

This booklet belongs to:

Your Guide to the Breast Cancer Pathology Report



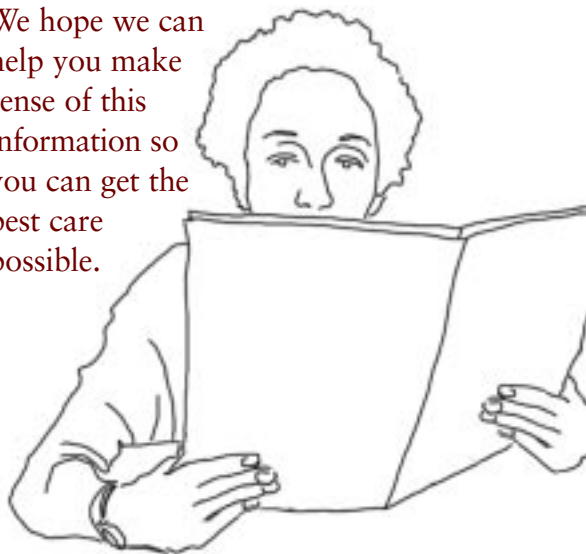
Developed for you by
breastcancer.org
The world's leading
Internet-based nonprofit
breast cancer organization

Your Guide to the Breast Cancer Pathology Report

A report is written each time that tissue is removed from the body to check for cancer. It is called a pathology report. Each report has the results of the studies of the tissue that was removed. The information in these reports will help you and your doctor decide about the best treatment for you.

Reading your pathology report can be scary and confusing. The words are like a foreign language. Different labs may use different words to describe the same thing. On page 20, you'll find an easy-to-understand word list.

We hope we can help you make sense of this information so you can get the best care possible.



Remember:

No matter what the pathology report says about the cancer, there are many effective treatments available to deal with it.

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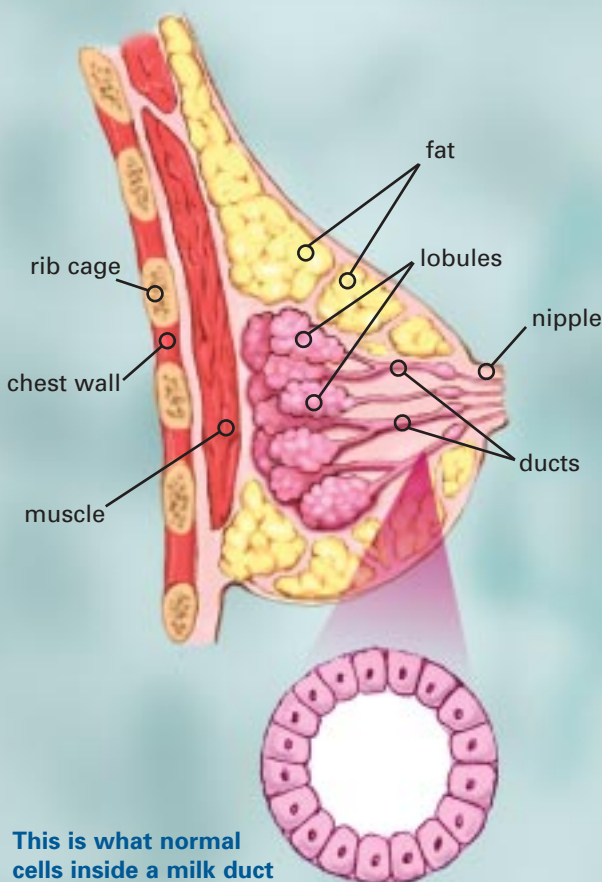
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Introduction: Wait for the Whole Picture

Waiting is so hard! But just one test can lead to several different reports. Some tests take longer than others. Not all tests are done by the same lab. Most information comes within one to two weeks after surgery, and you will usually have all the results within a few weeks. Your doctor can let you know when the results come in. If you don't hear from your doctor, give her or him a call.

