

What are aromatase inhibitors?

Aromatase inhibitors (AIs) are a type of hormone therapy used to treat some breast cancers. They are taken in pill form and can be started after surgery or radiation therapy. They are only given to postmenopausal women who have a hormone receptor-positive tumor, a tumor that needs estrogen to grow.

AIs are used to stop certain hormones from turning into estrogen. In doing so, these drugs lower the amount of estrogen in the body.

Generic/Brand names of AI's

Generic name	Brand name
anastrozole	Arimidex
exemestane	Aromasin
letrozole	Femara

Who can use aromatase inhibitors?

Postmenopausal women with early stage and metastatic breast cancer are often treated with AIs. After menopause, the ovaries produce only a small amount of estrogen. AIs stop the body from making estrogen, and as a result hormone receptor-positive tumors do not get fed by estrogen and die.

AIs are not given to premenopausal women because their ovaries still produce estrogen. AIs will not stop the ovaries from making the estrogen that feeds the tumor.

Aromatase Inhibitors vs. Tamoxifen

AIs and tamoxifen are both hormone therapies, but they act in different ways:

- AIs lower the amount of estrogen in the body by stopping certain hormones from turning into estrogen. If estrogen levels are low enough, the tumor cannot grow.
- Tamoxifen blocks estrogen receptors on breast cancer cells. Estrogen is still present in normal levels, but the breast cancer cells cannot get enough of it to grow.

As part of their treatment plan, some postmenopausal women will use AIs alone. Others will use tamoxifen for 1-5 years and then begin using AIs.



There are pros and cons to using AIs compared to tamoxifen. Keep in mind that tamoxifen has been studied for over 40 years and a lot is known about it. Doctors are still learning new things about AIs. If you have questions about which treatment is right for you, talk to your doctor.

	Benefits (drugs compared to each other)	Risks and side effects (from most common to least common)
Aromatase inhibitors	<ul style="list-style-type: none"> • Lower rates of vaginal discharge • Fewer clotting problems • Lower rates of uterine cancer 	<ul style="list-style-type: none"> • Muscle and joint pain • Memory problems and mental fuzziness • Osteoporosis and bone fractures • Unclear effect on heart health
Tamoxifen	<ul style="list-style-type: none"> • Better blood cholesterol levels • Lower risk of osteoporosis and bone fractures • Lower risk of having cancer in the other breast • In women at higher risk, lowers the risk of having breast cancer 	<ul style="list-style-type: none"> • Hot flashes • Vaginal discharge and dryness • Fatigue • Nausea • Depression • Loss of sex drive • Headache • Bloating • Vaginal bleeding • Uterine cancer • Blood clots in leg veins • Blood clots in the lungs • Stroke • Cataracts

Unanswered questions

There are many things that doctors are still trying to learn about AIs:

- Which one helps women the most?
- How long should they be taken?
- Do they help women who were premenopausal when they first found cancer but later became menopausal because of treatment?
- Can they be used for women with non-invasive (DCIS) breast cancer?
- How do they affect women who are estrogen receptor-negative compared to women who are estrogen receptor-positive?
- Can they be used to prevent breast cancer in higher risk women?

Related fact sheets in this series:

- Current Research on Drugs & Treatments
- Hormone Therapy
- Metastatic Breast Cancer
- Tamoxifen

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