

NLST Findings Regarding Quitting Motivation & Attitudes

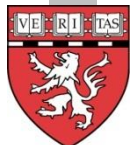
Elyse R. Park, Ph.D., MPH
Associate Professor in Psychiatry,
Massachusetts General
Hospital/Harvard Medical School



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CANCER
OUTCOMES
RESEARCH



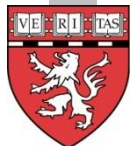
Funding Acknowledgements and Disclosures

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- NCI ACRIN/NLST Trial (U01 CA079778 and U01 CA080098)
- NCI K24CA197382

Disclosures

- Royalties from UpToDate
- Pfizer supplying medications for RCT



NLST Risk Perception Study

Phone Eligibility Screen

Enrollment/Baseline forms + Risk Perception Questionnaire

Randomize

Experimental
(CT Scan)

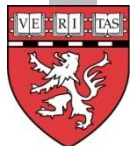
Control
(X-Ray)

12-Month Survey
Repeat CT scan 1

12-Month Survey
Repeat X-Ray

Repeat In-Person Scans at 2-year f/u
Primary Outcome (mortality) at 8 year f/u

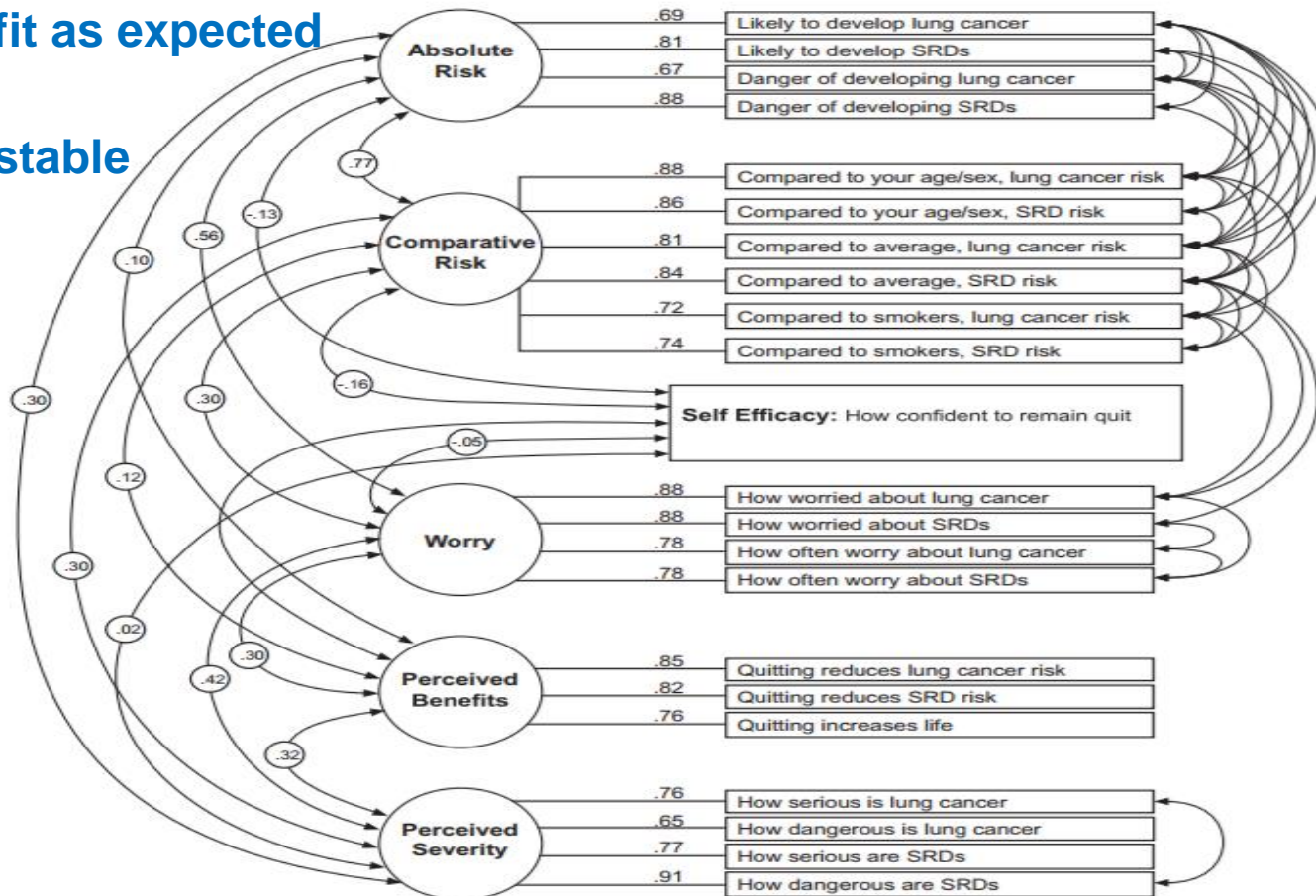
+ Risk
Perception
Questionnaire



Confirmatory factor analysis for NLST current cigarette smokers (n=2237)