This is what the inside of a breast looks like:



This is what normal cells inside a milk duct look like under a microscope.

Get All the Information You Need

Be sure that you have all the test information you need before you make a final decision about your treatment. Also, don't focus too much on any one piece of information by itself. Try to look at the whole picture as you think about your options.

Different labs and hospitals may use different words to describe the same thing. If there are words in your pathology report that are not explained in this booklet, don't be afraid to ask your doctor what they mean.

Breast Cancer Stage

The pathology report will help your doctor decide the stage of your breast cancer. It could be Stage 0, I (1), II (2), IIIA (3A), IIIB (3B), or IV (4).

Staging is based on the size of the tumor, whether lymph nodes are involved, and whether the cancer has spread beyond the breast. Your doctors use all parts of the pathology report as well as the breast cancer stage to shape your treatment plan.

For more information go to:

www.breastcancer.org

Introduction: How to Start

First, check the top of the report for your name, the date you had your operation, and the type of operation you had. Make sure they are right for you.



Expert Tip:

Pathology reports often come in bits and pieces. Just after surgery, the cancer cells are first looked at under the microscope. Results from additional studies that require special techniques may take longer. So you may have one, two, or three pathology reports from one surgery. Try to put them all together and keep them in one place, so that when you go for your treatment evaluations, the doctors will have all the information they need.

– Marisa Weiss, M.D., breast cancer doctor

Parts of Your Report

Specimen. This section describes where the tissue samples came from. Tissue samples could be taken from the breast, from the lymph nodes under your arm (axilla), or both.

Clinical history. This is a short description of you and how the breast abnormality was found. It also describes the kind of surgery that was done.

Clinical diagnosis. This is the diagnosis the doctors were expecting before your tissue sample was tested.

Gross description. This section describes the tissue sample or samples. It talks about the size, weight, and color of each sample.

Microscopic description. This section describes the way the cancer cells look under the microscope.

Special tests or markers. This section reports the results of tests for proteins, genes, and how fast the cells are growing.

Summary or final diagnosis. This section is the short description of all the important findings in each tissue sample.

For more information go to:

www.breastcancer.org

Section A: The Breast Cancer

1. Is the tumor a cancer?

A tumor is an overgrowth of cells. It can be made of normal cells or cancer cells. Cancer cells are cells that grow in an uncontrolled way. They may stay in the place where they started to grow. Or they may grow into the normal tissue around them.

The pathology report will tell you what kind of cells are in the tumor.

2. Is the breast cancer invasive?

The single most important fact about any breast cancer is whether it has grown beyond the milk ducts or lobules of the breast where it first started.



Normal Cells

Non-invasive cancers stay within the milk ducts or milk lobules in the breast. They do not grow into or invade normal tissues within or beyond the breast. These are sometimes called *in situ* or pre-cancers.



Non-invasive
Cells

If the cancer has grown beyond where it started, it is called invasive. Most cancers are invasive. Sometimes cancer cells can also spread to other parts of the body through the blood or lymph system.



Invasive
Cells

You may see these descriptions of cancer in your report:

DCIS (Ductal Carcinoma In Situ).

This is a cancer that is not invasive. It stays inside the milk ducts.

Note: There are subtypes of DCIS. You'll find their names in the word list on page 20 of this booklet.

LCIS (Lobular Carcinoma In Situ).

This is a tumor that is an overgrowth of cells that stay inside the milk-making part of the breast (called lobules). LCIS is not a true cancer. It is a warning sign for an increased risk of having an invasive cancer in the future, in either breast.

IDC (Invasive Ductal Carcinoma).

This is a cancer that begins in the milk duct but grows into the surrounding normal tissue inside the breast. This is the most common kind of breast cancer.

ILC (Invasive Lobular Carcinoma).

This is a cancer that starts inside the milk-making glands (called lobules), but grows into the surrounding normal tissue inside the breast.

