

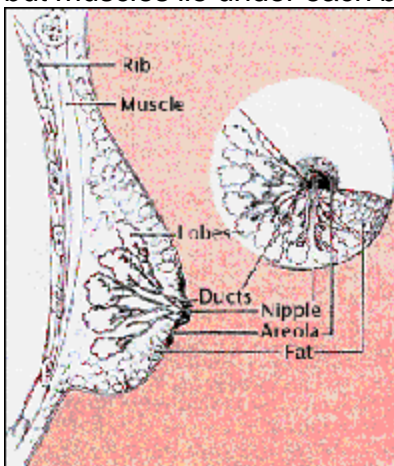
## What is Breast Cancer?

Cancer is a group of many different diseases that have some important things in common. They all arise in cells, the body's basic unit of life. To understand different types of cancer, it is helpful to know about normal cells and what happens when they become cancerous. The body is made up of many types of cells. Normally, cells grow and divide to produce more cells only when the body needs them. This orderly process helps keep the body healthy. Sometimes cells keep dividing when new cells are not needed. These cells may form a mass of extra tissue called a growth or tumor. Tumors can be benign or malignant.

- Benign tumors are not cancer. They can usually be removed, and in most cases, they don't come back. Most important, the cells in benign tumors do not invade other tissues and do not spread to other parts of the body. Benign breast tumors are not a threat to life.
- Malignant tumors are cancer. Cells in these tumors can invade and damage nearby tissues and organs. Also, cancer cells can break away from a malignant tumor and enter the bloodstream or lymphatic system. That is how breast cancer spreads and forms secondary tumors in other parts of the body. The spread of cancer is called metastasis.

## The Breasts

Each breast has 15 to 20 overlapping sections called lobes. Within each lobe are many smaller lobules which end in dozens of tiny bulbs that can produce milk. The lobes, lobules, and bulbs are all linked by thin tubes called ducts. These ducts lead to the nipple in the center of a dark area of skin called the areola. Fat fills the spaces around the lobules and ducts. There are no muscles in the breast, but muscles lie under each breast and cover the ribs.



Each breast also contains blood vessels and vessels that carry colorless fluid called lymph. The lymph vessels lead to small bean-shaped organs called lymph nodes. Clusters of lymph nodes are found near the breast in the axilla (under the

arm), above the collarbone, and in the chest. Lymph nodes are also found in many other parts of the body.

### **Types of Breast Cancer**

The most common type of breast cancer begins in the lining of the ducts and is called ductal carcinoma. Another type, called lobular carcinoma, arises in the lobules. When breast cancer spreads outside the breast, cancer cells are often found in the lymph nodes under the arm (axillary lymph nodes). If the cancer has reached these nodes, it may mean that cancer cells have spread to other parts of the body other lymph nodes and other organs, such as the bones, liver, or lungs - via the lymphatic system or the bloodstream. Cancer that spreads is the same disease and has the same name as the original (primary) cancer. When breast cancer spreads, it is called metastatic breast cancer, even though the secondary tumor is in another organ. Doctors sometimes call this "distant" disease.

### **Risk Factors for Breast Cancer**

The risk of breast cancer increases gradually as a woman gets older. This disease is uncommon in women under the age of 35. All women age 40 and older are at risk for breast cancer. However, most breast cancers occur in women over the age of 50, and the risk is especially high for women over age 60. Research has shown that the following conditions place a woman at increased risk for breast cancer:

- Personal history of breast cancer. Women who have had breast cancer face an increased risk of getting breast cancer again.
- Genetic alterations. Changes in certain genes (BRCA1, BRCA2, and others) make women more susceptible to breast cancer. In families in which many women have had the disease, gene testing can show whether a woman has specific genetic changes known to increase the susceptibility to breast cancer. Doctors may suggest ways to try to delay or prevent breast cancer, or improve the detection of breast cancer in women who have the genetic alterations.
- Family history. A woman's risk for developing breast cancer increases if her mother, sister, daughter, or two or more other close relatives, such as cousins, have a history of breast cancer, especially at a young age.
- Certain breast changes. Having a diagnosis of atypical hyperplasia or lobular carcinoma in situ (LCIS) or having had two or more breast biopsy biopsies for other benign conditions may increase a woman's risk for developing cancer.

Other factors associated with an increased risk for breast cancer include:

- Breast density. Women age 45 and older whose mammogram show at least 75 percent dense tissue are at increased risk. Dense breasts contain many glands and ligaments, which makes breast tumors difficult to "see,"

and the dense tissue itself is associated with an increased chance of developing breast cancer.

- Radiation therapy. Women whose breasts were exposed to radiation during their childhood, especially those who were treated with radiation for Hodgkin's disease, are at an increased risk for developing breast cancer throughout their lives. Studies show that the younger a woman was when she received her treatment, the higher her risk for developing breast cancer later in life.
- Late childbearing. Women who had their first child after the age of 30 have a greater chance of developing breast cancer than women who had their children at a younger age.

Also at a somewhat increased risk for developing breast cancer are women who started menstruating at an early age (before age 12), experienced menopause late (after age 55), never had children, or took hormone replacement therapy or birth control pills for long periods of time. Each of these factors increases the amount of time a woman's body is exposed to estrogen. The longer this exposure, the more likely she is to develop breast cancer.

In most cases, doctors cannot explain why a woman develops breast cancer. Studies show that most women who develop breast cancer have none of the risk factor listed above, other than the risk that comes with growing older. Also, most women with known risk factors do not get breast cancer. Scientists are conducting research into the causes of breast cancer to learn more about risk factors and ways of preventing this disease.

