cancer spread, either with an axillary lymph node dissection (ALND) or sentinel node biopsy (SLNB). If the sentinel lymph node contains cancer, a full ALND may be needed, depending on the size of the cancer in the lymph node as well as what other treatment is planned.

[Hormone therapy](#), [chemotherapy](#) (chemo) and/or [targeted therapy](#) may be recommended as adjuvant (after surgery) therapy, based on the tumor size and results of lab tests. Hormone therapy with tamoxifen is usually recommended for hormone receptor-positive tumors. Adjuvant chemo is commonly used for tumors larger than 1 cm (about 1/2 inch) across and some smaller tumors that may be more likely to spread (based on features such as grade or a high growth rate). Men with HER2-positive tumors may also receive targeted therapy with trastuzumab (Herceptin).

Stage II

These cancers tend to be larger than stage I cancers and/or have spread to a few nearby lymph nodes.

Systemic therapy is often recommended for men with stage II breast cancer. Some systemic therapies are given before [surgery](#) (neoadjuvant therapy), and others are given after surgery (adjuvant therapy). Neoadjuvant treatments may be an option for men with large tumors, because they can shrink the tumor before surgery, possibly enough to make breast-conserving surgery (BCS) an option. The lymph nodes under the arm will be checked for cancer spread, either with an axillary lymph node dissection (ALND) or sentinel lymph node biopsy. If the sentinel lymph node contains cancer, a full ALND may be needed, depending on the size of the cancer in the lymph node as well as what other treatment is planned.

Radiation therapy may be given after surgery if the tumor is large or if it is found to have spread to several lymph nodes. Radiation therapy lowers the risk of the cancer coming back (recurrence).

The drugs used will depend on the man's age and the tumor's hormone-receptor status and HER2 status. They may include:

Chemotherapy: Chemo can be given before or after surgery.

HER2 targeted drugs: If the cancer is HER2-positive, HER2 targeted drugs are started along with chemo. Both trastuzumab (Herceptin) and pertuzumab (Perjeta) may be used as a part of neoadjuvant treatment. Then trastuzumab is continued after surgery for a total of one year of treatment.

Hormone therapy: If the cancer is hormone receptor-positive, hormone therapy with tamoxifen is typically used for 5 years after surgery.

Stage III

This stage includes more advanced tumors (large or growing into nearby skin or muscle) and cancers with spread to many nearby lymph nodes.

Most often, these cancers are treated with **chemo** before **surgery** (neoadjuvant chemo). For HER2-positive tumors, the **targeted drug** trastuzumab is given as well, sometimes along with pertuzumab. This is usually followed by a mastectomy. Most men with this stage need a full axillary lymph node dissection (ALND). Often, radiation therapy is recommended after surgery. Adjuvant **hormone therapy** with tamoxifen is given for at least 5 years if the tumor is hormone receptor-positive. Men with HER2-positive cancers will probably also receive trastuzumab to complete one year of treatment. Adjuvant hormone therapy can typically be taken at the same time as trastuzumab.

Another option for stage III cancers is to treat with surgery first. This usually means a mastectomy with an ALND. Surgery is usually followed by adjuvant chemo. Trastuzumab is given with chemo if the tumor is HER2 positive, and then it is continued to complete one year of treatment. Radiation is recommended after surgery and chemo. Adjuvant hormone therapy is given to men with hormone receptor-positive breast cancers for at least 5 years.

Stage IV (Metastatic)

Stage IV cancers have spread beyond the breast and nearby lymph nodes to other parts of the body. Breast cancer most commonly spreads to the bones, liver, and lungs. As the cancer progresses, it may spread to the brain, but it can affect any organ and tissue.

Systemic therapy is the main treatment for Stage IV breast cancer in men. Depending on many factors, this may be **hormone therapy**, **chemo**, **targeted therapy**, or some combination of these treatments.

[Radiation therapy](#) and/or [surgery](#) may also be used in certain situations, such as:

- When the breast tumor is causing an open wound in the breast (or chest)
- To treat a small number of metastases in a certain area, such as the brain
- To help prevent bone fractures
- When an area of cancer spread is pressing on the spinal cord
- To treat a blood vessel blockage in the liver
- To relieve pain or other symptoms

If your doctor recommends such local treatments, it is important that you understand their goal, whether it is to try to cure the cancer or to prevent or treat symptoms.

