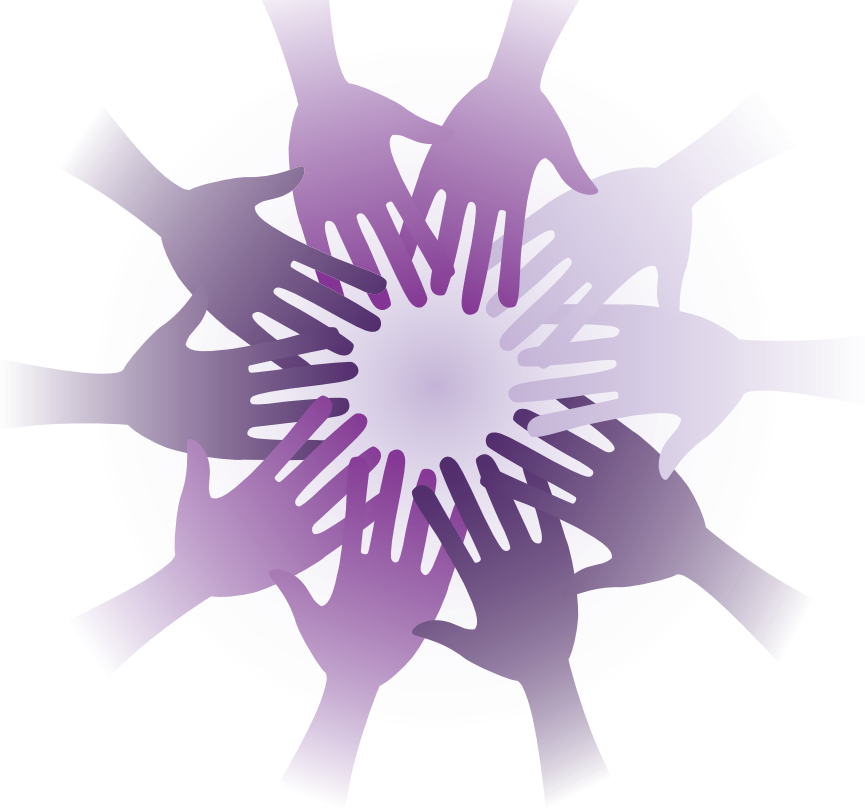


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# Male Breast Cancer



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CANCER CENTER

# General Information

## Key Points

- Breast cancer occurs when cancer cells form in the tissues of the breast.
- Radiation exposure, high levels of estrogen, and a family history of breast cancer can increase a man's risk of breast cancer.
- Male breast cancer is sometimes caused by inherited gene mutations (changes).
- Men with breast cancer usually have lumps in the breast that can be felt.
- Tests are used to find and diagnose breast cancer in men.
- If cancer is found, tests are done to study the cancer cells.
- Survival for men with breast cancer is similar to survival for women with breast cancer when their stage of diagnosis is the same.
- Certain factors affect the chance of recovery and treatment options.

# Male breast cancer

All people are born with some breast cells and tissue. Even though men do not develop milk-producing breasts, breast cancer may occur in men. For every 100 cases of breast cancer, only 1 will be a man, the remaining 99 will be women.

## Types of breast cancer found in men:

- **Infiltrating ductal carcinoma:** Cancer that has spread beyond the cells lining the ducts in the breast. This is the most common type of male breast cancer.
- **Ductal carcinoma in situ:** Abnormal cells are found in the lining of a duct; also called intraductal carcinoma.
- **Inflammatory breast cancer:** A type of cancer in which the breast looks red and swollen and also feels warm.
- **Paget disease of the nipple:** The cancer grows from ducts beneath the nipple onto the surface.

## **A man's risk of breast cancer**

Anything that increases your risk of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors does not mean that you will not get cancer. Talk with your doctor if you think you may be at risk. Risk factors for breast cancer in men may include:

- Being exposed to radiation
- Having a disease linked to high levels of estrogen in the body, such as liver disease (cirrhosis) or a genetic disorder called Klinefelter syndrome
- Having several female relatives who have had breast cancer, especially relatives who have a change in the BRCA2 gene

## **Inherited cancer**

The genes in cells carry the hereditary information that is received from your parents. Hereditary breast cancer makes up about 5 to 10 out of 100 breast cancers. Some mutated genes related to breast cancer are more common in certain ethnic groups.

Men who have a mutated gene related to breast cancer have an increased risk of this disease. Your doctor may recommend genetic counseling or testing.

**Male breast cancer is sometimes caused by inherited gene mutations (changes).**

There are tests that can find mutated genes. These genetic tests are sometimes done for members of families with a high risk of cancer.

