

UNDERSTANDING BIOMARKERS IN NON-SMALL CELL LUNG CANCER (NSCLC)

What are gene mutations in lung cancer?

A mutation is a change in a gene that tells your body how to function. People with NSCLC often have one or more gene mutations. It is **important to know if a mutation is present** as this helps determine the best treatment. Different targeted therapies work on different lung cancer biomarkers.

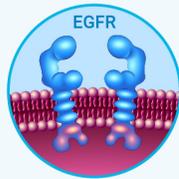


NSCLC has **20+** known gene mutations
EGFR
KRAS
ALK
BRAF
ROS1
HER2
MET

What is comprehensive biomarker testing?

Comprehensive biomarker testing looks at a sample of blood or tumor tissue for mutations in your genes and other information about your cancer.

When your lung cancer is diagnosed, speak with your doctor about **biomarker testing**.



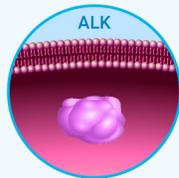
EGFR mutations

are fairly common in NSCLC, occurring in **15 to 20%** of tumors. EGFR mutations are more common in people from East Asia (about 35% of people with this heritage and NSCLC have them), women, and nonsmokers.



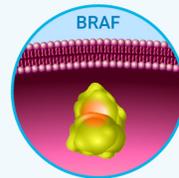
KRAS mutations

occur in about **one-third** of people with NSCLC. The KRAS G12C mutation is the most common type. KRAS mutations are more common in Western Europeans, smokers, former smokers, and people with exposure to asbestos.



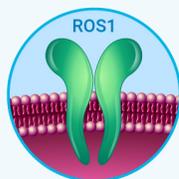
ALK mutations

occur in about **5%** of people with NSCLC. ALK mutations are more likely to occur in younger people, nonsmokers, and light smokers.



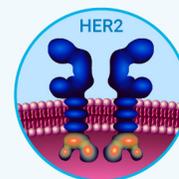
BRAF mutations

occur in **3 to 4%** of people with NSCLC, most often women, smokers, and former smokers. Two versions of the BRAF mutation are BRAF V600E and non-V600E.



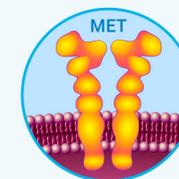
ROS1 mutations

occur in **1 or 2%** of people with NSCLC. ROS1 mutations are more common in nonsmokers, women, and younger people.



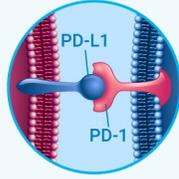
HER2 mutations

occur in about **2%** of people with NSCLC.



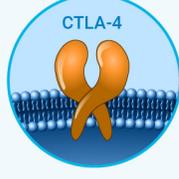
MET mutations

occur in about **1 to 2%** of people with NSCLC.



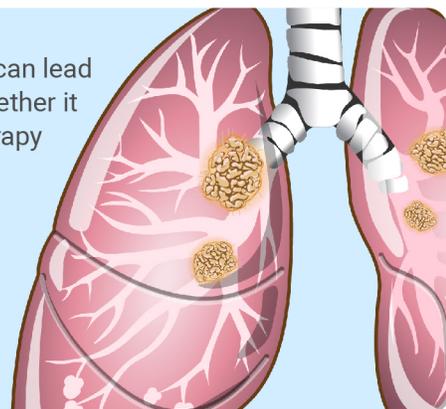
PD-1, PD-L1, and CTLA-4 checkpoint proteins

PD-1, PD-L1, and CTLA-4 are features that cancer cells use to slip past immune system checkpoints where they would normally be caught and destroyed. Different immunotherapies work on different checkpoint proteins.



Knowing your cancer mutation can lead to **more effective treatment**, whether it is immunotherapy, targeted therapy or something else.

Ask your doctor about **comprehensive biomarker testing** for your lung cancer today.



Please note: This information is not intended to be a substitute for professional medical advice. Always consult your doctor about any health-related questions.

References:
1. Chevallier M, Borgeaud M, Addeo A, Friedlaender A. Oncogenic driver mutations in non-small cell lung cancer: Past, present, and future. *World J Clin Oncol*. 2021 Apr 24;12(4):217-237.
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For more information visit:
YouAndLungCancer.com