In some cases, regional chemo (where drugs are delivered directly into a certain area, such as the fluid around the brain or into the liver) may be useful as well.

Treatment to relieve symptoms depends on where the cancer has spread. For example, pain from bone metastases may be treated with external beam radiation therapy and/or bisphosphonates or denosumab (Xgeva, Prolia). For more information, see [Treating Bone Metastases](#)⁵.

Advanced cancer that progresses during treatment

Treatment for advanced breast cancer can often shrink or slow the growth of the cancer (sometimes for many years), but after a time it may stop working. Further treatment at this point depends on several factors, including previous treatments, where the cancer is located, and a man's age, general health, and desire to continue getting treatment.

Progression while on hormone therapy: For hormone receptor-positive cancers that were being treated with hormone therapy, switching to another type of hormone therapy is sometimes helpful. Some doctors could also try giving another hormone drug with everolimus (Afinitor), but this has not been studied in men so it isn't clear that it would be helpful. If not, chemo is usually the next step.

Progression while on chemotherapy: For cancers that are no longer responding to one chemo regimen, trying another may be helpful. Many different drugs and combinations can be used to treat breast cancer. However, each time a cancer progresses during treatment it becomes less likely that further treatment will have an effect.

Progression while getting HER2 drugs: HER2-positive cancers that no longer respond to trastuzumab may respond if lapatinib (Tykerb) is added. Lapatinib or the

drug ado-trastuzumab emtansine (Kadcyla) can also be given instead of trastuzumab. These drugs also attack the HER2 protein. Lapatinib is usually given along with the chemo drug capecitabine (Xeloda), but it may be used with other chemo drugs, hormone drugs, or even by itself (without chemo or hormone therapy). Ado-trastuzumab emtansine is given by itself.

Because current treatments are very unlikely to cure advanced breast cancer, if you are in otherwise good health, you may want to think about taking part in a [clinical trial](#)⁶ testing newer treatments. You can also read about living with later-stage cancer in [Advanced Cancer, Metastatic Cancer, and Bone Metastasis](#)⁷.

Recurrent cancer

For some men, breast cancer may come back after treatment – sometimes years later. This is called a *recurrence*. **Recurrence can be local (in the same breast or in the surgery scar), regional (in nearby lymph nodes), or in a distant area.** If cancer is found in the opposite breast but nowhere else in the body, it is not a recurrence—it's a new cancer that requires its own treatment.

Treating local recurrence: This includes cancer coming back in the breast or in the chest wall (near the mastectomy scar). If a patient has a local recurrence and no evidence of distant metastases, it might still be cured. Treatment depends on what other treatments have been given already. The treatment for local recurrence may be additional surgery followed by radiation therapy. If the area has already been treated with radiation, it might not be possible to give more radiation to the area without damaging nearby tissues.

Hormone therapy, chemo, trastuzumab, or some combination of these may be used after surgery and/or radiation therapy.

Treating regional recurrence: When breast cancer comes back in nearby lymph nodes (such as those under the arm or around the collar bone), it is treated by removing those lymph nodes. This may be followed by radiation treatments aimed at the area.

Systemic treatment (such as hormone therapy, chemo, trastuzumab, or some combination of these) may be used after surgery and/or radiation therapy.

Treating distant recurrence: Men who have a recurrence in places such as the bones, lungs, brain, etc., are often treated the same way as those found to have stage IV breast cancer with spread to these organs when they were first diagnosed (see above). The only difference is that treatment may be affected by the previous treatments a man

has had.

Recurrent breast cancer can sometimes be hard to treat. If you are in otherwise good health, you may want to think about taking part in a [clinical trial](#)⁸ testing a newer treatment.

If your cancer comes back, see [Understanding Recurrence](#)⁹ for more general information on how to manage and cope with this phase of your treatment.

You can also read about treatments for metastatic cancer in [Advanced Cancer, Metastatic Cancer, and Bone Metastasis](#)¹⁰.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
2. www.cancer.org/cancer/breast-cancer-in-men/detection-diagnosis-staging/staging.html
3. www.cancer.org/cancer/breast-cancer-in-men/detection-diagnosis-staging/classifying.html
4. <https://www.cancer.org/cancer/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html>
5. www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer/treating-bone-metastases.html
6. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
7. www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer.html
8. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
9. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
10. www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer.html

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Questions to Ask Your Doctor About Breast Cancer in Men

It's important to be able to have frank, open discussions with your cancer care team. They want to answer all of your questions, so that you can make informed treatment and life decisions.

