

Respiratory Medicine

Lungs for Living



**UCL**

# Respiratory symptoms present when assessed for lung cancer screening: The SUMMIT study

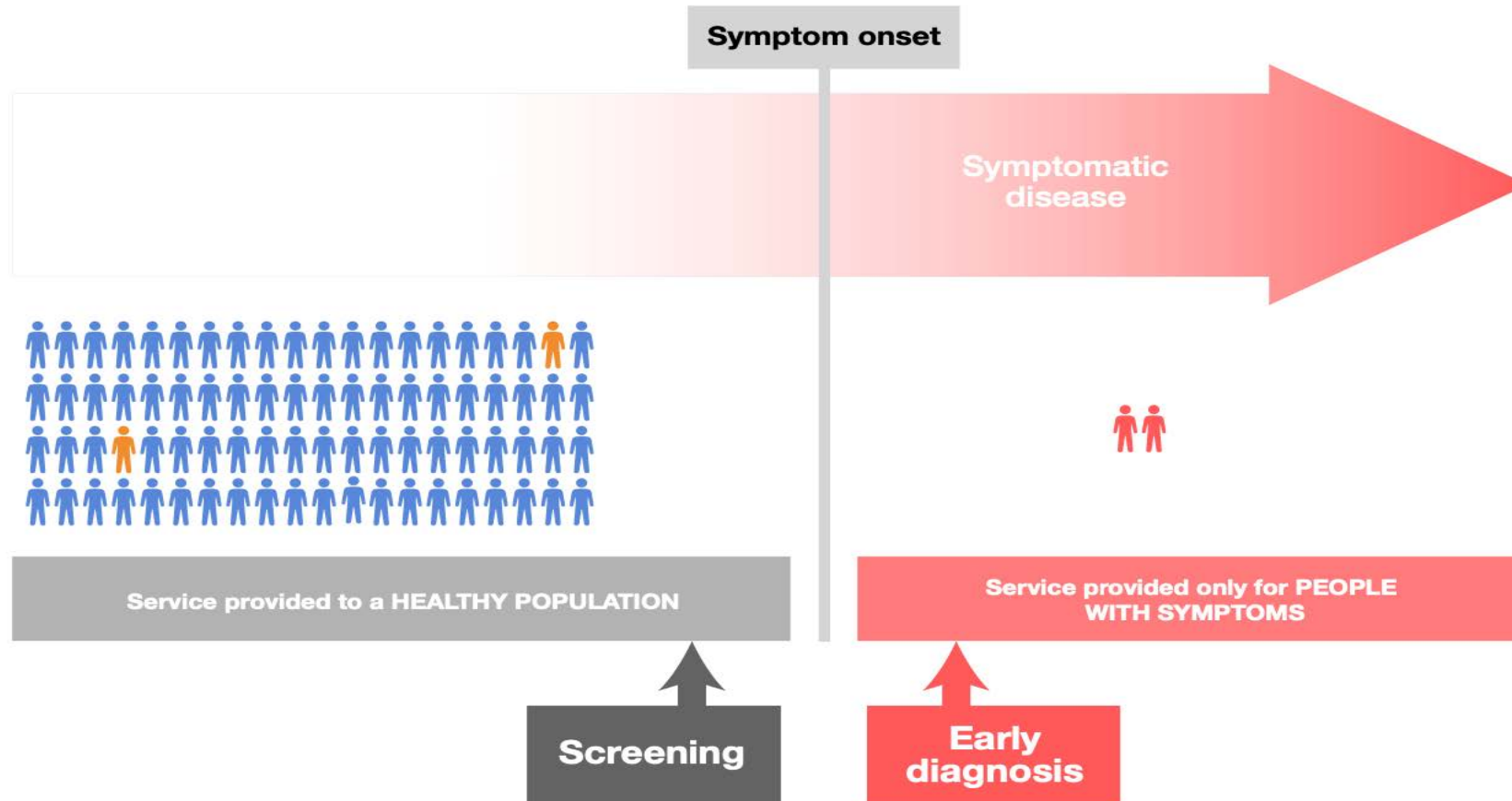


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Clinical Research Fellow*

# Disclosures and funding

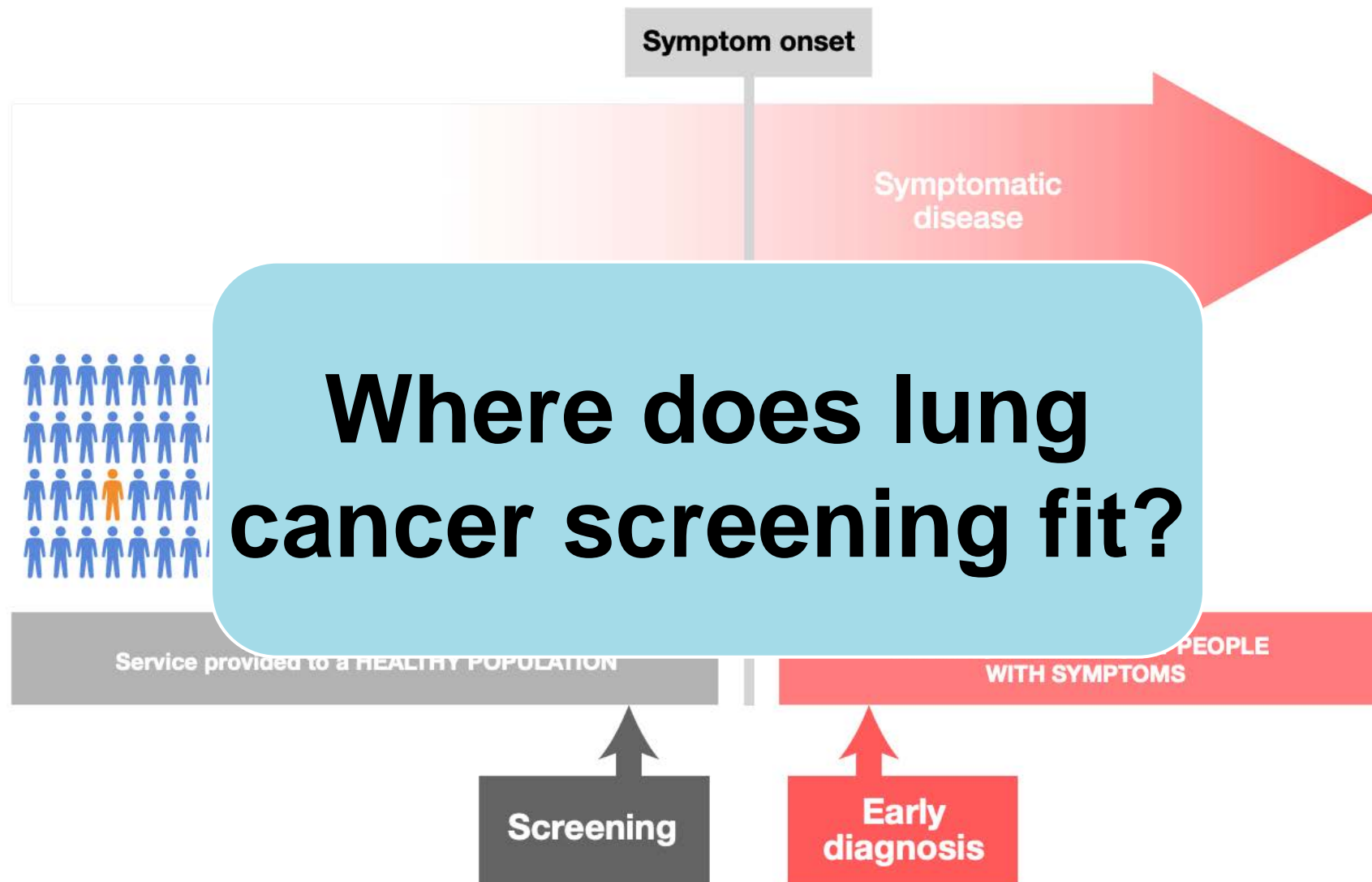
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- I received travel funding from GRAIL, LLC for this conference
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# WHO definition of screening: inviting asymptomatic target population for testing to detect pre-cancer or early cancer



