

Understanding Breast Changes: A Health Guide for Women

by Dr. Ratnakar P. Kini

The contents of this course are taken from the National Cancer Institute, U.S. National Institutes of Health. Learning objectives and post test have been prepared by Dr. Ratnakar P. Kini.

Breast cancer is the most common type of cancer among women accounting for nearly 1 in 3 cancers diagnosed in US women. In 2005, an estimated 211,240 new cases will be diagnosed and approximately 40,410 women are expected to die from breast cancer. In 2005, about 1,690 cases of breast cancer are expected to occur in men, accounting for 1% of all breast cancers. Approximately 460 men will die from breast cancer. Men are generally at low risk for developing breast cancer; however, they should be aware of risk factors, especially family history, and report any change in their breasts to a physician.

Most breast abnormalities are benign: that is, they are not cancerous, do not grow uncontrollably or spread, and are not life-threatening. Some breast cancers are called in situ, because they have not yet spread beyond the area where they began. Other cancerous breast tumors are invasive or infiltrating. The seriousness of invasive breast cancer is strongly influenced by the stage of the disease, that is the extent or spread of the cancer when it is first diagnosed. Breast cancer can be cured only if it is detected early. Clinical examination and mammogram are useful for detecting breast cancer.

Objectives:

Upon completion of the course, the learner will be able to

1. Explain the anatomy of the breast tissue
2. Discuss about the types of breast changes and when to report to the health care provider
3. Explain how to determine breast changes
4. Discuss in detail about mammograms and its application in the screening and diagnosis of breast cancer
5. Differentiate the benign lesions from the cancerous lesions
6. Discuss in detail about biopsy of the breast tissue

About Your Breasts

Breast Basics

The breast is a **gland** that produces milk in late pregnancy and after childbirth.

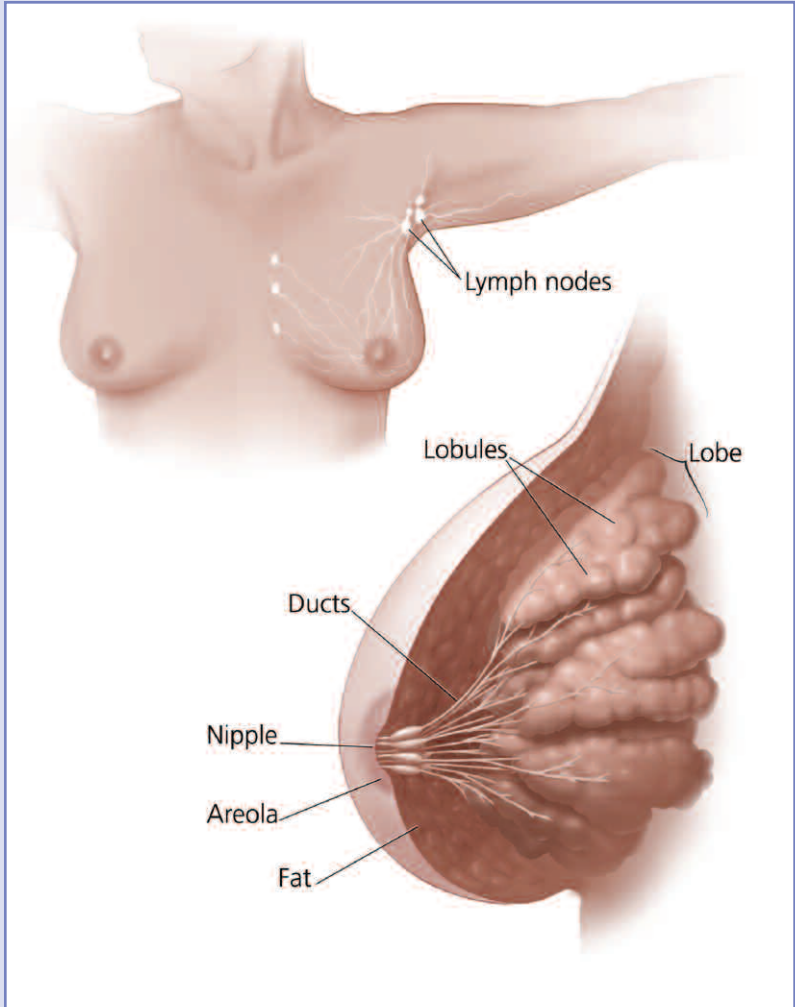
What are breasts made of?

- Each breast is made of **lobes**.
- Lobes are groups of milk glands called **lobules**.
- Lobules are arranged around thin tubes called **ducts**.
- Ducts carry the milk to the nipple.
- These lobules and ducts make up the **glandular** tissue.

What is the lymphatic system?

The breasts also contain **lymph vessels**, which carry a clear fluid called **lymph**.

- The lymph vessels lead to small, round organs called **lymph nodes**. Groups of lymph nodes are found near the breast in the underarm, above the collarbone, in the chest behind the breastbone, and in many other parts of the body.
- The lymph nodes trap bacteria, cancer cells, or other harmful substances that may be in the **lymphatic system**. Their job is to make sure harmful substances are safely removed from the body.