## **Early Detection**

When breast cancer is found and treated early, the chances for survival are better. Women can take an active part in the early detection of breast cancer by having regular screening mammograms and clinical breast exams (breast exams performed by health professionals). Some women also perform breast self-exams.

A screening mammogram is the best tool available for finding breast cancer early, before symptoms appear. A mammogram is a special kind of x-ray that is different from a chest x-ray or x-rays of other parts of the body. Screening mammograms are used to look for breast changes in women who have no signs of breast cancer. Mammograms can often detect breast cancer before it can be felt. Also, a mammogram can show small deposits of calcium in the breast. Although most calcium deposits are benign, a cluster of very tiny specks of calcium (called microcalcifications) may be an early sign of cancer.

Although mammograms are the best way to find breast cancer early, they do have some limitations. A mammogram may miss some cancers that are present (false negative) or may find things that turn out not to be cancer (false positive). And detecting a tumor early does not guarantee that a woman's life will be saved.

Some fast-growing cancers may already have spread to other parts of the body before being detected.

Still, regularly scheduled screening mammograms, together with clinical breast exams, offer the best chance of finding and treating breast cancer early. Studies show that mammograms reduce the risk of dying from breast cancer. The National Cancer Institute recommends that women in their forties and older have mammograms every 1 to 2 years.

Women should talk with their doctor about factors that can increase the risk for breast cancer. Women of any age who are at higher risk for this disease should ask their doctor when to begin and how often to have screening mammograms and breast exams.

Women should perform regular monthly breast self-exams to check for any changes in their breasts. When doing a breast self-exam, it's important to remember that each woman's breasts are different, and that changes can occur because of aging, the menstrual cycle, pregnancy, menopause, or taking birth control pills or other hormones. It is normal for the breast to feel a little lumpy and uneven. Also, it is common for a woman's breasts to be swollen and tender right before or during her menstrual period. Remember that for women in their forties and older, a monthly breast self-exam is not a substitute for regularly scheduled screening mammograms and clinical breast exams by a health professional.

## **Benign Breast Lumps and Other Benign Breast Changes**

Women commonly experience various kinds of breast lumps and other breast changes. These changes include those that normally occur during the menstrual cycle, during pregnancy, and with aging. From the time a girl begins to menstruate, her breasts undergo regular changes each month. Many women experience swelling, tenderness, and pain before and sometimes during their periods. At the same time, one or more lumps or a feeling of increased lumpiness may develop because of extra fluid collecting in the breast tissue. These lumps normally go away by the end of a woman's period. Eventually, about half of all women will experience symptoms such as lumps, pain, or nipple discharge. Generally, these symptoms disappear with menopause.

Normal structures inside the breasts can sometimes make them feel lumpy. Such lumpiness may be especially noticeable in women who are thin or who have small breasts. Most breast lumps and other changes are not cancer. Among breast conditions for which biopsies are often done, the results show that some 80 percent are not cancer, however only a doctor can tell for sure whether a condition is malignant (cancer) or benign (not cancer).

Some studies show that the chances of developing benign breast changes are higher for women who have never had children, have irregular menstrual cycles or have a family history of breast cancer. Benign breast changes are less

common among women who take birth control pills or who are overweight. Because they usually involve the glandular tissues of the breast, benign breast conditions are more of a problem for women of childbearing age, whose breasts are more glandular. There are several types of benign breast changes and conditions.

Some benign breast conditions cause a discharge from the nipple. Since the breast is a gland, secretions from the nipple of a mature woman are not unusual, nor even necessarily a sign of disease. For example, small amounts of discharge commonly occur in women taking birth control pills or certain other medications, including sedatives and tranquilizers. The discharge may be clear or milky. A bloody discharge, may indicate a benign or malignant tumor within the breast ducts. Any discharge should be mentioned to the doctor. The doctor will take a sample of the discharge and send it to a laboratory to be analyzed. Benign sticky discharges are treated chiefly by keeping the nipple clean. A discharge caused by infection may require antibiotics.

Generalized breast lumpiness is one common type of benign breast change. Benign breast conditions also include several types of distinct, solitary (single) lumps. Such lumps, which can appear at any time, may be large or small, soft or rubbery, fluid-filled or solid. Generalized breast lumpiness is known by several names, including fibrocystic changes, fibrocystic disease, and benign breast disease. Such lumpiness is most often felt in the area around the nipple and areola and in the upper outer part of the breast. During pregnancy, the milk-producing glands become swollen and the breasts may feel lumpier than usual. It can be difficult for a woman to examine her breasts when she is pregnant, but she should continue to do so; although very uncommon, breast cancer has been diagnosed during pregnancy. Lumpiness may become more obvious as a woman approaches middle age and the milk-producing glandular tissue of her breasts increasingly gives way to soft, fatty tissue. Unless a woman is taking replacement hormones, this type of lumpiness generally disappears after menopause.

Cysts are fluid-filled sacs. They occur most often in women 35 to 50 years of age, and cysts often enlarge and become tender and painful just before a woman's menstrual period. Cysts are usually found in both breasts. Some cysts are too small to feel, while others may be several inches across. Cysts show up clearly on ultrasound, an exam using sound waves to produce a picture of tissues inside the breast. Cysts are usually handled by observation or by withdrawing fluid with a needle. This procedure is called a fine-needle aspiration.