Here are some questions that you can use to help better understand your cancer and your treatment options. Don't be afraid to take notes and tell the doctors or nurses when you don't understand what they're saying. You might want to bring another person with you when you see your doctor and have them take notes to help you remember what was said.

Not all of these questions will apply to you, but they should help get you started. Be sure to write down some questions of your own. For instance, you might want more information about recovery times or you may want to ask about nearby or online support groups where you can talk with other men going through similar situations. You may also want to ask if you qualify for any [clinical trials](#)¹.

Keep in mind that doctors aren't the only ones who can give you information. Other health care professionals, such as nurses and social workers, can answer some of your questions. To find out more about speaking with your health care team, see [The Doctor-Patient Relationship](#)².

When you're told you have breast cancer

- Exactly what type of breast cancer do I have?
- How big is the cancer? Where exactly is it?
- Has the cancer spread to my lymph nodes or other organs?
- What's the stage of the cancer? What does that mean?
- Will I need any other tests before we can decide on treatment?
- Do I need to see any other doctors or health professionals?
- What is the hormone receptor status of my cancer? What does this mean?
- What is the HER2 status of my cancer? What does this mean?
- How do these factors affect my treatment options and long-term outlook (prognosis)?
- What are my chances of survival, based on my cancer as you see it?
- Should I think about genetic testing? What would the pros and cons of testing be?
- How do I get a copy of my pathology report?
- If I'm concerned about the costs and insurance coverage for my diagnosis and treatment, who can help me?

When deciding on a treatment plan

- What treatments are appropriate for me? What do you recommend? Why?
- How long will treatment last? What will it involve? Where will it be done?
- What risks or side effects should I expect?
- Should I think about taking part in a clinical trial?
- What should I do to get ready for treatment?
- How much experience do you have treating this type of cancer?
- Should I get a [second opinion](#)³? How do I do that?
- What would the goal of the treatment be?
- How soon do I need to start treatment?
- How will treatment affect my daily activities? Can I still work fulltime?
- Will I lose my hair? If so, what can I do about it?
- What are the chances the cancer will come back (recur) after this treatment?
- What would we do if the treatment doesn't work or if the cancer comes back?
- What if I have transportation problems getting to and from treatment?

If you need surgery

- Is breast-conserving surgery (lumpectomy) an option for me? Why or why not?
- What are the pros and cons of breast-conserving surgery versus mastectomy?
- How many surgeries like mine have you done?
- Will you have to take out lymph nodes? If so, would you advise a sentinel lymph node biopsy? Why or why not?
- What side effects might lymph node removal cause?
- How long will I be in the hospital?
- Will I have stitches or staples at the surgery site? Will there be a drain (tube) coming out of the site?
- How do I care for the surgery site? Will I need someone to help me?
- What will the scar look like?
- Do I need to stop taking any medications or supplements before surgery?
- When should I call your office if I'm having side effects?

During treatment

Once treatment begins, you'll need to know what to expect and what to look for. Not all of these questions may apply to you, but asking the ones that do may be helpful.

- How will we know if the treatment is working?
- Is there anything I can do to help manage side effects?
- What symptoms or side effects should I tell you about right away?
- How can I reach you on nights, holidays, or weekends?
- Will I need to change what I eat during treatment?
- Are there any limits on what I can do?
- Can I exercise during treatment? If so, what kind of exercise should I do, and how often?
- Can you suggest a mental health professional I can see if I start to feel overwhelmed, depressed, or distressed?
- Will I need special tests, such as imaging scans or blood tests? How often?

After treatment

- What are the chances my cancer might come back? What will we do if that happens?
- What type of follow-up will I need after treatment?

- Will I need a special diet after treatment?
- Are there any limits on what I can do?
- Am I at risk for lymphedema?
- What can I do to reduce my risk for lymphedema?
- What should I do if I notice swelling in my arm?
- What other symptoms should I watch for? What kind of exercise should I do now?
- What type of follow-up will I need after treatment?
- How often will I need to have follow-up exams, blood tests, or imaging tests?
- How will we know if the cancer has come back? What should I watch for?

