# Lung Cancer Screening Eligibility and Completion Rates in Adults with Diagnosed Lung Cancer: A Nationally Representative Observational Study

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## Introduction

- The U.S. Preventive Services Task Force (USPSTF) recommends annual lung cancer screening (LCS) with low-dose computed tomography (LDCT) for high-risk adults
- However, screening rates are still low (<22%) despite these guidelines

## Study Objective

- Analyze rates of LCS eligibility and LDCT completion in patients who were recently diagnosed with lung cancer
- Evaluate demographic and socioeconomic factors associated with LCS eligibility and LDCT completion rates

## Methods

Data Source:
- 2024 National Health Interview Survey (NHIS)

Study Population:
- Adults ≥ 50 years
- Diagnosed with lung cancer within past 10 years

LDCT Eligibility at Diagnosis:
- 2021 USPSTF criteria
- Self-reported smoking history

Data Analysis:
- Multivariable logistic regression
- Survey weights applied

LCS eligibility and factors associated with it were assessed

LDCT completion rates and factors associated with it were assessed

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## Results

The study included 115 participants (weighted n = 638,702 U.S. adults)

| Demographics | Weighted statistics (n = 638,702) | Non-weighted statistics (n= 115) |
|---|---|---|
| Average Age (years) | 72.3 ± 8.5 | 72.6 ± 8.2 |
| Male (%) | 51.0 | 51.3 |
| White (%) | 80.0 | 80.7 |
| Black (%) | 16.7 | 15.8 |
| Asian (%) | 2.5 | 1.8 |
| Other (%) | 0.9 | 1.8 |
| Hispanic or Latino (%) | 1.7 | 98.3 |
| **Employment Status** | | |
| Did not work in the last week (%) | 11.4 | 10.2 |
| Worked in the last week (%) | 88.6 | 89.81 |

**Table 1. Patient Demographics**

| LCS Eligibility | Percentage (%) |
|---|---|
| Not determined | 4.6 |
| Eligible | 52.0 |
| Not Eligible | 43.4 |

**Table 2. LCS Eligible**

| Group | Outcome | Percentage (%) |
|---|---|---|
| All patients | Ever received LDCT | 83.6 |
| All patients | LDCT prior to diagnosis | 29.6 |
| LCS-eligible patients | LDCT prior to diagnosis | 31.1 |
| Not LCS-eligible patients | LDCT prior to diagnosis | 27.6 |

**Table 3. LDCT Completion Rates**

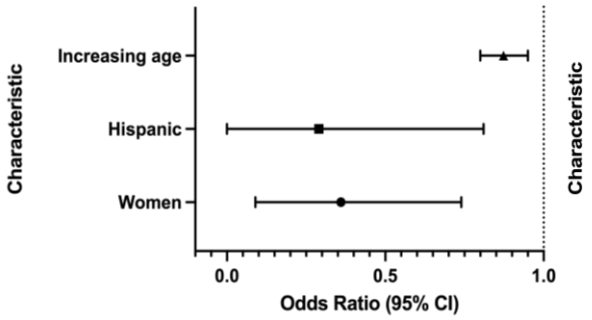


**Figure 1. Factors associated with lower LCS Eligibility**
The multivariable analysis for LCS eligibility showed that every one-year increase in age (OR 0.90; 95% CI 0.81–0.99; p = 0.04), female sex (vs. male) (OR 0.27; 95% CI 0.07–0.94; p = 0.04), and Hispanic ethnicity (OR 0.04; 95% CI 0.01-0.34; p = 0.004) was associated with lower odds of being eligible for LCS.

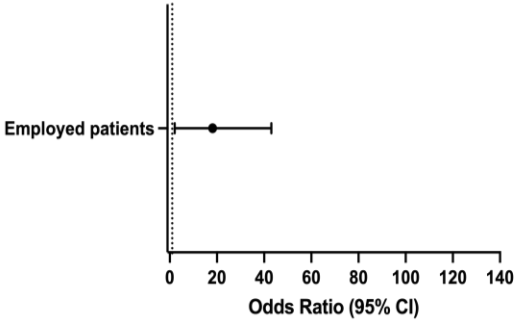


**Figure 2. Factors associated with higher LCS Eligibility**
The multivariable analysis showed that patients who were employed were more likely to be eligible for LCS (OR 9.44; 95% CI 2.07-43.05; p = 0.01) compared to those not employed.

In the multivariable model, no patient factor was significantly associated with LDCT completion prior to lung cancer diagnosis.

## Discussion

- Over half of patients were eligible for LCS at the time of diagnosis, yet LDCT use remained low, highlighting a gap between eligibility and real-world screening uptake
- Sociodemographic disparities in eligibility suggest that current USPSTF criteria may not fully capture all high-risk individuals
- These disparities may lead to the systematic exclusion of vulnerable populations and contribute to delayed diagnoses
- The lack of significant differences in LDCT completion between eligible and non-eligible groups highlights missed opportunities for targeted screening interventions
- Findings support the need to refine risk-based LCS criteria, which can include incorporating broader clinical and sociodemographic risk factors
- There is also a need to address systemic barriers to LDCT uptake, including improving screening access, patient education, and provider adherence
- Future efforts should focus on equitable implementation of LCS programs to improve early detection and reduce disparities in lung cancer outcomes

**References:**
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