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
- How Is Breast Cancer in Men Diagnosed?

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?
- Looking for Breast Cancer Spread
- How is Breast Cancer in Men Staged?
- Breast Cancer in Men Survival Rates, by Stage

Can Breast Cancer in Men Be Found Early?

Early detection improves the chances that male breast cancer can be treated successfully.

Differences affecting 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, they 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 they do not 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.

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.

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) is usually only done if a lump is found. Although sometimes a mammogram may be done in men who come to their doctors with gynecomastia (benign breast enlargement), it isn’t clear how helpful that is, either. Men who are at high risk for breast cancer 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) and/or ovarian 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 (besides breast and ovarian cancer) have been linked to BRCA mutations, including prostate cancer, pancreatic cancer, and testicular cancer.

Because breast cancer in men can be caused by BRCA mutations, men with breast cancer should also consider genetic testing.

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. Testing is also expensive and may not be covered by some health insurance plans.

- References
  See all references for Breast Cancer in Men

Signs and Symptoms of Breast Cancer in Men

Men need to know that breast cancer is not limited to only women. Possible symptoms of breast cancer to watch for include:
• A lump or swelling, which is usually (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 tissue is large enough to be felt.

These changes aren't always caused by cancer. For example, most breast lumps in men are caused by gynecomastia (a harmless enlargement of breast tissue). Still, if you notice any breast changes, you should see a health care professional as soon as possible.

• References
See all references for Breast Cancer in Men

Last Medical Review: October 10, 2014 Last Revised: January 26, 2016

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How Is Breast Cancer in Men Diagnosed?

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 thorough breast exam will be done to locate any lumps or suspicious areas and to feel their texture, size, and relationship to the skin and muscle tissue. 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) or an enlarged liver. Your general physical condition may also be evaluated.
Tests used to evaluate breast disease

If the history and physical exam results suggest breast cancer may be possible, several types of tests may be done.

Diagnostic mammography

A mammogram is an x-ray exam of the breast. It is called a diagnostic mammogram when it is done because problems are present.

For a mammogram, the breast is pressed between 2 plates to flatten and spread the tissue. This may be uncomfortable for a moment, but it is necessary to produce a good, readable mammogram. The compression only lasts a few seconds. This procedure produces a black and white image of the breast tissue either on a large sheet of film or as a digital computer image that is read, or interpreted, by a radiologist (a doctor trained to interpret images from x-rays and other imaging tests). In some cases, special images known as cone or spot views with magnification are used 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

Ultrasound, also known as sonography, uses high-frequency sound waves to outline a part of the body. Most often, a small, microphone-like instrument called a transducer is placed on the skin (which is first lubricated with gel). It emits sound waves and picks up the echoes as they bounce off body tissues. The echoes are converted by a computer into a black and white image on a computer screen. A newer ultrasound machine that was designed to look at the breast uses a much larger transducer that can examine the entire breast at once.

This test is painless and does not expose you to radiation.

Breast ultrasound is often used to evaluate breast abnormalities that are found during mammography or a physical exam. It can be useful to see if a breast lump or mass is a cyst or a tumor. A cyst is a non-cancerous, fluid-filled sac that can feel the same as a tumor on a physical exam. A mass that is not a simple cyst will often need to be biopsied.
In someone with a breast tumor, ultrasound can also be used to look at the lymph nodes under the arm to see if they are enlarged. If they are, ultrasound can be used to guide a needle to take a sample (a biopsy) to look for cancer cells.

**Magnetic resonance imaging (MRI) of the breast**

MRI machines are quite common, but they need to be specially adapted to look at the breast. It’s important that [MRI scans of the breast](#) be done on one of these specially adapted machines and that the MRI facility can also do a MRI-guided biopsy if it is needed.

MRI can be used to better examine suspicious areas found by a mammogram. MRI is also sometimes used in someone who has been diagnosed with breast cancer to better determine the actual size of the cancer and to look for any other cancers in the breast.

**Nipple discharge exam**

Fluid leaking from the nipple is called *nipple discharge*. If you have a nipple discharge, you should have it checked by your doctor. If there is blood in this fluid, you might need more [tests](#). One test collects some of the fluid to look at under a microscope to see if cancer cells are present. 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 may be more helpful, such as a mammogram or breast ultrasound. If you have a breast mass, you will probably need a biopsy, even if the nipple discharge does not contain cancer cells or blood.

