

RESEARCH SAVES LIVES

Often, a person's breast cancer outcome can be predicted based on tumor size and how far the cancer has spread. In recent years, however, the development of **prognostic biomarker** tests has complemented, and in some cases improved, these traditional approaches.

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.

While prognostic biomarkers do not predict whether a person will respond to a particular therapy, they may affect treatment choices. For example, information on risk of recurrence could help doctors decide whether chemotherapy is needed or not. A currently used example of such a prognostic biomarker is the Oncotype DX® test.

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

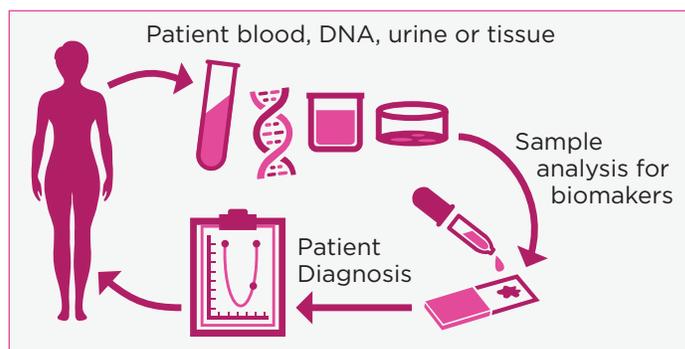


OUR RESEARCH INVESTMENT: (1982-2019)

More than **\$103 million** in **200 research grants** and more than **30 clinical trials** focused on precision medicine

What We're Investigating

- Developing liquid biopsies to determine whether circulating tumor cells in a patient's blood stream can be used to predict outcome and survival and aid in treatment decisions.
- Determining whether genetic changes found in tumors after treatment can be used as biomarkers to predict metastatic recurrence in triple negative breast cancer.
- Testing whether the presence of tumor cell clusters in the blood can be used as a biomarker to predict survival in patients with metastatic breast cancer.



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 about Komen-funded research on circulating tumor cells by Dr. Shymala Maheswaran, in our Science Buzz series.

<http://sgk.mn/2wi3T9j>

Read about findings from the [TAILORx study](#) that used the Oncotype DX Genomic testing score to show a majority of women with ER+ breast cancer can forgo chemotherapy.

<http://sgk.mn/2MRmDEe>

WHAT WE'VE LEARNED from Komen-funded research



Circulating tumor cells—tumor cells that have broken away from the tumor and entered the bloodstream—may be used to predict whether breast cancer will progress or metastasize.



Fluorescent biomarkers that can be imaged with MRI may be used to predict whether breast cancer will metastasize.



A gene involved in breast development and tumor progression may be used as a biomarker to predict which women with DCIS are at high risk for progressing to invasive breast cancer.