Fibroadenomas are benign tumors made up of both structural (fibro) and glandular (adenoma) tissues. Usually, these solid, round lumps are painless and most often found by women themselves. Fibroadenomas feel rubbery and can be moved around easily. They are the most common types of tumors in women in their late teens and early twenties, and they occur twice as often in African-American women as they do in other American women. Although fibroadenomas

do not become malignant, they can enlarge with pregnancy and breast-feeding. Fibroadenomas have a typically benign appearance on mammography (breast x-rays), and they can sometimes be diagnosed with fine-needle aspiration. Most surgeons believe that it is a good idea to remove fibroadenomas to make certain they are benign.

Fat necrosis refers to painless, round, firm lumps formed by damaged and disintegrating fatty tissue. This condition typically occurs in obese women with very large breasts. Fat necrosis often develops in response to a bruise or blow to the breast, even though a woman may not remember having been injured. Sometimes, the skin around the lumps looks red or bruised. Because fat necrosis can easily be mistaken for cancer, lumps are surgically removed so the tissue can be checked under a microscope.

Sclerosing adenosis is a benign condition involving the excessive growth of tissues in the breast's lobules. It frequently causes breast pain. Usually the changes are microscopic. However, adenosis can produce lumps, and it can show up on mammography, often as calcifications, small deposits of calcium in tissue. Because adenosis is often difficult to distinguish from cancer, doctors usually perform a surgical biopsy to diagnose and treat this condition.

Intraductal papilloma is a small wartlike growth that projects into breast ducts near the nipple. Solitary intraductal papillomas usually affect women nearing menopause. As any slight bump or bruise around the nipple can cause the papilloma to bleed, this condition is a common source of bloody or sticky discharge from the nipple. If the discharge becomes bothersome, the diseased duct can be removed surgically without damaging the appearance of the breast. Multiple intraductal papillomas, in contrast, are more common in younger women. They often occur in both breasts and are more likely to be associated with a lump than with nipple discharge. Multiple intraductal papillomas, or any papillomas associated with a lump, need to be removed.

Infection and/or inflammation characterize some benign breast conditions. Mastitis, sometimes called postpartum mastitis, is an infection most often seen in women who are breast-feeding. A duct might become blocked, causing milk to pool and allowing for infection by bacteria and inflammation. The breast appears red and feels warm, tender and lumpy. In its early stages, mastitis can be cured by antibiotics. More advanced stages may require surgical drainage or excision of the infected tissue.

Mammary duct ectasia is a disease of women nearing menopause. Ducts beneath the nipple become inflamed and can become clogged. Mammary duct ectasia can be painful, and it can produce a thick and sticky discharge that is gray to green in color. Treatment consists of warm compresses, antibiotics and, if necessary, surgery to remove the duct.

Studies show that certain very specific types of microscopic changes put a woman at higher risk for breast cancer. These changes feature excessive cell growth, or hyperplasia. It is important to understand, however, that most benign breast changes and conditions do not increase a woman's risk of getting cancer. Approximately 70 percent of the women who have a biopsy showing a benign condition have no evidence of hyperplasia and are at little or no increased risk of developing breast cancer. About 25 percent of benign breast biopsies show signs of hyperplasia, including conditions such as intraductal papilloma and sclerosing adenosis. In these cases, the risk of developing breast cancer is slightly increased. The remaining 5 percent of benign breast biopsies reveal both excessive cell growth (hyperplasia) and cells that are abnormal (atypia). A diagnosis of atypical hyperplasia, as it is called, moderately increases breast cancer risk.

### **Mammograms. Not just Once, but for a Lifetime**

#### **What is a mammogram and why should I have one?**

A mammogram is an x-ray picture of the breast. It can find breast cancer that is too small for you or your doctor to feel. Studies show that if you are in your forties or older, having a mammogram every 1 to 2 years could save your life.

#### **How do I know if I need a mammogram?**

Talk with your doctor about your chances of getting breast cancer. Your doctor can help you decide when you should start having mammograms and how often you should have them.

#### **Why do I need a mammogram every 1 to 2 years?**

As you get older, your chances of getting breast cancer get higher. Cancer can show up at any time -- so one mammogram is not enough. Decide on a plan with your doctor and follow it for the rest of your life.

#### **How is a mammogram done?**

Mammograms are quick and easy. You simply stand in front of an x-ray machine. The person who takes the x-rays places your breast between two plastic plates. The plates press your breast and make it flat. This may be uncomfortable for a few seconds, but it helps get a clear picture. You will have x-rays taken of each breast. A mammogram takes only a few seconds.

#### **Where can I get a mammogram?**

To find out where you can get a mammogram: Ask your doctor

### **Seven Steps to Breast Health**

1. Get regular exams.
2. Choose a quality facility.
3. Schedule the mammogram for when your breasts will be the least tender.
4. Give and get important information when you schedule the mammograms.

5. Know what to expect.
6. Come prepared.
7. Follow up on your results.

1. Get regular exams. This is the most important way you can protect your breast health.

- Get a breast exam from your doctor when you get your regular physical exam.
- Get a mammogram as often as your doctor recommends. Ask your doctor when to schedule your next mammogram.
- Check your breasts each month. Your doctor can show you how.

These three exams can help you and your doctor learn what is normal for your breasts and what may be signs of problems.

Call your doctor if you notice:

- A lump or thickening of the breast.
- A discharge from the nipple that stains your bra or bedclothes.
- Skin changes in the breast.

These changes may be normal, but you should always have them checked as soon as possible.