**Biopsy**

A [biopsy](#) removes a body tissue sample to be looked at under a microscope. A biopsy is the only way to tell if a breast abnormality is cancerous. Unless the doctor is sure the lump is not cancer, this should always be done. There are several types of biopsies. Your doctor will choose the type of biopsy based on your situation.

**Fine needle aspiration biopsy**: Fine needle aspiration (FNA) biopsy is the easiest and quickest biopsy technique. The doctor uses a very thin, hollow needle attached to a syringe to withdraw (aspirate) a small amount of tissue from a suspicious area. The doctor can guide the needle into the area of the breast abnormality while feeling the lump. A local anesthetic (numbing medicine) may or may not be used. Because such a thin needle is used for the biopsy, the process of getting the anesthetic might actually be more uncomfortable than the biopsy itself.
Core needle biopsy: For a core biopsy, the doctor removes a small cylinder of tissue from a breast abnormality to be looked at under a microscope. The needle used in this technique is larger than that used for FNA. The biopsy is done with local anesthesia and can be done in a clinic or doctor's office.

Surgical (open) biopsy: Most breast cancer can be diagnosed with a needle biopsy. Rarely, though, surgery is needed to remove all or part of the lump to know for certain if cancer is present. Most often, the surgeon removes the entire mass or abnormal area, as well as a surrounding margin of normal-appearing breast tissue. This is called an excisional biopsy. If the mass is too large to be removed easily, only part of it may be removed. This is called an incisional biopsy.

Lymph node biopsy: Cancer in the breast can spread to lymph nodes under the arm and around the collar bone (clavicle). If any of these lymph nodes are enlarged, they may be biopsied. Often, this is done with a needle biopsy during the same procedure as the breast biopsy.

Lymph node dissection and sentinel lymph node biopsy: These procedures are done specifically to look for breast cancer spread to lymph nodes. They are described in more detail under "Types of breast surgery" in the “Surgery for breast cancer in men” section.

References
See all references for Breast Cancer in Men

How is Breast Cancer in Men Classified?

After you have a biopsy, the samples of breast tissue are looked at in the lab to determine whether breast cancer is present and if so, what type it is. Certain lab tests may be done that can help determine how quickly a cancer is likely to grow and (to some extent) what treatments are likely to be effective. Sometimes these tests aren’t
done until either breast-conserving surgery or mastectomy.

If a benign condition is diagnosed, you will need no further treatment. Still, it is important to find out from your doctor if you need special follow-up.

If the diagnosis is cancer, there should be time for you to learn about the disease and to discuss treatment options with your cancer care team, friends, and family. It is usually not necessary to rush into treatment. You might want to get a second opinion before deciding what treatment is best for you.

Breast cancer type

The tissue removed during the biopsy (or during surgery) is first looked at under a microscope 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, such as invasive ductal carcinoma or invasive lobular carcinoma.

With an FNA biopsy, not as many cells are removed and they often become separated from the rest of the breast tissue, so it is often only possible to say that cancer cells are present without being able to say if the cancer is in situ or invasive.

The most common types of breast cancer, invasive ductal and invasive lobular cancer, generally are treated in the same way.

Breast cancer grade

A pathologist (a doctor who specializes in diagnosing disease in tissue samples) also assigns a histologic grade to the cancer (known as grading). The grade is a measure of how closely the cancer in the biopsy sample looks like normal breast tissue and how fast the cancer cells are dividing. It is based on the arrangement of the cells in relation to each other, as well as features of individual cells. The grade helps predict the patient's prognosis (outlook). In general, a lower grade number indicates a slower-growing cancer that is less likely to spread, while a higher number indicates a faster-growing cancer that is more likely to spread.

- **Grade 1** (well differentiated) cancers have relatively normal-looking cells that do not appear to be growing rapidly and are arranged in small tubules.
- **Grade 2** (moderately differentiated) cancers have features between grades 1 and 3.
• **Grade 3** (poorly differentiated) cancers have **cells that appear very abnormal**, grow rapidly, and rarely form tubules.

This system of grading is used for invasive cancers. Ductal carcinoma in situ is also graded, but the grade is based only on the features of the cancer cells.

### Tests to classify breast cancers

#### Estrogen receptor (ER) and progesterone receptor (PR)

Receptors are cell proteins that can attach to certain substances, such as hormones, that circulate in the blood. Normal breast cells and some breast cancer cells have receptors that attach to estrogen and progesterone. These 2 hormones often fuel the growth of breast cancer cells.