See your health care provider about a breast change when you have:

- A lump in or near your breast or under your arm
- Thick or firm tissue in or near your breast or under your arm
- Nipple discharge or tenderness
- A nipple pulled back (inverted) into the breast
- Itching or skin changes such as redness, scales, dimples, or puckers
- A change in breast size or shape

If you notice a lump in one breast, check the other breast. If both breasts feel the same, it may be normal. **You should still see your health care provider for a clinical breast exam to see if more tests are needed.**

Types of Breast Changes

Breast changes occur in almost all women. Most of these changes are not **cancer**. However, some breast changes may be signs of cancer. Breast changes that are not cancer are called **benign**. For more information on benign breast changes that are more likely to happen during certain times of your life, see Breast Changes During Your Lifetime That Are Not Cancer (page 12).

Common breast changes include:

- Lumpiness
- Breast changes due to your period
- Single lumps
- Nipple discharge

Lumpiness

Most women have some type of lumpiness in their breasts. Some areas may be more dense than others and can feel lumpy in an exam. What you are feeling may be glandular breast tissue.

Breast Changes Due to Your Period

Many women have swelling, tenderness, and pain in their breasts before and sometimes during their periods. You may also feel one or more lumps during this time because of extra fluid in your breasts.

Because some lumps are caused by normal **hormone** changes, your health care provider may suggest watching the lump for a month or two to see if it changes or goes away.

Single Lumps

Single lumps can appear at any time and come in various types and sizes. Most lumps are not cancer, but your health care provider should always check the lump carefully. He or she may do more tests to make sure the lump is not cancer. See Chart 1: Possible Mammogram Results and Follow-Up Care (page 26) for more information about these types of lumps.

Check with your health care provider if you notice any kind of lump. Even if you had a lump in the past that turned out to be benign, you can't be sure that a new lump is also benign.

Nipple Discharge

Nipple discharge is common for some women. It is fluid that comes from the nipple in different colors or textures. Usually, it is not a sign of cancer. For example, birth control pills and other medicines, such as sedatives, can cause a little discharge. Certain **infections** also cause nipple discharge. However, for women who are going through or have passed **menopause**, nipple discharge can be a sign of cancer.

See your doctor if you have nipple discharge for the first time, or a change in your discharge's color or texture. He or she may send a sample of the discharge to be checked at a lab.

Finding Breast Changes

There are two ways to find breast changes:

- **Clinical breast exams**—a breast exam done by your health care provider
- **Mammograms**—an **x-ray** of your breasts

One way to find breast changes is with a clinical breast exam done by your health care provider. He or she will check your breasts and underarms for any lumps, nipple discharge, or other possible changes. This breast exam should be part of a routine medical check-up.

The best tool for finding breast cancer is a mammogram. A mammogram is a picture of the breast that is made by using low-dose x-rays. It is currently recommended that women over age 40 receive a mammogram every 1 to 2 years.

Some women check their own breasts for changes. If you find a change, it's important to call your health care provider for an appointment. Make sure to watch the change you found until you see your provider. But a breast self-exam and a clinical breast exam are not substitutes for mammograms.

Questions to ask your health care provider about a breast change

- How can I tell the difference between my usual lumps and lumps I need to do something about?
- How will you be able to tell what kind of breast change I have?
- What should we do to watch this change over time?

Mammograms

Mammograms are used for both **screening** and **diagnosis**.

A **screening mammogram** is used to find breast changes in women who have no signs of breast cancer. Most women get two x-rays of each breast.

If your recent screening mammogram revealed a breast change since your last one, or if you or your health care provider noticed a

change, he or she will probably recommend a **diagnostic mammogram**. More x-rays are taken during a diagnostic mammogram than a screening mammogram to get clearer, more detailed pictures of the breast. It is also used to rule out other breast problems.

TIP

Take your original mammogram and a copy of the medical report with you if you change doctors or centers or need a second opinion.

A **digital mammogram** is another way to take a picture of your breasts. The procedure for having a digital mammogram is the same as a screening mammogram, except that it records the x-ray images in computer code instead of on x-ray film.



It is important to see your doctor and get a mammogram every 1 to 2 years after age 40 to find breast changes.

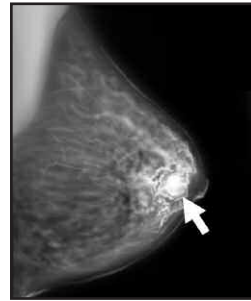
Here are mammograms of three different women. Doctors look at these x-rays for any breast changes that don't look normal.



Normal



Benign Cyst
(Not Cancer)



Cancer

Mammograms and Breast Implants

When you go for your mammogram, tell staff if you have **breast implants**. A **technologist** who is trained in x-raying patients with implants will do your mammogram. Breast implants can hide some breast tissue and make it harder to read your mammograms.

If you got implants for cosmetic reasons:

- You still need to get screening mammograms, with extra pictures to help get an accurate reading.

If you got an implant after having a **mastectomy** for breast cancer:

- You should continue to get mammograms of your other breast. Ask your doctor if you still need mammograms of the breast with the implant.

Getting Your Mammogram Results

Ask your doctor when you will get your results. You should get a written report of your mammogram results within 30 days of getting the x-ray. This is the law. Be sure the mammogram facility has your current address.

If your results were normal, it means the **radiologist** did not find anything that needs follow-up.

If your results were abnormal, it means the radiologist found:

- A change from a past mammogram
- A change that needs more follow-up

What a Mammogram Can Show

The radiologist will look at your x-rays for breast changes that do not look normal. The doctor will look for differences between your breasts. He or she will compare your past mammograms with your most recent one to check for changes. The doctor will also look for lumps and **calcifications**.