## High-risk individuals invited for lung cancer screening often have co-morbidities, especially respiratory due to smoking history







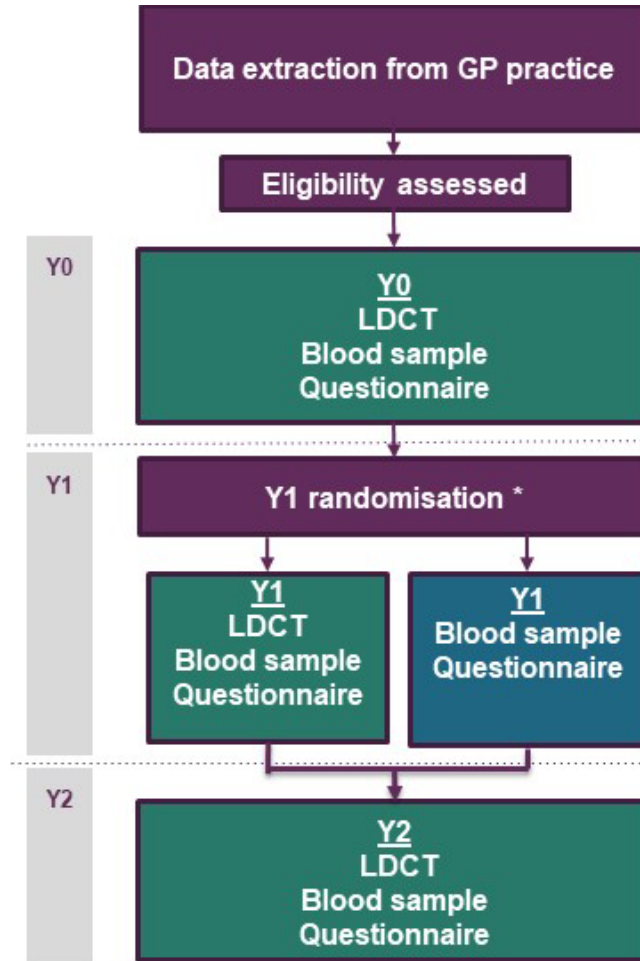
# Objectives:

1. Determine the **burden of self-reported symptoms** in a lung cancer screening cohort
2. Determine whether **symptoms were associated with an increased risk** of lung cancer
3. Determine whether **symptoms were associated with differences** in stage or treatment

# The SUMMIT study



*A prospective observational cohort study which aims to assess the implementation of Low-Dose Computed Tomography (CT) screening for lung cancer in a high-risk population and validate a multi-cancer early detection blood test*



\*Y1 randomisation for those with negative LDCT at Y0. All participants requiring annual scans for clinical reasons will not be randomised.

# Methods

Clinical assessment with self-reported questionnaires at entry to SUMMIT study

- **55-77 years old**
- **USPTF<sub>2013</sub> or PLCO<sub>m2012</sub> 6-year cancer risk  $\geq 1.3\%$**
- Not invited if active malignancy, palliative care/life expectancy  $< 12$  months, unable to consent

Red flag symptoms:

- Unintentional weight loss  $\geq 5$ kg in last 3 months
- Hemoptysis in last 12 months

Nonspecific symptoms:

- Daily Cough
- mMRC dyspnea  $\geq 1$

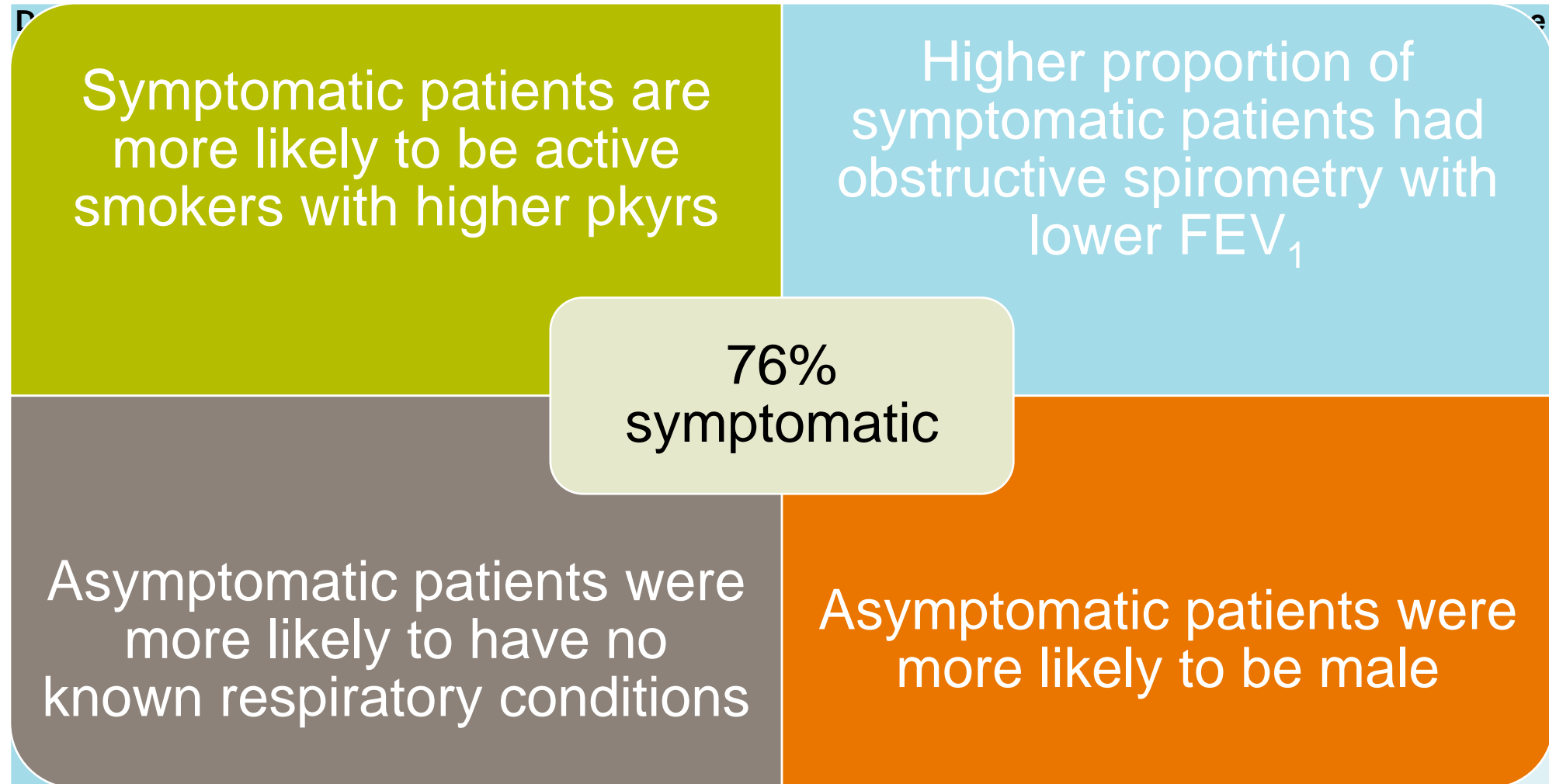
Lung Cancer diagnosis

- Diagnosed within 2 years of baseline CT
- Nationally collected cancer outcome data