An important step in evaluating a breast cancer is to test a portion of the cancer removed during the biopsy (or surgery) for estrogen and progesterone receptors. Cancer cells may contain neither, one, or both of these receptors. Breast cancers that contain estrogen receptors are often referred to as **ER-positive cancers**, while those containing progesterone receptors are called **PR-positive cancers**.

#### HER2/neu testing

In a small number of breast cancers in men, the cells have too much of a growth-promoting protein called HER2/neu (often just shortened to HER2). Tumors with increased levels of HER2/neu are referred to as **HER2-positive**.

The **HER2/neu** gene instructs cells to make this protein, and cells can 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 the section "**Targeted therapy for breast cancer in men**" for more information on drugs that target this protein.

The biopsy or surgery sample is usually **tested** 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. Patients 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 the section, "Hormone therapy for breast cancer in men"). 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.

**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. 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 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 of breast cancers**

**Tests of ploidy and cell proliferation rate**

These tests might be done to help predict how aggressive a cancer may be. 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*. If the amount is abnormal, then the cells are described as *aneuploid*. Tests of ploidy may help determine prognosis, but they rarely change treatment and are considered optional. They are not usually recommended as part of a routine breast cancer work-up.

The *S-phase fraction* is the percentage of cells in a sample that are replicating (copying) their DNA. DNA replication means that the cell is getting ready to divide into 2 new cells. The rate of cancer cell division can also be estimated by a Ki-67 test. If the S-phase fraction or Ki-67 labeling index is high, it means that the cancer cells are dividing more rapidly, which indicates a more aggressive cancer.
Tests of gene patterns

Researchers have found that looking at the patterns of a number of specific genes at the same time (sometimes referred to as gene expression profiling) can help predict whether or not an early-stage breast cancer is likely to come back after initial treatment. This can help when deciding whether to use additional (adjuvant) treatment such as chemotherapy after surgery. Two such tests (Oncotype DX® and MammaPrint®) look at different sets of genes.

Although many doctors use these tests (along with other information) to help make decisions about offering chemotherapy to women with breast cancer, the usefulness of these tests hasn’t really been studied well in men. Still, men may want to ask their doctors if these tests might be appropriate.

If you’d like to know more about biopsies and the ways they’re tested, see Testing Biopsy and Cytology Specimens for Cancer.

- References

See all references for Breast Cancer in Men

Last Medical Review: October 10, 2014 Last Revised: January 26, 2016

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Looking for Breast Cancer Spread

Once breast cancer is diagnosed, one or more of the following tests may be done. Which of these tests (if any) is done depends on how likely it is that the cancer has spread, the size of the tumor, the presence of lymph node spread, and any symptoms you are having. These tests aren’t often done for early breast cancer.

Chest x-ray

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

A bone scan can help show if a cancer has metastasized (spread) to the bones. It can be more useful than standard x-rays because 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.

For this test, a small amount of low-level radioactive material is injected into a vein (intravenously or IV). The substance settles in areas of bone changes throughout the entire skeleton over the course of a couple of hours. You then lie on a table for about 30 minutes while a special camera detects the radioactivity and creates a picture of your skeleton.

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 or MRI scans to get a better look at the areas that light up, or they may even take biopsy samples of the bone.

**Computed tomography (CT) scan**

The CT scan is an x-ray test that produces detailed cross-sectional images of your body. Instead of taking a single picture, like a regular x-ray, a CT scanner takes many pictures as it rotates around you while you lie on a table. A computer then combines these pictures into images of slices of the part of your body being studied. In people with breast cancer, this test is most often used to look at the chest and/or abdomen to see if the cancer has spread to other organs, such as the lungs or liver.

A CT scanner has been described as a large donut, with a narrow table in the middle opening. You will need to lie still on the table while the scan is being done. CT scans take longer than regular x-rays, and you might feel a bit confined by the ring while the pictures are being taken.

Before the test, you may be asked to drink 1 to 2 pints of a liquid called oral contrast. This helps outline the intestine so that certain areas are not mistaken for tumors. You may also receive an IV (intravenous) line through which a different kind of contrast dye (IV contrast) is injected to better outline structures in your body.