Lumps (or "mass")

The size, shape, and edges of a lump sometimes can give doctors more information about whether or not it is cancer. On a mammogram, a growth that is benign often looks smooth and round with a clear, defined edge. On the other hand, breast cancer often has a jagged outline and an irregular shape. (See Chart 1: Possible Mammogram Results and Follow-Up Care, page 26.)

Calcifications

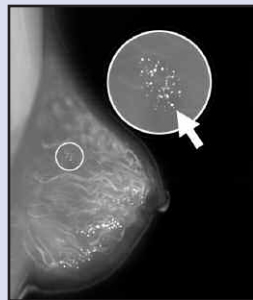
A calcification is a deposit of the mineral **calcium** in the breast tissue. Calcifications appear as small white spots on a mammogram. There are two types:

- **Macrocalcifications** are large calcium deposits often caused by aging. These are usually not cancer. (See Chart 1: Possible Mammogram Results and Follow-Up Care, page 26.)
- **Microcalcifications** are tiny specks of calcium that may be found in an area of rapidly dividing cells. If they are found grouped together in a certain way, it may be a sign of cancer. (See Chart 1: Possible Mammogram Results and Follow-Up Care, page 26.)

Depending on how many calcium specks you have, how big they are, and what they look like, your doctor may suggest that you:

- Have a different type of mammogram that allows the radiologist to have a closer look at the area
- Have another screening mammogram, usually within 6 months
- Have a test called a **biopsy** (See page 15.)

Calcium in the diet does *not* create calcium deposits (calcifications) in the breast.



Calcification



“I used to think whenever a mammogram found a lump or a mass, it was probably cancer—it turns out that most breast changes are not cancer. That’s one thing I sure didn’t mind being wrong about.” —ANNE, AGE 60

Are Mammogram Results Always Right?

No. Although they are not perfect, mammograms are the best method to find breast changes. If your mammogram shows a breast change, sometimes other tests are needed to better understand it. Even if the doctor sees something on the mammogram, it does not mean it is cancer.

Changes That Need More Follow-Up

Sometimes your doctor needs more information about a change on your mammogram. Your doctor may do follow-up tests such as an **ultrasound** or more mammograms. The only way to find out if an abnormal result is cancer is to do a biopsy. It is important to know that most abnormal findings are not cancer.

Breast Changes During Your Lifetime That Are Not Cancer

You might notice different kinds of breast changes at different times in your life. Many of these are caused by changes in your hormone levels and are a normal part of getting older.

Younger women may have more glandular (more dense, less fatty) breast tissue than older women who have stopped having their period (menopause). This kind of tissue is where breast changes usually occur.

Before or during your period, you might have lumpiness, tenderness, and pain in your breasts. The lumpiness and pain usually go away by the end of your period.

During pregnancy, your breasts may feel lumpy, as the glands that produce milk increase in number and get larger. Still, breast cancer has been found in pregnant women, so talk with your doctor if you have questions about any breast lumps.



“Everything changes over time, including your body. The important thing is to work with your doctor to deal with the changes in a calm and sensible way.”

—CARMEN, AGE 70

While breastfeeding, you may get an infection called **mastitis** that happens when a milk duct becomes blocked. Mastitis causes the breast to look red and feel lumpy, warm, and tender. Mastitis is often treated with **antibiotics**. Sometimes the duct may need to be drained. If the redness or mastitis does not go away with treatment, call your doctor, as you may need further care.

As you approach menopause, your periods may become less frequent. Changing hormone levels also can make your breasts:

- Feel tender, even when you are not having your period
- Feel more dense
- Feel more “lumpy” than they did before

As you age, other breast changes are more common, such as:

- **Intraductal papilloma**. This is a growth inside the nipple that looks like a wart. It can be removed by surgery without changing the way the breast looks.
- **Mammary duct ectasia**. As you near menopause, ducts beneath the nipple can become swollen and clogged. This can be painful and cause nipple discharge. The problem is treated with warm packs, antibiotics, and sometimes surgery to remove the duct.

If you are taking hormones, such as hormone replacement therapy (HRT), birth control pills, or injections, when getting your mammogram be sure to let your doctor know. Hormones may cause your breasts to be more dense. This can limit your doctor’s ability to read a mammogram.

When you stop having periods (menopause), your hormone levels drop, and your breast tissue becomes less dense and more fatty. You may stop having the lumps, pain, or nipple discharge you used to have. And because your breast tissue is less dense, mammograms can be easier to read. This means doctors are more likely to find breast changes or early breast cancer.



“I wasn’t sure if it was okay to ask for a second opinion... it’s good to know that lots of other people are asking. After all, it is my body; I owe it to myself to be sure.”

—MARIE, AGE 55

Getting a Second Opinion

After seeing your health care provider, you may want to get a second opinion from another health care provider. Sometimes, a second opinion may be covered by your health insurance. Many women feel uneasy about asking for a second opinion, but it is very common. Your health care provider will not be surprised or offended if you seek a second opinion. A second opinion might help you feel more confident that you are making the best choices about your health.

Follow-Up Tests to Tell You More

Doctors often use ultrasound or biopsies to follow up after finding signs of a breast change.

Ultrasound

An ultrasound uses sound waves to make a picture of breast tissue. This picture is called a **sonogram**. It helps doctors look more

A Cyst: The Most Common Breast Change

A cyst is a lump filled with fluid. Cysts are usually not cancer.

