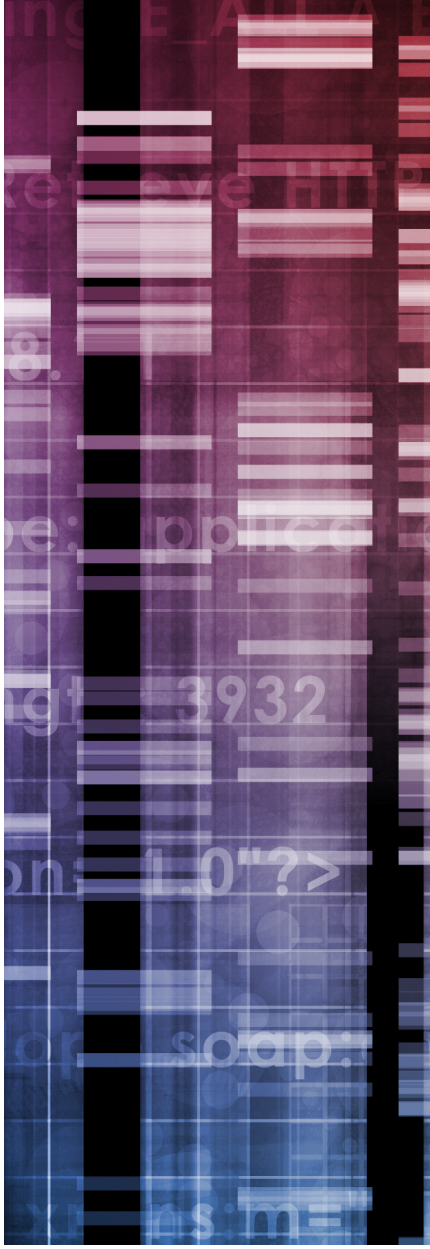
Precision Medicine in mNSCLC



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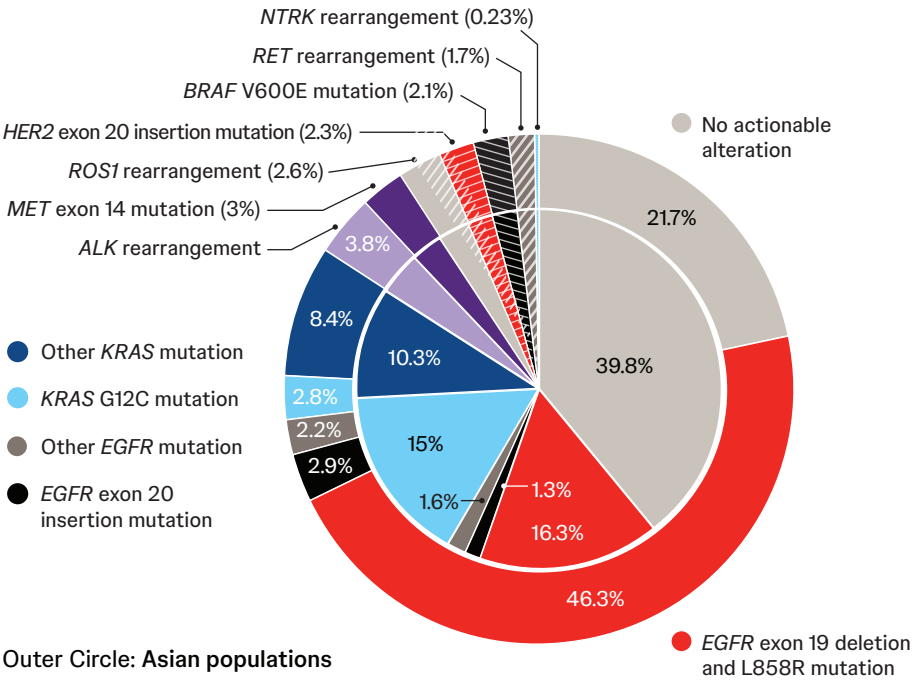
mNSCLC, metastatic non-small cell lung cancer.

mNSCLC is defined by molecular drivers, many of which are actionable[1,2]