The injection might cause some flushing (a feeling of warmth, especially in the face). Some people are allergic and get hives. Rarely, more serious reactions can occur like trouble breathing or low blood pressure. Be sure to tell the doctor if you have ever had a
reaction to any contrast material used for x-rays.

**CT guided needle biopsy:** If an abnormal area is seen on a CT scan, it may need to be biopsied to see if it is cancer. The biopsy can be done using the CT scans to precisely guide a biopsy needle into the area. For this procedure, you remain on the CT scanning table while a radiologist advances a biopsy needle through the skin and toward the location of the mass (abnormal area). CT scans are repeated until the doctors are sure that the needle is within the mass. A fine needle biopsy sample (tiny fragment of tissue) or a core needle biopsy sample (a thin cylinder of tissue about \(\frac{1}{2}\)-inch long and less than 1/8-inch in diameter) is then removed and sent to be looked at under a microscope.

**Magnetic resonance imaging (MRI) scan**

Using MRI scans to look at the breast was discussed earlier in the section “How is breast cancer in men diagnosed.”

MRI scans are also used to look for cancer that has spread to various parts of the body, just like CT scans. MRI scans are particularly helpful in looking at the brain and spinal cord.

There are some differences between using this test to look at the breast and other areas of the body. Firstly, you will lie face up in the machine. Second, the contrast material called **gadolinium** is not always needed to look at other areas of the body. Also, you may have the option of having the scan in a less confining machine known as an **open MRI machine**. The images from an open machine are not always as good, though, so this is not always an option.

**Ultrasound**

The use of this test to look at the breast was discussed earlier in the section “How is breast cancer diagnosed?” But ultrasound can also be used to look for cancer that has spread to some other parts of the body.

Abdominal ultrasound can be used to look for tumors in your liver or other abdominal organs. When you have an abdominal ultrasound exam, you simply lie on a table and a technician moves the transducer over the skin overlying the part of your body being examined. Usually, the skin is first lubricated with gel.
Positron emission tomography (PET) scan

A PET scan 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 is the most common type of PET scan used in patients with breast cancer.

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). PET scans are most often ordered for patients with large tumors or when the doctor suspects the cancer has spread.

For a PET scan, glucose (a form of sugar) that contains a radioactive atom is injected into the blood. Because cancer cells in the body are growing rapidly, they absorb large amounts of the radioactive sugar. After about an hour, a special camera is used to create a picture of areas of radioactivity in the body.

- References

See all references for Breast Cancer in Men

How is Breast Cancer in Men Staged?

*Staging* is the process of finding out how far the cancer has spread. The stage of a cancer is one of the most important factors in selecting treatment options.

Depending on the results of your physical exam and biopsy, the doctor may order certain imaging tests, such as a chest x-ray, mammograms, bone scans, computed tomography (CT) scans, magnetic resonance imaging (MRI) scans, and/or positron emission tomography (PET) scans. Blood tests may also be done to evaluate your overall health and to help detect whether the cancer has spread to certain organs.
The American Joint Committee on Cancer (AJCC) TNM system

A staging system is a standardized way for the cancer care team to summarize information about how far a cancer has spread. The most common system used to describe the stages of breast cancer is the American Joint Committee on Cancer (AJCC) TNM system. The staging system used for breast cancer in men is the same as the one used for breast cancer in women.

The stage of a breast cancer can be based either on the results of physical exam, biopsy, and imaging tests (called the clinical stage), or on the results of these tests plus the results of surgery (called the pathologic stage). The staging described here is the pathologic stage, which includes the findings after surgery, when the pathologist has looked at the breast mass and removed lymph nodes. Pathologic staging is likely to be more accurate than clinical staging, as it allows the doctor to get a firsthand impression of the extent of the cancer.

The TNM staging system classifies cancers based on their T, N, and M stages:

- The letter T followed by a number from 0 to 4 describes the tumor's size and spread to the skin or to the chest wall under the breast. Higher T numbers indicate a larger tumor and/or wider spread to tissues near the breast.
- The letter 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 affected.
- The letter M followed by a 0 or 1 indicates whether the cancer has spread to distant organs for example, the lungs or bones.

T categories for breast cancer

TX: Primary tumor cannot be assessed.

T0: No signs of a primary breast tumor.

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

T1 (includes T1a, b, and c): 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:** Tumor of any size growing into the chest wall or skin.