If a cyst is found, your doctor may decide to:

- Remove fluid in the cyst to make it go away
- Look at it with an ultrasound
- Watch it closely over time

closely at lumps. An ultrasound shows if a lump is solid or filled with fluid (**cyst**). (See Chart 1: Possible Mammogram Results and Follow-Up Care, page 26.) An ultrasound also can help your doctor decide if more tests are needed.

It is important to know that an ultrasound may not find all abnormal changes.

Biopsies

During a biopsy, the doctor removes some cells or tissue, an area of small calcium deposits, or the whole lump. The tissue is sent to a lab where a doctor called a **pathologist** will look at the cells. He or she checks the cells for cancer or other diseases. Biopsies are usually done on an outpatient basis, meaning you can go home the same day as your test. Biopsies are the only way to find out if cells are cancer.

Questions you might want to ask if your health care provider suggests a biopsy:

- What type of biopsy will I have? Why? How much tissue will be removed?
- Will only part of the lump or the whole lump be removed?
- Will the shape of my breast change?
- Will I have a scar?
- Where will the biopsy be done? How long will it take?
- Will I be awake?
- Will it hurt?
- Will there be any side effects?
- What tests will be done on the tissue?
- When will I know the results?
- Will I be able to go back to work the same day?

After the biopsy, you might want to ask:

- What do the results mean?
- Do I need to have other tests?
- Will I need follow-up tests or treatment?
- How do I care for the biopsy site?
- Is it okay if I exercise?
- Does my result mean I am at **higher risk** for breast cancer?

Sometimes it's hard—even for the experts—to tell benign breast changes from cancer. If you have any questions about your biopsy results, have more than one doctor look at the results.

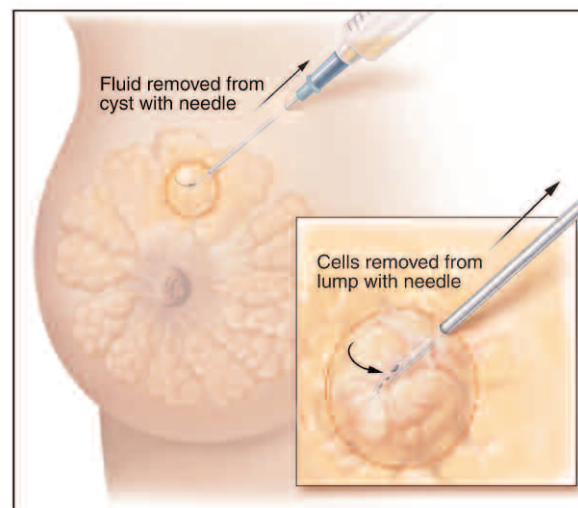
Types of Biopsies

The most common types of biopsies are:

- **Fine-needle aspiration**
- **Core needle biopsy**
- **Surgical biopsy**

Fine-Needle Aspiration

Fine-needle **aspiration** only takes a few minutes and can be done in the doctor's office. It is often done when a doctor finds a lump that appears to be a cyst. The doctor tries to remove fluid from the lump using a thin needle and a syringe. If the lump is a cyst, removing the fluid will make it go away. If the cyst returns, it can be drained again. Because cysts are rarely cancer, doctors test the fluid only if it is bloody or if there are other reasons to be concerned. If the lump is solid, cells can be taken out with the needle. These cells are checked for cancer.



Fine-Needle Aspiration

Core Needle Biopsy

This type of biopsy can be done in the doctor's office or hospital. A core needle biopsy is a type of biopsy that uses a needle with a special cutting edge. The core needle is inserted through a small cut in the skin. A small core of tissue is removed. More than one tissue sample can be taken through the same small cut in the skin. This test may cause a bruise but rarely leaves a scar.

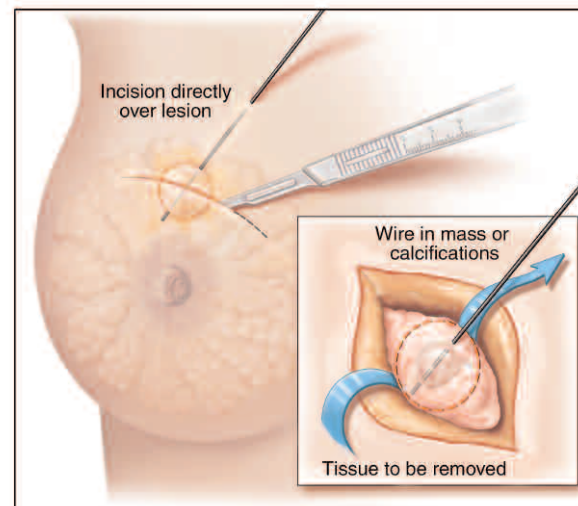
During the biopsy, the doctor may insert a guided **probe** into the area of the breast change. The probe gently vacuums tissue samples from the area.

Sometimes the doctor uses other methods to guide the core needle or probe to the breast change. These include:

- **Ultrasound-guided needle biopsy.** Doctors use ultrasound to guide the needle during the biopsy. This method is used when lumps are hard to feel on a breast exam or see on a mammogram.
- **Stereotactic core needle biopsy localization.** A three-dimensional (3-D) x-ray guides a biopsy needle to a lump or other change that cannot be felt on a breast exam. With one type of equipment, you lie face down on an exam table with a hole in it. The hole allows your breast to hang below the table, where the x-ray machine and needle are. Or, special equipment can be attached to a standard mammogram machine to x-ray your breast from two angles.

