

Hormonal Therapy

The growth of ER-positive breast cancer cells can be stopped or slowed by reducing their exposure to estrogen. The goal of hormonal therapy is to prevent the growth of ER-positive cancer **throughout the body** by reducing or stopping estrogen production.

These pills, given either alone or in combination with chemotherapy are effective weapons in the fight against ER-positive breast cancer. In many cases they:

- Reduce the chance of cancer coming back in the breast or elsewhere in the body
- Increase overall survival
- Reduce the risk of a new cancer in the healthy breast.

These drugs are usually started after surgery and radiation treatments are completed and are given for five years, although some may be switched from one type to another during those five years. In some cases of advanced breast cancer the drugs are given as long as they are working for the patient. Your oncologist will determine the best length of time for you to take these medications.

The two most common anti-estrogen (hormonal) drugs used to treat breast cancer are:

- Selective Estrogen Modifiers such as tamoxifen (Nolvadex).
- Aromatase inhibitors such as anastrozole (Arimidex), letrozole (Femara), and exemestane (Aromasin).

A reduction in estrogen levels with any of these medications can also result in side effects because estrogen is necessary for body functions, such as bone growth and cardiovascular health. Many side effects are mild and manageable but others may be serious.

Common side effects for all types of anti-estrogen therapy:

- Weakness or tiredness.
- Mood Swings.
- Hot Flashes.
- Vaginal dryness, itching or discharge.
- Early start of menopause (may be reversed).
- Increased risk of blood clots (**less than 1%**).
- Nausea and vomiting.
- Weight gain.
- Depression.

Not all women experience these side effects. Most women tolerate these drugs well.

Aromatase inhibitors (AIs)

These drugs are a newer class of hormone therapy that reduces the total amount of estrogen in a women's body. They are not effective in pre-menopausal women as they don't work in women with functional ovaries. The long term side effects of AIs are not completely understood although there is a good deal of information on the side effects when taken for fewer than five years. In addition to the common anti-estrogen therapy side effects listed above AI's may cause:

- Weakening of bones (osteoporosis).
- Joint pain.
- Increased cholesterol levels.
- Back pain, bone or pelvic pain.
- Diarrhea or constipation

Call your physician immediately if you have any of these side effects:

- Skin rash, hives, or itching.
- Chest pain, unexplained shortness of breath, trouble breathing; swelling of feet or lower legs; coughing up blood.

Call your physician as soon as you can if you have any of these side effects:

- Breakthrough bleeding or spotting.
- Irregular or missed periods.

Tamoxifen

Selective Estrogen Modifiers (tamoxifen) blocks the effects of estrogen in the body. Because Tamoxifen has been used for more than two decades, more is known about the long term side effects of this medication than the AIs. In addition to the common anti-estrogen therapy side effects listed, tamoxifen may cause:

- Increase risk of uterine cancer (2-3% of women).
- Increased risk of stroke (less than 1% of women).
- Fertility issues; may increase fertility.
- Cataract or other eye problems.
- Hair and nail thinning.

Call your physician immediately if you have any of these side effects:

- Skin rash, hives, or itching.
- Chest pain, unexplained shortness of breath, trouble breathing; swelling of feet or lower legs; coughing up blood.
- Weakness or loss of ability to move one side of the body.

Call your physician as soon as you can if you have any of these side effects:

- Dizziness or lightheadedness.
- Headache.
- Blurred or decreased vision.
- Abnormal vaginal bleeding, a change in vaginal discharge, pelvic pain and pressure.

The effects listed are the most common and/or important ones women experience. There may be others. Be sure to speak with your physician about any effects you notice after taking any new medicine.

Before using these medicines tell your doctor if you are pregnant or intend to become pregnant because these drugs may cause birth defects and miscarriages. It is best to use birth control while you are taking these medications and for about two months after stopping. However, do not use oral contraceptives(“the pill”) since they may interfere with the effectiveness of these medicines.

Be sure to tell you oncologist about **all** medications you are taking including over-the-counter drugs. You should not take estrogen in any form, including over-the-counter forms (such as dong quai, or black cohosh). Anti-estrogen therapy may increase the effect of anticoagulants (blood thinners).

Talk to your oncologist about benefits of anti-estrogen (hormonal) therapy and the various side effects. He or she will consider the nature of your cancer, menopausal status, medical condition and other treatments you are taking when selecting the appropriate therapy for you.