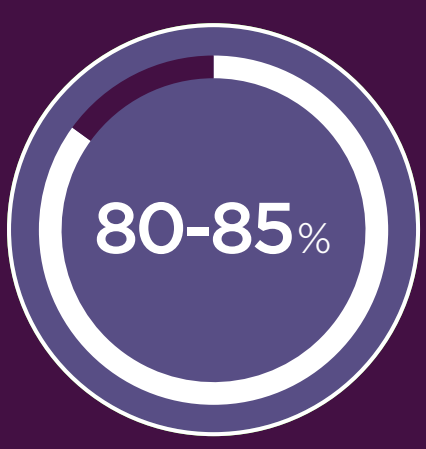
GETTING TO KNOW ALK+ NSCLC

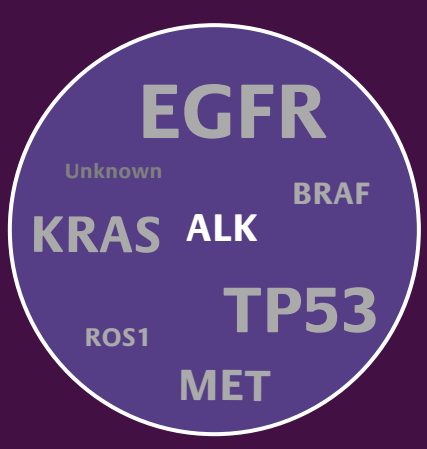
PREVALENCE OF LUNG CANCER

Lung cancer is one of the most common cancers and is the leading cause of cancer death worldwide.[1] Even with substantial improvement in cancer detection and treatment over the past decade, lung cancer was responsible for about 18% of cancer-related deaths worldwide, or about 1.8 million people, in 2020.[1,2]

WHAT IS NON-SMALL CELL LUNG CANCER (NSCLC)?



NSCLC is the most common form of lung cancer, accounting for approximately 80-85% of all lung cancers.[3]



There are a number of different driver mutations associated with NSCLC – making it complex to study, diagnose and treat.[4]

WHAT IS ANAPLASTIC LYMPHOMA KINASE-POSITIVE (ALK+) NSCLC?

ALK+ NSCLC is a unique subset of lung cancer caused by a mutation in the anaplastic lymphoma kinase, or ALK, gene.[5]

Genetic studies indicate that chromosomal rearrangement in the ALK gene are key drivers in a subset of NSCLC patients.[5] The altered ALK gene produces an abnormal protein that instructs cancer cells to grow and spread.[6]

PREVALENCE OF ALK+ NSCLC

Between 3-5% of NSCLC patients have the ALK mutation.[5,7]

There were roughly 93,000 new cases of ALK+ NSCLC worldwide in 2020.[1,3,5,7]

DIAGNOSIS AND TREATMENT FOR ALK+ NSCLC

Lung cancer patients diagnosed at an earlier stage have a higher chance of survival, but most cases are not detected until later stages.[8] However, advancements in lung cancer research are identifying the underlying genetic differences that may explain how lung cancer develops in different types of people and how factors – such as family history and environment – may be involved, opening up new ways to detect and potentially treat ALK+ NSCLC earlier.[9]

TOTAL LUNG CANCER POPULATION	VS	ALK+ NSCLC POPULATION
70	**MEDIAN AGE AT DIAGNOSIS** In the US, the median age at diagnosis is 70 among all lung cancers. However, among the ALK+ NSCLC population, the median age at diagnosis drops to 52.[10]	52
VERY COMMON RESPONSIBLE FOR **80%** OF DEATHS[11]	**SMOKING HISTORY** While the link between lung cancer and smoking is well established, smoking history can vary among people with NSCLC, with certain subtypes, such as ALK, being found more often in light or non-smokers.[12]	**NOT** **VERY COMMON** MOSTLY NON SMOKERS[13]

Takeda is committed to continuing research of targeted therapies designed to target ALK+ mNSCLC in the hopes of improving outcomes for patients worldwide.

REFERENCES

1 World Health Organization. Cancer. 2022. https://www.who.int/news-room/fact-sheets/detail/cancer Accessed February 2023.
2 American Cancer Society. Cancer Research Insights from the Latest Decade, 2010 to 2020. 2019. https://www.cancer.org/latest-news/cancer-research-insights-from-the-latest-decade-2010-to-2020.html Accessed February 2023.
3 American Cancer Society. Key Statistics for Lung Cancer. https://www.cancer.org/cancer/lung-cancer/about/key-statistics.html Accessed February 2023.
4 Chen X, Xu B, et al. Genetic profile of non-small cell lung cancer (NSCLC): A hospital-based survey in Jinhua. Mol Genet Genomic Med. 2020 Sep;8(9):e1398. DOI: 10.1002/mgg3.1398. Epub 2020 Jul 12. PMID: 32657049; PMCID: PMC7507563
5 Gainor JF, Varghese AM, Ou SH, et al. ALK rearrangements are mutually exclusive with mutations in EGFR or KRAS: an analysis of 1,683 patients with non-small cell lung cancer. Clin Cancer Res. 2013;19(15):4273-81. doi: 10.1158/1078-0432.CCR-13-0318.
6 Targeted Oncology. Overview of ALK+ NSCLC. 2021. https://www.targetedonc.com/view/overview-of-alk-nsclc Accessed February 2023.
7 Wong DW, Leung EL, So KK, et al. The EML4-ALK fusion gene is involved in various histologic types of lung cancers from nonsmokers with wild-type EGFR and KRAS. Cancer. 2009;115(8):1723-1733. DOI: 10.1002/cncr.24181.
8 American Cancer Society. Lung Cancer Fact Sheet. https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/resource-library/lung-cancer-fact-sheet#:~:text=The%20five%2Dyear%20survival%20rate,rate%20is%20only%205%20percent. Accessed March 2023.
9 National Institutes of Health. Genetics Home Reference. Your Guide to Understanding Genetic Conditions. Lung Cancer: Genetic Changes. https://ghr.nlm.nih.gov/condition/lung-cancer#genes. Accessed March 2023.
10 Solomon B, Christine M Lovly. Anaplastic lymphoma kinase (ALK) fusion oncogene positive non-small cell lung cancer. Wolters Kluwer. 2023;110
11 American Cancer Society. What Causes Lung Cancer? 2019. https://www.cancer.org/cancer/lung-cancer/causes-risks-prevention/what-causes.html%20accessed%20april%202022 Accessed February 2023.
12 Shaw AT, Solomon B. Targeting anaplastic lymphoma kinase in lung cancer. Clin Cancer Res. 2011;17(8):2081-6. doi: 10.1158/1078-0432.CCR-10-1591.
13 Williams AS, Greer W, Bethune D, et al. ALK+ lung adenocarcinoma in never smok ers and long-term ex-smokers: prevalence and detection by immunohistochemistry and fluorescence in situ hybridization. Virchows Arch. 2016;469(5):533-540. doi: 10.1007/s00428-016-2005-y.

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