Note: There are other, less common types of invasive breast cancer. You'll find their names in the word list on page 20 of this booklet.

My report says:

I have the _____
type of cancer.

Section A:

The Breast Cancer

3. How different are the cancer cells from normal cells?

Experts call this “grade.” They compare cancer cells to normal breast cells. Based on these comparisons, they give a “grade” to the cancer.

There are three cancer grades:

Grade 1

(Low Grade or Well Differentiated):

Grade 1 cancer cells still look a lot like normal cells. They are usually slow-growing.

Grade 2

(Intermediate/Moderate Grade or Moderately Differentiated):

Grade 2 cancer cells do not look like normal cells. They are growing somewhat faster than normal cells.

Grade 3

(High Grade or Poorly Differentiated):

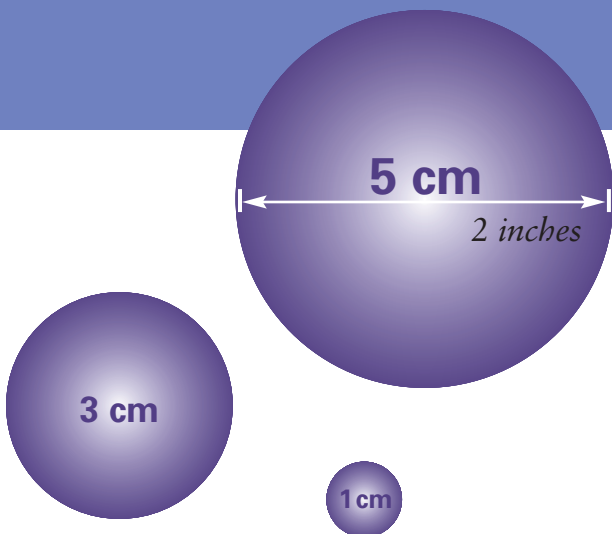
Grade 3 cancer cells do not look at all like normal cells. They are fast-growing.

My report says the cancer is: *(circle one)*

Grade 1

Grade 2

Grade 3



4. How big is the cancer?

Doctors measure cancers in centimeters (cm). The size of the cancer helps to determine its stage.

Size doesn't tell the whole story. Lymph node status is also important. A small cancer can be very fast-growing. A larger cancer can be a “gentle giant.”

My report says:

The size of the cancer is _____ centimeters.

For more information go to:

www.breastcancer.org

Section A: The Breast Cancer

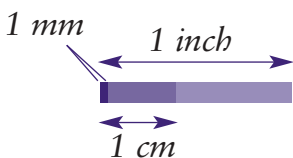
5. Has the whole cancer been removed?

When cancer cells are removed from the breast, the surgeon tries to take out the whole cancer with an extra area or “margin” of normal tissue around it. This is to be sure that all of the cancer is removed.

The tissue around the very edge of what was removed is called the margin of resection. It is looked at very carefully to see if it is clear of cancer cells.

The pathologist also measures the distance between the cancer cells and the outer edge of the tissue.

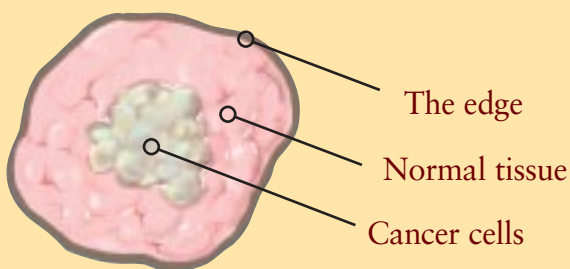
Note: What is called “negative” (or “clean”) margins can be different from hospital to hospital. In some places, doctors want at least two millimeters (mm) of normal tissue beyond the edge of the cancer. In other places, just one healthy cell is called a negative margin.



