



Breast Cancer in Men

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 that examine the breasts 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.

Breast Cancer in Men

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 at any age. 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 breast cancer in men.
- **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 chance of getting a disease is called a risk factor. Having a risk factor does not always mean that you will get cancer. You may get cancer even if you do not have a risk factor because not all risk factors are known. Risk factors for breast cancer in men may include:

- Treatment with radiation therapy to your breast/chest.
- Having a disease linked to high levels of estrogen in the body, such as cirrhosis (liver disease) or Klinefelter syndrome (a genetic disorder).
- Having one or more female relatives who have had breast cancer.
- Inherited changes in genes that increase the risk for breast cancer such as BRCA2.

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 such as BRCA2, 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.

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

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

Signs of Breast Cancer

Lumps and other signs may be caused by breast cancer or by other health problems. Check with your doctor if you notice:

- A lump or thickening in or near the breast or in the underarm area.
- A change in the size or shape of the breast.
- A dimple or puckering in the skin of the breast.
- A nipple turned inward into the breast.
- Fluid from the nipple, especially if it's bloody.
- Scaly, red, or swollen skin on the breast, nipple, or areola (the dark area of skin around the nipple).
- Dimples in the breast that look like the skin of an orange, called peau d'orange.

Tests to Find and Diagnose Breast Cancer in Men

The following tests and procedures may be used:

Physical exam and history.

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.

Mammogram: An x-ray of the breast.



Ultrasound exam: A procedure in which 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.

MRI (magnetic resonance imaging): A procedure that uses a magnet, radio waves, and a computer to make a series of detailed pictures of both breasts. This procedure is also called nuclear magnetic resonance imaging (NMRI).

Biopsy: A procedure in which a sample of tissue is taken from the breast. A pathologist (a doctor who works in a lab) looks at the sample to see if the tissue is benign, cancerous, or atypical (a high risk for cancer). Four types of biopsies are used to check for breast cancer:

- **Excisional biopsy:** Removal of all of an area of concern.
- **Incisional biopsy:** Removal of part of an area of concern or a sample of tissue.
- **Core biopsy:** Using a biopsy device to remove several samples of tissue from an area of concern.
- **Fine-needle aspiration (FNA) biopsy:** Using a thin needle to remove some cells or fluid from an area of concern.

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 could spread through the body
- How well certain treatments might work
- How likely the cancer is to recur (come back) after treatment

Tests include the following:

Estrogen and progesterone receptor test: A test to check for estrogen and progesterone (hormones) receptors in cancer tissue. If estrogen and progesterone receptors are present, the cancer is called estrogen and/or progesterone receptor positive. The test results show whether treatment to block estrogen and progesterone may stop the cancer from growing.

Human epidermal growth factor type 2 receptor (HER2) test:

A laboratory test to measure how many HER2 genes there are and how much HER2 protein is made in a sample of tissue. If there are more HER2 genes or higher levels of HER2 protein than normal, the cancer is called HER2 positive. This type of breast cancer may grow more quickly and is more likely to spread to other parts of the body. The cancer may be treated with drugs that target the HER2 protein.

Multigene tests: Tests in which samples of tissue are studied to look at the activity of many genes at the same time. These tests may help predict whether cancer will spread to other parts of the body or recur (come back).

Based on these tests, breast cancer is described as one of the following types:

- Hormone receptor positive (estrogen and/or progesterone receptor positive) or hormone receptor negative (estrogen and/or progesterone receptor negative).
- HER2 positive or HER2 negative.
- Triple negative (estrogen receptor, progesterone receptor, and HER2 negative).

This information helps the doctor decide which treatments will work best for your cancer. The prognosis (chance of recovery) and treatment options depend on the following:

- The stage of the cancer (the size of the tumor and whether it is in the breast only or has spread to lymph nodes or other places in the body)
- The type of breast cancer
- Hormone receptor and HER2 status
- The tumor grade (how different the cancer cell looks than a normal cell and how fast the cells divide and grow)
- How likely the tumor is to recur (come back)
- Whether the cancer has just been diagnosed or has recurred (come back)

Staging

The process used to find out whether the cancer has spread within the breast or to other parts of the body is called **staging**. The information gathered from the staging process determines the stage of the disease. It is important to know the stage in order to plan treatment. The results of some of the tests used to diagnose breast cancer are also used to stage the disease.

The following tests and procedures also may be used in the staging process, though not every person needs every test:

- **Sentinel lymph node biopsy:** The removal of the sentinel lymph node or nodes during surgery. The sentinel lymph node or nodes are the first lymph nodes to receive lymph drainage from a tumor. These are the first lymph nodes 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 nodes to receive the substance or dye are removed. A pathologist views the tissue under a microscope to look for cancer cells. If no cancer cells are found, it may not be necessary to remove more lymph nodes.

- **Chest x-ray:** An x-ray of the organs and bones inside the chest. An x-ray is a type of energy beam that can go through the body and onto film, making a picture of areas inside the body.
- **CT scan (CAT scan):** A procedure that makes a series of detailed pictures of areas inside the body, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A special dye (contrast) may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.
- **Bone scan:** A procedure to check if there are rapidly dividing cells, such as cancer cells, in the bone. A very small amount of radioactive material is injected into a vein and travels through the bloodstream. The radioactive material collects in the bones with cancer and is detected by a scanner.
- **PET scan (positron emission tomography scan):** A procedure to find malignant tumor cells in the body. 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. Malignant tumor cells show up brighter in the picture because they are more active and take up more glucose than normal cells do.