2. Choose a quality facility.

Many hospitals, clinics, and imaging or x-ray centers perform mammography. Mobile units (often vans) offer screening at shopping malls, community centers, and offices. All of these facilities must meet the same quality standards. Your doctor may refer you to a mammography facility. Or you may select the one that is most convenient for you. Make sure the mammography facility you choose is certified by the Food and Drug Administration (FDA) unless it is a Veterans Health Administration (VHA) facility. A law, called the Mammography Quality Standards Act, requires all mammography facilities except those of VHA to be FDA certified beginning October 1, 1994. To be certified, facilities must meet standards for the equipment they use, the people who work there, and the records they keep. VHA has its own high-quality mammography program, similar to FDA's. If the facility is not FDA certified, get your mammogram in a facility that is certified. To find a certified mammography facility, ask your doctor.

3. Schedule the mammogram for when your breasts will be the least tender. If you have sensitive breasts, try having your mammogram at a time of month when your breasts will be least tender. Try to avoid the week right before your period. This will help to lessen discomfort.

4. Give and get important information when you schedule the mammograms.

When you call for an appointment, be ready to provide information the mammography facility needs to know. The facility may wait until your appointment to ask some questions, so it's a good idea also to take the information with you when you have your mammogram. The information requested may include:

- Your name, address, and phone number.
- Your age.
- Name, address, and phone number of any facility where you have had a mammogram.
- Any breast disease in your family.
- Any current problems with your breasts, and how long you have had the problems.
- Past problems with your breasts, breast biopsies, or breast surgeries.
- Whether you have breast implants.
- Other personal information:
  - Whether you are pregnant or nursing.
  - The timing of your menstrual cycle or when menopause began.
  - Anything that might make it harder to do a mammogram (unusually large breasts or inability to stand, for example).
- Name, address, and phone number of your doctor.

Here are some questions for you to ask before your appointment:

- How and when you will find out the results of the exam.
- What you need to do to prepare for the exam.

If you have any other questions before your mammogram, be sure to call your doctor or the mammography facility.

#### 5. Know what to expect.

Understanding what happens during a mammogram will help reduce any anxious feelings you might have. It is important to know that only a small amount of radiation is used in mammography. When you have a mammogram, you stand in front of a special x-ray machine. The radiologic technologist lifts each breast and places it on a platform that holds the x-ray film. The platform can be raised or lowered to match your height.

The breast is then gradually pressed against the platform by a specially designed clear plastic plate. Some pressure is needed for a few seconds to make sure the x-rays show as much of the breast as possible. This pressure is not harmful to

your breast. In fact, flattening the breast lowers the x-ray dose needed. Studies show that most women do not find a mammogram painful for the short time needed to take the picture. Try to relax. If the pressure becomes painful, you can tell the radiologic technologist to stop. If there is an area of your breast that appears to have a problem, the radiologist or radiologic technologist may examine the breast.

#### 6. Come prepared.

- Wear a two-piece outfit so you will have to remove only your top.
- Don't use deodorant, talcum powder, or lotion under your arms or near the breasts that day. These products can show up on the x-ray picture.
- Bring the name, address, and phone number of your doctor or other health care provider.
- Bring a list of the places and dates of mammograms, biopsies, or other breast treatment you have had before.
- Ask the facilities where you had mammograms before to release them to you, and bring them with you if possible. Your new mammogram can be compared with the earlier ones to see if there have been any changes.

It also may be helpful to:

- Bring a list of any questions you may have about mammography.
- If you think you may have trouble hearing or understanding the instructions, consider bringing a friend or family member to help you.
- If you are worried about discomfort, you may want to take a mild over-the-counter pain reliever about an hour before your mammogram. This will not affect the mammogram.

If there is something you do not understand, ask. And keep asking until all your questions are answered.

#### 7. Follow up on your results.

Learning the results of your mammogram is very important.

Chances are your mammogram will be normal. But do *not* assume that your mammogram is normal just because you have not received the results. If you have not received your screening results within 10 days, ask your doctor or call the mammography facility. If your screening mammogram shows anything unusual, talk to your doctor as soon as possible about what you should do next. Your doctor may schedule a diagnostic mammogram, or you can schedule it yourself-but have it done soon. Discuss the results with your doctor.

When a diagnostic mammogram shows something abnormal, the radiologist may recommend another type of exam. A biopsy is a way to obtain a small piece of breast tissue for study under a microscope. Sometimes a biopsy is needed

because of something your doctor found in checking your breast even though the mammogram appears normal.

Whenever a mammogram uncovers a problem or a need to check something further:

- Make sure you understand what you need to do next.
- Always get results of any test that you have.
- Ask questions about your results if something is hard to understand.

If you do not have a doctor or other health care provider, you will need to find one if you have an abnormal mammogram. Ask the mammography facility to help you find a doctor. Then make an appointment right away so you can discuss your results and what should be done next.

### **Symptoms**

Early breast cancer usually does not cause pain. In fact, when breast cancer first develops, there may be no symptoms at all. But as the cancer grows, it can cause changes that women should watch for:

- A lump or thickening in or near the breast or in the underarm area;
- A change in the size or shape of the breast;
- Nipple discharge or tenderness, or the nipple pulled back (inversion) into the breast;
- Ridges or pitting of the breast (the skin looks like the skin of an orange)
- A change in the way the skin of the breast, areola, or nipple looks or feels (for example, warm, swollen, red, or scaly).

A woman should see her doctor about any symptoms like these. Most often, they are not cancer, but it's important to check with the doctor so that any problems can be diagnosed and treated as early as possible.

