

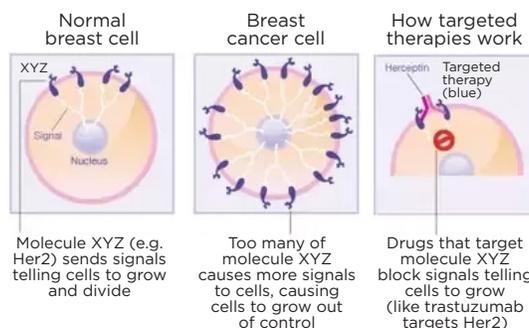
### RESEARCH SAVES LIVES

The old paradigm of one blockbuster drug for every breast cancer patient is ancient history. Breast cancer has entered an era of precision medicine (also called personalized medicine), where treatment selection for each person is becoming individualized or customized.

An important part of precision medicine is the use of **targeted therapies**. Unlike standard chemotherapy—which kills both cancer and normal cells—targeted therapies attack specific molecules that cancer cells use to grow, divide and spread. By attacking molecules that are specific to the tumor, targeted therapies may be more effective at killing cancer than other types of treatments and less harmful to normal cells.

The best target for therapy is a molecule that is present in cancer cells and absent, or present at low levels, in normal cells. An example of a targeted therapy for breast cancer is trastuzumab, which specifically targets breast cancer cells that make too much of the HER2 protein.

Targeted therapies for breast cancer are becoming more common as researchers discover more about the uniqueness of each person's tumor. They help doctors tailor breast cancer treatment based on the characteristics of each individual's tumor.



Learn more about precision medicine <http://sgk.mn/1odO1J8>

### OUR RESEARCH INVESTMENT: (1982-2019)

More than **\$107 million** in over **250 research grants** and more than **20 clinical trials** focused on targeted therapies

### What We're Investigating

- Testing targeted therapies to prevent and treat breast cancer that has metastasized to the bone.
- Identifying new targeted therapies that can treat aggressive and drug resistant breast cancers, including triple negative breast cancer.
- Developing nanoparticles (very small) that can deliver targeted therapies to cancer stem cells to prevent breast cancer recurrence and metastasis.



Want to read more about our research on biomarkers and precision medicine?

Download the other Fast Facts in this series. <http://sgk.mn/1xi7r82>



Read more in our Science Buzz series about research on targeted therapies for triple negative breast cancer by Komen's Chief Scientific Advisor Dr. Jennifer Pietenpol. <http://sgk.mn/1hYpOUv>

### WHAT WE'VE LEARNED from Komen-funded research

- There are at least six different types of triple negative breast cancer, which may be more effectively treated with novel targeted therapies (currently in clinical trials) than with current chemotherapies.
- A new drug that targets two newly identified receptors on TNBC cells can shrink TNBCs, including those resistant to chemotherapy, and will soon be tested in clinical trials. [Read more.](#)
- Targeting a second protein found in HER2-positive breast cancer, called HER3, improves response of HER2 breast cancers to existing drugs and may prevent drug resistance.