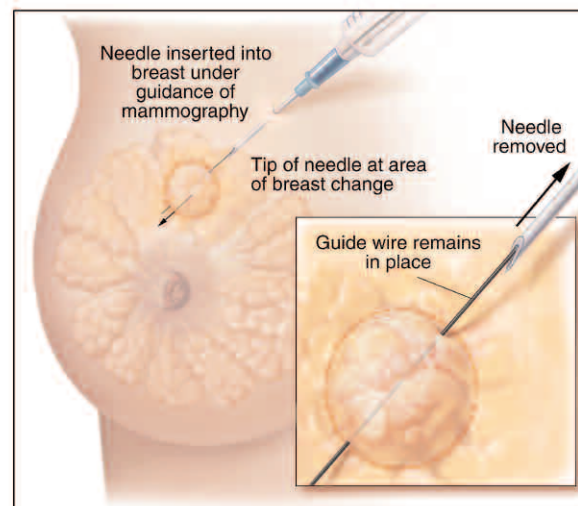
Surgical Biopsy

A surgical biopsy is an operation to remove part or all of the breast lump. Most of the time, you have the biopsy and go home the same day. Sometimes a doctor will do a surgical biopsy as the first step. Other times, a doctor may do a surgical biopsy if the results of a needle biopsy do not give enough information.



Surgical Biopsy

Sometimes, a needle is used to guide a surgical biopsy. A mammogram or ultrasound is used to find breast changes that cannot be felt. Once the breast change is found, a radiologist puts a needle into the breast so that the tip of the needle is at the area of breast change (called **needle localization**). Then a fine wire is placed through the needle. The needle may be removed and the wire stays in place. You may be asked to walk to another room or to the operating room for the biopsy. During surgery, the doctor uses the tip of the wire as a guide to what tissue to take out.



Needle Localization

Getting Your Biopsy Results

On average, you should get your biopsy results from your doctor 7 to 10 days after your biopsy.

The biopsy results will tell your doctor if you have:

- Benign breast changes
- Changes that may increase your chances of getting breast cancer
- Cancer cells in the lining of your breast ducts
- Cancer cells that have spread into nearby breast tissue

Here are more detailed descriptions of biopsy results.

Benign Changes

- **Fibroadenomas**—Hard, round lumps that feel like rubber
- **Fat necrosis**—Painless, round, firm lumps
- **Sclerosing adenosis**—Growths that may contain calcifications and are often painful

Your health care provider will probably suggest that you get follow-up care for these types of benign changes. See Chart 2: Possible Biopsy Results and Follow-Up Care (page 28) for more information.

Two types of changes that may increase your chances of getting breast cancer

- Abnormal cells found in the breast ducts (**Atypical Ductal Hyperplasia**, or **ADH**)
- Abnormal cells found in the breast lobules (**Lobular Carcinoma In Situ**, or **LCIS**)



“Even though I was scared, I am glad I went for follow-up to find out what I had. Now my doctor and I can do something about the breast change.”

—JACKIE, AGE 63

Atypical Ductal Hyperplasia (ADH) or Lobular Carcinoma In Situ (LCIS)

ADH and LCIS are not cancer. However, having ADH or LCIS in one breast does mean that you have a higher risk of getting cancer in either breast. Your doctor will want to follow your breast health very closely if you have ADH or LCIS. For example, your doctor may suggest that you:

- Get more mammograms or see him or her more often
- Take a drug, called **tamoxifen**, which has been shown to lower some women's risk of getting breast cancer
- Take part in **clinical trials** of promising new preventive treatments. In a cancer prevention trial, a large group of people is studied to help find better ways of preventing or lowering the chances of getting cancer.

A very small number of women with LCIS have surgery to remove both their breasts. They do this to try to keep breast cancer from developing. Talk to your doctor about what is best for you.

See Chart 2: Possible Biopsy Results and Follow-Up Care (page 28) for more information about ADH and LCIS.

Cancer Cells Found in the Lining of the Ducts (Ductal Carcinoma In Situ or DCIS)

DCIS is a condition in which cancer cells are only found inside the lining of a breast duct. The abnormal cells have not spread outside the duct to the surrounding breast tissue. Therefore, most women with DCIS are cured with treatment. However, if not treated, DCIS sometimes spreads to other parts of the breast (also called invasive breast cancer). Your doctor may discuss some of these treatment choices for DCIS:

- Getting breast-sparing surgery (the surgeon removes only your cancer and some normal tissue around it) with **radiation** therapy
- Getting breast-sparing surgery without radiation therapy
- Getting a total mastectomy (surgery to remove the entire breast)
- Taking the drug tamoxifen after surgery and radiation to lower the chances of the cancer coming back

See Chart 2: Possible Biopsy Results and Follow-Up Care (page 28) for more information about DCIS.

Getting a Second Opinion

You can ask to have another pathologist review your biopsy results. This is important because biopsy results determine treatment(s) for breast changes and diseases. Ask your medical team to help you with this process.

Cancer That Is Invasive

Even if you have breast cancer that has spread to other parts of your breast, finding it early gives you the best chance to get treatment that may save your breasts and your life. It's also true that women with breast cancer that has spread have reasons for hope.

Some women with breast cancer may want to take part in a clinical trial. Clinical trials are research studies to find better ways to treat cancer. Some studies on new cancer-fighting drugs, drug combinations, and ways of giving treatment have already begun to show good results.

