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.

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**Our Research Investment 1982–2019**

More than $103 million in 200 research grants and more than 30 clinical trials focused on prognostic biomarkers

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**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.

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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.

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**More Komen-funded Research Stories**

- Read more about Komen-funded research on circulating tumor cells by Dr. Shymala Maheswaran, in our Science Buzz series. [http://sgk.mn/2wi3T9j](http://sgk.mn/2wi3T9j)

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Learn more about precision medicine [http://sgk.mn/1odO1J8](http://sgk.mn/1odO1J8)

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Learn more about breast cancer

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Get Involved & Support Komen Research

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