Margins around a cancer are described in three ways:

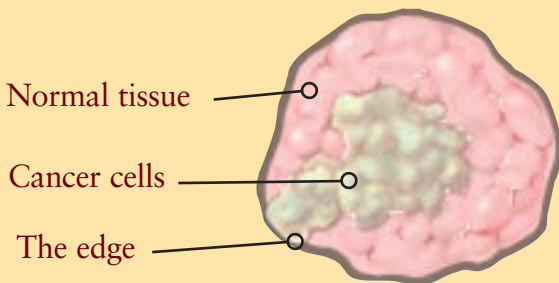
Negative:

No cancer cells can be seen at the outer edge. Usually, no more surgery is needed.



Positive:

Cancer cells come right out to the edge of the tissue. More surgery may be needed.



Close:

Cancer cells are close to the edge of the tissue, but not right at the edge. More surgery may be needed.

My report says the margins are: *(circle one)*

Negative

Positive

Close

Section A: The Breast Cancer

6. Are there cancer cells in your lymph or blood vessels?

The breast has a network of blood vessels and lymph channels that connect breast tissue to other parts of the body. These are the “highways” that bring in nourishment and remove waste products.

There is an increased risk of cancer coming back when cancer cells are found in the fluid channels of the breast. In these cases, your doctor may recommend treatment to your whole body, not just the breast area.

This test result will look like this:

Lymphatic/vascular invasion:
PRESENT (yes, it has been found) or
ABSENT (no, invasion not found).

**My report says lymphatic
or vascular invasion is:** *(circle one)*

Present Absent

7. How fast are the cancer cells growing?

(Rate of Growth)

There are two tests that may be used to see how fast the cancer is growing: S-phase fraction test and Ki-67 test. Both tests measure if the cells are growing at a normal rate or faster than normal.

Even in very experienced labs, these tests are hard to do reliably. That's why many doctors depend on other information to make the best treatment decisions.



For more information go to:

www.breastcancer.org

Section A:

The Breast Cancer

8. Do the cancer cells have hormone receptors?

Hormone receptors are like ears on breast cells that listen to signals from hormones. These signals “turn on” growth in breast cells that have receptors.

A cancer is called “ER-positive” if it has receptors for the hormone estrogen. It is called “PR-positive” if it has receptors for the hormone progesterone. Breast cells that do not have receptors are “negative” for these hormones.

Breast cancers that are either ER-positive or PR-positive, or both, tend to respond well to hormone therapy.

These cancers can be treated with medicine that reduces the estrogen in your body. They can also be treated with medicine that keeps estrogen away from the receptors.

If the cancer has no hormone receptors, there are still very effective treatments available.

You will see the results of your hormone receptor test written in one of these three ways:

- 1) the number of cells that have receptors out of 100 cells tested. You will see a number between 0% (no receptors) and 100% (all have receptors).
- 2) a number between 0 and 3. You will see the number
 - 0 (no receptors),
 - 1+ (a small number),
 - 2+ (a medium number), or
 - 3+ (a large number of receptors).
- 3) the word “positive” or “negative.”

Note: If your report just says “negative,” ask your doctor or lab to give you a number. This is important because sometimes a low number may be called “negative.” But even cancers with low numbers of receptors may respond to hormone therapy.

My report says

hormone receptors are: *(circle two)*

ER-positive ER-negative

PR-positive PR-negative

For more information go to:

www.breastcancer.org

Section A: The Breast Cancer

9. Does the cancer have genes that are not normal?

HER-2 status

(also called HER-2/neu)

HER-2 is a gene that helps control how cells grow, divide, and repair themselves. About one out of four breast cancers has too many copies of the HER-2 gene. The HER-2 gene directs the production of special proteins, called HER-2 receptors, in cancer cells.

Cancers with too many copies of the HER-2 gene or too many HER-2 receptors tend to grow fast. They are also associated with an increased risk of spread. But they do respond very well to treatment that works against HER-2. This treatment is called anti-HER-2 antibody therapy.

