



Below is a synopsis of important, recently published research supporting adoption of comprehensive biomarker testing in non-small cell lung cancer (NSCLC). LUNGEvity maintains a website that collates the most high-impact papers and provides brief synopses for busy providers and hospital administrators.

[View more research on the LUNGEvity Clinical Value of Biomarker Testing webpage](#)

The Waiting Game: How NGS and Guideline-Concordant-Care Timing Shape Survival in Advanced NSCLC

Marmarelis, et al. *Cancers (Basel)*. 2026

About half of people with advanced non-squamous non-small cell lung cancer (NSCLC) have a biomarker in their tumor that can be treated with an FDA-approved targeted therapy. Comprehensive biomarker testing finds these biomarkers, but the results help most when they are available before the first treatment is chosen. This study used real-world health records from 4,389 U.S. patients with advanced non-squamous NSCLC who had comprehensive biomarker testing within 90 days of diagnosis, using either a blood sample (1,806 patients) or a tumor tissue sample (2,583 patients). The researchers looked at whether patients' first treatment matched their biomarker results, and how that related to survival.

- **Patients who started chemotherapy or immunotherapy before their biomarker results came back did not live as long.** Among patients tested by blood, those who waited for their results and then started a matched targeted therapy lived a median of about 25 months, compared with about 8 months for those who started chemotherapy or immunotherapy before their results came back. Among patients tested by tissue, the pattern was similar (about 27 vs. 20 months), but the difference was smaller and was not statistically significant after accounting for other patient factors.



- **Having results available was not enough on its own; the results also had to guide treatment.** Some patients started chemotherapy or immunotherapy even after their results showed a targetable biomarker. Their survival was also shorter than that of patients who started a matched targeted therapy (about 15 vs. 25 months with blood testing and 19 vs. 27 months with tissue testing).
- **How quickly results came back did not, by itself, predict survival.** Blood results came back faster than tissue results (about 8 days vs. about 4 weeks). However, blood tests were usually ordered about 2 weeks after diagnosis, often after tissue testing, so a faster test did not always mean earlier results. Survival was more closely tied to whether results were available when the first treatment was chosen and whether patients with a targetable biomarker received the matching therapy.

Because this was an observational study, some patients who started treatment before their results were back may have had faster-growing or more symptomatic cancer that could not wait, which may explain part of the difference in survival.

Biomarker results should be available in time to inform the first treatment decision, so that patients with a targetable biomarker can start on the appropriate targeted therapy. Ordering comprehensive biomarker testing at diagnosis, including blood and tissue testing at the same time when appropriate, can help make this possible. This will require coordination among pulmonologists, interventional radiologists, pathologists, and medical oncologists.

Read the full research study: [The Waiting Game: How NGS and Guideline-Concordant-Care Timing Shape Survival in Advanced NSCLC](#)

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