For more information about breast cancer and its treatments, call 1-800-4-CANCER for a free copy of *What You Need To Know About Breast Cancer* or visit www.cancer.gov and search for "breast cancer." (See For More Information, page 24.)

Finding the Support You Need

It can be scary when you find out about a breast change, get an abnormal mammogram result, or learn you have breast cancer. Many women have found it helpful to:

- Ask friends or loved ones for support. Take someone with you while you are learning about your testing and treatment choices.
- Ask your doctor or nurse to:
 - Help you understand medical terms that are confusing
 - Tell you how other people have handled the types of feelings that you are having
- Contact the organizations listed on pages 24–25.

For More Information

The following organizations can give you more information on mammograms, breast changes, finding breast cancer early, and different breast cancer treatments.

National Cancer Institute (NCI)

You can find out more from these free NCI services:

Cancer Information Service

Toll free: 1-800-4-CANCER (1-800-422-6237)

TTY: 1-800-332-8615

- Answers to your questions about cancer
- Tips to prevent and screen for cancer
- Informational materials
- Other resources

NCI Online

Web site: www.cancer.gov

This Web site provides current and accurate information from the National Cancer Institute. Through instant messaging (LiveHelp), Information Specialists can answer your questions about cancer and provide help in navigating NCI's Web site. You will find a wide range of cancer information, including:

- Treatment options
- Clinical trials
- Ways to reduce cancer risk
- Prevention and screening information
- Ways to cope with cancer

Centers for Medicare and Medicaid Services (CMS)

Toll free: 1-800-MEDICARE (1-800-633-4227)

TTY/TDD: 1-877-486-2048

Web site: www.cms.gov or www.medicare.gov

CMS provides information about Medicare benefits to pay for screening mammograms.

Centers for Disease Control and Prevention (CDC)

Toll free: 1-888-842-6355

Web site: www.cdc.gov/cancer

CDC conducts, supports, and promotes efforts to prevent cancer and increase early detection of cancer. CDC's National Breast and Cervical Cancer Early Detection Program provides free breast and cervical cancer screening and diagnostic services to women with low incomes.

National Women's Health Information Center (NWHIC)

Toll free: 1-800-994-WOMAN (1-800-994-9662)

TTY: 1-888-220-5446

Web site: www.4woman.gov

NWHIC provides a gateway to women's health information. NWHIC is sponsored by the U.S. Department of Health and Human Services Office on Women's Health.

U.S. Food and Drug Administration (FDA)

Web site: www.fda.gov/cdrh/mammography

The FDA has information about **mammography** on its Web site, including a section for consumers, a list of FDA-approved mammography facilities, and laws about how these facilities are run.

Possible Mammogram Results and Follow-Up Care

Conditions	Features
Cysts	<ul style="list-style-type: none"> • Fluid-filled lumps • Usually not cancer • Occur most often in women ages 35–50 • Often in both breasts • Some too small to be felt
Fibroadenoma	<ul style="list-style-type: none"> • Hard, round, benign growth • Feels like rubber; moves around easily • Usually painless • Often found by the woman herself • Appears on mammogram as smooth, round lumps with clearly defined edges • Can get bigger when the woman is pregnant or nursing
Macrocalcifications	<ul style="list-style-type: none"> • Appear on a mammogram as large calcium deposits • Often caused by aging • Usually not cancer
Mass	<ul style="list-style-type: none"> • May be round and smooth or have irregular borders • May be caused by normal hormone changes
Microcalcifications	<ul style="list-style-type: none"> • Appear on a mammogram as tiny specks of calcium that might be found in an area of rapidly dividing cells • If they are found grouped together in a certain way, they may be a sign of cancer.

What Your Doctor May Recommend

- Doctors often watch cysts over time or use fine-needle aspiration to remove the fluid from the cyst.
- Ultrasound may be used to see whether a lump is solid or filled with fluid.

- Sometimes diagnosed with fine-needle aspiration
- If the fibroadenoma does not appear normal, the doctor may suggest taking it out to make sure it is benign.

- Have another mammogram to have a closer look at the area.
- A biopsy may be used for diagnosis.

- A mammogram and/or ultrasound may be used to see whether a lump is solid or filled with fluid.
- A biopsy may be used for diagnosis.

- Have another mammogram to have a closer look at the area.
- A biopsy may be used for diagnosis.

Possible Biopsy Results and Follow-Up Care

Conditions	Features
Atypical Ductal Hyperplasia (ADH)	<ul style="list-style-type: none"> Abnormal cell growth
Cancer	<ul style="list-style-type: none"> Abnormal cells dividing without control in the breast Could spread to other parts of the body
Ductal Carcinoma In Situ (DCIS)	<ul style="list-style-type: none"> Cancer cells in the breast ducts Has not spread to other parts of the breast May develop into cancer that spreads to other parts of the breast (invasive breast cancer)
Fat Necrosis	<ul style="list-style-type: none"> Painless, round, firm lumps Formed by damaged fatty tissue May occur after surgery to the breast Often occurs in response to a bruise or blow to the breast, although a woman might not recall being injured
Fibroadenoma	<ul style="list-style-type: none"> Hard, round, benign growth Feels like rubber; moves around easily Usually painless Often found by the woman herself Appears on mammogram as smooth, round lumps with clearly defined edges Can get bigger when the woman is pregnant or nursing

What Your Doctor May Recommend

- Getting more mammograms and/or seeing the doctor more often
 - Taking tamoxifen
- Surgery
 - Chemotherapy
 - Radiation therapy
 - Hormonal therapy
 - Biological therapy
 - Treatment may depend on the stage of the disease.
- Breast-sparing surgery and radiation therapy (with or without tamoxifen)
 - Breast-sparing surgery without radiation therapy (with or without tamoxifen)
 - Total mastectomy (with or without tamoxifen)
- Sometimes removed with surgical biopsy because it can look like cancer
- Sometimes diagnosed with fine-needle aspiration
 - If the fibroadenoma does not appear normal, the doctor may suggest taking it out to make sure it is benign.