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
2. www.cancer.org/treatment/understanding-your-diagnosis/talking-about-cancer/the-doctor-patient-relationship.html
3. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/seeking-a-second-opinion.html

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After Male Breast Cancer Treatment

Living as a Cancer Survivor

For many people, completing cancer treatment often raises questions about next steps as a survivor.

- [What Happens After Treatment for Breast Cancer in Men?](#)

Cancer Concerns After Treatment

Treatment may remove or destroy the cancer, but it is very common to have questions about cancer coming back or treatment no longer working.

- [Second Cancers After Male Breast Cancer](#)

What Happens After Treatment for Breast Cancer in Men?

For many men with breast cancer, treatment can remove or destroy the cancer. The end of treatment can be both stressful and exciting. You may be relieved to finish treatment, but it's hard not to worry about cancer coming back. This is very common if you've had cancer.

For other people, the cancer may never go away completely. Some people may get

regular treatments with chemotherapy, radiation therapy, or other therapies to try to help keep the cancer in check. Learning to live with cancer that does not go away can be difficult and very stressful.

Follow-up care

Even after you have completed breast cancer treatment, your doctors will want to watch you closely. It's very important to go to all of your follow-up appointments. During these visits, your doctors will ask if you are having any problems. They may do exams and lab tests or imaging tests to look for signs of cancer or treatment side effects.

Almost any cancer treatment can have [side effects](#)¹. Some might only last for a few days or weeks, but others might last a long time. Some side effects might not even show up until years after you have finished treatment. Visits with your doctor are a good time for you to ask questions and talk about any changes or problems you notice or concerns you have. However, if you have additional concerns about your cancer, you do not have to wait until your next scheduled visit. You can call your doctor immediately.

Typical follow-up schedules

Doctor visits: At first, your follow-up doctor visits will probably be scheduled for every few months. The longer you have been free of cancer, the less often the appointments are needed. After 5 years, they are typically done about once a year.

Mammograms: Routine screening mammograms, even after a breast cancer diagnosis in a man, is not common, and it is unclear how helpful they are.

Bone density tests: If you are taking an aromatase inhibitor or a luteinizing hormone-releasing hormone (LHRH) analog, you may be at increased risk for osteoporosis (thinning of the bones). Your doctor may want to monitor your bone health and may consider testing your bone density.

Other tests: Other tests such as blood tumor marker studies, blood tests of liver function, bone scans, and chest x-rays are not a standard part of follow-up. Getting these tests doesn't help someone treated with breast cancer live longer. They will be done (as indicated) if you have symptoms or physical exam findings that suggest that the cancer has recurred. These and other tests may be done as part of evaluating new treatments by [clinical trials](#)².

If symptoms, exams, or tests suggest cancer may have recurred, imaging tests such as a chest x-ray, CT scan, PET scan, MRI scan, bone scan, and/or a biopsy may be done.

Your doctor may also measure levels of blood tumor markers such as CA15-3, CEA or CA27-29. The blood levels of these substances go up in some men if their cancer has spread. They are not elevated in everyone with recurrence, so these tests aren't always helpful. However, if your are elevated, they may help your doctor monitor the results of treatment.

Men who have had breast cancer can also still get other types of cancer. Talk to your doctor about genetic testing to see if you have a hereditary cancer syndrome that might put you at a very high risk for other cancers. Male breast cancer survivors also have a normal risk for other types of cancers. Because of this, it's important to follow the [American Cancer Society guidelines for the early detection of cancer](#)³, such as those for colorectal cancer and prostate. To learn more about the risks of second cancers and what you can do about them, see [Second Cancers After Male Breast Cancer](#).

Ask your doctor for a survivorship care plan

Talk with your doctor about developing a survivorship care plan for you. This plan might include:

- A suggested schedule for follow-up exams and tests
- A schedule for other tests you might need in the future, such as early detection (screening) tests for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions

- Reminders to keep your appointments with your primary care provider (PCP), who will monitor your general health care

Keeping health insurance and copies of your medical records

Even after treatment, it's very important to keep health insurance. Tests and doctor visits cost a lot, and even though no one wants to think about their cancer coming back, this could happen.

