

What are hormones?

Hormones are chemicals made in the body that control how cells and organs do their work. Two female hormones, estrogen and progesterone, are important for reproduction. They help control a woman's monthly period and pregnancy.

Hormones and breast cancer

Some breast cancer cells need hormones to grow. These cells will have many proteins called hormone receptors. Tumors with many of these cells are called hormone receptor-positive tumors (estrogen receptor-positive and/or progesterone receptor-positive) tumors. Tumors with few or none of these cells are called hormone receptor-negative and/or progesterone receptor-negative) tumors.

Hormone receptor status is key in planning breast cancer treatment. Hormone therapies are only used to treat hormone receptor-positive breast cancers.

Tamoxifen and/or aromatase inhibitors

Tamoxifen and aromatase inhibitors (AIs) are hormone therapy drugs used to treat hormone receptor-positive tumors.

Tamoxifen attaches to the estrogen receptors in the cancer cell. This blocks estrogen from getting into the cancer cell. It is used to treat breast cancer in both pre- and postmenopausal women. Some types of antidepressants may interfere with how tamoxifen works. Be sure to talk with your doctor if you take one.

AIs lower the amount of estrogen in the body which slow or stop the growth of hormone receptor-positive

tumors. As a result, the cancer cells don't get the hormones they need to grow. They are only used for postmenopausal women.

AIs include:

- Anastrozole (Arimidex)
- Letrozole (Femara)
- Exemestane (Aromasin)

Hormone therapy can lower the risk that breast cancer will:

- Recur (return) or metastasize (spread)
- Occur in the other breast
- Result in death

How are tamoxifen and aromatase inhibitors given?

Tamoxifen and AIs are pills.

Tamoxifen is taken daily for at least 5 years (and sometimes, up to 10 years).

Tamoxifen may be taken for a few years then replaced with an AI, for a combined total of at least 5 years.

AIs may also be taken for the full course of treatment. When they are the only hormone therapy given, they are taken for 5 years.

To get the most benefit, hormone therapy should be taken for the full length of time they are prescribed. Women who complete the full course have higher rates of survival than those who do not. The benefit continues even after the drugs are stopped.

Side effects of tamoxifen and aromatase inhibitors

Menopausal symptoms like hot flashes are common with both tamoxifen and AIs. However, other side effects differ. The three AI drugs have similar side effects. Talk with your doctor about these and other rare but serious health risks that may occur with these drugs.

	Tamoxifen	Aromatase Inhibitors
Common side effects	<ul style="list-style-type: none">• Hot flashes and night sweats• Loss of sex drive• Vaginal discharge• Vaginal dryness or itching	<ul style="list-style-type: none">• Hot flashes and night sweats• Joint and muscle pain• Loss of bone mineral density (may lead to osteoporosis or bone fracture)• Loss of sex drive• Vaginal dryness or itching

Cost

Tamoxifen and all 3 AIs come in generic form and cost less than the name brands.

Medicare and many insurance providers offer prescription drug plans. One may be included in your policy or you may be able to buy an extra plan for prescriptions. You may also qualify for programs that help with drug costs.

If you need help paying for medications, call our breast care helpline for information at 1-877 GO KOMEN (1-877-465-6636) Monday through Friday, 9 AM to 10 PM ET.

Ovarian suppression

Ovarian suppression uses drugs or surgery to keep the ovaries from making estrogen. This stops menstrual periods and lowers hormone levels in the body (similar to a natural menopause), so the tumor can't get estrogen to grow. Ovarian suppression is only an option for premenopausal women. In most cases, once drug therapy is stopped, the ovaries begin making estrogen again. If surgery is used to remove the ovaries, this ends periods and leads to early menopause.

Tumor profiling

Tumor profiling tests give information about the genes in cancer cells. Tumor profiling is used to help make treatment decisions in some people with estrogen



receptor-positive cancers. It can help decide whether or not chemotherapy is needed in addition to hormone therapy.

Questions to ask your doctor

- If I need hormone therapy, what kind do you recommend for me and why?
- When will it be started? How long will I take it?
- What are the possible side effects? How long will they last? Which ones should I report to you?
- Are there any clinical trials I should consider?

Related fact sheets in this series:

- Breast Cancer Prognosis
- How Hormones Affect Breast Cancer Risk
- Making Breast Cancer Treatment Decisions

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