Frequency of oncogenic driver alterations in NSCLC (adenocarcinoma)[1]



Outer Circle: **Asian populations**
Inner Circle: **Western populations**

>1 out of every 2
patients have 1 of the 9 currently actionable driver alterations[1,2]

~1 out of every 5
patients has 1 of the 8 less common actionable driver alterations[1,2]

Driver alteration rates may vary in certain populations[1]

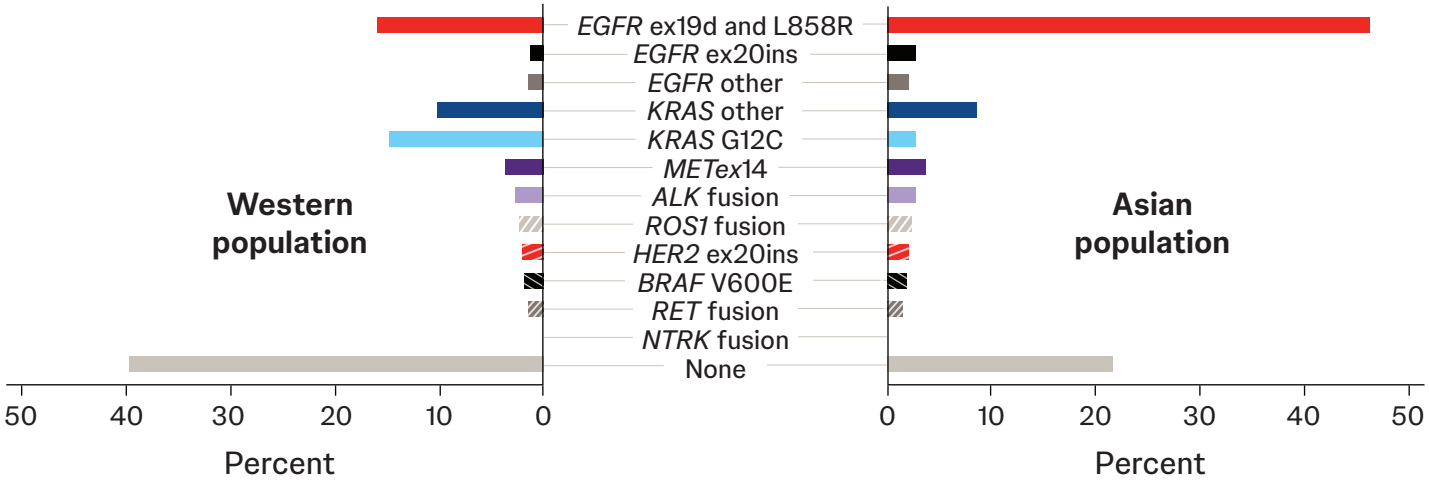


Image adapted from: Tan AC, Tan DSW. Targeted therapies for lung cancer patients with oncogenic driver molecular alterations. *J Clin Oncol*. 2022;40(6):611–625.

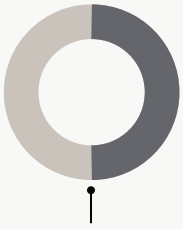
Precision Medicine in Lung Cancer

PD-L1 is also an actionable biomarker in mNSCLC[3,4]

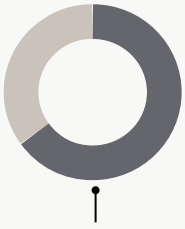
of patients with mNSCLC are PD-L1+[3,4]

- PD-L1 is a protein biomarker, not a driver alteration[4]
- PD-L1 may help predict patient response to ICI[3,4]

Two retrospective studies, which demonstrated that patients with driver mutations who may have PD-L1+ overexpression, show that[3,4]:



Up to **~50%** of patients with *EGFR* mutation



Up to **~65%** of patients with *ALK* translocation

were also PD-L1+ (TPS ≥1%)[3,4]

Guidelines from multiple US organizations recommend testing for all actionable biomarkers in mNSCLC, often via expanded panel testing[5–8]*

Patients with mNSCLC who receive biomarker-informed care may have better outcomes[9–11]

One study found[9]:

18.6 months median OS in patients receiving **NCCN-recommended matched therapy**

11.4 months median OS in patients **NOT receiving** NCCN-recommended matched therapy

Another study found[10]:

~2× longer OS in patients **with a driver alteration** receiving biomarker-informed treatment

vs

Those who **initiated treatment with chemotherapy, ICI, or both before test results** were available and did not switch to matched therapy within 35 days

⚠ Timing and sequence of treatment can impact outcomes

Studies have reported that **concurrent treatment** or treatment with **targeted therapy following ICI can lead to SAEs, including higher risk of**[12–16]**:**

Pneumonitis (grades 3–5)

Interstitial lung disease (grades 3–4)

Hepatotoxicity (grades 3–4)

Wait for test results before initiating 1L therapy, if clinically feasible[5]*

NGS is the optimal way to efficiently test for all driver alterations[6,8,17,18]

Compared with sequential single-gene testing for all actionable biomarkers:

Uses less tissue	NGS uses 15+ **fewer slides with a higher success rate** than sequential single-gene testing[19,20]
May have a faster turnaround time	With **NGS**, **results** for all actionable biomarkers **available as quickly as ~2.1 weeks,** compared with complete sequential single-gene testing (4.5–10.2 weeks)[19,21]
May be less expensive	NGS can be up to **~20% less expensive** than sequential gene testing[21–24]

Solutions start with a conversation

Take action and speak to **J&J Precision Medicine**

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1L, first-line; ALK, anaplastic lymphoma kinase; ICI, immune checkpoint inhibitor; mNSCLC, metastatic NSCLC; NGS, next-generation sequencing; NSCLC, non–small cell lung cancer; OS, overall survival; PD-L1, programmed death-ligand 1; TPS, tumor proportion score.

References: 1. Tan AC, et al. *J Clin Oncol.* 2022;40(6):611–625. **2.** Chevallier M, et al. *World J Clin Oncol.* 2021;12(4):217–237. **3.** Dietel M, et al. *Lung Cancer.* 2019;134:174–179. **4.** D'Incecco A, et al. *Br J Cancer.* 2015;112(1):95–102. **5.** Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Non-Small Cell Lung Cancer V.2.2025. ©National Comprehensive Cancer Network, Inc. 2025. All rights reserved. Accessed January 8, 2025. To view the most recent and complete version of the guideline, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. **6.** Lindeman NI, et al. *J Thorac Oncol.* 2018;13(3):323–358. **7.** Sholl LM, et al. *Arch Pathol Lab Med.* 2024;148(7):757–774. **8.** Kalemkerian GP, et al. *J Clin Oncol.* 2018;36(9):911–919. **9.** Singal G, et al. *JAMA*. 2019;321(14):1391–1399. **10.** Scott JA, et al. *JCO Oncol Pract*. 2023;20(1):145–153. **11.** Stricker T, et al. *Oncologist*. 2024;29(6):534–542. **12.** Schoenfeld AJ, et al. *Ann Oncol*. 2019;30(5):839–844. **13.** Desai A, et al. *J Thorac Oncol*. 2023;18(10):1265–1267. **14.** Jaiyesimi IA, et al. *J Clin Oncol*. 2024;42(11):e1–e22. **15.** Somasundaram A, et al. *Drugs*. 2020;80(9):883–892. **16.** Lin JJ, et al. *J Thorac Oncol*. 2019;14(1):135–140. **17.** El-Deiry WS, et al. *CA Cancer J Clin*. 2019;69(4):305–343. **18.** Palacín-Aliana I, et al. *Biomedicines*. 2021;9(8):906. **19.** Nesline MK, et al. *Oncol Ther*. 2024;12(2):329–343. **20.** Yu TM, et al. *Clin Lung Cancer*. 2019;20(1):20–29.e8. **21.** Bestvina CM, et al. *J Med Econ*. 2024;27(1):292–303. **22.** Zou D, et al. *J Mol Diagn*. 2022;24(8):901–914. **23.** Bestvina CM, et al. *J Manag Care Spec Pharm*. 2024;30(10):1–12. **24.** Vanderpoel J, et al. *J Med Econ*. 2022;25(1):457–468.

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