My report says HER-2 status is:

(circle one) Positive Negative

Test used:

(circle one) IHC FISH

There are two tests for HER-2:

1) IHC test

(IHC stands for ImmunoHistoChemistry)

- The IHC test shows if there is too much HER-2 receptor protein in the cancer cells.
- The results of the IHC test can be 0 (negative), 1+ (negative), 2+ (borderline), or 3+ (positive).

2) FISH test

(FISH stands for Fluorescence In Situ Hybridization)

- The FISH test shows if there are too many copies of the HER-2 gene in the cancer cells.
- The results of the FISH test can be “positive” (extra copies) or “negative” (normal number of copies).

Find out which test for HER-2 you had. This is important. Only cancers that test IHC “3+” or FISH “positive” will respond well to therapy that works against HER-2. An IHC 2+ test result is called borderline. If you have a 2+ result, you can and should ask to have the tissue tested with the FISH test.

For more information go to:

www.breastcancer.org

Section B: The Lymph Nodes

1. Are there breast cancer cells in your lymph nodes?

Having cancer cells in the lymph nodes under your arm is associated with an increased risk of the cancer spreading.

Lymph nodes are filters along the lymph fluid channels. Lymph fluid leaves the breast and goes back into the bloodstream. The lymph nodes try to catch and trap cancer cells before they reach other parts of the body.

When lymph nodes are free or “clear” of cancer, the test results are called “negative.” If lymph nodes have some cancer cells in them, they are called “positive.”

My report says the lymph nodes are:

(circle one) Positive Negative

If positive:

The number of involved nodes is _____.

2. How many lymph nodes are involved?

The more lymph nodes have cancer cells in them, the more serious the cancer might be. For this reason, doctors use the number of involved lymph nodes to help make treatment decisions.

Doctors also look at the amount of cancer in the lymph nodes.

You may see these words describing how much cancer is in each lymph node:

microscopic:

Only a few cancer cells are in the node. A microscope is needed to find them.

gross:

There is a lot of cancer in the node. You can see or feel the cancer without a microscope.

extracapsular extension:

Cancer has spread outside the wall of the node.

For more information go to:

www.breastcancer.org

Word List

Abnormal cells: cells that do not look or act like the healthy cells of the body

Aggressive cancer cells: cells that are fast-growing and can spread beyond the area where they started

Anti-HER-2 antibody therapy: a medicine used to treat breast cancer with abnormal HER-2 genes

Aromatase inhibitor: medicine that reduces estrogen in the body (after menopause)

Axillary lymph nodes: lymph nodes under your arms

Benign: not cancerous

Biopsy: an operation to take out tissue to check if it is cancer or not

Clean margins: means that the normal tissue around the tumor is free of cancer cells

Close margins: means that cancer cells come near the outer edge of the tissue around the tumor

Colloid: a type of invasive cancer that grows into the normal tissue around it; it usually grows slowly

Comedo: a type of non-invasive cancer that usually does not spread; it tends to grow fast

Cribriform: a type of non-invasive cancer that does not spread and usually grows slowly

Ductal Carcinoma In Situ (DCIS): a non-invasive cancer that stays inside the milk pipes and usually doesn't spread

ER-negative: a cancer that does not have estrogen receptors

ER-positive: a cancer that has estrogen receptors

FISH (Fluorescence In Situ Hybridization) test: a test for the HER-2 gene

Gene: part of the body's code for making new cells and controlling the growth and repair of the cells

Grade: tells you how much the tumor cells look different from normal cells

HER-2: a gene that helps control the growth and repair of cells

Hormone receptors: tiny areas like ears on cells that listen and respond to signals from hormones

IHC (immunohistochemistry) test: a test for the HER-2 protein

In situ: a cancer that stays inside the part of the breast where it started; it usually does not spread

Invasive: a cancer that spreads beyond the place where it started

Invasive Ductal Carcinoma (IDC): a cancer that begins in the milk duct but grows into the normal breast tissue around it

