Treating Breast Cancer in Men

General information about treatment of breast cancer in men

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.

Treatments can be classified into broad groups, based on how they work and when they are used.

The main types of treatment for breast cancer are:

- Surgery
- Radiation therapy
- Chemotherapy
- Hormone therapy
- Targeted therapy
- Bone-directed therapy

It is 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 is anything you're not sure about. You can find some good questions to ask in the section What should you ask your doctor about breast cancer in men?

No matter which treatment is recommended, it helps to look into your health insurance situation before you start treatment. This can allow you to manage financial issues and avoid unpleasant surprises. For more, see Understanding Health Insurance.
Local versus systemic therapy

Local therapy is intended to treat a tumor at the site without affecting the rest of the body. Surgery and radiation therapy are examples of local therapies.

Systemic therapy refers to drugs, which can be given by mouth or directly into the bloodstream to reach cancer cells anywhere in the body. Chemotherapy, hormone therapy, and targeted therapy are systemic therapies.

Adjuvant and neoadjuvant 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. Doctors know that 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 (like chemotherapy, hormone therapy, and targeted therapy) and radiation can both be used as adjuvant therapy.

Not every patient needs adjuvant therapy. Whether or not you are likely to benefit from adjuvant therapy 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 a patient should be offered adjuvant therapy. Recommendations on adjuvant therapy are discussed in the sections on these treatments and in the section Treatment of breast cancer in men, by stage.

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.

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. Sometimes 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 are not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials. See Clinical Trials to learn more.

**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 dangerous.

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. See Complementary and Alternative Medicine to learn more.

**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.

*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**

The thought of surgery can be frightening. But having a better understanding of what to expect before, during, and after the operation can help. Depending on what surgery is planned, you may have an outpatient procedure (you go home the same day) or need admission to the hospital.

**What to expect**

**Before surgery:** Usually, you meet with your surgeon a few days before the operation to talk about the procedure. This is a good time to ask questions about the surgery and its possible risks. Be sure you understand what the extent of the surgery is likely to be and what you should expect afterward.

You will be asked to sign a consent form, giving the doctor permission to perform the surgery. Take your time and read the form carefully. Make sure you understand what you are signing. Sometimes, doctors give you material to look at before your appointment, so you will have plenty of time to read it and won't feel rushed.

You could be asked to donate blood before an operation such as a mastectomy, if the doctor thinks you might need a transfusion during or after the operation. You might feel more secure knowing that if you do need a transfusion, you will get your own blood back. But in the United States, a blood transfusion from another person is nearly as safe as receiving your own blood. Ask your doctor if you will possibly need a blood transfusion.

Your doctor will review your medical records and ask you about any medicines you are taking. This is to be sure that you are not taking anything that could interfere with the surgery. For example, if you are taking aspirin, arthritis medicine, or a blood-thinning medicine (like Coumadin), you may be asked to stop taking it about a week or two before the surgery. Be sure you tell your doctor about everything you take, including over-the-counter drugs, vitamins, and herbal supplements. Usually, you will be told not to eat or drink anything for 8 to 12 hours before the surgery, especially if you are going to have general anesthesia (will be "asleep" during surgery).

You will also meet with the anesthesiologist or nurse anesthetist, the health professional who will give you the anesthesia during your surgery. The type of anesthesia used depends largely on the kind of surgery being done and your medical history.
It is also a good idea to **quit smoking** before surgery. Using tobacco tightens (constricts) the blood vessels and reduces the supply of nutrients and oxygen to tissues. As with any surgery, smoking can delay healing. This can cause more noticeable scars and a longer recovery time. Patients who smoke also have a higher chance of the cancer coming back later.

**During Surgery:** General anesthesia is usually given whenever the surgery is a mastectomy or an axillary node dissection, and is most often used during breast-conserving surgeries as well. You will have an IV (intravenous) line put in (usually into a vein in your arm), which the medical team will use to give medicines that may be needed during the surgery. Usually you will be hooked up to an electrocardiogram (EKG) machine and have a blood pressure cuff on your arm, so your heart rhythm and blood pressure can be checked during the surgery.