At some point after your cancer treatment, you might find yourself seeing a new doctor who doesn't know about your medical history. It's important to keep copies of your medical records to give your new doctor the details of your diagnosis and treatment.

Learn more in [Keeping Copies of Important Medical Records⁴](#).

Can I lower my risk of breast cancer progressing or coming back?

If you have (or have had) breast cancer, you probably want to know if there are things you can do that might lower your risk of the cancer growing or coming back, such as exercising, eating a certain type of diet, or taking nutritional supplements. Research has shown that some things that might be helpful but the studies have been done in women with breast cancer, since breast cancer in men is so rare. Many of the recommendations, however, have been shown to help reduce a person's risk of developing cancer, in general.

Staying as healthy as possible is more important than ever after breast cancer treatment. [Controlling your weight, exercising, and eating right⁵](#) may help you lower your risk of your breast cancer coming back, and may help protect you from other health problems.

Getting to a healthy weight

If you have had breast cancer, getting to and staying at a healthy weight might help lower your risk. A lot of research suggests that being overweight or obese (very overweight) raises the risk of breast cancer coming back. It has also been linked with a higher risk of getting [lymphedema⁶](#), as well as a higher risk of dying from breast cancer.

Of course, for men who are overweight, getting to a healthy weight can also have other health benefits. Getting to a healthy weight might also lower your risk of getting some other cancers, as well as some other chronic diseases.

Because of the possible health benefits of losing weight, many health care providers now encourage men who are overweight to get to and stay at a healthy weight. Still, it's important to discuss this with your doctor before trying to lose weight, especially if you are still getting treatment or have just finished it. Your health care team can help you create a plan to lose weight safely.

Being physically active

Among female breast cancer survivors, studies have found a consistent link between physical activity and a lower risk of breast cancer coming back and of dying from breast cancer. This has not been well studied in men, but may also apply. Physical activity has also been linked to improvements in quality of life, physical functioning, and fewer [fatigue⁷](#) symptoms.

It's not clear exactly how much activity might be needed, but more seems to be better. More vigorous activity may also be more helpful than less vigorous activity. But further studies are needed to follow up on these findings.

Some people used to think that breast cancer survivors with lymphedema should avoid certain arm exercises and vigorous activities. But studies have found that such physical activity is safe. In fact, it might actually lower the risk of lymphedema, or improve lymphedema for someone who already has it.

As with other types of lifestyle changes, it's important to talk with your treatment team before starting a new physical activity program. This will likely include meeting with a physical therapist as well. Your team can help you plan a program that can be both safe and effective for you.

Eating a healthy diet

Most research on possible links between diet and the risk of breast cancer coming back has looked at broad dietary patterns, rather than specific foods. In general, it's not clear if eating any specific type of diet can help lower your risk of breast cancer coming back. Studies have found that female breast cancer survivors who eat diets high in vegetables, fruits, whole grains, chicken, and fish tend to live longer than those who eat diets that have more refined sugars, fats, red meats (such as beef, pork, and lamb), and processed meats (such as bacon, sausage, luncheon meats, and hot dogs). But it's not clear if this is due to effects on breast cancer or possibly to other health benefits of eating a healthy diet.

Many people have questions about whether soy products are safe to eat after a diagnosis of breast cancer. Soy foods are rich sources of compounds called *isoflavones* that can have estrogen-like properties in the body. However, some recent large studies have not found that soy food intake affects breast cancer coming back or survival rates. While eating soy foods doesn't seem to pose a risk, the evidence regarding the effects of taking soy or isoflavone supplements is not as clear. Soy in your regular diet is likely safe, but if you are thinking about consuming high levels of soy you should discuss this with your physician.

While the links between specific types of diets and breast cancer coming back are not certain, there are clearly health benefits to eating well. For example, diets that are rich in plant sources are often an important part of getting to and staying at a healthy weight. Eating a healthy diet can also help lower your risk for some other health problems, such as heart disease and diabetes.

Dietary supplements

Some people want to know if there are any dietary or nutritional supplements they can take to help lower their risk. So far, no dietary supplements (including vitamins, minerals, and herbal products) have been shown to clearly help lower the risk of female breast cancer progressing or coming back. This doesn't mean that none will help, but it's important to know that none have been proven to do so.

