

Lung Cancer: To test or not to test

For patients with lung cancer, biomarker testing may be an option.

By [Susan Mantel](#) | Jun 06, 2016

Each year, 1.8 million people are diagnosed with lung cancer worldwide.¹ In the US alone, someone receives a new diagnosis every two-and-a-half minutes. Still, there are many common misconceptions about this widespread disease.^{2,3}

Did you know that today up to 65% of people with lung cancer do not smoke or are former smokers at the time of their diagnosis?⁴⁻⁶ Another misconception is that lung cancer is a hopeless disease. While at one time there were few options, in the last dozen years we have made tremendous strides in understanding this complex disease and developing specific treatments for individual patients.

In addition to classifying the disease by how cells look under a microscope, scientists are learning about the molecular changes that enable lung cancer to develop and grow. So far, approximately 60% of patients with adenocarcinoma, a common form of non-small cell lung cancer, have a form of disease linked to these changes or mutations.³ Researchers have identified 12 driver mutations in adenocarcinomas alone, and several others in squamous cell lung cancer.⁷ A few treatments have been approved for three of the known mutations – ALK, EGFR and ROS-1 – and clinical trials are underway for others. To find out whether someone is a candidate for these treatments, a tumor sample needs to be tested for these molecular biomarkers.⁷

Unfortunately, many people who should be tested don't get this testing at any point in their treatment. Due to inconsistent and confusing language, many aren't even sure whether their tumor has been tested for these markers. For example, the term "genetic testing" often leads people to think we are discussing whether the lung cancer has been or can be inherited. Furthermore, some people call it "molecular testing," while others call it "mutation profiling," "companion diagnostics," "genomic testing" – the list continues.

Testing for every actionable mutation is not a standard practice, so initial biopsies often do not get enough tumor sample to be comprehensive. This can result in the need for additional biopsies, as well as in no testing or incomplete testing.⁸ Testing methods also vary by healthcare setting, which can lead to inconsistent results. Each tumor can be tested for one biomarker at a time or for an entire set of biomarkers all at once.⁸

Currently approved targeted therapies almost always stop being effective after some time. We know that in at least some tumors, when this happens, an additional molecular change has taken place. These resistant tumors should be tested again to see if they are a match for a treatment that blocks this new change.^{9,10} While we have seen that patients are willing to undergo additional biopsies, many doctors have also told us that they are reluctant to put the patient through this.

With so much change happening around understanding and treating lung cancer, a patient's best bet is to be as informed as possible and to be prepared to discuss a full set of options with his or her healthcare team. More information on lung cancer, biomarker testing and treatment options can be found at www.LUNGevity.org.

Learn more about biomarker testing in #lungcancer patients.

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