The length of the operation depends on the type of surgery being done. A mastectomy with axillary lymph node dissection often takes from 2 to 3 hours.

**What to expect after surgery:** After your surgery, you will be taken to the recovery room, where you will stay until you are awake and your condition and vital signs (blood pressure, pulse, and breathing) are stable.

How long you stay in the hospital depends on the surgery being performed, your overall state of health and whether you have any other medical problems, how well you do during surgery, and how you feel after surgery. Decisions about the length of your stay should be made by you and your doctor and not dictated by what your insurance will pay, but it is important to check your insurance coverage before surgery.

Often, men having a mastectomy and/or axillary lymph node dissection stay in the hospital overnight and then go home. However, it is becoming more common for the surgery to be done on an outpatient basis, with a short-stay in an observation unit before going home. Your doctor might arrange for a home care nurse to visit you at home to monitor your progress and provide care.

You will have a dressing (bandage) over the surgery site that may or may not snugly wrap around your chest. You may have one or more drains (plastic or rubber tubes) coming out from the breast or underarm area to remove blood and lymph fluid that collects during the healing process. Your health care team will teach you how to care for the drains, which may include emptying and measuring the fluid and identifying problems the doctor or nurse needs to know about. Most drains stay in place for 1 or 2 weeks. When drainage has decreased to about 30 cc (1 fluid ounce) each day, the drain will usually be removed.
Doctors rarely put the arm on the side of the surgery in a sling to hold it in place. Most doctors will want you to start moving that arm soon after surgery so that it won't get stiff.

Ask your health care team how to care for the surgery site and arm. Written instructions about care after surgery are usually given to you and your caregivers. These instructions should include:

- The care of the surgical wound and dressing
- How to monitor drainage and take care of the drains
- How to recognize signs of infection
- Bathing and showering after surgery
- When to call the doctor or nurse
- When to begin using the arm and how to do arm exercises to prevent stiffness
- What to eat and not to eat
- Use of medicines, including pain medicines and possibly antibiotics
- Any activity restrictions
- What to expect regarding sensations or numbness in the breast and arm
- When to see your doctor for a follow-up appointment

Most patients see their surgeon within 7 to 14 days after the surgery. Your surgeon should explain the results of your pathology report at this visit and talk to you about the need for further treatment. If you will need more treatment, you will be referred to a radiation oncologist and/or a medical oncologist.

### Types of breast surgery

Most men with breast cancer have some type of surgery. This usually is an operation called a mastectomy. For most cancers, a procedure to remove one or more axillary (armpit) lymph nodes is also done.

#### Mastectomy

A mastectomy removes all of the breast tissue, sometimes along with other nearby tissues.

- 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**

This type of surgery is sometimes called partial (or segmental) mastectomy. It is also sometimes called lumpectomy or quadrantectomy. In breast-conserving surgery (BCS), 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 not used as often in men, because removing most male breast cancers requires removing almost all of the breast tissue, since the male breast usually has only a small amount of tissue beneath the nipple. And because men have less breast tissue, cancers in their breasts are more likely to have reached the nipple or skin when they are still small, which requires more extensive surgery. But BCS may be an option in some cases if the tumor is not thought to have reached the nipple. If this type of surgery 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).

**Lymph node surgery**

To determine if the breast cancer has spread to axillary (underarm) lymph nodes, one or more of these lymph nodes may be removed and looked at under the microscope. This is an important part of staging and determining treatment and outcomes. When the lymph nodes are affected, there is an increased likelihood that cancer cells have spread through the bloodstream to other parts of the body.

