



Breast Cancer
Foundation NZ

Breast cancer What do my biopsy and surgical results mean?



For more information

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www.breastcancerfoundation.org.nz

What do my biopsy and surgical results mean?

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This brochure tells you about the testing done on your biopsy tissue and the tissue removed when you have your surgery. These results help your treatment team decide which treatments are best for you.



1

What is a biopsy?

A biopsy is a procedure which removes tissue samples from the tumour to provide more information to your medical team. The specimen is sent to the laboratory where a pathologist looks at the tissue under a microscope and determines whether or not the samples removed are cancer, and if so, the various features of the cancer.

Your breast imaging and examination will have provided information about how your breast cancer looks and feels. **Your initial biopsy is often done at the time of imaging and before a diagnosis is made.**

Tissue can be removed in a number of ways including;

- **A core biopsy** is the most commonly used breast biopsy technique. A spring-loaded hollow needle is used to remove small samples or 'cores' of tissue from a solid lump. Samples removed in this way provide a more detailed description of the tissue including the type, grade and receptor status of the cancer.
- **A fine needle aspiration (FNA) biopsy** is occasionally used to remove fluid or cells from a breast lesion or for aspiration (taking a sample) of a cyst. The cells are examined under the microscope to confirm if they are malignant (cancerous) or benign (not cancerous).
- **An excision biopsy** removes an area of tissue and may be needed if a firm diagnosis has not been made using other methods or when it is not possible to accurately target the area.

It is important to let your doctor know if you take anti-coagulants (blood thinners) as some medications may need to be stopped prior to your biopsy.

The pathologist prepares a report of the findings, including the diagnosis, and sends it to your surgeon or oncologist. The pathology report(s) helps to determine your treatment plan. The report is written in medical language but understanding the basic parts of the report can help you to be better informed about your diagnosis.

Results of your biopsy usually take one to two weeks, though some may take longer.



It is a good idea to ask for a copy of your pathology report to refer to later, especially if you have questions about your treatment plan or wish to seek a second opinion.

The pathology report from your biopsy may contain the following information, used by your medical team to help plan your treatment.

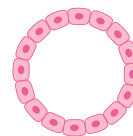
Type of breast cancer

This may be in-situ or invasive.

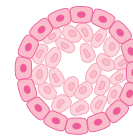
In-situ breast cancer is the earliest form of breast cancer.

Ductal carcinoma in-situ (DCIS) means that the cancer cells are still confined within the breast ducts and is a pre-invasive condition. Lobular carcinoma in-situ (LCIS) is when the cell changes originate in the breast lobules (milk-producing structures) in the breast.

Invasive/infiltrating cancer means that the cancer cells have spread out of the ducts or lobules into surrounding breast tissue. If invasive, the cancer will be further classified e.g. invasive ductal carcinoma, invasive lobular carcinoma or one of the less common special types. "Carcinoma" just means cancer. Over 90% of breast cancers are ductal. Ductal cancer may also be called "No Special Type (NST) or Not Otherwise Specified (NOS). Special types include tubular, mucinous, medullary, cribriform, papillary, invasive micropapillary, malignant phyllodes, metaplastic or Paget's disease of the breast.



Normal breast duct



DCIS



Invasive breast cancer

Grade of the tumour

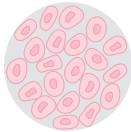
Invasive cancer is usually expressed as Grade 1, Grade 2 or Grade 3. In-situ cancer is expressed as low grade, intermediate grade or high grade.

This indicates how abnormal the tumour appears under the microscope, as compared to normal breast tissue. It can also indicate how quickly the tumour cells are dividing.



Grade 1 (low grade)

The cancer cells still look similar to normal breast cells and grow quite slowly. May also be described as well-differentiated.



Grade 2 (intermediate grade)

The cancer cells look more abnormal and grow slightly faster. May also be described as moderately differentiated.



Grade 3 (high grade)

The cancer cells no longer look like the original breast cells and tend to grow quickly. May also be described as poorly differentiated.

Occasionally the grade of the cancer may change when the pathologist has a bigger sample to examine after surgery.

The grade is not the same as the stage of the cancer.

The stage indicates the size of the tumour and whether the cancer is confined to the breast or has moved to the lymph nodes or to another part of the body. The stage cannot be fully assessed until the cancer has been removed and examined under a microscope and the lymph node status is known. Sometimes other tests or scans may be required to complete the staging.

Hormone receptor status

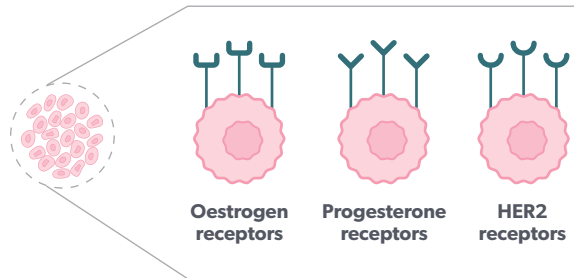
Your breast biopsy or surgical specimen will be tested for oestrogen or progesterone receptors. If positive it means that the breast cancer relies on oestrogen related hormones to grow. The receptor status is usually described as ER and PR positive or negative. DCIS and LCIS are not tested for receptor status.

Note: Not all biopsy reports contain these receptor results.

Some laboratories prefer to perform these tests on the specimen which is removed at surgery.

If the cancer is hormone receptor positive, hormonal (endocrine) therapy may be recommended as part of the treatment plan to reduce the risk of the cancer coming back in the future.

The strength of staining and percentage of cells may also be mentioned in your report in terms of strong, moderate or weakly positive in x% of cells. This helps guide your specialist team as to how effective hormonal (endocrine) therapy may be.