### **Diagnosis**

An abnormal area on a mammogram, a lump, or other changes in the breast can be caused by cancer or by other, less serious problems. To find out the cause of any of these signs or symptoms, a woman's doctor does a careful physical exam and asks about her personal and family medical history. In addition to checking general signs of health, the doctor may do one or more of the breast exams described on the following page.

- **Palpation.** The doctor can tell a lot about a lump (its size, its texture, and whether it moves easily) by palpation, carefully feeling the lump and the tissue around it. Benign lumps often feel different from cancerous ones.

- **Mammography** X-rays of the breast can give the doctor important information about a breast lump. If an area on the mammogram looks suspicious or is not clear, additional mammograms may be needed.
- **Ultrasonography** . Using high-frequency sound waves, ultrasonography can often show whether a lump is solid or filled with fluid. This exam may be used along with mammography.

Based on these exams, the doctor may decide that no further tests are needed and no treatment is necessary. (In such cases, the doctor may need to check the woman regularly to watch for any changes.) Often, however, fluid or tissue must be removed from the breast to make a diagnosis. A woman's doctor may refer her for further evaluation to a surgeon or other health care professional who has experience with breast diseases. These doctors may perform:

- **Fine needle aspiration** . A thin needle is used to remove fluid from a breast lump. This procedure may show whether a lump is a fluid-filled cyst (not cancer) or a solid mass (which may or may not be cancer). Clear fluid removed from a cyst may not need to be checked by a lab.
- **Needle biopsy** . Using special techniques, tissue can be removed with a needle from an area that is suspicious on a mammogram but cannot be felt. Tissue removed in a needle biopsy goes to a lab to be checked by a pathologist for cancer cells.
- **Surgical biopsy**. The surgeon cuts out part or all of a lump or suspicious area. A pathologist examines the tissue under a microscope to check for cancer cells.

When a woman needs a biopsy, these are some questions she may want to ask her doctor:

- What type of biopsy will I have? Why?
- How long will it take?
- Will I be awake?
- Will it hurt?
- How soon will I know the results?
- If I do have cancer, who will talk with me about treatment? When?

### **When Cancer Is Found**

When cancer is found, the pathologist can tell what kind of cancer it is (whether it began in a duct or a lobule) and whether it is invasive cancer (has invaded nearby tissues in the breast). Special lab tests of the tissue help the doctor learn more about the cancer. For example, hormone receptor test (estrogen and progesterone receptor tests) can help predict whether the cancer is sensitive to hormones. Positive test results mean hormones help the cancer grow, and the

cancer is likely to respond to hormonal therapy. Other lab tests are sometimes done to help the doctor predict whether the cancer is likely to grow slowly or quickly. The doctor may order x-rays and blood tests. The doctor may also do special exams of the bones, liver, or lungs because breast cancer may spread to these areas. If the diagnosis is cancer, the patient may want to ask these questions:

- What kind of breast cancer do I have? Is it invasive?
- What did the hormone receptor test show? What other lab tests were done on the tumor tissue, and what did they show?
- How will this information help in deciding what type of treatment or further tests to recommend?

The patient's doctor may refer her to other doctors who specialize in treating cancer. Treatment generally begins within a few weeks after the diagnosis. There will be time for the woman to talk with the doctor about her treatment choices and /or to get a second opinion.

## **Treatment**

Through continuing research into new treatment methods, women now have more treatment options and hope for survival than ever before. The treatment options for each woman depend on the size and location of the tumor in her breast, the results of lab tests (including hormone receptor tests), and the stage (or extent) of the disease. To develop a treatment plan to fit each patient's needs, the doctor also considers a woman's age and menopausal status, her general health, and the size of her breasts.

Many women want to learn all they can about their disease and their treatment choices so that they can take an active part in decisions about their medical care. They are likely to have many questions and concerns about their treatment options. The doctor is the best person to answer questions about treatment for a particular patient: what her treatment choices are, how successful her treatment is expected to be, and how much it is likely to cost. Most patients also want to know how they will look after treatment and whether they will have to change their normal activities. Also, the patient may want to talk with her doctor about taking part in a clinical trial, a research study involving people, of new treatment methods.

Many patients find it helpful to make a list of questions before seeing the doctor. To make it easier to remember what the doctor says, patients may take notes or ask whether they may use a tape recorder. Some patients also find that it helps to have a family member or friend with them when they see the doctor--to take part in the discussion, to take notes, or just to listen. Here are some questions a woman may want to ask the doctor before treatment begins:

- What are my treatment choices?

- What are the expected benefits of each kind of treatment?
- What are the risks and possible side effects of each treatment?
- Are new treatments under study? Would a clinical trial be appropriate for me?

There is a lot to learn about breast cancer and its treatment. Patients should not feel that they need to ask all their questions or understand all the answers at once. They will have many other chances to ask the doctor to explain things that are not clear and to ask for more information.

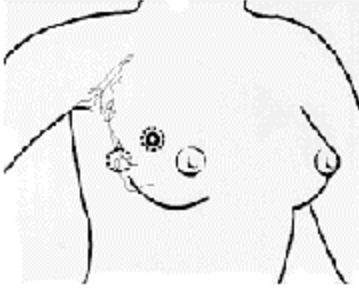
## **Planning Treatment**

Before starting treatment, the patient might want a second opinion about the diagnosis and the treatment plan. Some insurance companies require a second opinion; others may cover a second opinion if the patient requests it. It may take a week or two to arrange to see another doctor. Studies show that a brief delay (up to several weeks) between biopsy and treatment does not make breast cancer treatment less effective.