**Lumps can usually be felt**

Lumps and other signs may be caused by male breast cancer or by other health problems. Check with your doctor if you notice a change in your breasts.

# Tests to find and diagnose breast cancer in men

The following tests and procedures may be used:

**Physical exam and history:** The body is checked for general signs of health, including checking for signs of disease, such as lumps or anything else that seems unusual. A history of the patient's health habits and past illnesses and treatments will also be taken.

**Clinical breast exam (CBE):** The doctor or other health professional carefully feels the breasts and under the arms for lumps or anything else that seems unusual.

**Mammography:** A mammogram is a safe, low-dose x-ray exam of breast tissue. 3D mammography produces a clearer view of any areas of concern than a traditional x-ray. Sometimes, IV contrast medicine is given to make any areas of concern easier to see.



**Ultrasound exam:** High-energy sound waves (ultrasound) are bounced off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram. The picture can be printed to be looked at later.

**MRI (magnetic resonance imaging):** A magnet, radio waves, and a computer are used to make a series of detailed pictures of the breast tissue and nearby areas of the body.

**Blood chemistry studies:** A blood sample is checked to measure the amounts of certain substances released into the blood by organs and tissues. A higher or lower than normal amount of a substance can be a sign of a health problem.

**Biopsy:** Cells or tissues are removed so they can be viewed under a microscope by a pathologist to check for signs of cancer. These are types of biopsies:

- **Fine-needle aspiration (FNA) biopsy:** A thin needle is used to remove tissue or fluid.
- **Core biopsy:** A wide needle is used to remove tissue.
- **Excisional biopsy:** An entire lump of tissue is removed.



# Tests to study the cancer cells

Decisions about the best treatment are based on the results of these tests. The tests give information about:

- How quickly the cancer may grow
- How likely that the cancer will spread through the body
- How well treatments might work
- How likely the cancer is to return after treatment

Tests include the following:

**Estrogen and progesterone receptor test:** Measures the amount of hormone receptors in cancer tissue. If cancer is found in the breast, tissue from the tumor is checked in the laboratory to find out whether hormones could affect the way cancer grows. The test results show if hormone therapy may stop the cancer from growing.

**HER2 test:** Measures the amount of HER2 in cancer tissue. HER2 is a growth factor protein that sends growth signals to cells. When cancer forms, the cells may make too much of the protein, causing more cancer cells to grow. If cancer is found in the breast, tissue from the tumor is checked for the amount of HER2 in the cells. The test results show if monoclonal antibody therapy may stop the cancer from growing.

## **Survival rate**

Survival for men with breast cancer is similar to that for women with breast cancer when their stage at diagnosis is the same. Breast cancer in men, however, is often diagnosed at a later stage. Cancer found at a later stage may be less likely to be cured.

## **Factors that can affect recovery and treatment options**

The chance of recovery and treatment options depend on:

- The stage of the cancer (whether it is in the breast only or has spread to other places in the body)
- The type of breast cancer
- Estrogen-receptor and progesterone-receptor levels in the tumor tissue
- Whether the cancer is also found in the other breast
- The patient's age and general health

# Male breast cancer testing

## Key Points

- How cancer spreads
- Common tests to find out if cancer cells have spread within the area or to other parts of the body

## How cancer spreads in the body

Cancer may spread from where it began to other parts of the body. After cancer has been diagnosed, tests are done to find out if cancer cells have spread within the area or to other parts of the body.

There are 3 ways that cancer spreads in the body.

Cancer can spread through tissue, the lymph system, and the blood:

**Tissue.** The cancer spreads from where it began by growing into nearby areas.

**Lymph system.** The cancer spreads from where it began by getting into the lymph system. The cancer travels through the lymph vessels to other parts of the body.

**Blood.** The cancer spreads from where it began by getting into the blood. The cancer travels through the blood vessels to other parts of the body.

The process used to find out if cancer has spread is called staging. It is important to know the stage in order to plan treatment. Not every person needs every test. Breast cancer in men is staged the same as it is in women.

### **Tests and procedures for staging**

These tests and procedures may be used in the staging process:

**Sentinel lymph node biopsy:** The removal of the sentinel lymph node during surgery.

- The sentinel lymph node is the first lymph node to receive lymphatic drainage from a tumor. It is the first lymph node the cancer is likely to spread to from the tumor.
- A radioactive substance and/or blue dye is injected near the tumor. The substance or dye flows through the lymph ducts to the lymph nodes. The first lymph node to receive the substance or dye is removed.
- A pathologist views the tissue under a microscope to look for cancer cells. If cancer cells are not found, more lymph nodes may need to be removed.

