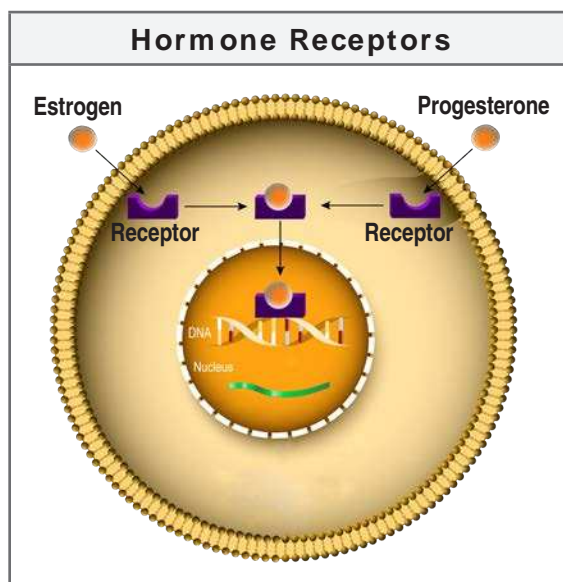


## Estrogen and Progesterone Receptor Status

An estrogen receptor (ER) assay (analysis of a substance) and a progesterone receptor (PR) assay are tests performed on your tumor to determine if estrogen and progesterone hormones stimulated the growth of your cancer. This test will help the oncologist determine the most appropriate type of treatment needed for your cancer.

Hormones are chemicals that are released into the bloodstream by a particular gland. The hormones attach to receptors elsewhere in the body producing a physical response. The hormones estrogen and progesterone are primarily produced by the ovaries, but also by the adrenal glands and other tissues in the body. The hormones function much like a key, traveling until they locate a receptor on a cell or a lock-like opening that fits the key. These “locks” on the breasts are called estrogen or progesterone receptors. When an estrogen/progesterone molecule finds a receptor, it attaches to the receptor and the breast cell allows the molecule to enter. When inside the breast tissues, the estrogen or progesterone molecules have the ability to affect the cell’s function. If the cells do not have this receptor, they are not affected and the hormone molecules cannot enter or affect the function of the cell. Some breast cancers have receptors for estrogen or progesterone molecules. Some breast cancers do not have any receptors for these hormones.



All breast cancers are tested for ER/PR receptor status. A pathologist will study your tumor to determine if your cancer had estrogen receptors (ER) or progesterone receptors (PR). If the receptors are found, they referred to as “ER (+) positive” or “PR (+) positive” tumors. Some breast cancers may be positive for one hormone and not for the other. Some tumors do not have receptors for estrogen or progesterone and are reported as “ER (-) negative” “or PR (-) negative.”

Often, postmenopausal women have a higher rate of positive receptor sites than premenopausal women. Typically, about 75 to 80 percent of tumors are positive. When tumors are ER or PR positive, more treatment options with fewer side effects are available.

ER/PR testing is very important to determine the most appropriate treatments. Tumors that are ER positive and PR positive are shown to be more responsive to hormonal therapies, whereas tumors that are ER or PR negative will probably not respond to hormonal treatment.

If a woman tests ER or PR positive there are numerous hormonal drugs that can reduce and prevent estrogen/progesterone impact on breast tissues.

**There Are Three Types of Anti-Hormonal Medications:**

- **Selective Estrogen Receptor Modulators (SERMs):** Tamoxifen, Fareston® (toremifene)
- **Aromatase Inhibitors:** Arimidex® (anastrozole), Aromasin® (exemestane), Femara® (letrozole)
- **Estrogen Receptor Downregulators (ERDs):** Faslodex (fulvestrant)

Anti-hormonal medication side effects are similar to menopausal symptoms, such as hot flashes, vaginal dryness, vaginal spotting and occasionally nausea during the first several weeks. Removal of the ovaries can also be a treatment option to reduce the circulating hormones in the body. These hormonal treatments, unlike most chemotherapy drugs, do not cause hair loss or negatively affect blood counts.

Your pathology report will reveal if you are ER positive/negative or PR positive/negative. Your physician will discuss the effect of your receptor status on your treatment options.

***Additional Information:***

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