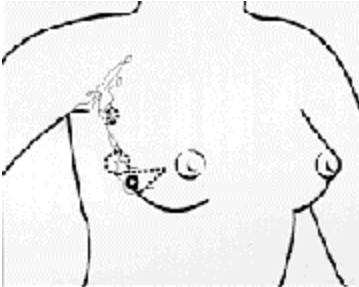
## **Methods of Treatment**

Methods of treatment for breast cancer are local therapy or systemic. Local treatments are used to remove, destroy, or control the cancer cells in a specific area. Surgery and radiation therapy are local treatments. Systemic treatments are used to destroy or control cancer cells throughout the body. Chemotherapy and hormonal therapy are systemic treatments. A patient may have just one form of treatment or a combination. Different forms of treatment may be given at the same time or one after another.

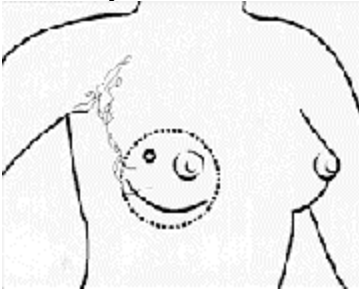
Surgery is the most common treatment for breast cancer. Several types of surgery may be used. The doctor can explain each of them in detail, discuss and compare the benefits and risks of each type, and describe how each will affect the patient's appearance. An operation to remove the breast (or as much of the breast as possible) is a mastectomy. Breast reconstruction is often an option at the same time as the mastectomy or later on. An operation to remove the cancer but not the breast is called breast-sparing surgery or breast-conserving surgery. Lumpectomy and segmental mastectomy segmental mastectomy (also called partial mastectomy) are types of breast-sparing surgery. They usually are followed by radiation therapy to destroy any cancer cells that may remain in the area. In most cases, the surgeon also removes lymph nodes under the arm to help determine whether cancer cells have entered the lymphatic system.



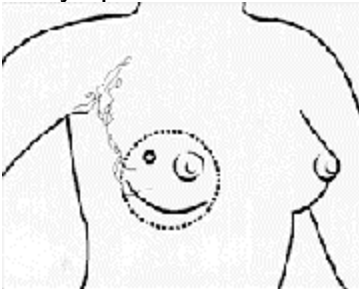
In lumpectomy, the surgeon removes the breast cancer and some normal tissue around it. Often, some of the lymph nodes under the arm are removed.



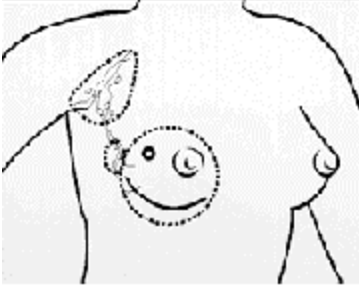
In segmental mastectomy, the surgeon removes the cancer and a larger area of normal breast tissue around it. Occasionally, some of the lining over the chest muscles below the tumor is removed as well. Some of the lymph nodes under the arm may also be removed.



In total (simple) mastectomy, the surgeon removes the whole breast. Some of the lymph nodes under the arm may also be removed.



In modified radical mastectomy, the surgeon removes the whole breast, most of the lymph nodes under the arm, and often the lining over the chest muscles. The smaller of the two chest muscles is also taken out to help in removing the lymph nodes.



In radical mastectomy (also called Halsted radical mastectomy), the surgeon removes the breast, the chest muscles, all of the lymph nodes under the arm, and some additional fat and skin. For many years, this operation was considered the standard one for women with breast cancer, but it is very rarely used today and only in cases of advanced cancer in which the cancer has spread to the chest muscles.

Breast reconstruction (surgery to rebuild a breast's shape) is often an option after mastectomy. Women considering reconstruction should discuss this with a plastic surgeon **before** having a mastectomy.

Here are some questions a woman may want to ask her doctor before having surgery:

- What kinds of surgery can I consider?
- Which operation do you recommend for me?
- Is breast-sparing surgery followed by radiation therapy an option for me?
- Do I need my lymph nodes removed? How many? Why?
- How will I feel after the operation?
- Where will the scars be? What will they look like?
- If I decide to have plastic surgery to rebuild my breast, how and when can that be done? Can you suggest a plastic surgeon for me to contact?
- Will I have to do special exercises?
- When can I get back to my normal activities?

Radiation therapy (also called radiotherapy) is the use of high-energy rays to kill cancer cells and stop them from growing. The rays may come from radioactive material outside the body and be directed at the breast by a machine (external radiation). The radiation can also come from radioactive material placed directly in the breast in thin plastic tubes (implant radiation). Some women receive both kinds of radiation therapy.

For external radiation therapy, patients go to the hospital or clinic each day. When this therapy follows breast-sparing surgery, the treatments are given 5

days a week for 5 to 6 weeks. At the end of that time, an extra "boost" of radiation is sometimes given to the place where the tumor was removed. The boost may be either external or internal (using an implant). Patients may stay in the hospital for a short time for implant radiation.

Radiation therapy, alone or with chemotherapy or hormone therapy, is sometimes used before surgery to destroy cancer cells and shrink tumors. This approach is most often used in cases in which the breast tumor is large or not easily removed by surgery. Before having radiation therapy, a patient may want to ask her doctor these questions:

- Why do I need this treatment?
- What are the risks and side effects of this treatment?
- When will the treatments begin? When will they end?
- How will I feel during therapy?
- What can I do to take care of myself during therapy?
- Can I continue my normal activities?
- How will my breast look afterward?
- What are the chances of the tumor coming back in my breast?