Constructs fit as expected

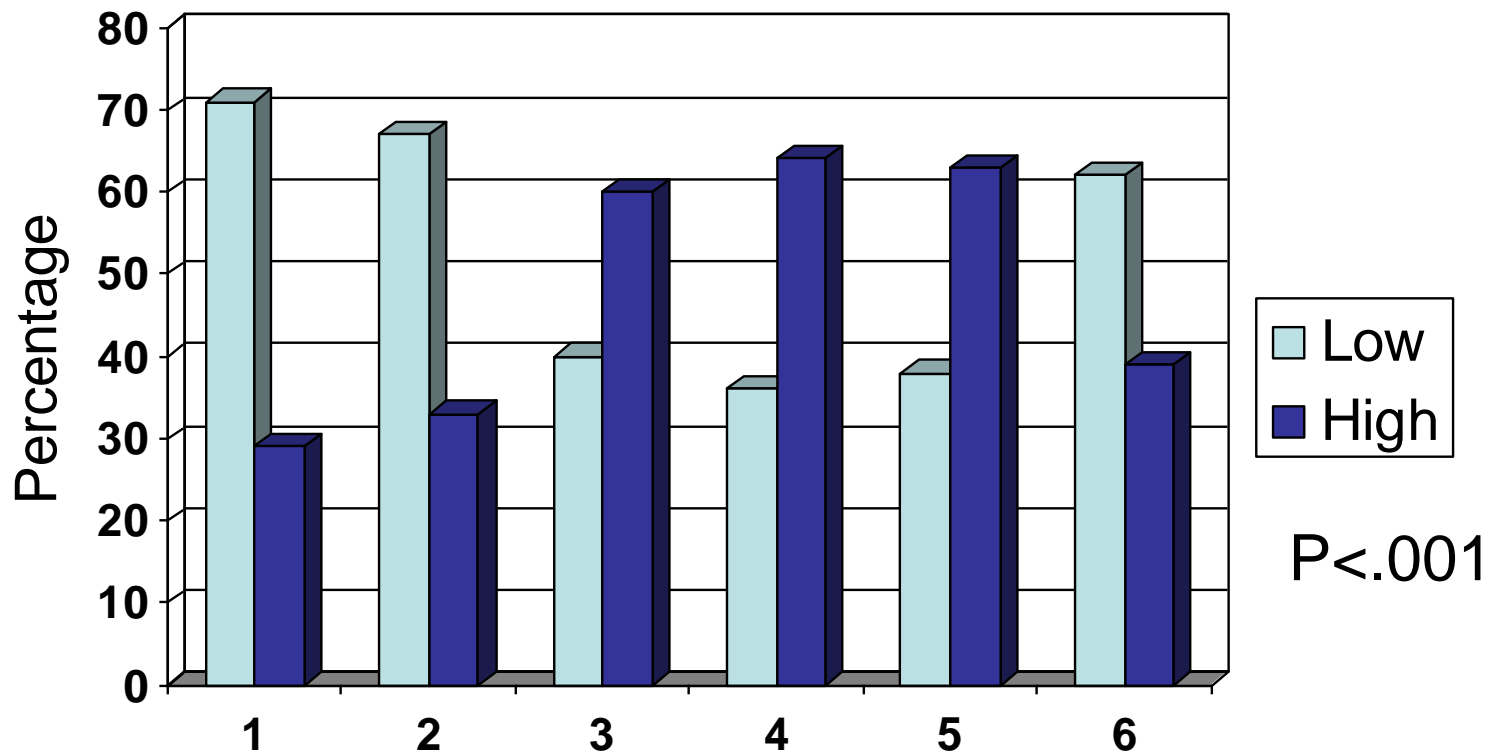
Constructs stable



Baseline Behavior Change Constructs

	Total ever smokers (n=630)	Current smoker (n=345)	Former smoker (n=285)	<i>p</i> -value
Smoking risk perceptions scale, mean (SD)				
Risk perceptions for LC/SRD (10-50)	35.2 (7.5)	36.9(7.3)	33.1 (7.1)	<.001
Cognitive and emotional constructs, mean (SD)				
Perceived benefits of quitting (3-12)	9.4 (2.2)	9.0 (2.2)	9.8 (2.0)	<.001
Confidence to quit/remain quit (1-5)	3.6 (1.4)	2.7 (1.2)	4.6 (0.8)	<.001
Perceived severity of LC/SRD (4-20)	18.3 (2.1)	18.1 (2.3)	18.6 (1.7)	0.01
Worry about LC /SRD (4-16)	9.4 (2.9)	9.8 (2.9)	8.9 (2.7)	<.001

