

EQUAL Study Launches Lung Cancer Screening Trial for People at High Risk

The study will identify people who have never used tobacco but are at a high risk of lung cancer and offer them complimentary lung cancer screening.

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Dana-Farber Cancer Institute researchers have launched a study of a novel, homegrown blood test in hopes of identifying people who are at an elevated risk of lung cancer – despite never having used tobacco – and screen them for the disease. The team, led by principal investigator and thoracic oncologist [Narjust Florez, MD](#), associate director of Dana-Farber’s [Cancer Care Equity Program](#), designed the study in response to rising rates of lung cancer in younger people and prevalence in individuals of Asian or Hispanic/Latinx descent who have never used tobacco.

Lung cancer screening is currently limited to individuals over 50 with a history of tobacco use equivalent to smoking a pack of cigarettes every day for 20 years and doing so within the past 15 years. According to the American Lung Association, only about 23% of lung cancer cases are diagnosed at an early stage, when the five-year survival rate is high. Lung cancer is much more likely to be diagnosed at a late stage, when the cancer may have spread, and curative treatments become less effective.

“Our hope is that we will be able to determine if this blood test helps us diagnose patients early, since they are at a high risk for lung cancer but don’t qualify for traditional lung cancer screening,” says Florez.

The trial, called EQUAL (EGFR ctDNA Quantitative Assessment for Lung Cancer screening in Asian and Latinx populations), focuses on individuals of Asian and Hispanic/Latinx descent, populations where epidermal growth factor receptor (EGFR) gene mutations can be prevalent. Since EGFR type mutations are associated with lung cancer, having this mutation poses an increased risk of developing the disease. Cancer cases are also [rising more rapidly](#) in people of Asian or Hispanic/Latinx descent.

The study employs a blood test to detect an EGFR gene mutation, specifically EGFR L858R and exon 19 deletions. EGFR mutations can be inherited, and the presence of an EGFR mutation increases the risk of lung cancer before the age of 60. EGFR mutations can also develop during a person’s life in lung tissue and increase the chances of developing lung cancer.

Developed at the Robert and Renée Belfer Center for Applied Cancer Science at Dana-Farber, the test analyzes circulating cell-free DNA (cfDNA), which are fragments of DNA shed from cells that have died. The test is designed to use PCR testing – the same kind of testing used to detect infections such as COVID-19 – to detect the presence of known EGFR mutations associated with lung cancer.

Today, numerous inhibitors target mutant EGFR proteins, transforming treatment for patients with EGFR-positive lung cancer. These patients account for approximately 15% of lung cancers in the U.S. and Europe and about 50% in Asia. The role of mutant EGFR in lung cancer was originally co-discovered by Dana-Farber's, [Pasi Jänne, MD, PhD](#), director of the [Chen-Huang Center for EGFR Mutant Lung Cancers](#), who has since led the development of therapeutic strategies for patients with EGFR mutant lung cancer.

The EQUAL trial will enroll 1000 people of Asian or Hispanic/Latinx descent and aims to evaluate the feasibility of using the blood test to detect EGFR mutations. Patients between ages 50 and 80 are eligible if they are of Asian or Hispanic/Latinx descent and have never used tobacco. Patients may enroll between age 40 and 49 if they also have a family history of EGFR-positive lung cancer or other risk factors not including tobacco use.

Participants in the study who test positive for an EGFR mutation will be screened for free at Dana-Farber for lung cancer using a CT scan. If the scan indicates follow-up is needed, trial participants will have the help of a patient navigator to assist them with finding follow-up care. Those who test positive for an EGFR mutation and who have a clear scan will be followed for one year and provided with a second free scan at its conclusion.

"This is a multi-step intervention," says Florez. "We are offering a free CT scan and will help people connect to any medical resources they need for diagnosis afterwards. Our patients' hands will be held for the entire process."

Of the 1000 patients who will be enrolled, approximately 100 will complete a survey or participate in a focus group so that the research team can learn about their experiences and inform future studies. Should this approach of testing and early screening for high-risk individuals prove to be feasible to implement and effective at finding cancer early, the team aims to expand the study to reach patients nationwide.

To make the study as accessible as possible, the team has partnered with ExamOne, a mobile phlebotomy service that does house calls.

"We are covering the cost of the mobile phlebotomist to decrease the financial and time burden for patients," says Florez. "We imagine that an entire family might enroll and get tested all together at one family member's home, because we know that family members of our EGFR-positive patients are at a higher risk of lung cancer."

Florez will also present her findings during a [poster session](#) at the [2025 Annual Meeting of the](#)

[American Society of Clinical Oncology](#) (ASCO) in Chicago from May 30 to June 3, 2025.

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