**N categories for breast cancer (based on looking at the lymph nodes with a microscope)**

Lymph node staging for breast cancer has changed over time as technology has evolved. Earlier methods were useful in finding large deposits of cancer cells in the lymph nodes, but could miss microscopic areas of cancer spread. Over time, newer methods have made it possible to find smaller and smaller deposits of cancer cells. Experts haven’t been sure what to do with the new information. Do tiny deposits of cancer cells affect outlook the same way that larger deposits do? How much cancer in the lymph node is needed to see a change in outlook or treatment?

These questions are 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 less than 200 cells) doesn’t change the stage, but is recorded with abbreviations that reflect the way the cancer spread was detected.

The abbreviation i+ means that cancer cells were only seen when a special staining technique, called *immunohistochemistry*, was used. The abbreviation mol+ is used if the cancer could only be found using a technique called *PCR*. PCR is a molecular test that can find very small numbers of cells that cannot even be seen using special stains. These very tiny areas are sometimes called *isolated tumor cells*. 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* (1 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 may just be called *metastases*.

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

**N0:** Cancer has not spread to nearby lymph nodes.

- **N0(i+):** Tiny amounts of cancer are found in underarm lymph nodes by using
special stains. The area of cancer spread contains less than 200 cells and is smaller than 0.2 mm.

- **N0(mol+):** Cancer cells cannot be seen in underarm lymph nodes (even using special stains), but traces of cancer cells were detected using PCR

**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 1 to 3 lymph nodes under the arm. The areas of cancer spread in the lymph nodes are 2 mm or less across (but at least 200 cancer cells or 0.2 mm across).
- **N1a:** Cancer has spread to 1 to 3 lymph nodes under the arm and at least one area of cancer spread is greater than 2 mm across.
- **N1b:** Cancer has spread to internal mammary lymph nodes, but this spread could only be found by 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 axillary (under the arm) lymph nodes, or cancer has enlarged the internal mammary lymph nodes (either N2a or N2b, but not both).

- **N2a:** Cancer has spread to 4 to 9 lymph nodes under the arm, and at least one area of cancer spread is 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, and at least one area of cancer spread is greater than 2 mm.
  - Cancer has spread to the lymph nodes under the clavicle (collar bone), and at least one area of cancer spread is greater than 2 mm.
- **N3b:** Either:
  - Cancer is found in at least one axillary lymph node (and at least one area of cancer spread is greater than 2 mm) and has enlarged the internal mammary lymph nodes.
  - Cancer was found in 4 or more axillary lymph nodes (and at least one area of cancer spread is 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 clavicle and at least one
area of cancer spread is greater than 2 mm.

**M categories for breast cancer**

**M0:** No distant spread is found on x-rays (or other imaging procedures) 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 breast

**M1:** Spread to distant organs is present. (The most common sites are bone, lung, brain, and liver.)

**Breast cancer stage grouping**

Once the T, N, and M categories have been determined, this information is combined in a process called *stage grouping*. Cancers with similar stages tend to have a similar outlook and thus are often treated in a similar way. Stage is expressed in Roman numerals from stage I (the least advanced stage) to stage IV (the most advanced stage). Non-invasive cancer is listed as stage 0.

**Stage 0:** **Tis, N0, M0:** This is *ductal carcinoma in situ (DCIS)*, a pre-cancer of the breast. Many consider this the earliest form of breast cancer. In DCIS, cancer cells are still within a duct and have not invaded deeper into the surrounding fatty breast tissue. Paget disease of the nipple (without an underlying tumor mass) is also stage 0. In all cases the cancer has not spread to lymph nodes or distant sites.

**Stage I:** Includes stages IA and IB

**Stage IA:** **T1, N0, M0:** The tumor is 2 cm (about 3/4 of an inch) or less across and has not spread to lymph nodes or distant sites.

**Stage IB:** **T0 or T1, N1mi, M0:** The tumor is 2 cm or less across (or is not found) with micrometastases in 1 to 3 axillary lymph nodes (the cancer in the lymph nodes is greater than 0.2 mm across and/or more than 200 cells but is not larger than 2 mm). The cancer has not spread to distant sites.

**Stage II:** Includes stages IIA and IIB

**Stage IIA:** One of the following applies:
T0 or T1, N1 (but not N1mi), M0: The tumor is 2 cm or less across (or is not found) (T1 or T0) and either:

- It has spread to 1 to 3 axillary lymph nodes (N1a), but not to distant sites (M0), OR
- Tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N1b), but not in distant sites (M0), OR.
- The cancer has spread to 1 to 3 axillary lymph nodes, and tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N1c), but it has not spread to distant sites (M0).