HER2 status

Approximately 15-20% of breast cancers over-produce the HER2 protein, which acts as a growth-regulator. These are described as HER2 positive cancers. DCIS and LCIS are not tested for HER2 status.

When the HER2 is over-produced, this causes the cancer cells to rapidly divide and grow. They are treated with anti-HER2 drugs e.g. trastuzumab (Herceptin or an equivalent drug), sometimes together with Perjeta (pertuzumab), or Kadcyla (T-DM1).

The HER2 status is reported as Negative (0 or 1+) or Positive (3+). Sometimes the result is Equivocal (2+), or uncertain, requiring further testing known as fluorescence in-situ hybridisation (FISH).

An informative booklet "**Herceptin for early HER2-positive breast cancer patient**" is produced by Roche Products (NZ) Ltd and may be available from your breast nurse. You can also download it from cancertreatments.co.nz/breast-cancer/herceptin

Triple negative breast cancer (TNBC)

Approximately 10% of breast cancers are negative for all three receptors: ER, PR and HER2.

These are known as triple negative cancers and do not respond to hormonal (endocrine) therapy nor to anti-HER2 therapies like Herceptin. The mainstay of treatment in these cases is chemotherapy, with or without targeted cancer treatments like Keytruda (pembrolizumab, currently unfunded in NZ for TNBC).

2

Testing on the tumour after surgery

Following surgery, a final histology/pathology report will be issued. This contains additional information about your tumour, and some details may differ slightly from the initial biopsy result. Your treatment team uses this report to help them decide what further treatment you might need.

It is a good idea to ask for a copy of this report to refer to later, especially if you have any questions about your treatment plan or wish to seek a second opinion.

Size of the breast cancer

The size of the breast cancer is measured in millimetre (mm) at its widest point. Some small cancers can be fast growing, and some larger cancers may grow more slowly, or this could be the other way around. The rate of growth is determined by the grade, mentioned earlier.

If more than one cancer is found it will be called multifocal. The size of the largest cancer is used to assist in determining treatment.

If you have had neo-adjuvant treatment (chemotherapy or another drug before surgery), your report will include the size of any "residual" cancer still present. A "complete pathological response" (pCR) means there is no remaining cancer. A "partial response" means there is some cancer remaining, and "no evidence of response" means the cancer has not changed or has grown.

Surgical margins

Your pathology report will give the distance of the cancer from the edge of the tissue removed in mm. The report may say the edges (margins) are positive (cancer present on the margin) or close (cancer near the margin) or negative (no cancer on or near the margin).

Words you may see in your report include superior (top), inferior (bottom), medial (towards the middle), lateral (towards the edge), superficial/anterior (front) and posterior/deep (back).

The presence of positive or close margins may indicate the need for further surgery or radiation therapy.

Lymphovascular invasion

The breast contains blood vessels and lymph vessels. When breast cancer spreads into the tissue surrounding the tumour it is called lymphovascular invasion (LVI). This increases the chances of breast cancer spreading to other parts of the body.

Lymph nodes

If you have invasive breast cancer or are having a mastectomy for DCIS you may have a sentinel node biopsy (SNB) to check for cancer in the lymph nodes. You may have an axillary node dissection/clearance (AND), if a biopsy of the lymph nodes before surgery showed cancer present.

Your pathology results will say how many lymph nodes were removed and how many contain cancer. Following a SNB, for example, the report may say "1/3" meaning 1 of the 3 lymph nodes removed have cancer in them. The number of sentinel nodes and axillary nodes varies from person to person.

Positive lymph nodes mean there is cancer in them. The more positive lymph nodes there are, the more likely the cancer has spread elsewhere in the body. If cancer is found in the tissue around the lymph nodes it is called extranodal spread. If only a tiny area of breast cancer is seen in the lymph nodes it is called micrometastases.

3

Additional tests

Even with all the testing completed on the biopsy tissue and the tissue removed at the time of surgery, your treatment team may suggest further testing to help make a decision about whether chemotherapy would add benefit compared to hormone therapy alone.

Additional genetic tests such as MammaPrint, Oncotype DX, ProSigma, can be performed on the tissue that was removed when you had your biopsy or your surgery. Check our website for further info at breastcancerfoundation.org.nz/understanding-your-pathology-report

These tests are not publicly funded in New Zealand, but if you are interested you can discuss them with your specialist team. Costs can be several thousand dollars.

4

We recommend you ask your doctor these questions

1. Can I have a copy of the pathology report and can you explain it to me?
2. Can I bring a support person in so you can explain my results to them?
3. Can you write down what you have told me so that I can read it again later?
4. Can I record this conversation so I can listen later to better understand?
5. Who can I call if I have questions when I get home?
6. What are my next steps?

Summary of my results

My Pathology Results

The tumour I have is

- Malignant Benign
 In-situ Invasive

The type of cancer I have is

- Non-invasive Invasive
 DCIS Ductal
 LCIS Lobular
 Other

The grade of my cancer is

- Grade 1
 Grade 2
 Grade 3

The grade of my DCIS is

- Low
 Intermediate
 High

The size of my cancer is

Write size here

Lymphatic vascular invasion (LVI)

- Yes No

The number of nodes removed is

Write number here

The number of nodes with cancer is

Write number here

My hormone receptors are

- ER positive PR positive
 ER negative PR negative

My HER2 status is

- Positive
 Negative
 Equivocal

FISH test

- Yes No



Breast Cancer
Foundation NZ



Need advice?

0800 BC NURSE (0800 226 8773)

breastnurse@bcf.org.nz

www.breastcancerfoundation.org.nz

We're here to help



@pinkribbonNZ

Breast Cancer Foundation NZ's vision is zero deaths from breast cancer. Our mission is to push for new frontiers in early detection, treatment and support.

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