A Guide to Interpreting a Pathology Report

The first information you should look for is the patient’s name, age and gender.

**Specimen(s) received**
This section lists where the tissues were taken from.

**Clinical History**
This section refers to the patient’s breast cancer history, such as any procedures that have been done and/or a diagnosis.

**Gross Description**
In this section, you will find macroscopic descriptions of the samples, such as size.

**Description**
This section describes characteristics of a patient’s cancer.

**Specimen Type**: Identifies where the sample was taken from.

**Specimen Size**: The largest piece of tissue the pathologist looks at.

**Laterality**: Identifies the side of the body the tissue sample came from.

**Tumor Size**: The size of the tumor present in the sample. Size is measured in centimeters. Size is important for diagnosis.

**Final Diagnosis**: Type of cancer present in the sample.

**Histologic Grade**: Indicates how different the cancer cells are from healthy cells. There are three grades:
- Grade 1: Cancer cells are similar to healthy cells and grow slowly.
- Grade 2: Cancer cells do not look like healthy cells and grow more quickly.
- Grade 3: Cancer cells look very different from healthy cells and grow very fast.

**Stage**: Stage describes the extent of the cancer. Stage ranges from 0-IV.

**Number of nodes examined**: When breast cancer spreads, cancer cells are often found in the lymph nodes under the arm. This number tells how many lymph nodes were examined by the pathologist.

**Number of positive nodes**: This number tells how many lymph nodes in the sample contain cancer cells. A large number of positive lymph nodes may indicate the cancer is more serious.

**Lymphovascular invasion**: If cancer cells have invaded the blood or lymphatic tissue, there is a risk that cancer may return after the tumor is removed. Lymphovascular invasion will be either present or absent.
Procedures/Addenda
Test results often come back at different times and their results are added to a report here. You will see test results for the hormones estrogen and progesterone and the protein HER2/neu. Results will be expressed with a number and an interpretation. These tests have important implications for treatment. Estrogen (ER) and progesterone (PR) are hormones that stimulate the development and maintenance of female characteristics. These hormones bind to cells that have ER and PR receptors. Cells with ER and PR receptors are located in the breast, uterus, brain, heart, liver and bone. In the tissues of the breast and uterus, ER and PR cause cells to grow and divide, or proliferate. For example, estrogen triggers cell proliferation in milk glands to prepare the breast to produce milk if a woman becomes pregnant. While ER and PR have many beneficial effects, they can also be harmful due to their ability to trigger cell proliferation in the breast and uterus.

Some breast cancer cells have hormone receptors while others do not. A cell is hormone positive if it has many ER or PR receptors and hormone negative if it has no receptors. Typically, the hormone receptor test results are a number between 0-3:

**Result Interpretation**

0 No receptors
1+ Small number of receptors
2+ Medium number of receptors
3+ Large number of receptors

ER and PR positive cancers respond well to hormone therapies that block the interaction between the hormone and the hormone receptor.

HER-2/neu is a protein involved in normal cell growth. Some cancer cells have too many copies of the gene that makes the HER2/neu protein. Cancers that have too many copies of HER2 tend to grow very fast. The HER2/neu test uses a staining technique. A sample that has little to no staining is negative. Typically, the HER2/neu test results are a number between 0-3, and refer to the level of staining intensity:

**Result Interpretation**

0 Negative
1+ Negative
2+ Borderline
3+ Positive

Cancers that are HER2/neu positive respond well to biological therapy, which uses antibodies.