Chemotherapy is the use of drugs to kill cancer cells. Chemotherapy for breast cancer is usually a combination of drugs. The drugs may be given by mouth or by injection. Either way, chemotherapy is a systemic therapy because the drugs enter the bloodstream and travel throughout the body. Chemotherapy is given in cycles: a treatment period followed by a recovery period, then another treatment, and so on. Most patients have chemotherapy in an outpatient part of the hospital, at the doctor's office, or at home. Depending on which drugs are given and the woman's general health, however, she may need to stay in the hospital during her treatment.

Hormonal therapy is used to keep cancer cells from getting the hormones they need to grow. This treatment may include reducing the amount and/or effects of estrogen with medications or, less commonly, by surgical removal of the ovaries. Like chemotherapy, hormonal therapy is a systemic treatment that it can affect cancer cells throughout the body. Patients may want to ask these questions about chemotherapy or hormonal therapy:

- Why do I need this treatment?
- What drugs will I be taking? What will they do?
- Will I have side effects? What can I do about them?

- If I need hormonal treatment, which would be better for me, drugs or an operation?
- How long will I be on this treatment?

## Treatment Choices

Treatment decisions are complex. They are often affected by the judgment of the doctor and by the desires of the patient. A patient's treatment options depend on a number of factors. These factors include her age and menopausal status; her general health; the size, location, and stage of the tumor; whether the doctor can feel lymph nodes under her arm; and the size of her breast. Certain features of the tumor cells (such as whether they depend on hormones to grow) are also considered. The most important factor is the stage of the disease. The stage is based on the size of the tumor and whether the cancer has spread. The following section contains brief descriptions of the stages of breast cancer and the treatments most often used for each stage.

- Stage 0 is sometimes called noninvasive carcinoma or carcinoma in situ. Lobular carcinoma in situ, or LCIS, refers to abnormal cells in the lining of a lobule. These abnormal cells seldom become invasive cancer. However, their presence is a sign that a woman has an increased risk of developing breast cancer. This risk of cancer is increased for both breasts. Some women with LCIS may choose to take a medication called tamoxifen to try to prevent breast cancer, or they may take part in studies of other promising new preventive treatments. Others may not receive any treatment, but return to the doctor regularly for checkups. Still others may have surgery to remove both breasts to try to prevent cancer from developing. (In most cases, removal of underarm lymph nodes is not necessary.)
  - Ductal carcinoma in situ, also called intraductal carcinoma or DCIS, refers to cancer cells in an area of abnormal tissue in the lining of a duct that have not invaded the surrounding breast tissue. If DCIS lesions are left untreated, over time cancer cells may break through the duct and spread to nearby tissue, becoming an invasive breast cancer.
  - Patients with DCIS may have a mastectomy or may have breast-sparing surgery followed by radiation therapy. Underarm lymph nodes are not usually removed. Women with DCIS may want to talk with their doctors about the possible usefulness of treatment with tamoxifen.
- Stage I and stage II are early stages of breast cancer, but the cancer has invaded nearby tissue.
  - Stage I - means that cancer cells have not spread beyond the breast and the tumor is no more than about an inch across.

- Stage II - means one of the following: the tumor in the breast is less than 1 inch across and the cancer has spread to the lymph nodes under the arm; the tumor is between 1 and 2 inches with or without spread to the lymph nodes under the arm; or the tumor is larger than 2 inches but has not spread to the lymph nodes under the arm.

Women with early stage breast cancer may have breast-sparing surgery followed by radiation therapy as their primary local treatment, or they may have a mastectomy, with or without breast reconstruction (plastic surgery) to rebuild the breast. Sometimes radiation therapy is also given to the chest wall after mastectomy. These approaches are equally effective in treating early stage breast cancer. The choice of breast-sparing surgery or mastectomy depends mostly on the size and location of the tumor, the size of the woman's breast, certain features of the cancer, and how the woman feels about preserving her breast. With either approach, lymph nodes under the arm usually are removed.

Many women with stage I and most with stage II breast cancer have chemotherapy and/or hormonal therapy in addition to surgery or surgery and radiation therapy. This added treatment is called adjuvant therapy. It is given to try to destroy any remaining cancer cells and prevent the cancer from recurring, or coming back.

- Stage III is also called locally advanced cancer. The tumor in the breast is large (more than 2 inches across), the cancer is extensive in the underarm lymph nodes, or it has spread to other lymph nodes or tissues near the breast. Inflammatory breast cancer is a type of locally advanced breast cancer. Patients with stage III breast cancer usually have both local treatment to remove or destroy the cancer in the breast and systemic treatment to stop the disease from spreading. The local treatment may be surgery and/or radiation therapy to the breast and underarm. The systemic treatment may be chemotherapy, hormonal therapy, or both; it may be given before or after the local treatment.
- Stage IV is metastatic cancer. The cancer has spread from the breast to other parts of the body. Women who have stage IV breast cancer receive chemotherapy and/or hormonal therapy to destroy cancer cells and control the disease. They may have surgery or radiation therapy to control the cancer in the breast. Radiation may also be useful to control tumors in other parts of the body.
- Recurrent cancer means the disease has come back in spite of the initial treatment. Even when a tumor in the breast seems to have been completely removed or destroyed, the disease sometimes returns because undetected cancer cells remained in the area after treatment or because the disease had already spread before treatment. Most recurrences appear within the first 2 or 3 years after treatment, but breast

cancer can recur many years later. Cancer that returns only in the area of the surgery is called a local recurrence. If the disease returns in another part of the body, it is called metastatic breast cancer. The patient may have one type of treatment or a combination of treatments.