# Demographics

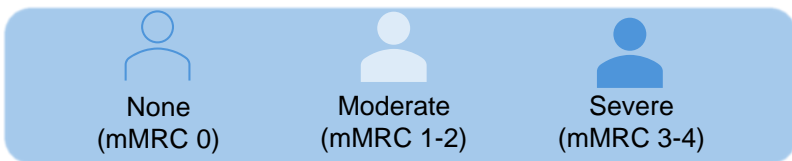
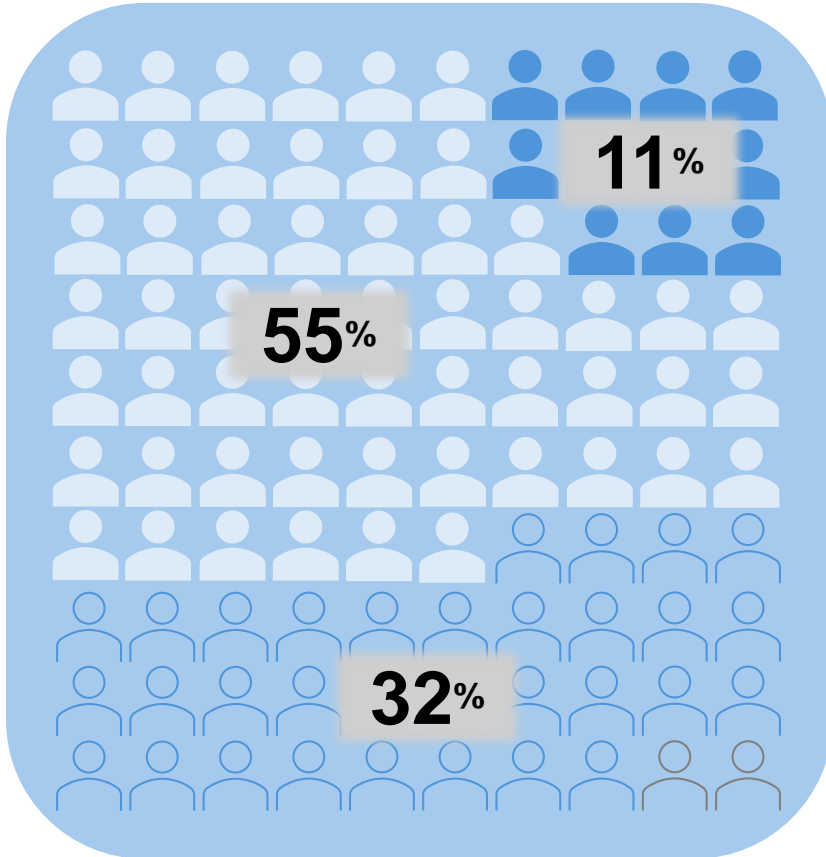
Demographics	All (N=13,035)	Red Flag (N=759)	Nonspecific (N=9,100)	Asymptomatic (N=3,176)	p-value
Age at study entry	65±4	64±6	66±6	65±6	<0.001*
Male	7,491 (57)	449 (59)	5,012 (55)	2,030 (64)	<0.001
Smoking at study entry	6,377 (49)	487 (64)	4,535 (50)	1,355 (43)	<0.001
Cigarette pack years	45±23	49±25	46±24	41±19	<0.001*
Median %PLCO <sub>m2012</sub>	3.1 (1.9, 5.6)	3.9 (2.2,7.0)	3.2 (1.9,5.9)	2.6 (1.7,4.4)	<0.001
Spirometry: FEV1/FVC ratio<0.7	5,545 (44)	338 (46)	4,139 (47)	1,068 (35)	<0.001
FEV1 %	76±19	71±21	74±19	84±17	<0.001*
No Respiratory COPD	8,001 (61) 3,833 (29)	346 (46) 339 (45)	5,139 (56) 3,041 (33)	2,516 (79) 452 (14)	<0.001 <0.001
Asthma	2,067 (16)	179 (24)	1,642 (18)	246 (8)	<0.001
Bronchiectasis	106 (0.8)	13 (1.7)	84 (0.9)	9 (0.3)	<0.001
Tuberculosis	288 (2)	24 (3)	219 (2)	45 (1)	0.001
Sarcoidosis	47 (0.4)	3 (0.4)	33 (0.4)	11 (0.4)	0.98
ILD	56 (0.4)	7 (0.9)	43 (0.5)	6 (0.2)	0.01

