Patient Treatment Information
Precision Oncology

What is precision oncology?

Precision oncology is also called precision medicine or personalized medicine. It uses laboratory tests to target more effective care and treatments for patients with cancer and other diseases. Many cancers have differences in their genes or proteins. These different genes or proteins are called biomarkers and tell us more about those cancers.

Using precision oncology tests, doctors can look for cancer biomarkers. Precision oncology is changing how we treat cancer. Doctors can treat each person based on their biomarkers.

Precision oncology tests are used to:

- Develop a more complete or specific diagnosis
- Determine eligibility for clinical trials
- Create individual, cancer-specific treatment plans
- Evaluate how well a treatment is working

Precision oncology treatment plans may target cancer cells better than chemotherapy.

Would I benefit from precision oncology/biomarker testing?

Many, but not all, cancer types have biomarkers that can help doctors identify the most effective treatment. Ask your doctor if you are a candidate.

Factors to consider when determining next steps for cancer treatment:

- Availability of biomarker testing, clinical trials, or targeted treatments for your type of cancer
- Cancer stage
- Previous treatments

How is biomarker testing performed?

Doctors may suggest taking a sample of the tumor, blood, bone marrow, or other body fluids to test cancer cells for biomarkers. This depends on the type of cancer. Samples are sent out to specialized labs to be tested.

The testing lab will determine your estimated out-of-pocket expenses and may contact you to discuss the expected costs or start the financial assistance process. You can also contact the testing company directly. Ask your provider for information on the testing company.

How will I get my results?

Results from biomarker tests typically take 1 to 3 weeks, but it may take longer. This depends on the type of sample and the specific test ordered. Your healthcare team will discuss the test results with you and review your personalized care plan.

Possible results include:

- You may have biomarkers in your cancer that match with available treatments or clinical trials. If you do, your care team will discuss these options with you.
- The test might find a tumor biomarker that you could have inherited from your family. An additional test will be needed to learn if it is inherited. This added information can help doctors choose the right treatment for your cancer. If the biomarker is confirmed to be inherited, it could also give important information about your risk of cancer to you and your family.
- There may not be any useful biomarkers that match with available treatments. Your care team might recommend more testing for inherited biomarkers. This decision depends on your type of cancer and your family history.

What happens if I have a possible inherited biomarker?

Inherited biomarkers can affect how your cancer is treated and how likely it is for you to get cancer in the future. They can also provide important information about the chance of your family members getting cancer.

Additional genetic testing is needed to determine if your biomarker is inherited. This testing is called germline testing. Germline testing helps doctors find biomarkers that are passed down from your parents. These biomarkers may not always be found by regular precision medicine tests.

Your care team may order this additional testing or refer you to a provider who knows a lot about genetics for more information and genetic testing.

Additional resources

- Precision or Personalized Medicine | Precision Medicine for Cancer | American Cancer Society
- Biomarker Testing for Cancer Treatment - NCI

Notes

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References:

1. Precision or Personalized Medicine. *American Cancer Society*. http://www.cancer.org/cancer/managing-cancer/treatment-types/precision-medicine [Accessed 2024].
2. Biomarker Testing for Cancer Treatment. *National Cancer Institute.* https://www.cancer.gov/about-cancer/treatment/types/biomarker-testing-cancer-treatment#is-biomarker-testing-part-of-precision-medicine [Accessed 2024].