Risk by Smoking Intentions

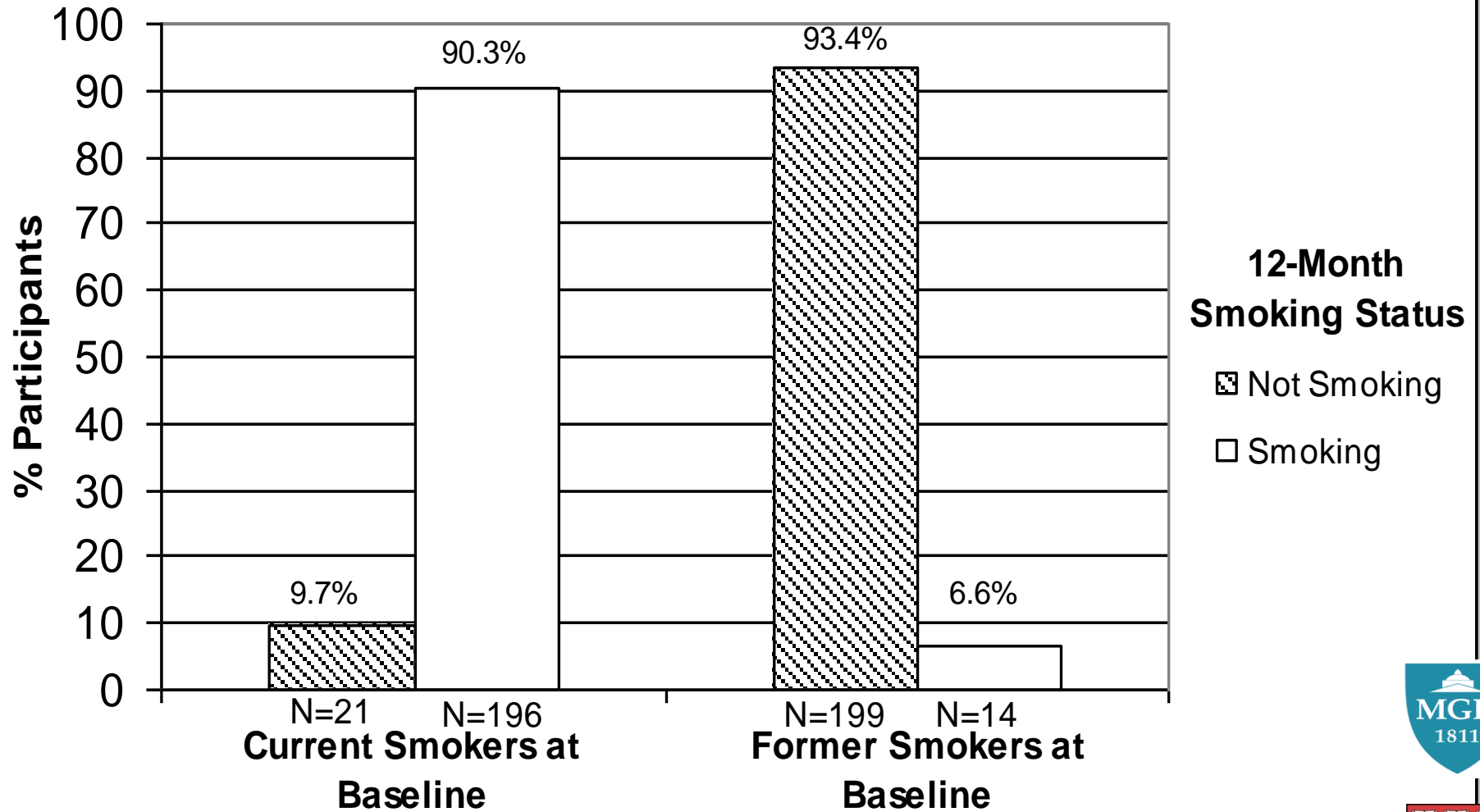


Smoking Intentions

- 1: I enjoy smoking so much I will never consider quitting
- 2: I never/rarely think about quitting but I might someday/have no plans
- 3: I sometimes/often think about quitting, but not in near future
- 4: I plan to quit in the next 30 days/have set a quit date
- 5: I have already quit but I worry about slipping back or relapsing
- 6: I have quit and I am 100% confident that I will never smoke again



Change in Self-Reported Smoking Behaviors at 12-Month Follow-up by Baseline Smoking Status



One Year Follow-up: Current Smokers

Current Smokers	Baseline		1 year follow-up		95% C.I.
	Mean	SD	Mean	SD	
Lung Cancer Risk	17.9	3.93	18.1	3.85	(-0.23, 0.59)
Smoking Related Disease Risk	18.5	4.06	18.8	4.05	(-0.25, 0.74)
Perceived Benefits of Quitting Smoking	9.11	2.10	9.0	2.12	(-0.39, 0.21)
Perceived Confidence to Quit Smoking/Stay Quit	2.71	1.12	2.8	1.21	(-0.04, 0.29)
Perceived Severity of LC/SRD's	18.24	2.12	18.3	1.98	(-0.26, 0.24)
Worry about LC and SRD's	10.1	2.84	10.2	2.81	(-0.18, 0.46)
Perceived Benefits of Lung Screening	4.83	1.44	4.9	1.45	(-0.14, 0.23)
Percent of Smokers who will get LC	37.2	23.3 ₉	36.6	22.0	(-3.25, 1.95)
One Pack/Day Smoker's Risk of Developing LC	3.04	1.08	3.1	1.11	(-0.11, 0.16)