# Demographics

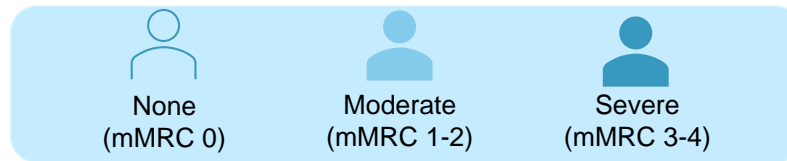
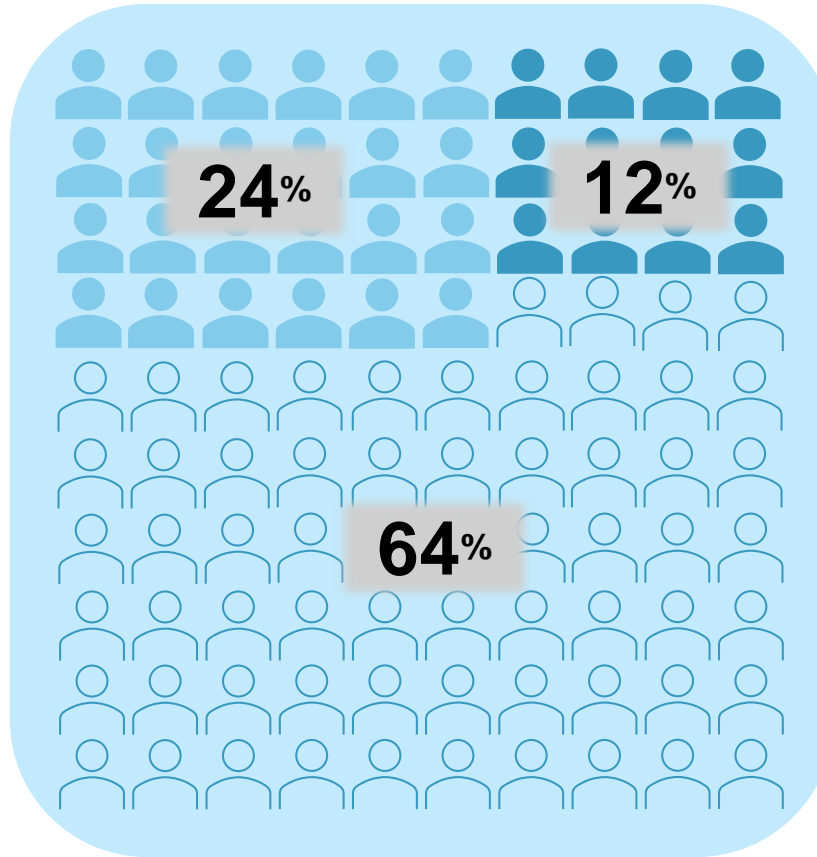


