

# HER2-TARGETED THERAPIES

## for Breast Cancer

### Questions for my doctor.

- What are my treatment options?
- Is targeted therapy right for me?
- Will my heart need to be monitored during treatment?
- What are the side effects and risks of the therapy you recommend for me?
- What can I do if my skin becomes more sensitive? If I develop breakouts, how should I treat them?
- Is there a clinical trial I could join?



### HER2-positive breast cancer

HER2-positive breast cancers have a lot of a protein called HER2 on the surface of the cancer cells. The HER2 protein is important for cancer cell growth.

All breast cancers are tested for [HER2 status](#). This information is part of breast cancer staging and helps guide treatment.

About 10 - 20 percent of newly diagnosed breast cancers are HER2-positive.

HER2-negative breast cancers have little or no HER2 protein.

### What are HER2-targeted therapies?

HER2-targeted therapies treat HER2-positive breast cancers. They are only used to treat HER2-positive breast cancers. They have no role in the treatment of HER2-negative cancers.



### HER2-targeted therapy drugs for early breast cancer

Drug name	Brand name	Pill, injection (given under the skin) or IV (given by vein through an IV) drug
Trastuzumab	Herceptin	IV drug or injection
Pertuzumab	Perjeta	IV drug or injection
Ado-trastuzumab emtansine	Kadcyla, T-DM1, trastuzumab emtansine	IV drug
Neratinib	Nerlynx	Pill

Other HER2-targeted therapy drugs are under study for early breast cancer treatment.

This fact sheet is intended to be a brief overview. For more information, visit [komen.org](http://komen.org) or call Susan G. Komen's Breast Care Helpline at 1-877 GO KOMEN (1-877-465-6636) Monday through Friday, 9 AM to 10 PM ET or email at [helpline@komen.org](mailto:helpline@komen.org).

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### Resources

#### Susan G. Komen®

1-877 GO KOMEN

(1-877-465-6636)

[komen.org](https://www.komen.org)

#### BreastCancerTrials.org

415-476-5777

[breastcancertrials.org](https://www.breastcancertrials.org)

#### National Cancer Institute

1-800-4-CANCER

[cancer.gov](https://www.cancer.gov)

### Related educational resources:

- [Biosimilars](#)
- [Clinical Trials](#)
- [Treatment Overview for Breast Cancer](#)
- [What is Breast Cancer](#)
- [Questions to Ask Your Doctor - Biosimilars](#)
- [Breast Cancer 101 - videos](#)
- [HER2-Targeted Therapy for Breast Cancer video](#)

### How do HER2-targeted therapies work?

- Trastuzumab and pertuzumab are specially made antibodies that target HER2-positive cancer cells. When attached to the HER2 protein, these drugs can slow or stop the growth of these cancer cells.
- Ado-trastuzumab emtansine (T-DM1) is an antibody-drug conjugate. It combines the antibody targeted therapy drug trastuzumab and a chemotherapy drug called DM1. This combination allows the targeted delivery of the chemotherapy to HER2-positive cancer cells.
- Neratinib is a tyrosine-kinase inhibitor. This drug targets enzymes important for cell functions called tyrosine-kinase enzymes. Tyrosine-kinase inhibitors can block these enzymes at many points along the HER2 cancer growth pathway.

### Side effects of targeted therapies

Unlike chemotherapy, targeted therapies only kill cancer cells, with little harm to healthy cells. However, they have some possible side effects:

- Trastuzumab, pertuzumab and ado-trastuzumab emtansine can cause heart problems. Your heart will be checked before and during treatment to help ensure there are no problems.
- Neratinib can cause diarrhea. Your doctor will recommend medications to help control the diarrhea. It can also cause nausea, vomiting, rash and fatigue.

### Biosimilar forms of trastuzumab

[Biosimilars](#) are “generic-like” versions of biologic drugs that are already approved by the Federal Drug Administration (FDA). They are made in or from living things like yeast, bacteria, plant or animal cells – not chemicals.

A generic drug has the exact same active chemical ingredients as the original drug. It's not possible to make an exact copy of a biologic because it's a living thing. However, a biosimilar is highly similar to the original biologic drug and works the same way in the body. So, it's a “generic-like” version of a biologic drug.

There are several FDA-approved biosimilars for trastuzumab. Other biosimilars for breast cancer treatment are under study.

Your health care provider can tell you whether a biosimilar drug may be part of your breast cancer treatment plan. If you have questions about biosimilars, talk with your provider.

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