Chart 2 continues on next page.

Possible Biopsy Results and Follow-Up Care

Conditions	Features
Intraductal Papilloma	<ul style="list-style-type: none"> • Growth inside the nipple that looks like a wart • May cause nipple discharge
Lobular Carcinoma In Situ (LCIS)	<ul style="list-style-type: none"> • Abnormal cells found in the lobules • Not cancerous but associated with a greater chance of getting cancer in either breast in the future
Sclerosing Adenosis	<ul style="list-style-type: none"> • Too much tissue growth in lobules • Can contain calcifications • Often painful • Changes usually very small but can produce lumps

What Your Doctor May Recommend

- Surgery to remove the growth
- Regular check-ups to look for signs of breast cancer
- Tamoxifen may be suggested
- Evaluation of breast cancer risk by your doctor
- Clinical breast exam
- Annual mammogram
- More tests if breast changes are noted on breast self-exam, clinical breast exam, or mammogram

More information on these conditions can be found on www.cancer.gov or by calling 1-800-4-CANCER.

Dictionary

antibiotic (an-tih-by-AH-tik): A drug used to treat infections caused by bacteria and other microorganisms.

areola (a-REE-o-la): The area of dark-colored skin on the breast that surrounds the nipple.

aspiration (as-per-AY-shun): The removal of fluid from a lump, often a cyst, with a needle and a syringe.

atypical (ductal) hyperplasia (AY-TIP-I-kul hy-per-PLAY-zha): A benign (noncancerous) condition in which cells look abnormal under a microscope and are increased in number.

benign (beh-NINE): Not cancerous. Benign tumors do not spread to tissues around them or to other parts of the body.

biopsy (BY-op-see): The removal of cells or tissues for examination under a microscope. When only a sample of tissue is removed, the procedure is called an incisional biopsy or core biopsy. When an entire lump or suspicious area is removed, the procedure is called an excisional biopsy. When a sample of tissue or fluid is removed with a needle, the procedure is called a needle biopsy or fine-needle aspiration.

breast implants: A silicone gel-filled or saline-filled sac placed under the chest muscle to restore breast shape.

calcifications: Small deposits of calcium in tissue. Calcification on the breast can be seen on a mammogram, but cannot be detected by touch. There are two types of breast calcification, macrocalcification and microcalcification. Macrocalcifications are large deposits and not usually related to cancer. Microcalcifications are specks of calcium that may be found in an area of rapidly dividing cells. Many microcalcifications clustered together may be a sign of cancer.

calcium (KAL-see-um): A mineral normally found in teeth, bones, and other body tissues. Clusters of calcium deposits (calcifications) seen on a mammogram may indicate an abnormal condition or breast cancer.

cancer (KAN-sir): A term for diseases in which abnormal cells divide without control. Cancer cells can invade nearby tissues and can spread through the bloodstream and lymphatic system to other parts of the body.

clinical breast exam: A physical exam performed by a health care provider to check for lumps or other changes.

clinical trial: A type of research study that tells how well new medical treatments or other interventions work in people. Such studies test new methods of screening, prevention, diagnosis, or treatment of a disease. The study may be carried out in a clinic or other medical facility. Also called a clinical study.

core needle biopsy: The removal of a tissue sample with a needle for examination under a microscope.

cyst (sist): A sac or capsule in the body. It may be filled with fluid or other material.

DCIS (ductal carcinoma in situ): A noninvasive, precancerous condition in which abnormal cells are found in the lining of a breast duct. The abnormal cells have not spread outside the duct to other tissues in the breast. In some cases, DCIS may become invasive cancer and spread to other tissues, although it is not known at this time how to predict which lesions will become invasive. Also called intraductal carcinoma.

diagnosis: The process of identifying a disease by the signs and symptoms.

diagnostic mammogram: X-ray of the breasts used to check for cancer after a lump or other sign or symptom of breast cancer has been found.

digital mammogram: A technique that uses a computer, rather than x-ray film, to record x-ray images of the breast.

duct (dukt): A tube through which body fluids pass. Breast ducts transport milk from the breast's lobules to the nipple.

fat necrosis (fat neh-KRO-sis): Lumps of fatty material that form in response to a bruise or blow to the breast.

fibroadenoma (fye-bro-ad-uh-NO-muh): Benign breast tumor made up of both structural (fibro) and glandular (adenoma) tissues.

fine-needle aspiration (fine NEE-dl as-per-AY-shun): The removal of tissue or fluid with a needle for examination under a microscope. Also called needle biopsy.

gland: An organ that makes one or more substances, such as hormones, digestive juices, sweat, tears, saliva, or milk. Endocrine glands release the substances directly into the bloodstream. Exocrine glands release the substances into a duct or opening to the inside or outside of the body.

