Biomarker Testing

TargetCancer Foundation

targetcancer.org

Table of contents

Biomarker testing can help you and your care team better understand important details about your cancer and inform personalized treatment options that can be most likely to help you.

Understanding biomarker testing

Biomarkers — short for biological markers — are gene mutations (changes) produced by the body or tumor of a person with cancer. These mutations may help show how and why your cancer cells grow, divide, and spread to other parts of the body. Some of these mutations affect how different cancer treatments will work. There are many known cancer biomarkers, and new ones are regularly being discovered.

Biomarkers are found through biomarker testing, also called:

- molecular profiling
- comprehensive genomic profiling
- tumor testing
- or next-generation sequencing

You may also hear a biomarker test being called a companion diagnostic test if it is paired with a specific treatment.

Doctors use the information from biomarker testing to identify possible treatments for patients. People with certain biomarkers may benefit from targeted therapies, immunotherapy, or clinical trials.

Treatments aren't equally effective for all people or all cancers. Advances in biomarker testing and targeted therapy development may help identify the most effective and personalized treatments and improve patient outcomes.

Frequently asked questions about biomarker testing

Who can get biomarker testing?

Because biomarker testing can be performed on tumor tissue or blood, anyone with cancer can receive it.

Should I get biomarker testing?

Yes. Biomarker testing is a critical tool for identifying targeted treatments or immunotherapies that might be effective for a particular patient. It can also be helpful in providing more precise diagnoses in people who have developed rare cancers. **Biomarker testing should be a part of every rare cancer patient's care.**

Don't be afraid to advocate for biomarker testing with your doctor. You have a right to know more about your tumor sample and to see your full biomarker test report. If your doctor doesn't want to test for relevant biomarkers, seek a second opinion or pursue a test from a company that specializes in biomarker testing.

What happens after I get my test results?

Once biomarker testing results are returned, you can partner with your care team to determine if any of the mutations can be targeted with available drugs. Targeted therapies work differently in different people, and even if your results indicate a biomarker that matches an available treatment, the therapy may not work for you.

However, research has shown that treatment led by biomarker testing extends patients' lives. Talk to your doctor about the results of your biomarker test and ask how they impact your treatment options.

How much does biomarker testing cost?

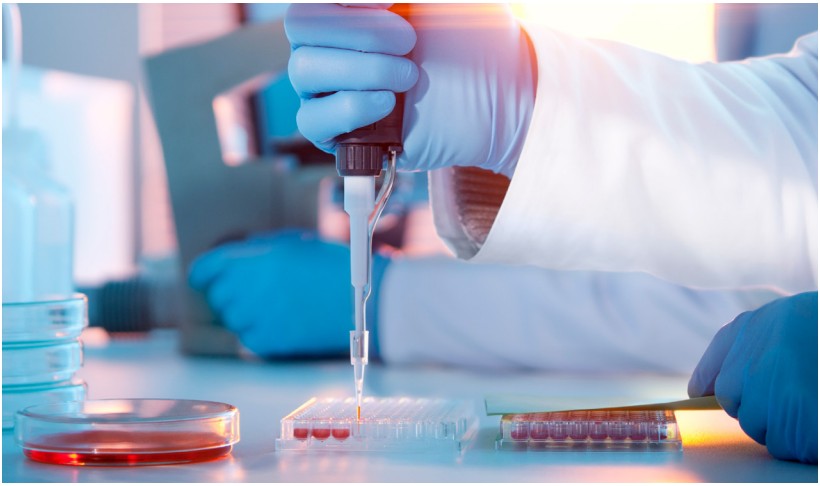
The cost of biomarker testing varies widely in the United States depending on the type of test you get, the type of cancer you have, and your insurance plan. For some people with advanced cancer, biomarker tests may be covered by Medicare and Medicaid. Additionally, private insurance providers often cover the cost of biomarker testing if there is proof that the test is necessary to guide treatment decisions. However, **most biomarker testing companies offer extensive financial support programs.**

How is biomarker testing performed?

For tumor biomarker testing, a sample of your cancer cells will be taken during either surgery or a biopsy. For blood biomarker testing, also known as a liquid biopsy, you will have a blood draw. Your samples will then be sent to a special laboratory where they can be tested for certain cancer biomarkers that may be responsible for driving your cancer's growth. If biomarkers are found in your cancer, it will help your care team identify treatments that can target these drivers. The lab will create a report of their findings for you and your healthcare team to discuss.

Where can I get biomarker testing done?

For some types of rare cancers and at some institutions, biomarker testing is part of the standard of care, and your doctor may test for biomarkers without you having to ask. For others, biomarker testing is done only upon request. You should ask your care team whether biomarker testing is being carried out on your tumor and, if not, where it can be done. There are also private, independent companies—such as Foundation Medicine, Tempus, Caris, and many more.



Understanding the difference between genetic and genomic testing

Biomarker testing is different from genetic testing, which is used to find out if a person has mutations they inherited from their parents that make them more likely to get cancer or other diseases.

Both kinds of tests — those mapping a person's DNA profile for hereditary mutations (genetic) and those analyzing a tumor's genomic abnormalities acquired throughout one's lifetime (genomic) — may help inform cancer treatment. However, they are used in different ways in different circumstances.

GENETICS

Genetics is the study of genes and their roles in inheritance—the way that certain traits or conditions are passed down from one generation to another.

Genetic testing can help individuals and families learn about how conditions are inherited in families, what screening and testing options are available, and, for some genetic conditions, what treatments are available. Some inherited genetic changes can put a person at higher risk for developing cancer.*

VS

GENOMICS

Genomics describes the study of all of a person's genes (the genome), including how those genes interact with each other and with the person's environment. It can help researchers discover why some people get sick from certain infections, environmental factors, and behaviors, while others do not.

Biomarker (also known as genomic) testing is helpful for individuals with rare cancers because it can identify mutations that occur during one's lifetime. The mutations found in genomic testing of cancers can help oncologists recommend a precision therapy designed to target that mutation.

*Working with a genetic counselor can help you understand the results of genetic testing and the options it provides for your rare cancer treatment.

Biomarker testing in TargetCancer Foundation's TCF-001 TRACK Trial

Many clinical trials involve biomarker testing.

TRACK
TARGET → RARE → CANCER → KNOWLEDGE

Patients enrolled in the TargetCancer Foundation TCF-001 TRACK trial, for example, receive biomarker testing at no cost. This includes tissue and blood biomarker testing from Foundation Medicine, as well as interpretation and treatment recommendations from an expert panel of rare cancer clinicians and scientists.

Simultaneously, TRACK generates critical genomic data to drive a better understanding of often overlooked rare cancers.

Learn more at **targetcancer.org/research/track**

Helpful resources

TargetCancer Foundation can help answer your questions about biomarker testing and provide information about programs and organizations that offer testing.

Contact us at:
info@targetcancer.org
(617) 765-4881

A list of additional educational resources on biomarker testing can be found at: **targetcancer.org/learn/biomarker-testing/**

TargetCancer Foundation

955 Massachusetts Avenue #343
Cambridge, MA 02139

info@targetcancer.org | targetcancer.org