**Chest x-ray:** A painless way to take a picture of your chest muscles and, lungs. Usually a front view and a side view are taken.

**CT scan (CAT scan):** A series of detailed pictures of areas inside the body are taken from different angles. A dye may be given into a vein or swallowed to help the organs or tissues show up more clearly.

**Bone scan:** A procedure to check if there are rapidly dividing cells, such as cancer cells, in the bone. A small amount of radioactive material is injected into a vein and travels through the bloodstream. The radioactive material collects in the bones and is detected by a scanner.

**PET scan (positron emission tomography scan):** A small amount of radioactive glucose (sugar) is injected into a vein. The PET scanner rotates around the body and makes a picture of where glucose is being used in the body. Cancer cells show up brighter in the picture because they are more active and take up more glucose than normal cells do.

# Male breast cancer staging

## Key points to learn in this section

- The TNM system is part of staging cancer.
- Male breast cancer stages are described as 0 (zero) to IV (4).

## TNM staging system

Your doctor may use these words as part of your pathology report.

**T is for Tumor.** This describes the size and spread of the main tumor.

**N is for Nodes.** This describes if cancer has spread to nearby lymph nodes.

**M is for Metastases.** This explains the location of spread to other organs or to distant lymph nodes.

Your doctor will look at other factors that affect tumor growth as well. The T, N, and M status and factors such as hormonal influence are combined to “stage” the cancer. The overall stage of your cancer helps to find the best treatment options as well as which clinical trials may be offered to you.

## **Stage 0 (zero)**

The cancer has not invaded surrounding tissue. Cancer cells are found in the ducts (ductal carcinoma in situ) or lobules (lobular carcinoma in situ).

## **Stage I (one)**

In stage I, cancer has invaded surrounding normal tissue. This may be a small tumor size with no cancer in the lymph nodes.

## **Stage II (two)**

Stage II cancer is a tumor size of about 2 centimeters (2 ½ centimeters equal 1 inch). The cancer may or may not be found in the lymph nodes.

## **Stage III (three)**

Stage III cancer is a tumor about 5 centimeters (2 inches). Cancer may be found in lymph nodes, spread to nearby skin or chest muscles.

## **Stage IV (four)**

In stage IV, breast cancer has spread to other organs of the body, most often the bones, lungs, liver, or brain. The metastatic (meh-tah-stat-ic) tumor is the same type of cancer as the primary tumor. For example, if breast cancer spreads to the bone, the cancer cells in the bone are breast cancer cells. The disease is metastatic breast cancer, not bone cancer.

## **Inflammatory male breast cancer**

In inflammatory breast cancer, cancer cells have spread to the skin of the breast. The breast looks red and swollen and feels warm. The redness and warmth occur because the cancer cells block the lymph vessels in the skin. The skin of the breast may also show the dimpled appearance called peau d'orange (like the skin of an orange). There may not be any lumps in the breast that can be felt.

## **Recurrent male breast cancer**

Recurrent breast cancer is cancer that comes back after it has been treated. The cancer may come back in the breast, the chest muscle, or other parts of the body.



# Treatment option overview

## Key Points

- Five types of standard treatment are used to treat men with breast cancer:
  - Surgery
  - Chemotherapy
  - Hormone therapy
  - Radiation therapy
  - Targeted therapy
- Treatment may cause side effects.

## Clinical trials

Clinical trials are done to find out if new cancer treatments are safe and effective or better than the standard treatment.

People who take part in a clinical trial may receive:

- The standard treatment alone or
- The standard treatment plus the new treatment being studied

Taking part in a clinical trial helps improve the way cancer will be treated in the future. Even when clinical trials do not lead to effective new treatments, they often answer important questions and help move research forward.

Many of today's standard treatments for cancer are based on earlier clinical trials.

**Ask if there is a clinical trial right for you.**

Some clinical trials only include people who have not yet received treatment. Other trials test treatments for those people whose cancer has not gotten better. There are also clinical trials that test new ways to stop cancer from coming back or reduce the side effects of cancer treatment.

Clinical trials are taking place in many parts of the country. Information is available from the National Cancer Institute (NCI) website. Choosing the best cancer treatment should involve the patient, family, and health care team.

# Standard treatments

## Surgery

Your surgeon will discuss with you which surgeries may be best in your case. A common surgery for men with breast cancer is a modified radical mastectomy. This includes removal of:

- The breast
- Many of the lymph nodes under the arm
- The lining over the chest muscles
- Sometimes part of the chest muscles

Another type of surgery is breast-conserving surgery. This surgery removes the cancer but not the breast itself. A lumpectomy is done to remove the tumor (lump) and a small amount of normal tissue around it. In a small number of cases, more surgery may be needed.