# Objective 1: Proportion of symptoms

Proportion of **dyspnea** in the SUMMIT lung cancer screening cohort



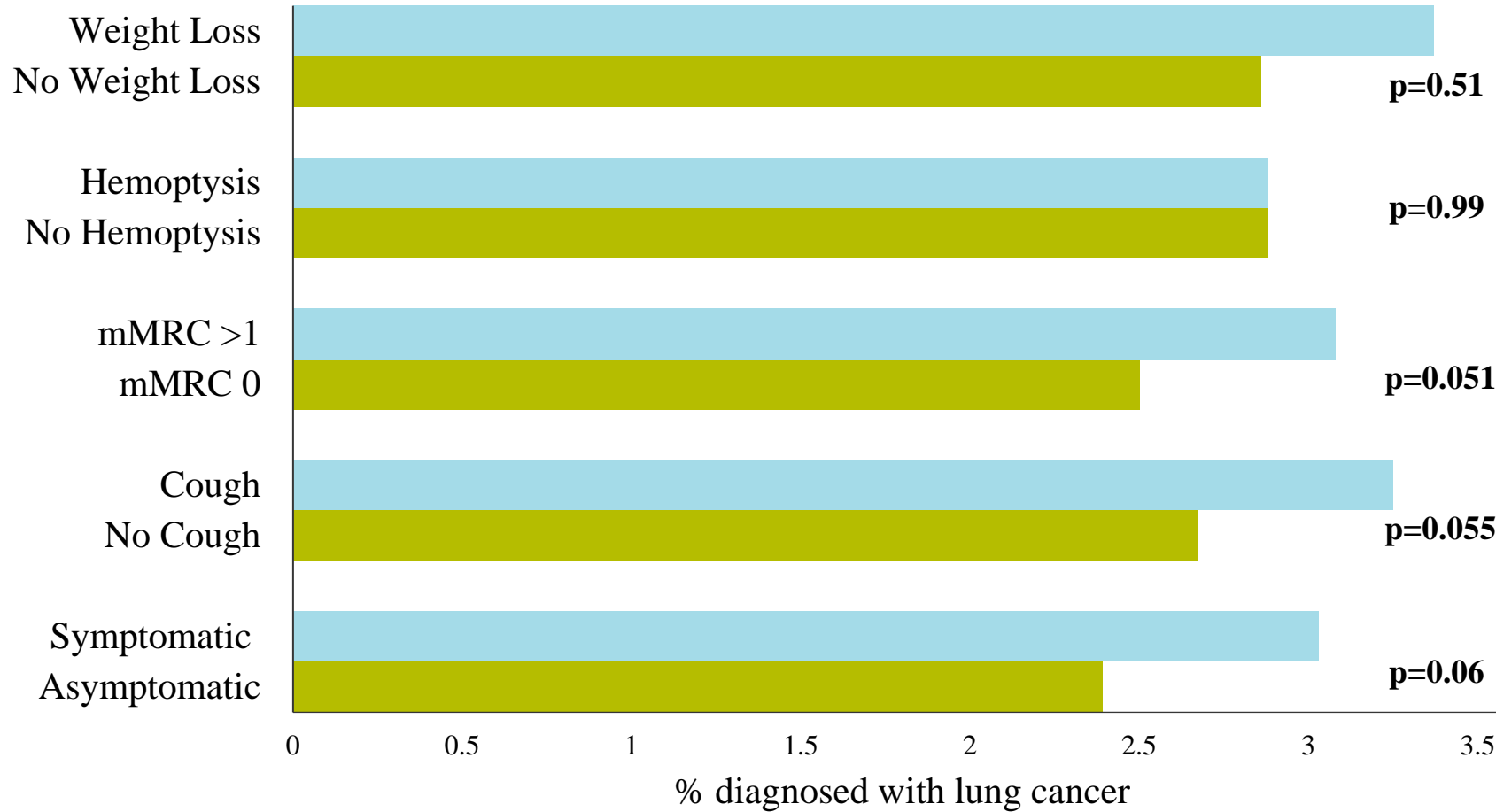
Proportion of patients with **cough** in the SUMMIT lung cancer screening cohort



Red flag symptoms are uncommon:

- 6%, N=759

# Objective 2: Association of Symptoms with Lung Cancer



Adjusting for age, gender and pkyrs, symptoms were not associated with lung cancer (co-efficient: 0.14, p=0.29)

# Objective 3: Define any differences in screening outcomes

Cancer Characteristics N (%)	Total N=375	Symptomatic N=299	Asymptomatic N=76	P-value
Screen detected cancer	346 (92)	276 (92)	70 (92)	0.95
Interval cancer	33 (9)	27 (9)	6 (8)	
<b><u>Stage at Diagnosis</u></b>				0.11
I	256 (68)	200 (67)	56 (74)	
II	31 (8)	21 (7)	10 (13)	
III	54 (14)	48 (16)	6 (8)	
IV	27 (7)	24 (8)	3 (4)	
Unknown	7 (2)	6 (2)	1 (2)	
<b><u>Histology</u></b>				
Adenocarcinoma	246 (66)	193 (65)	53 (70)	
Squamous cell carcinoma	68 (18)	54 (18)	14 (18)	
Small cell	15 (4)	13 (4)	2 (3)	
Other Neuroendocrine	14 (4)	10 (3)	4 (5)	
Other	17 (5)	17 (6)	0 (0)	
Unknown	15 (4)	12 (4)	3 (4)	
<b><u>First Treatment</u></b>				0.12
Curative Surgery	278 (74)	212 (71)	66 (87)	
Curative Radiation	34 (9)	30 (10)	4 (5)	
Chemoradiation	18 (5)	15 (5)	3 (4)	
Palliative Systemic	17 (5)	15 (5)	2 (3)	
Palliative Radiation	8 (2)	8 (3)	0 (0)	
None	20 (5)	19 (6)	1 (1)	

**No significant differences in screening outcomes among symptomatic and asymptomatic**

## Take home messages:



- Symptoms are common amongst individuals in screening programs



- The presence of symptoms does not increase likelihood of lung cancer diagnosis during screening



- Symptomatic patients have similar lung cancer characteristics and still benefit from enrolling in screening