

LO SCREENING DEL TUMORE DEL POLMONE CON TC TORACE A BASSA DOSE

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ISS
31 maggio 2019

LUNG CANCER IN ITALY



35.000 dead/year
100 every day

European cancer mortality predictions for the year 2015: does lung cancer have the highest death rate in EU women?

ANNALS OF ONCOLOGY 2015

M. Malvezzi^{1,2}, P. Bertuccio¹, T. Rosso², M. Rota¹, F. Levi³, C. La Vecchia^{2*} & E. Negri¹

¹Department of Epidemiology, IRCCS-Istituto di Ricerche Farmacologiche 'Mario Negri', Milan; ²Department of Clinical Sciences and Community Health, Università degli Studi di Milano, Milan, Italy; ³Cancer Epidemiology Unit, Institute of Social and Preventive Medicine (IUMSP), Lausanne University Hospital, Lausanne, Switzerland

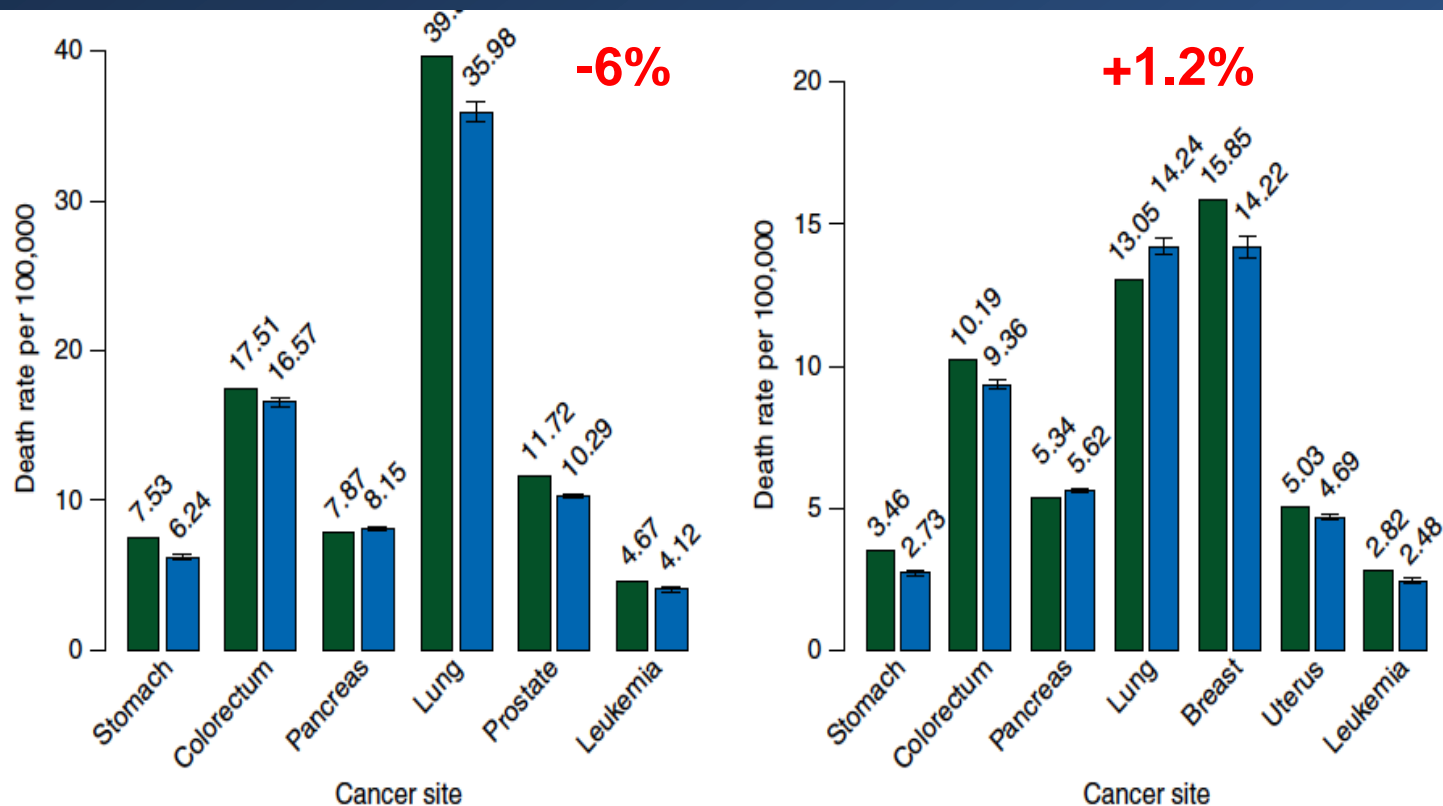
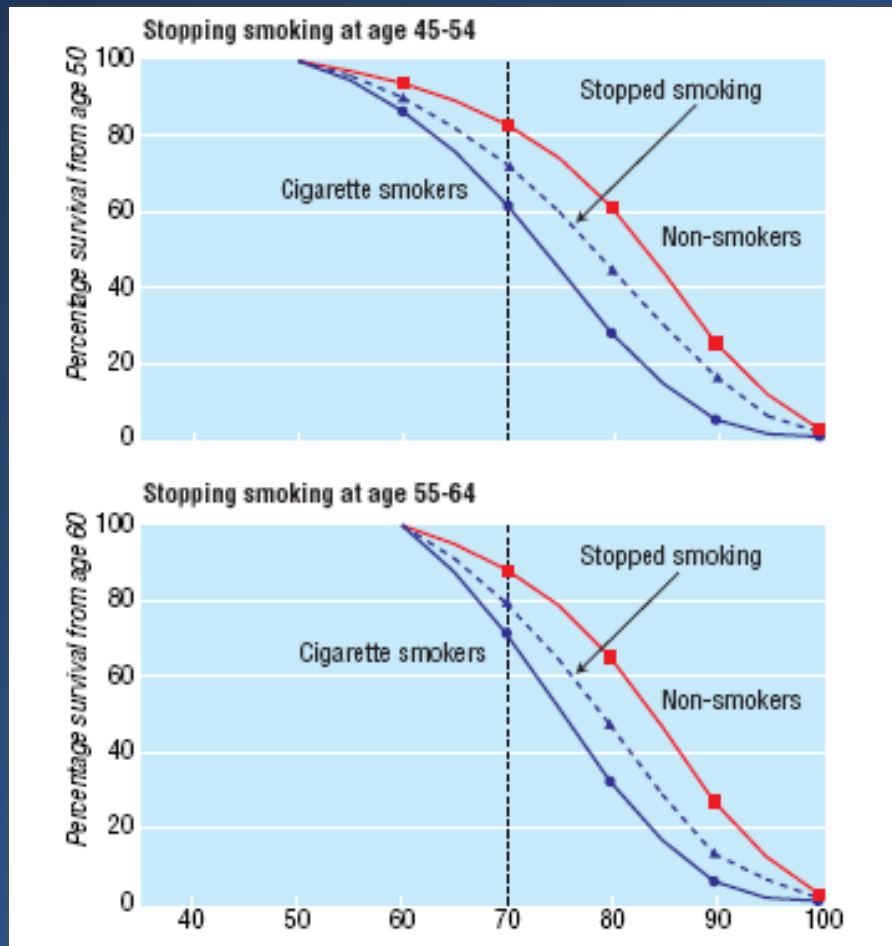