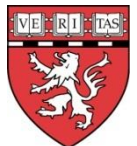


Changes in Risk Perception as Predictors of Smoking at 12 Months

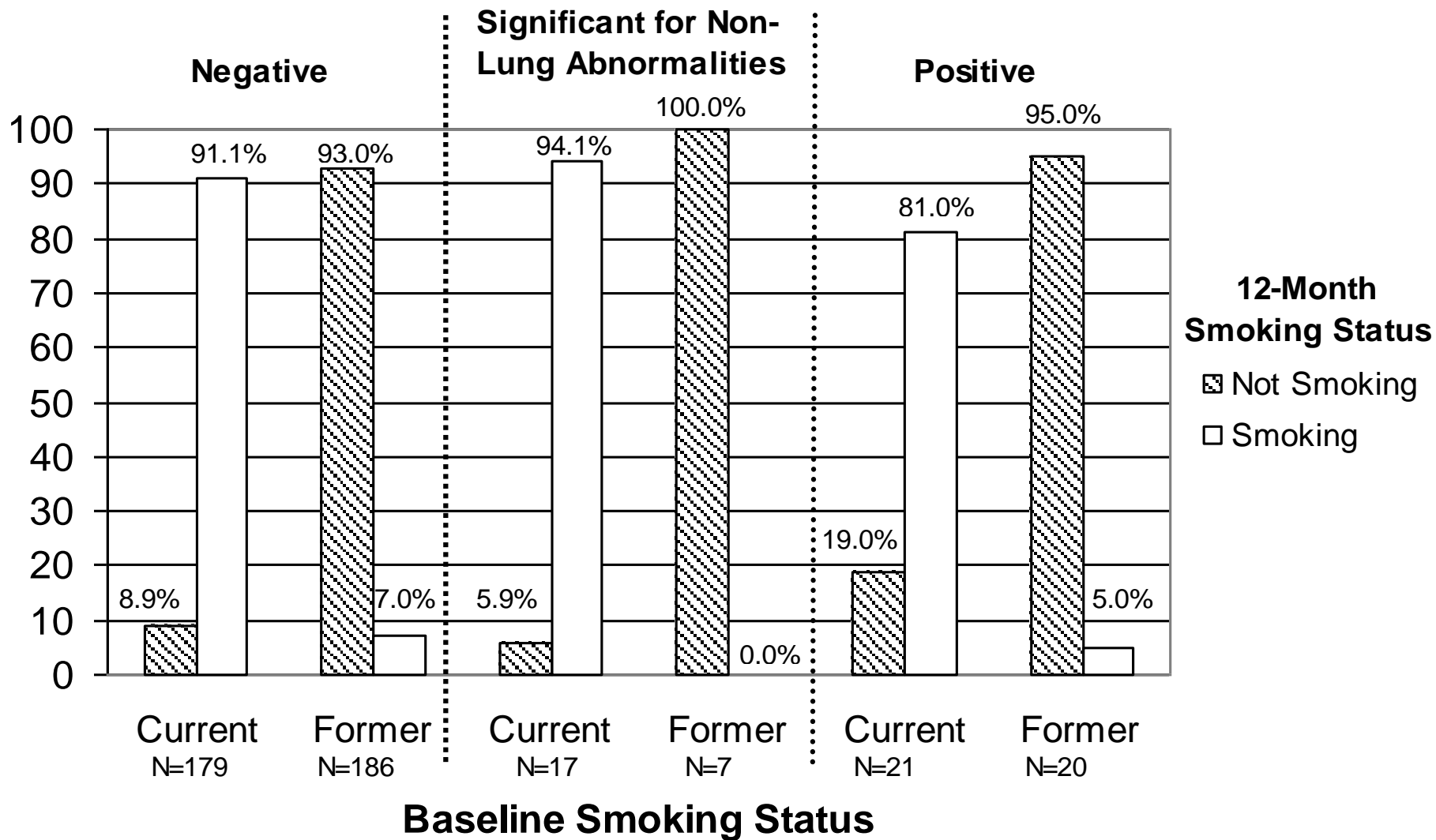
	Odds Ratio	95% CI
<u>Former Smokers at Baseline</u>		
Changes in Lung Cancer Risk	1.08	(0.91 , 1.28)
Changes in Smoking-Related Disease Risk	0.99	(0.86 , 1.14)
<u>Current Smokers at Baseline</u>		
Changes in Lung Cancer Risk	1.08	(0.93 , 1.26)
Changes in Smoking-Related Disease Risk	1.05	(0.93 , 1.19)

Change in LC Risk based on Baseline Screening Result and Smoking Status

	T0 Screening Result												
	Negative				Significant for non-lung cancer abnormalities				Positive				P
	Former Smoker at Baseline (n=186)		Current Smoker at Baseline (n=179)		Former Smoker at Baseline (n=7)		Current Smoker at Baseline (n=17)		Former Smoker at Baseline (n=20)		Current Smoker at Baseline (n=21)		
Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Δ in Lung Cancer Risk	-0.08	3.1	0.17	3.1	0.86	2.8	0.71	3.0	0.40	3.3	-0.14	2.9	0.8



12-Month Smoking Status by Baseline Screening Result



Original investigation

The Relations Between False Positive and Negative Screens and Smoking Cessation and Relapse in the National Lung Screening Trial: Implications for Public Health

Melissa A. Clark PhD^{1,2}, Jeremy J. Gorelick PhD³, JoRean D. Sicks MS³, Elyse R. Park PhD, MPH^{4,5}, Amanda L. Graham PhD^{6,7}, David B. Abrams PhD^{6,7,8}, Ilana F. Gareen PhD^{1,3}

