

Breast cancer prevention drug approved for post-menopausal women in the UK. Here's how it works

November 9 2023, by Sarah Allinson



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A drug that can [halve the risk](#) of developing breast cancer in post-menopausal women has been approved for use in the UK. This drug,

called anastrozole, could benefit an estimated 289,000 women in the UK who are at [increased risk of breast cancer](#).

Anastrozole was already approved for use in the UK as a [breast cancer](#) treatment. It belongs to a group of drugs called [aromatase inhibitors](#) that were first developed to treat breast cancer in women who had undergone menopause.

The key to anastrozole's success both in treating and preventing breast cancer, is due to its effects on the body's estrogen levels.

[Up to 80%](#) of all breast cancers produce a protein called the estrogen receptor, which binds to the hormone estrogen. When it binds, this protein tells [breast cancer cells](#) to divide. This overrides the normal controls that prevent cells from dividing too much—causing a tumor to grow. The more estrogen circulating around the body, the more likely it is that tumor growth will be stimulated.

But anastrozole reduces estrogen levels, preventing breast cancer cells from dividing. It does this by targeting a specific enzyme in the body.

Before the menopause, most of the body's estrogen is produced in the ovaries. But after the [menopause](#), estrogen is instead produced by an enzyme called [aromatase](#). This estrogen is typically made in our fat tissue. Aromatase produces estrogen by converting other hormones—such as testosterone and androstenedione.

Anastrozole and similar drugs—such as letrozole and exemestane—stop aromatase from working and drastically reduce the amount of estrogen in the body. This means that in post-menopausal breast cancer patients, the drug is [very effective](#) at stopping cancers which produce the estrogen receptor from recurring after surgery or chemotherapy.

The reason anastrozole also works to prevent breast cancer is because often the earliest stages of normal breast tissue becoming cancerous depend on estrogen. Indeed, many of the [known risk factors](#) for developing breast cancer—such as [late menopause](#) and [obesity](#)—are associated with increased estrogen levels. But using anastrozole to reduce estrogen levels can stop breast cancer before it even starts in at-risk [post-menopausal women](#).

Preventative drug

Thanks to the new license, post-menopausal women in the UK who are at moderate to high risk of developing breast cancer will now be offered the chance to take anastrozole to protect themselves. Women who have a [family history of the disease](#) should talk to their doctor about their risk and whether they could benefit from taking anastrozole.

It's worth noting, however, that the drastic reductions in estrogen levels caused by an [aromatase inhibitor](#) such as anastrozole are not without their drawbacks. Not only may it [worsen menopause symptoms](#), it may also cause other [side-effects](#)—such as a decrease in bone density and increased risk of fractures. These [side-effects can become more serious](#) the longer the [drug](#) is taken. This is why it's currently recommended that anastrozole is only taken for prevention for five years.

Women who are at increased risk of breast cancer and are considering using anastrozole need to be supported in making an [informed decision](#) that's right for them. Women with osteoporosis or serious kidney or [liver disease](#) are [particularly advised](#) to discuss this decision with their doctor first.

In the UK, there are [almost 56,000 new diagnoses of breast cancer](#) annually. The NHS estimates that if just 25% of eligible patients opt to take anastrozole, then [2,000 breast cancer cases](#) could be prevented each

year in the UK.

Breast cancer is the [most common cancer in the world](#). An estimated 2.3 million people—mainly women—will develop the disease each year. Preventing even a fraction of these cancers has the potential to save many lives and reduce suffering. Although anastrozole is prescribed off-label to prevent breast cancer in [other countries](#), the UK is the first to license it for this specific use. Given the burden of breast cancer, it's hoped that other countries will follow suit.

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