**Axillary lymph node dissection (ALND)**

In this procedure, anywhere from about 10 to 40 (though usually less than 20) lymph nodes are removed from the area under the arm (axilla) and checked for cancer spread. ALND is usually done at the same time as the mastectomy or lumpectomy, but it can be
done in a second operation. This was once the most common way to check for breast
cancer spread to nearby lymph nodes, and it is still done in some cases. For example,
an ALND may be done if a previous biopsy such as a needle biopsy or sentinel lymph
node biopsy (see below) has found cancer cells in one or more of the underarm lymph
nodes.

**Sentinel lymph node biopsy (SLNB)**

Although ALND is a safe operation and has low rates of most side effects, removing
many lymph nodes increases the chance that the patient will have lymphedema after
surgery (this is discussed below). To lower the risk of lymphedema, the doctors may
use a sentinel lymph node biopsy (SLNB) procedure to check the lymph nodes for
cancer. This procedure tells the doctor if cancer has spread to lymph nodes without
removing as many of them first.

In this procedure 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 by the pathologist.

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.

Based on some recent studies in women, patients having breast-conserving surgery
whose sentinel lymph nodes contain small amounts of cancer cells may be able to skip
having a full ALND as long as they are going to have radiation. But because this hasn’t
been studied well in patients who have had mastectomy, it isn’t clear that skipping the
ALND would be safe for them. At this time, a full ALND is a standard part of the
treatment for patients having a mastectomy who have a positive sentinel lymph node
biopsy.
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.

The main 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 remain and build up.

This side effect has not been studied well in men, but in studies of women up to 30% of those who have a full ALND develop lymphedema. It also occurs in up to 3% of those who have a sentinel lymph node biopsy. 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. Ways to help prevent or reduce the effects of lymphedema are discussed in the section "What happens after treatment for breast cancer in men?" 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 lymphedema after breast surgery, see our document *For People With Lymphedema*.

You may also have short- or long-term limitations in moving 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). 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.

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
is more common after an ALND than SLNB. Symptoms may 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.

**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. Studies have shown that 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. The classic symptoms of PMPS are pain and tingling in the chest wall, armpit, and/or arm. Pain may also be felt in the shoulder or surgical scar. Other common complaints include numbness, shooting or pricking pain, or unbearable itching. Most patients with PMPS say that their symptoms are not severe.

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. 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.

It is important to tell your doctor if you are having any pain. 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.

PMPS can be treated. Although opioids or narcotics are medicines commonly used to treat pain, they don’t always work well for nerve pain. But there are medicines and treatments that do work for this kind of pain. Be honest with your doctor if you are in pain to make sure you get the pain control you need. For more on pain management, see our document [Guide to Controlling Cancer Pain](#).

- References
- See all references for Breast Cancer in Men

Last Medical Review: October 10, 2014 Last Revised: January 26, 2016
Radiation Therapy for Breast Cancer in Men

Radiation therapy uses high-energy rays or particles to destroy cancer cells. Radiation to the breast is often given after breast-conserving surgery to help lower the chance that the cancer will come back in the breast or nearby lymph nodes. This 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. Radiation may still be needed after mastectomy if the cancer is larger than 5 cm (2 inches) in size, or if cancer is found in the lymph nodes.

Radiation is also used to treat cancer that has spread, such as to the bones or brain.

When given after surgery, radiation therapy is usually not started until the tissues have been able to heal for about a month. If chemotherapy is to be given as well, radiation therapy is usually delayed until chemotherapy is complete.

External beam radiation

External beam radiation is the usual type of radiation therapy for men with breast cancer. The radiation is focused from a machine outside the body on the area affected by the cancer. This usually includes the chest wall where the breast was removed and, depending on the size and extent of the cancer, may include the underarm area, supraclavicular lymph nodes (nodes above the collarbone) and internal mammary lymph nodes (nodes beneath the breast bone in the center of the chest).

Before your treatments start, the radiation team will take careful measurements to determine 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 that they will use as a guide to focus the radiation on the right area. You might want to ask your health care team if these marks will be permanent.