## Chemotherapy

Chemotherapy uses drugs to stop the growth of cancer cells either by killing the cells or by stopping them from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream to reach cancer cells throughout the body. When chemotherapy is placed directly into the cerebrospinal fluid, an organ, or a body cavity (such as the abdomen); the drugs mainly affect cancer cells in those areas. The way the chemotherapy is given depends on the type and stage of the cancer being treated.

## **Hormone therapy**

Hormone therapy removes hormones or blocks their action and stops cancer cells from growing. Hormones are substances made by glands in the body and circulated in the bloodstream. Some hormones can cause certain cancers to grow. If tests show that the cancer cells have places where hormones can attach (receptors); drugs, surgery, or radiation therapy is used to reduce the production of hormones or block them from working.

## **Radiation therapy**

Radiation therapy uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. There are two types of radiation therapy:

- External radiation therapy uses a machine outside the body to send radiation through the skin toward the cancer.
- Internal radiation therapy uses a radioactive substance that is placed directly into or near the cancer.

The way the radiation therapy is given depends on the type and stage of the cancer being treated. External radiation therapy is usually used to treat male breast cancer.

## **Targeted therapy**

Targeted therapy uses drugs or other substances to identify and attack specific cancer cells without harming normal cells. Monoclonal antibody therapy is a type of targeted therapy used to treat breast cancer in men.

Monoclonal antibody therapy uses antibodies made in the laboratory from a single type of immune system cell. These antibodies can identify substances on cancer cells or normal substances that may help cancer cells grow. The antibodies attach to the substances and kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by IV. They may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells. Monoclonal antibodies are also used with chemotherapy after surgery to lower the risk that the cancer will come back.

### **Adjuvant therapy**

Therapy given after an operation when cancer cells can no longer be seen is called adjuvant therapy. Even if the doctor removes all the cancer that can be seen at the time of surgery, the patient may be given radiation therapy, chemotherapy, hormone therapy, and/or targeted therapy after surgery to try to kill any cancer cells that may be left.

- Node-negative: For men whose cancer has not spread to the lymph nodes, adjuvant therapy should be considered.
- Node-positive: For men whose cancer has spread to the lymph nodes, adjuvant therapy may include the following:
  - Chemotherapy plus tamoxifen (to block the effect of estrogen).
  - Other hormone therapy.
  - Targeted therapy with a monoclonal antibody.

These treatments appear to increase survival in men as they do in women. Response to hormone therapy depends on if the cancer cells have hormone receptors (proteins). Most breast cancers in men have these receptors. Male breast cancer patients usually have hormone therapy, but it can have many side effects, including hot flashes and impotence (not being able to have enough of an erection for sexual intercourse).

### **Treatment options for distant metastases**

Treatment for men whose cancer has spread to other parts of the body may be hormone therapy, chemotherapy, or both. Hormone therapy may include the following:

- Orchiectomy (the removal of the testicles to decrease the amount of hormone made).
- Luteinizing hormone-releasing hormone agonist with or without total androgen blockade (to decrease the amount of sex hormones made).
- Tamoxifen for cancer that is estrogen-receptor positive.
- Progestin (a female hormone made in a laboratory).
- Aromatase inhibitors (to decrease the amount of estrogen made).

Hormone therapies may be used one after the other. Standard chemotherapy may be used if hormone therapy does not work. Men usually respond to therapy in the same way as women who have breast cancer.

## **Treatment options for recurrent male breast cancer**

For men whose breast cancer has come back in a limited area after being treated, treatment is usually either:

- Surgery with chemotherapy or
- Radiation therapy with chemotherapy

## **To learn more about male breast cancer**

- **American Cancer Society**

<https://www.cancer.org/>

- **National Cancer Institute**

<https://www.cancer.gov/>

- **National Comprehensive Cancer Network  
Guidelines for Patients**

<https://www.nccn.org/patients/guidelines/cancers.aspx>

- **MedlinePlus**

<https://medlineplus.gov/>

# Common questions

What does my pathology report tell me?

What did the hormone receptor test show?

What did the HER2 test show?

Do any lymph nodes show signs of cancer?

What is the stage of my cancer?

What are my treatment choices? Is a clinical trial right for me?

What are my goals for treatment?

What kind of support services are available for me about finances, emotions, spiritual questions?



My Health Care Team	Contact Information
Navigator:	
Medical Oncologist:	
Pharmacy:	
Radiation Oncologist:	
Nutritionist/Dietitian:	
Surgeon:	
Primary Care Doctor:	
Counselor/Therapist:	
Other:	
Other:	

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