### **Side Effects of Treatment**

It is hard to limit the effects of cancer treatment so that only cancer cells are removed or destroyed. Because healthy cells and tissues may also be damaged, treatment often causes unwanted side effects.

The side effects of cancer treatment are different for each person, and they may even be different from one treatment to the next. Doctors try to plan treatment to keep problems to a minimum. They also watch patients carefully so that they can help with any problems that occur.

### **Surgery**

Surgery causes short-term pain and tenderness in the area of the operation, so women may need to talk with their doctor about which method of pain control would be appropriate. Any kind of surgery also carries a risk of infection, poor wound healing, bleeding, or a reaction to the anesthesia used in surgery. Women who experience any of these problems should tell their doctor or nurse right away.

Removal of a breast can cause a woman's weight to shift and be out of balance--especially if she has large breasts. This imbalance can cause discomfort in a woman's neck and back. Also, the skin in the breast area may be tight, and the muscles of the arm and shoulder may feel stiff. After a mastectomy, some women have some permanent loss of strength in these muscles, but for most women, reduced strength and limited movement are temporary. The doctor, nurse, or physical therapist can recommend exercises to help a woman regain movement and strength in her arm and shoulder.

Because nerves may be injured or cut during surgery, a woman may have numbness and tingling in the chest, underarm, shoulder, and arm. These feelings usually go away within a few weeks or months, but some women may have permanent numbness. Removing the lymph nodes under the arm slows the flow of lymph. In some women, this fluid builds up in the arm and hand and causes swelling (lymphedema ). Women need to protect the arm and hand on the treated side from injury, even long after surgery. They should ask the doctor how to handle any cuts, scratches, insect bites, or other injuries that may occur. Also, they should contact the doctor if an infection develops in the arm or hand.

### **Radiation Therapy**

The radiation oncologist will explain the possible side effects of radiation therapy for breast cancer--including uncommon side effects that may involve the heart, lungs, and ribs. One of the common side effects is fatigue, especially in the later weeks of treatment and for sometime afterward. Resting is important, but doctors

usually advise their patients to try to stay reasonably active, matching their activities to their energy level. It is also common for the skin in the treated area to become red, dry, tender, and itchy. Toward the end of treatment, the skin may become moist and "weepy." Exposing this area to air as much as possible will help the skin heal. Because bras and some types of clothing may rub the skin and cause irritation, patients may want to wear loose-fitting cotton clothes. Good skin care is important at this time, and patients should check with their doctor before using any deodorants, lotions, or creams on the treated area. These effects of radiation therapy on the skin are temporary, and the area gradually heals once treatment is over. However, there may be a permanent change in the color of the skin.

For most women, the breast will look and feel about the same after radiation therapy. Occasionally, the treated breast may be firmer. Also, it may be larger (due to fluid buildup) or smaller (because of tissue changes) than it was before. For some women, the breast skin is more sensitive after radiation treatment; for others, it is less sensitive.

## **Chemotherapy**

The side effects of chemotherapy depend mainly on the drugs the patient receives. As with other types of treatment, side effects vary from person to person. In general, anticancer drugs affect rapidly dividing cells. These include blood cells, which fight infection, cause the blood to clot, and carry oxygen to all parts of the body. When blood cells are affected by anticancer drugs, patients are more likely to get infections, bruise or bleed easily, and may have less energy during treatment and for some time afterward. Cells in hair follicles and cells that line the digestive tract also divide rapidly. As a result of chemotherapy, patients may lose their hair and may have other side effects, such as loss of appetite, nausea, vomiting, diarrhea, or mouth sores.

Many of these side effects can now be controlled, thanks to improvements in antiemetics (drugs that reduce or prevent vomiting) and other medications. Side effects generally are short-term problems. They gradually go away during the recovery part of the chemotherapy cycle or after the treatment is over.

With modern chemotherapy, long-term side effects are quite rare, but there have been cases in which the heart is weakened, and second cancers such as leukemia (cancer of the blood cells) have occurred. Also, some anticancer drugs can damage the ovaries. If the ovaries fail to produce hormones, the woman may have symptoms of menopause, such as hot flashes and vaginal dryness. Her periods may become irregular or may stop, and she may not be able to become pregnant. However, some women may still be able to get pregnant during treatment.

Because the effects of chemotherapy on an unborn child are not known, it is important for a woman to talk to her doctor about birth control before treatment

begins. After treatment, some women regain their ability to become pregnant, but in women over the age of 35 or 40, infertility is likely to be permanent

### **Hormonal Therapy**

Hormonal therapy can cause a number of side effects. They depend largely on the specific drug or type of treatment, and they vary from patient to patient.

Tamoxifen is the most common hormonal treatment. This drug blocks the body's use of estrogen but does not stop estrogen production. Tamoxifen may cause hot flashes, vaginal discharge or irritation, and irregular periods. Any unusual bleeding should be reported to the doctor. Younger women taking tamoxifen may become pregnant more easily and should discuss birth control methods with their doctor.

Serious side effects of tamoxifen are rare, but this drug can cause blood clots in the veins, especially in the legs. In a very small number of women, tamoxifen has caused cancer of the lining of the uterus. The doctor may do a pelvic exam, as well as biopsies or other tests of the lining of the uterus, to monitor for this condition. This does not apply to women who have had a hysterectomy, (surgical removal for the uterus)

Young women whose ovaries are removed to deprive the cancer cells of estrogen experience menopause immediately. The side effects they have are likely to be more severe than the effects of natural menopause.

Links We Like

[www.breastcancer.com](http://www.breastcancer.com)