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

Breast radiation is most often given 5 days a week (Monday thru Friday) for about 6 to 7
weeks. In studies of women with early breast cancer that had not spread to lymph nodes, giving radiation over 3 weeks has been shown to be just as effective as giving it over 5 to 6 weeks. This, known as hypofractionated radiation therapy, has not been studied in men (because breast cancer is so rare in men).

Possible side effects of radiation therapy: The main short-term side effects of radiation therapy are fatigue and sunburn-like skin changes. Your skin may peel. Your health care team may advise you to avoid exposing the treated skin to the sun because it may make the skin changes worse. Most skin changes go away in a few months.

Radiation to the breast/chest can sometimes damage some of the nerves to the arm. This, called brachial plexopathy, can lead to numbness, pain, and weakness in the shoulder, arm, and hand.

Radiation to the axilla (underarm area) can cause abnormal swelling in the arm. This is called lymphedema, and is more common if underarm lymph nodes have been surgically removed. 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 patients. 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 is the development of another type of cancer called angiosarcoma. These rare cancers can grow and spread quickly.

Brachytherapy

Brachytherapy, also known as internal radiation, is another way to deliver radiation therapy. Brachytherapy is rarely used to treat breast cancer in men because it is only used in someone who has had breast conserving surgery (BCS). Instead of aiming radiation beams from outside the body, radioactive seeds or pellets are placed into a device in the breast tissue near the place where the cancer had been. It is often used as a way to add an extra boost of radiation to the tumor site (along with external radiation to the whole breast), although it may also be used by itself (see below). Tumor size, location, and other factors may limit who can get brachytherapy. It is also important to realize that studies of brachytherapy for breast cancer have only included women, so there is no way to know if it would work as well in men.

There are different types of brachytherapy.
**Intracavitary brachytherapy**: This is the most common way brachytherapy is given to breast cancer patients and is considered a form of accelerated partial breast irradiation. A device is put into the space left from BCS and is left in place until treatment is complete. There are several different devices that can be used: MammoSite®, SAVI®, Axxent®, and Contura®. They all go into the breast as a small catheter (tube). The end of the device inside the breast is then expanded so that it stays securely in the right place for the entire treatment. The other end of the catheter sticks out of the breast.

For each treatment, one or more sources of radiation (often pellets) is placed down through the tube and into the device for a short time and then removed. Treatments are given twice a day for 5 days as an outpatient. After the last treatment, the device is collapsed down again and removed.

Early studies of intracavitary brachytherapy as the only radiation after BCS had promising results, but didn’t directly compare this technique with standard whole breast external beam radiation.

One study comparing long-term outcomes between intracavitary brachytherapy and whole breast radiation after BCS found that women treated with brachytherapy were twice as likely to go on to get a mastectomy of the treated breast (most likely because cancer was found in that breast). The overall risk was still low, however, with about 4% of the women in the brachytherapy group needing mastectomy versus only 2% of the women in the whole breast radiation group.

This study raises questions about whether irradiating only the area around the cancer will reduce the chances of the cancer coming back as much as giving radiation to the whole breast. More studies comparing the 2 approaches are needed to see if brachytherapy should be used instead of whole breast radiation.

Intracavitary brachytherapy can also have side effects, including redness, bruising, breast pain, infection, and a break-down of an area of fat tissue in the breast. As with whole breast radiation, the ribs can weaken and fracture.

**Interstitial brachytherapy**: In this approach, several small, hollow tubes (catheters) are inserted into the breast around the area where the tumor was removed and are left in place for several days. Radioactive pellets are inserted into the catheters for short periods of time each day and then removed. This method of brachytherapy has been around longer (and has more evidence to support it), but it is not used as much anymore.

For more information about radiation therapy, see the [Radiation Therapy](#) section of our website.
Chemotherapy for Breast Cancer in Men

Chemotherapy (chemo) is treatment with cancer-fighting drugs that may be given intravenously (injected into a vein) or by mouth. The drugs travel through the bloodstream to reach cancer cells in most parts of the body. Chemo is given in cycles, with each treatment period followed by a recovery period.

When is chemo used?