Dietary supplements are not regulated like medicines in the United States – they do not have to be proven effective (or even safe) before being sold, although there are limits on what they're allowed to claim they can do. If you're thinking about taking any type of nutritional supplement, talk to your health care team. They can help you decide which ones you can use safely while avoiding those that might be harmful.

Alcohol

It's clear that alcohol – even as little as a few drinks a week – increases a woman's risk of *getting* breast cancer. But whether alcohol affects the risk of breast cancer *coming back* is not as clear. Drinking alcohol can raise the levels of estrogen in the body, which in theory could increase the risk of breast cancer coming back. But there is no strong evidence from studies to support this.

Although there is no specific research in men with breast cancer and alcohol, as part of its [guidelines on nutrition and physical activity for cancer prevention](#)⁸, the American Cancer Society recommends that men who drink alcohol limit their intake to no more than 2 drinks a day to help lower their risk of getting certain types of cancer.

Because this issue is complex, it's important to discuss it with your health care team, taking into account your risk of breast cancer coming back (or getting a new breast cancer), your risk of heart disease, and your risk of other health issues linked to alcohol use.

If the cancer comes back

If cancer does return, your treatment options will depend on where it comes back, what treatments you've had before, and your current health and preferences. For more information on how recurrent cancer is treated, see [Treatment of Breast Cancer in Men, by Stage](#)⁹.

Second cancers after treatment

Men who have had breast cancer can also still get other types of cancer. Men with breast cancer should be offered genetic testing to see if they have a hereditary cancer syndrome and could be at a very high risk for other cancers. They also have a normal risk for other types of cancers. Learn more in [Second Cancers After Male Breast Cancer](#).

Getting emotional support

Some amount of feeling depressed, anxious, or worried is normal when breast cancer is a part of your life. Some people are affected more than others. But everyone can benefit from help and support from other people, whether friends and family, religious groups, support groups, professional counselors, or others. Learn more in [Life After Cancer](#)¹⁰.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
2. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
3. www.cancer.org/healthy/find-cancer-early/cancer-screening-guidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer.html
4. www.cancer.org/treatment/survivorship-during-and-after-treatment/be-healthy-after-treatment/keeping-copies-of-important-medical-records.html
5. www.cancer.org/healthy.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html
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Second Cancers After Male Breast Cancer

Breast cancer survivors can be affected by a number of health problems, but often a major concern is facing cancer again. Cancer that comes back after treatment is called a *recurrence*. But some cancer survivors develop a new, unrelated cancer later. This is called a *second cancer*.

Men who have had breast cancer can get any type of second cancer, but they have a higher increased risk for certain types of cancer, including:

- A second breast cancer (this is different than the first cancer coming back)
- [Small intestine cancer](#)¹
- [Rectal cancer](#)²
- [Pancreas cancer](#)³
- [Prostate cancer](#)⁴
- [Basal and squamous cell skin cancer](#)⁵
- [Myeloid leukemia](#)⁶

For some second cancers, shared genetic risk factors may play a role. For example, men with mutations in the *BRCA2* gene have an increased risk of prostate and pancreas cancer as well as breast cancer. All men with breast cancer meet guidelines for genetic testing and should discuss this with their doctor or see a genetic counselor.

Follow-up care for men after breast cancer treatment

After completing treatment for breast cancer, you should still see your doctor regularly to look for signs the cancer has come back or spread. Experts do not recommend any specific tests to look for second cancers in patients without symptoms. Let your doctor

know about any new symptoms or problems, because they could be caused by the cancer coming back or by a new disease or second cancer.

Survivors of breast cancer should follow the [American Cancer Society guidelines for the early detection of cancer](#)⁷ and [stay away from tobacco products](#)⁸. Smoking increases the risk of many cancers.

To help [maintain good health](#)⁹, survivors should also:

- Achieve and maintain a healthy weight
- Adopt a physically active lifestyle
- Consume a healthy diet, with an emphasis on plant foods
- Limit consumption of alcohol to no more than 2 drinks per day

These steps may also lower the risk of some cancers.

See [Second Cancers in Adults](#)¹⁰ for more information about causes of second cancers.

Hyperlinks

1. www.cancer.org/cancer/small-intestine-cancer.html
2. www.cancer.org/cancer/colon-rectal-cancer.html
3. www.cancer.org/cancer/pancreatic-cancer.html
4. www.cancer.org/cancer/prostate-cancer.html
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