When cancer spreads to another part of the body, it is called **metastasis**. Cancer cells break away from where they began (the primary tumor) and travel through the lymph system or blood.

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.

Staging Breast Cancer in Men

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.

The overall stage of your cancer helps to find the best treatment options as well as which clinical trials may be offered to you.

Breast Cancer Stages

Breast cancer staging tells if the disease has spread. Breast cancer stages are described as 0 (zero) to IV (four). The lower the number, the less the cancer has spread. The stage is based on the tumor and lymph nodes removed during surgery and on other tests.

Other factors in staging include:

- Estrogen Receptor (if present, called positive)
- Progesterone Receptor (if present, called positive)
- HER2 status (a protein, if more than normal, called positive)
- Triple negative (estrogen receptor, progesterone receptor, and HER2 negative)
- Grade (how different the cancer cell looks than a normal cell and how fast the cells divide and grow)
- Multi-gene testing may be included in the reporting. This will help to decide in some cases if chemotherapy is advised or not

Stage I (one)

Cancer has formed; divided into stages IA and IB.

Stage II (two)

Divided into stages IIA and IIB.

Stage III (three)

Divided into stages IIIA, IIIB, and IIIC.

Stage IV (four)

Also called metastatic; cancer has spread to other parts of the body, such as the bone, lung, brain, or liver.

Staging Factor	Results	Comments
Estrogen Receptor		
Progesterone receptor		
HER2		
Triple negative (estrogen receptor, progesterone receptor, HER2 negative)		
Grade		
Stage		
Multi-gene testing		

Inflammatory Breast Cancer

Inflammatory breast cancer means the cancer has spread to the skin of the breast. The breast looks red and swollen, and feels warm. The redness and warmth occur because cancer cells block the lymph vessels in the skin. The skin of the breast may appear dimpled, called *peau d'orange* (like the skin of an orange). There may not be any lumps in the breast that can be felt. Inflammatory breast cancer may be stage IIIB, stage IIIC, or stage IV.

Recurrent Breast Cancer

Recurrent breast cancer is cancer that has come back after it has been treated. The cancer may come back in the breast, in the skin of the breast, in the chest wall, in nearby lymph nodes, or distant sites.

Treatment Option Overview

Key Points to Learn in This Section

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.

Different types of treatment are available for patients with breast cancer. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials. These clinical trials are research studies meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the standard treatment, the new treatment may become the standard treatment. Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.

Five Types of Standard Treatment

Surgery

Surgery for men with breast cancer is usually a modified radical mastectomy, surgery to remove the whole breast that has cancer. This may include removal of the nipple, areola (the dark-colored skin around the nipple), and skin over the breast. Most of the lymph nodes under the arm are also removed.

Breast-conserving surgery, an operation to remove the cancer but not the breast itself, is also used for some men with breast cancer. A lumpectomy is done to remove the tumor (lump) and a small amount of normal tissue around it.

Chemotherapy

Chemotherapy is a cancer treatment that 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 and can reach cancer cells throughout the body (systemic chemotherapy). 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 (regional chemotherapy).

The way the chemotherapy is given depends on the type and stage of the cancer being treated. Systemic chemotherapy is used in the treatment of breast cancer.

When given before surgery, chemotherapy may shrink the tumor and reduce the amount of tissue that needs to be removed during surgery. Treatment given before surgery is called preoperative therapy or **neoadjuvant therapy**.

After the doctor removes all the cancer that can be found at the time of the surgery, some patients may be given radiation therapy, chemotherapy, targeted therapy, or hormone therapy to kill any cancer cells that may be left. Treatment given after the surgery, to lower the risk that the cancer will come back, is called postoperative therapy or **adjuvant therapy**.

Radiation Therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

There are two types of radiation therapy:

- **External radiation therapy** uses a machine outside the body to send radiation toward the cancer.
- **Internal radiation therapy** uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer.

Hormone Therapy

Hormone therapy is a cancer treatment that removes hormones or blocks their action and stops cancer cells from growing. Hormones are substances made by glands in the body and travel 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 may be used to reduce the production of hormones or block them from working.

Targeted Therapy

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells without harming normal cells. Monoclonal antibodies, tyrosine kinase inhibitors, cyclin-dependent kinase inhibitors, mammalian target of rapamycin (mTOR) inhibitors, and PARP inhibitors are types of targeted therapies used in the treatment of breast cancer.

Monoclonal antibodies are immune system proteins made in the laboratory. As a cancer treatment, these antibodies can attach to a specific target on cancer cells or other cells that may help cancer cells grow. The antibodies are able to then kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by infusion. They may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells.

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.

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.

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

Ask if there is a clinical trial right for you.

As Treatment Progresses

Some tests may be repeated to see how well your treatment is working. Decisions about whether to continue, stop, or change treatment may be based on the results of these tests.

A plan for your long term care will be discussed with your treatment team and shared with your primary care provider.

To Learn More About Breast Cancer in Men

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/>

John W. Nick Foundation, Inc.

888-222-4441

<http://www.johnwnickfoundation.org>

Men's Health Network

202-543-6461

<http://www.menshealthnetwork.org>

National Breast Cancer Coalition

800-622-2838

<http://www.stopbreastcancer.org>

Susan G. Komen for the Cure

800-I'M-AWARE (800-462-9273) 877-465-6636

<http://www.komen.org>

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 fertility, 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:	