Chemo may be recommended in several different situations.

**After surgery (adjuvant chemotherapy):** When therapy is given to patients who have no evidence of cancer after surgery, it is called **adjuvant therapy**. Surgery is used to remove all of the cancer that can be seen, but adjuvant therapy is used to kill any cancer cells that might be left behind or spread but can't be seen, even on imaging tests. If these cells are allowed to grow, they can establish new tumors in other places in the body. Adjuvant therapy after surgery to remove breast cancer lowers the risk of breast cancer coming back. Radiation and hormone therapy can also be used as adjuvant treatments. Adjuvant chemo is often given over 3 to 6 months.

**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. In terms of survival and the cancer coming back, there is no difference between getting chemo before or after surgery. But neoadjuvant chemo does have two benefits. First, chemo may shrink the tumor so that it can be removed with less extensive surgery. That is why neoadjuvant chemo is often used to treat cancers that are too big to be surgically removed at the time of diagnosis (called **locally advanced**). Also, by giving chemo before the tumor is removed, doctors can better see how the cancer responds. If the first set of drugs does not shrink the tumor, your doctor will know that other drugs are needed.
Chemotherapy for advanced breast cancer: Chemo can also be used as the main treatment for men whose cancer has 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 whether the cancer shrinks, how much it shrinks, and how well you tolerate treatment.

How is chemotherapy given?

For early-stage breast cancer, combinations of drugs are often used. There are many combinations in use, and it's not clear that any single combination is clearly the best. Clinical studies continue to compare today's most effective treatments against something that may be better.

The most common chemo drugs used for early breast cancer include the anthracyclines (such as doxorubicin/Adriamycin® and epirubicin/Ellence®) and the taxanes (such as paclitaxel/Taxol® and docetaxel/Taxotere®). These may be used in combination with certain other drugs, like fluorouracil (5-FU), cyclophosphamide (Cytoxan®), and carboplatin.

For cancers that are HER2 positive, the targeted drug trastuzumab (Herceptin®) is often given with one of the taxanes. Pertuzumab (Perjeta®) can also be combined with trastuzumab and docetaxel for HER2 positive cancers if the chemo is given before surgery. (See the section on targeted therapy for more information about these drugs.)

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 too few white blood cells)
- Easy bruising or bleeding (from too few blood platelets)
- Fatigue (from too few red blood cells or other reasons)

These side effects are usually short-term and go away after treatment is finished. It's important to let your health care team know if you have any side effects, as 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. Your cancer care team will give you information about the possible side effects of the specific drugs you are getting.

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.
Heart damage: Doxorubicin, epirubicin, and some other drugs may cause permanent heart damage (called cardiomyopathy). The risk of this occurring depends on how much of the drug is given, and is highest if the drug is used for a long time or in high doses. Doctors watch closely for this side effect. Most doctors check the patient's heart function (with a test like a MUGA or echocardiogram) 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 decline, treatment with these drugs is stopped. In some patients, heart damage takes a long time to develop. They may not show signs of poor heart function until months or years after treatment ends. Heart damage from these drugs happens more often if other drugs can cause heart damage, such as trastuzumab and other drugs that target HER2 are used as well, 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 may help. These symptoms gradually get better when the drug is stopped or the dose is decreased. 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. This syndrome can also occur when the drug 5-FU is given as an IV infusion over several days (not a common way to treat breast cancer).

Chemo brain: 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. There is very little research on chemo brain in men, but there is no reason to expect any differences. For more information, see our document Chemo Brain.

Increased risk of leukemia: Very rarely, certain chemo drugs can permanently damage the bone marrow, leading to a disease called myelodysplastic syndrome or even acute myeloid leukemia, a life-threatening 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. They often still feel body pain or achiness and a mild loss of physical functioning. They may only mention these very subtle changes when questioned closely.

Fatigue 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, which may be helped by counseling and/or medicines.

For more information about chemotherapy, see the Chemotherapy section of our website.

