# ER-Positive Breast Cancer: What's the Latest in Treatment?

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Harold J. Burstein, MD, PhD, physician-scientist in the Breast Oncology Program of the Susan F. Smith Center for Women's Cancers, provided an update on treatment of ER-positive breast cancer, including the roles of chemotherapy, targeted therapy, and ovarian suppression, in a recent New England Journal of Medicine article.

What is ER-positive breast cancer?

Of the 250,000 new cases of breast cancer diagnosed in the United States each year, 70% are ER-positive, meaning their cells bear a receptor for the estrogen hormone, which drives the growth and proliferation of breast tumors. An inherited gene accounts for 8-10% of ER-positive breast cancer, although their treatment is the same as for non-hereditary cases.

What are the treatment options for ER-positive breast cancer?

In addition to surgery, treatments for ER-positive breast cancers include:

- Chemotherapy
- Hormone-based therapies that deplete estrogen production or interrupt estrogen-receptor signaling
- Ovarian suppression
- Targeted therapies
- Immunotherapy

Burstein says there has been a "sea change" in the use of chemotherapy for early-stage ER-positive breast cancer, thanks to tests of the genomic characteristics of a tumor and which "allow the majority of women to avoid chemotherapy."

For premenopausal women with early, low-risk breast cancers, there is growing recognition that

ovarian suppression rather than chemotherapy is an important treatment to reduce the chances of recurrence. Chemotherapy is indicated, however, for women with larger ER-positive tumors with higher-risk genomic features.

Endocrine therapy for five to 10 years, to prevent metastatic disease, recurrence, and tumors in the opposite breast, is recommended for almost all patients with ER-positive breast cancer. Previously, tamoxifen was the standard endocrine therapy, but in recent years, there have been more options, such as aromatase inhibitors, which are more effective than tamoxifen, especially in higher-risk cancers. Endocrine therapy is also standard treatment for metastatic disease.

All the endocrine therapies carry some risks and have side effects. Burstein's review notes that better understanding of these side effects and how to manage them can help providers individualize therapy for patients.

Advances have also emerged from research on targeted therapies, such as CDK4/6 inhibitors, which, when added to aromatase inhibitors can improve survival. Another class of targeted therapies, PARP inhibitors, are proving effective for women with ER-positive breast cancers that harbor inherited cancer gene mutations such as BRCA1, BRCA2, or PALB2.

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