Invasive Lobular Carcinoma (ILC): a cancer that starts inside the milk-making gland, but grows into the normal breast tissue around it

Irregular cells: cells that do not look like the healthy cells of the body

Ki-67 Test: a test that shows how fast cancer is growing

Lobular Carcinoma In Situ (LCIS): cells that are not normal but that stay inside the milk-making part of the breast

Lymphatic invasion: means that cancer cells are found in the lymph vessels

Lymph nodes: filters along the lymph fluid channels; they try to catch and trap cancer cells before they reach other parts of the body

Margins: the normal tissue around the tumor that was taken out

Medullary: a type of invasive cancer that grows into the normal tissue around it

Milk ducts: tiny tubes in the breast through which milk flows to the nipple

Milk lobules: milk-making glands in the breast

Mucinous: a type of invasive cancer that spreads into the normal tissue around it

Negative margins: means that the tissue around the tumor is free of cancer cells

Non-invasive: a cancer that stays inside the breast part where it started

Papillary: a type of non-invasive cancer that does not spread and tends to grow slowly

Pathologist: a doctor who looks at tissue under a microscope to see if it's normal or affected by disease

Positive margins: means that cancer cells come up to the edge of the normal tissue around the tumor

Pre-cancerous: a tumor that is not considered a cancer; it is a warning sign that you may get cancer in the future

PR-negative: a cancer that does not have progesterone receptors

PR-positive: a cancer that has progesterone receptors

Recurrence: when a cancer comes back again

Solid: a type of cancer that is non-invasive; it does not spread and tends to grow slowly

S-phase fraction test: a test that shows how fast a cancer is growing

Tamoxifen: medicine that stops estrogen from reaching hormone receptors on cancers

Tubular: a type of invasive cancer that grows into the normal tissue around it; it usually grows slowly

Vascular invasion: means that cancer cells are found in the blood vessels

For more information go to:

www.breastcancer.org

Tell us what you think

Just fill in, tear off, and mail — no stamp required.

Thank you for taking the time to answer these questions.

My age: 18-30 31-40 41-50 51-60
 61-70 71-80 81-100

I am a: Woman affected by breast cancer
 Family member/friend
 Physician Nurse
 Other health care professional

I would like more of these booklets to give to others:

Yes No If yes, how many? _____

Mailing address: _____

I would like to receive free email updates from breastcancer.org: Yes No

Email address: _____

Questions for women affected by breast cancer:

1. Did this booklet help you to understand your breast cancer pathology report? A lot A little Not at all
2. Did this booklet give you more confidence in talking to your doctor about breast cancer?
 A lot A little Not at all
3. Did this booklet help you think of questions to ask your doctor? A lot A little Not at all
4. Did this booklet help you in making decisions about your treatment? A lot A little Not at all
5. Do you use the Internet to find information about your health? A lot A little Not at all

Questions for health care professionals:

1. Has this booklet helped facilitate your discussions with patients about their treatment options?
 A lot A little Not at all
2. Do you feel this booklet has helped save you time in your discussions with your patients?
 A lot A little Not at all
3. Do you feel this booklet has helped make your patients more comfortable with their treatment decisions?
 A lot A little Not at all

Key Questions

Here are important questions to be sure you understand, with your doctor's help:

1. Is this breast cancer invasive or non-invasive?
2. Are any lymph nodes involved with cancer? If so, how many?
3. What did the hormone receptor test show? Can you take a medicine that lowers or blocks your estrogen?
4. Were the margins negative, close, or positive?
5. Was the HER-2 test normal or abnormal?
6. Is this a slow-growing or a fast-growing breast cancer?
7. What other lab tests were done on the tumor tissue?
8. What did these tests show?
9. Is any further surgery recommended based on these results?
10. What types of treatment are most likely to work for this specific cancer?

breastcancer.org

“To help women and their loved ones make sense of the complex medical and personal information about breast cancer, so they can make the best decisions for their lives.”

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