- References

See all references for Breast Cancer in Men

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

Hormone Therapy for Breast Cancer in Men

Hormone therapy is the use of hormones or drugs or other treatments that affect hormones in treating cancer. Hormone therapy is another form of systemic therapy. Like chemotherapy, hormone therapy can be used as an adjuvant therapy to help reduce the risk of cancer recurrence after surgery, or as neoadjuvant treatment. It is also used to treat cancer that has come back after treatment (recurred) or has spread.

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

**Tamoxifen and toremifene (Fareston®)**

These anti-estrogen drugs work by temporarily blocking estrogen receptors on breast cancer cells, preventing estrogen from binding to them and spurring their growth. They are taken daily as a pill.

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.

The most common side effects include fatigue, hot flashes, and sexual problems. Blood clots, which usually form in deep veins of the leg (called deep venous thrombosis or DVT), are a rare but serious side effect of these drugs. In some cases, a piece of clot may break off and end up causing a blockage in the lungs (called a 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.

Tamoxifen has rarely been associated with strokes. These mostly have been seen in post-menopausal women, and the risk in men is not clear. Still, 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®). They work 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 releasing hormone analog to turn off hormone production by the testicles (these drugs are discussed later on). These drugs are generally used if tamoxifen stops working. They are also sometimes used as the first line of hormone therapy instead of tamoxifen, but this has been linked to poorer outcomes. The main side effects of these drugs are thinning of the bones and joint and muscle pain.

**Fulvestrant (Faslodex®)**

Fulvestrant is a drug that also acts on the estrogen receptor, but instead of blocking it, this drug eliminates it. In postmenopausal women, this drug is often effective even if the breast cancer is no longer responding to tamoxifen. In one small study of men with advanced breast cancer who had previously been treated with at least one other hormone drug, some of the men saw their tumors shrink with fulvestrant. It is given by injection every 2 weeks for a month, then monthly. The most common side effects are hot flashes, mild nausea, fatigue, and pain at the injection site.

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

LHRH analogs such as leuprolide (Lupron®) and goserelin (Zoladex®) affect the pituitary gland. In men they 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 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 treatment was once quite common, but it is now used less often because of new non-surgical approaches to lowering androgen levels, such as the LHRH analogs discussed previously.

**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.

- References
  See all references for Breast Cancer in Men

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

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy.

**Targeted Therapy for Breast Cancer in Men**

As researchers have learned more about the gene changes in cells that cause cancer, they have been able to develop newer drugs that specifically target these changes. These targeted drugs work differently from standard chemotherapy (chemo) drugs. They often have different (and less severe) side effects. 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
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. Breast cancers with too much of this protein are called HER2 positive. They tend to grow and spread more aggressively without special treatment. A number of drugs have been developed that target this protein.

**Trastuzumab (Herceptin):** Trastuzumab is a monoclonal antibody, a man-made version of a very 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 is used as a part of adjuvant (or neoadjuvant) therapy for early stage HER2-positive cancers to reduce the risk of the cancer coming back. It is given first with chemo, then by itself to complete a year of treatment.

Trastuzumab is also used to treat HER2-positive advanced breast cancers that return after chemo or continue to grow during chemo. Often, trastuzumab is combined with chemo. If the cancer gets worse while on trastuzumab and chemo, often the trastuzumab is continued and the chemo is changed.

Compared with chemo drugs, the side effects of trastuzumab are relatively mild. These occur rarely and 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. People having these symptoms
should call their doctor right away.

**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 given as an infusion into a vein 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 tests of 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** (hand-foot syndrome was discussed in the section “Chemotherapy for breast cancer in men”). 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.
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. For more information about hormone therapy for men with breast cancer see Hormone Therapy for Breast Cancer in Men. There are 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.

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 promotes their growth and division. 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 anastrazole (or the cancer started growing shortly after stopping treatment with these drugs). It has also been studied for use with other hormone therapy drugs. It may help hormone drugs work better in men who have hormone-receptor positive breast cancer, but this has not been studied.
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.

