Endocrine Therapy for Breast Cancer

What is endocrine therapy?

Endocrine therapy is also known as “hormone blocking therapy”. Hormones are chemical messengers your body naturally makes. They travel in the bloodstream and control the activity of other cells and organs in the body. Hormones can also stimulate the growth of certain kinds of cancer. Some breast cancers are sensitive to the hormones estrogen, progesterone or both. These cancers have hormone sensors called “receptors” in their cells where hormones can become attached. This is called a “Hormone-Receptor Positive” cancer.

Your doctor may use endocrine therapy to block the estrogen receptor or to lower the amount of estrogen in your body. This may prevent breast cancer cells from growing and spreading. Endocrine therapy is a type of systemic therapy. This means it works throughout your body, not just in the breast tissue.

Endocrine therapy for breast cancer is not the same as female menopausal hormone replacement therapy. Menopausal hormone replacement therapy is given to lessen the symptoms of menopause.

Where does estrogen come from?

In premenopausal women, most estrogen in the body is made by the ovaries. In postmenopausal women, the ovaries stop making estrogen. If you have gone through menopause or if your ovaries have been removed, your body can still make estrogen using an enzyme called “Aromatase”. High levels of the aromatase enzyme are found in the breast, body fat and muscle. An enzyme is a chemical that helps change one substance into something else. In men, estrogen is made in the testes and can also be produced by the aromatase enzyme.
When is endocrine therapy used?

Endocrine therapy can be used to treat both early and advanced stage breast cancers. Your doctor may recommend endocrine therapy before or after other cancer treatments. If endocrine therapy is given before surgery, it is called a “neoadjuvant” therapy. If it is given after surgery it is called an “adjuvant” therapy.

For early stage hormone-receptor-positive breast cancer, your doctor may use endocrine therapy after surgery. This is to help prevent cancer cells from coming back in the breast or other areas in the body. This is an “adjuvant” endocrine therapy. You may need to take adjuvant endocrine therapy for about 5 to 10 years.

For advanced stages of hormone-receptor-positive breast cancer, endocrine therapy may be used to control the symptoms and to prevent the cancer from growing larger or spreading to new areas. Your doctor may talk with you about changing or stopping endocrine therapy if you are unable to tolerate this therapy or if your cancer does not respond well to the treatment.

Can endocrine therapy be given with other kinds of treatment?

For early stage hormone-receptor-positive breast cancer, your doctor will use adjuvant endocrine therapy after you have had other treatments (surgery, chemotherapy or radiation). Endocrine therapy can be used by itself, or in combination with other drugs including Trastuzumab (Herceptin), Pertuzumab (Perjeta) or Neratinib (Nerlynx) if your breast cancer is also “human epidermal growth factor receptor 2” (HER2) positive.

For the treatment of advanced stages hormone-receptor-positive breast cancer, your doctor may use endocrine therapy by itself or in combination with other types of “targeted” therapy. Endocrine therapy is normally not given in combination with chemotherapy.

What are the different kinds of endocrine therapy?

There are many kinds of endocrine therapies available for breast cancer. Here are the most common types:

- **Selective Estrogen Receptor Modulators (SERMs)** – These are anti-estrogen medicines such as **Tamoxifen or Toremifene**. They work to
prevent the action of estrogen by blocking estrogen from binding to receptors inside the cancer cell. These medicines are taken by mouth and may be used in premenopausal and postmenopausal women, or men.

- **Ovarian Suppression** – This treatment stops the ovaries from making estrogen. An **Oophorectomy** is a surgery to permanently remove the ovaries. The drug **Goserelin** (Zoladex) is a shot given under the skin once a month to shut down the ovaries for a period of time in premenopausal women.

- **Aromatase Inhibitors (AI’s)** – Medicines such as **Anastrozole** (Arimidex), **Letrozole** (Femara) and **Exemestane** (Aromasin) are taken by mouth to block the enzyme aromatase from making estrogen in postmenopausal women.

- **Estrogen Receptor Downregulator (ERD)** – **Fulvestrant** (Faslodex) is a drug given as a shot once a month. It reduces the action of estrogen by blocking estrogen from binding to receptors inside the cancer cell. Fulvestrant is only used in postmenopausal women for advanced stage breast cancer.

**What are the side effects of endocrine therapy?**

Every person responds differently to treatment. Some of the more common side effects are:

- Hot flashes or flushing
- Night sweats
- Mood swings or depression
- Vaginal dryness (Aromatase Inhibitors)
- Vaginal discharge (Tamoxifen)
- Fatigue
- Muscle or joint aches and pains (Aromatase Inhibitors)
- Changes in bone density
- Changes in blood cholesterol or triglycerides (Aromatase Inhibitors)
- Blood clots (Tamoxifen)
- Changes in vision (Tamoxifen)
- Risk of developing cancer of the uterus (Tamoxifen)
- Changes in sex drive