Abstract

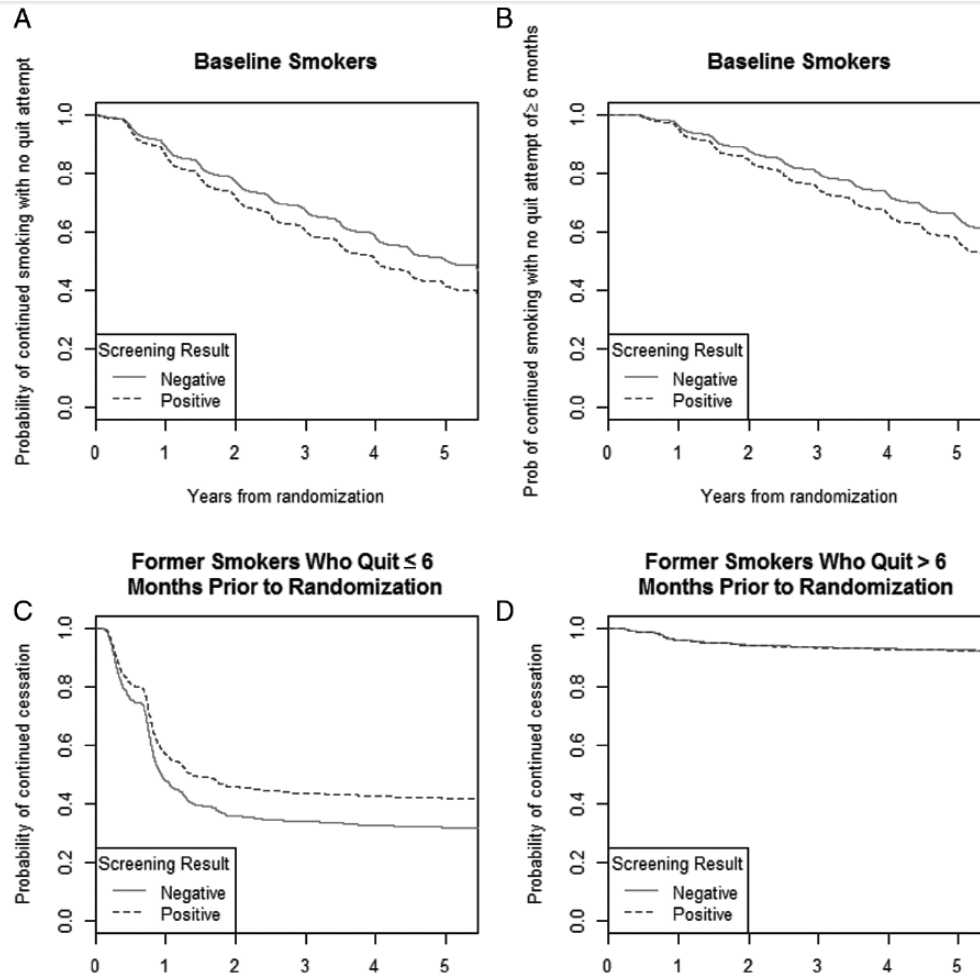
Introduction: Lung screening is an opportunity for smoking cessation and relapse prevention, but smoking behaviors may differ across screening results. Changes in smoking were evaluated among 18 840 current and former smokers aged 55–74 scheduled to receive three annual lung screenings.

Methods: Participants were randomized to low-dose computed tomography or single-view chest radiography in the American College of Radiology/National Lung Screening Trial. Outcome measures included point and sustained (6-month) abstinence and motivation to quit among smokers; and relapse among smokers who quit during follow-up, recent quitters (quit < 6 months), and long-term former smokers (quit ≥ 6 months).

Results: During five years of follow-up, annual point prevalence quit rates ranged from 11.6%–13.4%; 48% of current smokers reported a quit attempt and 7% of long-term former smokers relapsed. Any false positive screening result was associated with subsequent increased point (multivariable hazard ratio HR = 1.23, 95% CI = 1.13, 1.35) and sustained (HR = 1.28, 95% CI = 1.15, 1.43) abstinence among smokers. Recent quitters with ≥1 false positive screen were less likely to relapse (HR = 0.72, 95% CI = 0.54, 0.96). Screening result was not associated with relapse among long-term former smokers or among baseline smokers who quit during follow-up.