More information about monoclonal antibodies can be found in Immunotherapy.

General information about targeted therapy can be found in Targeted Therapy.

- References

See all references for Breast Cancer in Men

Last Medical Review: October 10, 2014 Last Revised: October 24, 2017

Bone-directed Therapy for Breast Cancer in Men

When breast cancer spreads to the bones, it can cause problems like pain, fractures (breaks), and high blood calcium levels. Drugs like bisphosphonates and denosumab can lower the risks of these problems happening, and so are often used to treat patients with breast cancer that has spread to bones.

Bisphosphonates

Bisphosphonates are drugs that are used to help strengthen bones and, reduce the risk of fractures, and pain in bones that have been weakened by metastatic breast cancer. The most common bisphosphonates used in breast cancer patients are pamidronate (Aredia®) and zoledronic acid (Zometa®). They are given intravenously (IV).
Bisphosphonates may also help against bone thinning (osteoporosis) from treatment with aromatase inhibitors and LHRH analogs (see “Hormone therapy for breast cancer in men”). There are a number of medicines, including some oral forms of bisphosphonates, to treat loss of bone strength when it is not caused by cancer spread to the bones.

Bisphosphonates can have side effects, including flu-like symptoms and bone pain. They can also lead to kidney problems, so patients with poor kidney function may not be able to be treated with these drugs.

A rare but very distressing side effect of bisphosphonates is damage (osteonecrosis) in the jaw bones or ONJ. It can be triggered by having a tooth removed while getting treated with the bisphosphonate. ONJ often appears as an open sore in the jaw that won’t heal. It can lead to loss of teeth or infections of the jaw bone.

Doctors don’t know why this happens or the best way to treat it, other than to stop taking bisphosphonates. Maintaining good oral hygiene by flossing, brushing, making sure that dentures fit properly, and having regular dental checkups may help prevent this. Your cancer doctor will likely recommend that you have a dental checkup and have any tooth or jaw problems treated before you start taking a bisphosphonate.

**Denosumab**

Denosumab (Xgeva®, Prolia®) is another drug that can help lower the risk of fractures and other problems caused by breast cancer that has spread to the bone. It works differently from bisphosphonates. In studies of patients with breast cancer that had spread to the bone, it seemed to help prevent problems like fractures (breaks) better than zoledronic acid (Zometa). It also can help even after bisphosphonates stop working.

In patients with cancer spread to bones, this drug is injected under the skin every 4 weeks. Side effects include low blood levels of calcium and phosphate, as well as the jaw bone problem known as osteonecrosis of the jaw. This drug does not seem to affect the kidneys, so it is safe to take if you have kidney problems.

Denosumab can also be used to strengthen weak bones if you are given treatments that lower androgen levels. This use has been studied in men being treated for prostate cancer, but it isn’t likely to be studied for this use in male breast cancer since this disease is so rare. When given for this purpose, denosumab is given less often (usually every 6 months).
Treatment of Breast Cancer in Men, by Stage

Because there have been few clinical trials 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.

Stage 0 (ductal carcinoma in situ)

Ductal carcinoma in situ (DCIS) is considered a pre-cancer because it has not spread to lymph nodes or distant sites. 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. If the DCIS is estrogen receptor-positive, tamoxifen might be given as well.

Because sometimes DCIS can contain an area 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, 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. Although this is usually done by mastectomy, breast-conserving surgery such as a lumpectomy may
also be an option. But because men have very little breast tissue, usually the whole breast (including the nipple) needs to be removed. 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** and/or **chemotherapy** (chemo) may be recommended after surgery as adjuvant 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 trastuzumab (Herceptin).

**Stage II**

These cancers are larger and/or have spread to a few nearby lymph nodes. One option is to treat first with chemo and/or hormone therapy before surgery (neoadjuvant therapy). For HER2-positive cancers, neoadjuvant therapy will likely include trastuzumab and may also include pertuzumab (Perjeta). Then, as with stage I cancers, mastectomy is usually done. 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 later (recurrence).

