Understanding Estrogen, Progesterone, Her2/neu and Ki67

Your surgeon will send the tissue sample from your surgery to the Pathology Department to be analyzed. Part of this process will be to examine the specimen for the presence of estrogen, progesterone, and protein called Her2/neu and Ki67.

Estrogen and progesterone are hormones present in all women. These hormones have many purposes but they are also known to influence certain breast cancers. Cancer cells influenced by these hormones respond through estrogen receptors (ER) and progesterone receptors (PR).

Breast cancer cells that have a larger amount of estrogen and progesterone are called ER and PR receptor positive. Breast cancer cells that are ER or PR receptor negative have low levels of these hormones. The amount of estrogen and progesterone is determined using a test called the hormone receptor assay. The result of the hormone receptor assay test is important to help you and your physician plan the medications for your treatment.

There is also a protein called Her2/neu that contributes to cell growth and development but in some cancers this protein is overproduced. When this overproduction occurs the cancer cell grows more rapidly. The Her2/neu status of a tumor can be tested using either immunohistochemistry (IHC) or fluorescence in situ hybridization (FISH). This information is important to you and your physician since there are treatments with Herceptin that specifically target Her2/neu-positive tumors and blocks Her2/neu from stimulating breast cancer cell growth.

Immunohistochemical test for Ki67 antigen will also be performed on the tumor tissue. This marker reflects growth activity of the tumor and will allow the clinician to better evaluate the property of each tumor and tailor the therapy accordingly.