



NEW LUNG CANCER TREATMENT POSSIBILITIES

THROUGH MOLECULAR TUMOR TESTING

When your doctors suspected you had cancer, they took a small portion of your tumor (a biopsy) to have it examined. A specialized doctor, called a pathologist, looked at your tumor cells under the microscope and found out you had lung cancer. The pathologist should have been able to tell whether you have small cell lung cancer or non-small cell lung cancer (NSCLC).

If you have NSCLC, the pathologist can usually tell the subtype of your tumor based on histology. Adenocarcinoma and squamous cell carcinoma are the most common subtypes of NSCLC.

WHAT IS MOLECULAR TUMOR TESTING?

More detailed testing can be done on your tumor if your doctor requests it. These tests are sometimes referred to as molecular testing or biomarker testing, and may involve:

- looking for changes (mutations) in the DNA of the tumor
- looking at levels of specific proteins present in the tumor

The mutations of lung cancers are usually not inherited and can not be passed on to your children.



free to breathe
a partnership for lung cancer survival



WHY SHOULD MY TUMOR BE TESTED?

Testing can help determine which treatments options might be best for you.

Targeted Therapies - When particular tumor characteristics are found through molecular testing, special lung cancer treatments designed to “target” these characteristics may be offered to you as an option for treatment. It is important to know if you have a tumor with one of these characteristics so you and your doctor can make well-informed decisions about your treatment.

Characteristics that can be targeted with treatments currently available include (as of the writing of this brochure):

- Epidermal Growth Factor Receptor (**EGFR**) mutations
- Anaplastic Lymphoma Kinase (**ALK**) gene rearrangement

- ROS1 gene rearrangement
- T790M mutation

EGFR, ALK and ROS1 Mutations

EGFR, ALK and ROS1 mutations turn on processes in tumors that make cancer cells uncontrollably grow and divide. Targeted therapies work by turning off these processes.

Testing for EGFR, ALK and ROS1 mutations may be recommended if you have the adenocarcinoma sub-type of NSCLC, though other sub-types can also have these mutations.

T790M Mutation

Sometimes tumors can develop new mutations that cause targeted therapies to stop working (a process known as resistance). The most common mutation that causes resistance to EGFR-targeted drugs is called T790M. You should talk to your doctor about whether your tumor should be biopsied to test for T790M.



Immunotherapy - Immunotherapy is one of the most exciting new approaches for treating lung cancer. Immunotherapies work by boosting your body's own natural defenses to fight cancer. Your doctor may recommend testing your tumor for the amount of a protein known as PD-L1 before prescribing an immunotherapy.

Clinical Trials - Even if your tumor is negative for EGFR, ALK and ROS1, your tumor can still be tested for other biomarkers that may allow you to access treatment through a clinical trial.

TO FIND CLINICAL TRIALS for your cancer treatment, call the Free to Breathe Support Line at 844.835.4325 or visit freetobreathe.org/clinical-trials.

HOW DO I GET MY TUMOR TESTED?

If there is enough tissue from the original biopsy of your tumor, this tissue can be tested. If not, you may need a second biopsy or minor surgery to get enough tissue to test. Some doctors may also want a second biopsy to see if you have developed the T790M mutation while taking an EGFR-targeted therapy. Results are usually sent back to your doctor 1 to 3 weeks later.

If your doctor doesn't recommend tumor testing for you, it is okay for you to ask "why not?" Testing may not be appropriate for all patients, but it is best for you to know as much as you can about your disease so you and your doctors can be full partners in your care. If you have questions about the response you get from your doctor, it is okay to ask for a second opinion from another doctor.



Questions? Call the Free to Breathe Support Line

1-844-835-4325

A FREE resource for lung cancer patients & caregivers

WHERE CAN I GO TO GET MY TUMOR TESTED?

Many major medical centers, including members of the Lung Cancer Mutation Consortium (LCMC), offer molecular testing for lung cancer patients. If your medical center does not provide this testing, consider visiting an LCMC institution. **Visit golcmc.com to find an institution near you.**

WHAT WILL IT COST TO GET MY TUMOR TESTED?

Most lung cancer tumor tests are covered by insurance. If you have concerns about whether your insurance will pay for tumor testing, talk with your nurse, social worker or insurance representative.

WHAT IF MY TEST RESULTS DON'T QUALIFY ME FOR TARGETED TREATMENT?

Even if your tumor does not have known characteristics that can be matched to a targeted treatment that is available commercially or through a clinical trial, molecular testing can still help you and your doctor decide on the right treatment option for you. In these cases, the very best care will still be given to you.

FOR ADDITIONAL INFORMATION

on lung cancer, molecular testing and where to find a lung cancer doctor, please visit freetobreathe.org/tumor-testing.