Adjuvant hormone therapy with tamoxifen is usually recommended for hormone receptor-positive tumors. If neoadjuvant chemo wasn’t given, adjuvant chemo will likely be also recommended. Choices about chemo may be influenced by a man’s age and general state of health. Men with HER2-positive cancer will probably also receive trastuzumab.

**Stage III**
This stage includes more advanced tumors (large or with growth into nearby skin or muscle) and cancers with more lymph node involvement (either more underarm lymph nodes containing cancer or lymph nodes inside the chest containing cancer).

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 followed by surgery, usually mastectomy. If the lymph nodes aren't known to contain cancer before surgery, a sentinel lymph node biopsy (SLNB) may be done to check the lymph nodes for cancer. Most patients with this stage, though, need a full axillary lymph node dissection (ALND). Radiation therapy is usually recommended after surgery. Adjuvant hormone therapy with tamoxifen is given for at least 5 years after surgery if the tumor is hormone receptor-positive. Men with HER2-positive cancers will probably also receive trastuzumab to complete a year of treatment.

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 systemic chemo. Trastuzumab is given with chemo if the tumor is HER2 positive, and then it is continued to complete a 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

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, even the eyes.

Surgery and/or radiation may be useful in some situations, but systemic therapy is the main treatment. Depending on many factors, this may be hormone therapy, chemo, targeted therapy, or some combination of these treatments. Targeted therapy options include trastuzumab, trastuzumab plus pertuzumab (Perjeta), ado-trastuzumab emtansine (Kadcyla), and lapatinib.

All of the systemic therapies given for breast cancer — hormone therapy, chemo, and targeted therapies — have possible side effects, which were described in previous sections. Your doctor will explain to you the benefits and risks of these treatments before prescribing them.

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
• To prevent bone fractures
• When an area of cancer spread is pressing on the spinal cord
• To treat a blockage in the liver
• To relieve pain or other symptoms
• When the cancer has spread to the brain

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). Most doctors recommend bisphosphonates or denosumab along with calcium and vitamin D for all patients whose breast cancer has spread to their bones. For more information, see Bone Metastasis.

**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 want to continue getting treatment.

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.

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.

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, patients in otherwise good health are encouraged to think about taking part in clinical trials of other promising treatments. You can also read about living with later-stage cancer in Advanced Cancer.

Recurrent cancer

Cancer is called recurrent when it comes back after treatment. Recurrence can be local (in or near the same place it started) or distant (spread to organs such as the lungs or bones). Rarely, breast cancer comes back in nearby lymph nodes. This is called regional recurrence.

**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, cure may still be possible. Treatment depends on what other treatments have been given already. If the initial treatment was mastectomy, recurrence is treated by removing the tumor whenever possible. This may be followed by radiation therapy. If the area has already been treated with radiation, it may not be possible to give more radiation to the area without severely damaging nearby normal tissues.

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

**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 to the area.

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

**Distant recurrence**: Men who have a recurrence in organs 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.

Should your cancer come back, the Understanding Recurrence section on our website can provide you with more general information on how to manage and cope with this phase of your treatment.
What Should You Ask Your Doctor About Breast Cancer in Men?

It is important for you to have frank, open discussions with your cancer care team. You should ask questions, no matter how minor you think they are. Some questions to consider:

- What type of breast cancer do I have? Does this affect my treatment options and prognosis (outlook)?
- Has my cancer spread to lymph nodes or internal organs?
- What is the stage of my cancer and what does that mean in my case?
- Will I need to have other tests before we can decide on treatment?
- 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?
- What are the chances my cancer might come back? What will we do if that happens?
- What is my prognosis?
- What type of follow-up will I need after treatment?

Be sure to write down any questions you have that are not on this list. For instance, you might want information about recovery times so that you can plan your work schedule. (You can read more about this in Working During Cancer Treatment.) Or you might want to ask about second opinions.