Commentary: Our findings demonstrated that lung screening was associated with increased smoking cessation and decreased relapse with no apparent iatrogenic effect of negative screen results.

Protective effects of a false positive screening result



Current smokers
False + result is associated \uparrow likelihood of abstinence

Recent quitters
False + result is associated \downarrow likelihood of relapse

Long-term quitters
False + result is not associated likelihood of abstinence

Qualitative Substudy 1 year post screen: Health Belief Model

Cue to
Action

Perceived
Severity

Perceived
Risk

Perceived
Benefit

Confidence

Conclusions

HBM criteria

Lung Screening participants

Cue to action →

Screening not a trigger

Risk beliefs →

High risk, but perceptions not well formed

Perceived severity → High severity/disconnected from causality

Confidence to quit → Low


Worry (Self Regulatory Model) → Low

Park et al., NTR, 2014

Examining Racial Differences in Risk Perceptions

	White (N=1743)	Black (N=194)	P Value
Personal History of, N (%)			
Asthma	129 (7.40)	24 (12.37)	0.05
Chronic Bronchitis	230 (13.20)	22 (11.34)	0.68
Emphysema	168 (9.64)	6 (3.09)	0.004
Heart Disease/Heart Attack	264 (15.15)	24 (12.37)	0.46
Stroke	52 (2.98)	7 (3.61)	0.75
Had personal history of cancer, N (%)	177 (10.15)	13 (6.70)	0.31
Had personal history of SRD, N (%)	494 (28.34)	39 (20.10)	0.05
Had family history of lung cancer, N (%)	424 (24.33)	45 (23.20)	0.83
Baseline screening result, N (%)			
Negative	1434 (82.27)	158 (81.44)	0.68
Significant for non-lung cancer abnormalities	113 (6.48)	10 (5.15)	
Positive	191 (10.96)	26 (13.40)	
Unknown	5 (0.29)	0 (0.00)	
Risk Perceptions, mean (SD)			
Risk perceptions for lung cancer and SRDs	35.52 (7.50)	32.36 (9.32)	<.01
Cognitive and emotional constructs, Mean (SD)			
Perceived benefits of screening	4.86 (1.38)	4.79 (1.52)	0.50
Perceived severity of lung cancer and SRDs	18.24 (1.93)	18.00 (2.69)	0.21
Worry about lung cancer and SRDs	9.57 (2.81)	9.91 (3.48)	0.15

A matched case-control study of 3336 NLST participants who were smokers at enrollment examined participants' rates and patterns of 5A delivery



Research

Original Investigation

Primary Care Provider-Delivered Smoking Cessation Interventions and Smoking Cessation Among Participants in the National Lung Screening Trial

Elyse R. Park, PhD, MPH; Ilana F. Gareen, PhD; Sandra Japuntich, PhD; Inga Lennes, MD; Kelly Hyland, BA; Sarah DeMello, MS; JoRean D. Sicks, MS; Nancy A. Rigotti, MD

JAMA Intern Med. doi:10.1001/jamainternmed.2015.2391
Published online June 15, 2015.

Matched case control study (n=7075) of smokers at enrollment.

Reported 5A Delivery of Study Quitters and Continued Smokers (n=3336) with PCP visits post screening

Delivery of Each A	No. (%) of Patients (n = 3336)		Quitters vs Continued Smokers, OR (95% CI)	
	Quitters (n = 1668)	Continued Smokers (n = 1668)	Unadjusted	Adjusted ^a
Ask	1281 (76.8)	1262 (75.7)	1.07 (0.91-1.25)	1.10 (0.93-1.30)
Advise	1232 (73.9)	1237 (74.2)	0.98 (0.84-1.15)	0.99 (0.84-1.17)
Assess	1122 (67.3)	1084 (65.0)	1.11 (0.96-1.28)	1.14 (0.98-1.32)
Assist	1080 (64.8)	961 (57.6)	1.35 (1.18-1.56)	1.40 (1.21-1.63)
Arrange follow-up	291 (17.4)	224 (13.4)	1.37 (1.13-1.67)	1.46 (1.19-1.79)



Thank you.

epark@mgh.harvard.edu