

Tamoxifen Update

Tamoxifen is a medication that blocks the effects of the hormone estrogen.

Tamoxifen is used to treat breast cancer for women whose tumors have **estrogen receptors** (called ER positive). Approximately 60% to 70% of breast cancers are ER positive. Tamoxifen is most often used after surgery or radiation therapy but also can be used for cancer prevention in women who are at high risk of developing breast cancer. Both premenopausal and postmenopausal women can take tamoxifen.

Treating Breast Cancer With Tamoxifen

Physicians have used tamoxifen since the 1970s to treat women with breast cancer who have already had surgery to remove a tumor. The goal of treatment is to prevent any remaining cancer cells from growing.

Tamoxifen has had a major effect on improving breast cancer survival, including decreasing the likelihood that a woman will develop cancer in the other breast.

Despite its usefulness in preventing breast cancer recurrence, tamoxifen has some serious side effects. Some result from its ability to act like estrogen in other tissues, such as the uterus, leading to an increased risk of uterine cancer. There is a risk of endometrial cancer, but only in postmenopausal women. Additional risks include blood clots (especially in the lungs and legs), stroke, and cataracts, among others.

How Long Should Women Take Tamoxifen?

Breast cancer may spread throughout the body. Cancerous cells may lay **dormant** (inactive) for many years before becoming active again and causing the disease to come back. Therefore, tamoxifen is given for several years to prevent the dormant cancer cells from developing into cancers.

The duration of treatment with tamoxifen is 5 years. A recent study called the ATLAS trial looked at the results of extending tamoxifen use for additional lengths of time. The ATLAS study looked at benefits and risks of a 10-year course of tamoxifen. The study looked at 6846 women with ER-positive breast cancer who had already taken tamoxifen daily for 5 years. Half were randomly as-

signed to a control group that stopped taking the drug. The other half continued to take tamoxifen for another 5 years.

Compared with women who stopped taking the drug after 5 years, women who took tamoxifen for at least 10 years had reduced overall death rates—from 21.1% to 18.6%. However, long-term tamoxifen use caused more problems with blood clotting, heart attacks, and endometrial cancers (rate increased by 0.2%) (see related Patient Pages mentioned below).

The study was not designed to find out how important these complications are as a downside of treatment. However, in general, women at higher risk of recurrence are more likely to benefit from increasing the length of their treatment, and women at lower risk of recurrence may benefit from the usual 5 years of treatment.

If you are taking tamoxifen to prevent a recurrence of breast cancer, ask your doctor how long you should take the medication. Even though studies like the one summarized here provide guidance, treatment decisions should be based on an individual patient's circumstances.

FOR MORE INFORMATION

- National Cancer Institute
www.cancer.gov/cancertopics/understandingcancer/estrogenreceptors
- National Library of Medicine
www.nlm.nih.gov/medlineplus/druginfo/meds/a682414.html
- American Cancer Society
www.cancer.org/treatment/treatmentsandsideeffects/guidetocancerdrugs/tamoxifen

+ To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA's website at jama.com. Many are available in English and Spanish. A Patient Page on pulmonary emboli was published in the February 6, 2013, issue and one on myocardial infarction in the January 30, 2008, issue.

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