

**RESEARCH SAVES LIVES**

Cancer care has moved away from a “one-size-fits-all” approach towards a more innovative one called precision medicine. Unlike the past model of care, precision medicine, also called **personalized medicine**, considers the unique differences in an individual’s genes, lifestyle habits and environment. This allows researchers to predict more accurately which treatments and prevention strategies will work best among different groups of people.

Precision medicine includes the use of biomarkers, which are molecules found in the blood, other body fluids or tissues and are produced by the tumor or by the body’s response to the tumor. Biomarkers are key to precision medicine. They reflect changes in the body that can be used to identify disease in its earliest stages (early detection and diagnostic biomarkers),

predict disease progression (prognostic biomarkers) and identify which therapies will be most effective (predictive biomarkers).

Precision medicine has great potential to optimize outcomes for people with breast cancer, as it addresses the complexity of the disease as well as its various types and causes. Finding distinct differences in tumors is key to finding the right breast cancer treatment for each individual at the right time.

**What makes a good biomarker?**

*Because even normal cells can produce biomarkers, the most effective are those that are expressed at different levels in cancer cells compared to normal cells, and can help distinguish a cancer cell from a normal cell.*

**OUR RESEARCH INVESTMENT:**

(1982-2022)

More than **\$330 million** in over **720 research grants** and more than **120 clinical trials** focused on precision medicine

**What We’re Investigating**

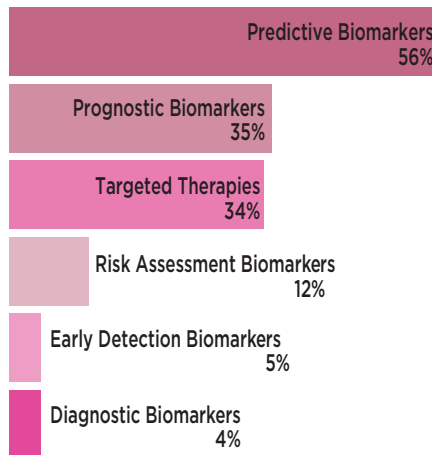


- Identifying biomarkers that can predict whether cancer will progress, recur or spread (metastasize) to other parts of the body (prognostic).
- Discovering biomarkers that can predict whether a tumor will respond to or develop resistance to a particular therapy (predictive).
- Using artificial intelligence to develop biomarkers that will identify people who are at high risk for developing breast cancer, such as those with dense breasts or certain genetic mutations (risk assessment).
- Identifying and developing new therapies and drug delivery methods that specifically target cancer cells or that target a specific type of breast cancer (targeted therapies).
- Testing whether a gene panel test could inform more effective treatment strategies, especially for breast cancer types that are more prevalent in racial and ethnic minority groups (predictive).



Learn more about precision medicine [here](#).

Topic Area of Total Investment (1982-2022)



\*Total percent is greater than 100 as some grants are relevant to more than one category.



Komen Researcher Dr. Aileen Fernandez is using biomarkers in breast cancer tumors to identify people whose cancers are resistant to certain therapies.

Read more [here](#).