glandular (GLAN-dyoo-lar): Refers to the part of the breast that includes lobules where milk is produced and ducts (milk passages) through which milk is carried to the nipple. (The fatty tissue and the ligaments that support the breast make up the stromal part of the breast.)

high risk (for breast cancer): A measure of the chances of getting breast cancer when risk factors known to be associated with the disease are present.

hormone: A chemical made by glands in the body. Hormones circulate in the bloodstream and control the actions of certain cells or organs. Some hormones can also be made in a laboratory.

infection: Invasion by and multiplication of germs in the body. Infections can occur in any part of the body and can be localized or systemic (spread throughout the body). The germs may be bacteria, viruses, yeast, or fungi. They can cause a fever and other

problems, depending on the site of the infection. When the body's natural defense system is strong, it can often fight the germs and prevent infection. Cancer treatment can weaken the natural defense system.

intraductal papilloma (in-truh-DUK-tul pap-uh-LO-muh): A small wart-like growth that projects into a breast duct.

LCIS (lobular carcinoma in situ): Abnormal cells found in the lobules of the breast. This condition seldom becomes invasive cancer; however, having lobular carcinoma in situ increases your risk of developing breast cancer in either breast.

lobe (lohb): Part of the breast that contains lobules.

lobule (LAHB-yule): Part of the breast that contains dozens of milk-producing bulbs.

lymph (limf): The clear fluid that travels through the lymphatic system and carries cells that help fight infections and other diseases. Also called lymphatic fluid.

lymph node (limf node): A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes filter lymph (lymphatic fluid), and they store lymphocytes (white blood cells). They are located along lymph vessels. Also called a lymph gland.

lymph vessels (limf VES-suls): Thin tubes that carry lymph (lymphatic fluid) and white blood cells through the lymphatic system. Also called lymphatic vessels.

lymphatic system (lim-FAT-ik SIS-tem): The tissues and organs that produce, store, and carry white blood cells that fight infections and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes, and lymph vessels (a network of thin tubes that carry lymph and white blood cells). Lymph vessels branch, like blood vessels, into all the tissues of the body.

macrocalcifications (MAK-ro-kal-si-fi-KAY-shuns): Coarse calcium deposits. They are most likely due to aging, old injuries, or inflammation and usually are benign.

mammary duct ectasia (MAM-uh-ree dukt ek-TAY-zhuh): A benign breast condition in which ducts beneath the nipple become dilated and sometimes inflamed, and which can cause pain and nipple discharge.

mammogram (MAM-o-gram): An x-ray of the breast.

mammography (mam-OG-gra-fee): The use of x-rays to create a picture of the breast.

mastectomy (mas-TEK-toe-mee): Surgery to remove the breast (or as much of the breast tissue as possible).

mastitis (mas-TYE-tis): Infection of the breast. Mastitis is most often seen in nursing mothers.

menopause (MEN-o-pawz): The time of life when a woman's menstrual periods stop permanently. Also called "change of life."

microcalcifications (MY-krow-kal-si-fi-KAY-shuns): Tiny deposits of calcium in the breast that cannot be felt but can be detected on a mammogram. A cluster of these very small specks of calcium may indicate that cancer is present.

needle localization: A procedure that uses very thin needles or guide wires to mark the location of an abnormal area of tissue so it can be surgically removed. An imaging device is used to place the wire in or around the abnormal area. Needle localization is used when the doctor cannot feel the lump of abnormal tissue.

nipple discharge: Fluid coming from the nipple.

pathologist (pa-THOL-o-jist): A doctor who identifies diseases by studying cells and tissues under a microscope.

probe: A slender, flexible medical instrument used to explore a wound or body cavity.

radiation (ray-dee-AY-shun): Energy released in the form of particles or electromagnetic waves. Common sources of radiation include radon gas, cosmic rays from outer space, and medical x-rays.

radiologist (RAY-dee-OL-o-jist): A doctor who specializes in creating and interpreting pictures of areas inside the body. The pictures are produced with x-rays, sound waves, or other types of energy.

sclerosing adenosis (skluh-RO-sing a-den-OH-sis): A benign breast disease that involves the excessive growth of tissues in the breast's lobules.

screening: Checking for disease when there are no symptoms.

screening mammogram (SCREEN-ing MAM-o-gram): X-rays of the breasts taken to check for breast cancer in the absence of signs or symptoms. Two views of each breast are taken—one from above the breast and one from the side.

sonogram (SON-o-gram): A computer picture of areas inside the body created by bouncing high-energy sound waves (ultrasound) off internal tissues or organs. Also called an ultrasonogram.

stereotactic core needle biopsy (STAIR-ee-o-TAK-tik BY-op-see): A biopsy procedure that uses a computer and a 3-D (three-dimensional) scanning device to find a tumor site. It guides the removal of tissue for examination under a microscope.

surgical biopsy (SIR-ji-kul BY-op-see): The surgical removal of tissue for microscopic examination and diagnosis. Surgical biopsies can be either an excisional biopsy or an incisional biopsy.

tamoxifen (ta-MOK-si-FEN): A drug that is used to treat breast cancer. Tamoxifen blocks the effects of the hormone estrogen in the breast. It belongs to the family of drugs called antiestrogens.

technologist: A health professional who has been trained to position patients for x-rays and take x-ray images (such as mammograms). The images are then sent to a doctor (radiologist) to be examined.

