

RESEARCH SAVES LIVES

The uniqueness of each individual's breast cancer is becoming more recognized and it has become clear that some drugs work better in some individuals than in others. But how do doctors determine which patients will respond to a treatment and who will have little or no benefit and can safely avoid it? Sometimes a person's response can be predicted based on the type of breast cancer or other characteristics of the tumor, but biomarker tests are becoming increasingly used and are helping doctors match the best treatment plan to each individual patient.

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

Biomarkers are an important part of precision medicine (also known as personalized medicine). Biomarkers are specific molecules found in the blood, other body fluids, or tissues that are a sign of a normal or abnormal process, or of a condition or disease. In the case of breast cancer, they are produced by the tumor or by the body's response to the tumor. Tests that screen for biomarkers, such as blood or urine tests, are becoming increasingly used by doctors to help diagnose and understand each person's individual risk of disease.

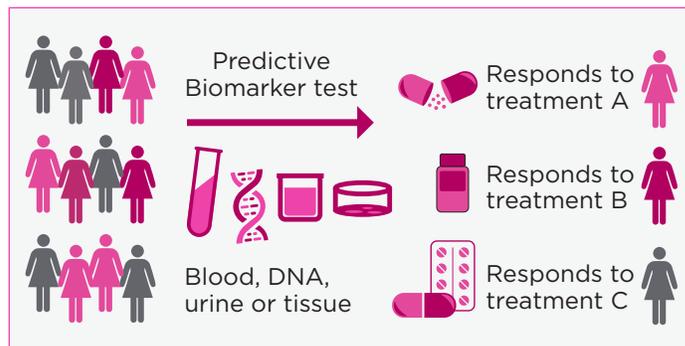
Predictive biomarkers can help identify which patients are most likely to respond to a particular treatment type, will become resistant, or develop toxicities to a therapy. In some cases a predictive biomarker can also be a target for therapy.

OUR RESEARCH INVESTMENT:
(1982-2019)

More than **\$170 million** in over **270 research grants** and more than **60 clinical trials** focused on predictive biomarkers

What We're Investigating

- Identifying immune-related biomarkers that can predict response to Her2-targeted therapies, getting the right immunotherapy treatments to the right patients.
- A blood test that can measure changes in breast cancer cells over time may be used to guide treatment decisions by predicting which patients with ER+ metastatic breast cancer will respond to therapy.
- Developing a biomarker test that measures circulating tumor cells and can be used to identify which therapy will work best at any given time, even as a tumor changes.



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

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



Read more in our Science Buzz series about Komen-funded research on the Oncotype DX test by Komen Scholar Dr. Terry Mamounas. <http://sgk.mn/2ghXE1o>

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

-  In addition to its approved use as a prognostic biomarker, Oncotype DX may also be used as a predictive biomarker to identify which women may benefit from a second type of chemotherapy after initial treatment.
-  A blood test that can measure changes in breast cancer cells over time may be used to guide treatment decisions by predicting which patients with ER+ metastatic breast cancer will respond to therapy.
-  A biomarker that measures two different molecules found in muscle can help predict which patients will develop heart failure after certain treatments like anthracyclines, taxanes or trastuzumab.