OR

T2, N0, M0: The tumor is larger than 2 cm across and less than 5 cm (T2), but it hasn't spread to the lymph nodes (N0) or to distant sites (M0).

Stage IIB: One of the following applies:

T2, N1, M0: The tumor is larger than 2 cm and less than 5 cm across (T2). It has spread to 1 to 3 axillary lymph nodes and/or tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N1). It has not spread to distant sites (M0).

OR

T3, N0, M0: The tumor is larger than 5 cm across but does not grow into the chest wall or skin (T3). It has not spread to lymph nodes (N0) or to distant sites (M0).

Stage III: Includes stages IIIA, IIIB, and IIIC

Stage IIIA: One of the following applies

T0 to T2, N2, M0: The tumor is not more than 5 cm across (or cannot be found) (T0 to T2). It has spread to 4 to 9 axillary lymph nodes, or it has enlarged the internal mammary lymph nodes (N2). It has not spread to distant sites (M0).

OR

T3, N1 to N2, M0: The tumor is larger than 5 cm across but does not grow into the chest wall or skin (T3). It has spread to 1 to 9 axillary nodes, or to internal mammary nodes (N1 or N2). It has not spread to distant sites (M0).

Stage IIIB: T4, N0 to N2, M0: The tumor has grown into the chest wall or skin (T4), and
one of the following applies:

- It has not spread to the lymph nodes (N0).
- It has spread to 1 to 3 axillary lymph nodes and/or tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N1).
- It has spread to 4 to 9 axillary lymph nodes, or it has enlarged the internal mammary lymph nodes (N2).

The cancer hasn't spread to distant sites (M0).

**Stage III C: Any T, N3, M0:** The tumor is any size (or can't be found) (any T), and one of the following applies:

- Cancer has spread to 10 or more axillary lymph nodes (N3).
- Cancer has spread to the lymph nodes under the clavicle (collar bone) (N3).
- Cancer has spread to the lymph nodes above the clavicle (N3).
- Cancer involves axillary lymph nodes and has enlarged the internal mammary lymph nodes (N3).
- Cancer involves 4 or more axillary lymph nodes, and tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy.

The cancer hasn't spread to distant sites (M0).

**Stage IV: Any T, any N, M1:** The cancer can be any size and may or may not have spread to nearby lymph nodes. It has spread to distant organs (the most common sites are the bone, liver, brain, or lung), or to lymph nodes far from the breast.

If you have any questions about the stage of your cancer and what it might mean in your case, be sure to ask your doctor.

- References
  [See all references for Breast Cancer in Men](#)

Last Medical Review: October 10, 2014 Last Revised: January 26, 2016

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**Breast Cancer in Men Survival Rates, by**
Survival rates are often used by doctors as a standard way of discussing a person's prognosis (outlook). Some patients with breast cancer may want to know the survival statistics for people in similar situations. Others may not find the numbers helpful, or may even not want to know them. If you decide you don’t want to know them, stop reading here and skip to the next section.

The 5-year survival rate refers to the percentage of patients who live at least 5 years after their cancer is diagnosed. Of course, many people live much longer than 5 years (and many are cured).

Five-year relative survival rates assume that some people will die of other causes and compare the observed survival with that expected for people without the cancer. This is a more accurate way to describe the impact of a particular type and stage of cancer on survival.

In order to get 5-year survival rates, doctors have to look at people who were treated at least 5 years ago. Improvements in treatment since then may result in a more favorable outlook for men being diagnosed with breast cancer now.

Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they cannot predict what will happen in any particular person's case. Many other factors can affect a person's outlook, such as their overall health, what treatment they receive, and how well the cancer responds to treatment. Your doctor can tell you how the numbers below may apply to you, as he or she is familiar with the aspects of your situation.

The numbers below come from the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) database. These statistics include only male breast cancer cases but are based on an older version of AJCC staging. In that version, some men who are now considered stage IB would be included as stage II.

It is also important to realize that these statistics are based on the stage of the cancer when it was first diagnosed. These do not apply to cancer after it has come back or spread, for example.

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year relative survival rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>I</td>
<td>100%</td>
</tr>
</tbody>
</table>
II 91%
III 72%
IV 20%

- References

See all references for Breast Cancer in Men

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