Figure 1. (A) Bar plots of age-standardised (world population) death rates per 100 000 and certified deaths for the year 2009 (green) and predicted rates and number of deaths (predicted numbers of deaths are rounded to the nearest hundred) for 2015 (blue) with 95% prediction intervals (PIs) for total cancer mortality in the EU in men and women. (B) Bar plots of age-standardised death rates per 100 000 population for year 2009 (green) and predicted rates for 2015 with 95% PIs (blue) in the EU in men and women for selected cancer sites.

The risk of lung cancer remains high for 15-20 years after quitting

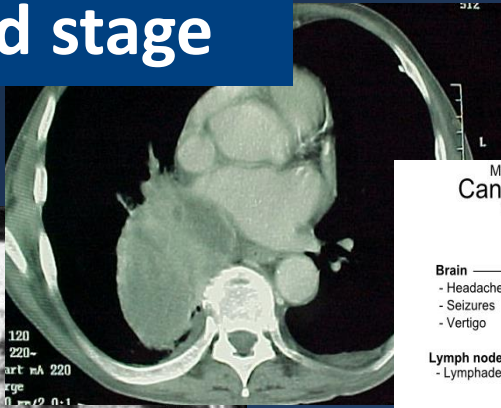
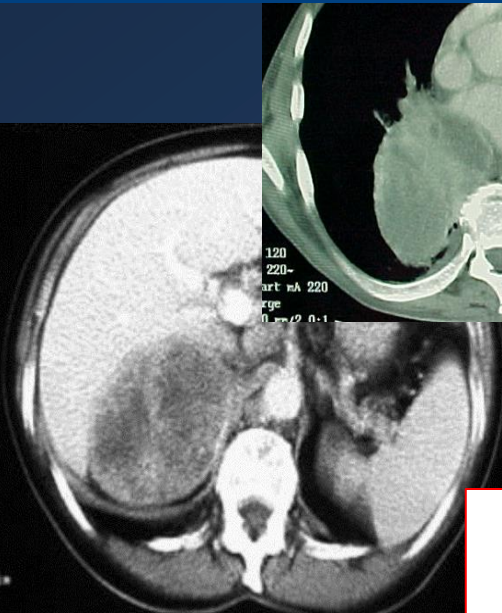


Doll R et al. BMJ 2004

Doll R et al. BMJ 2004

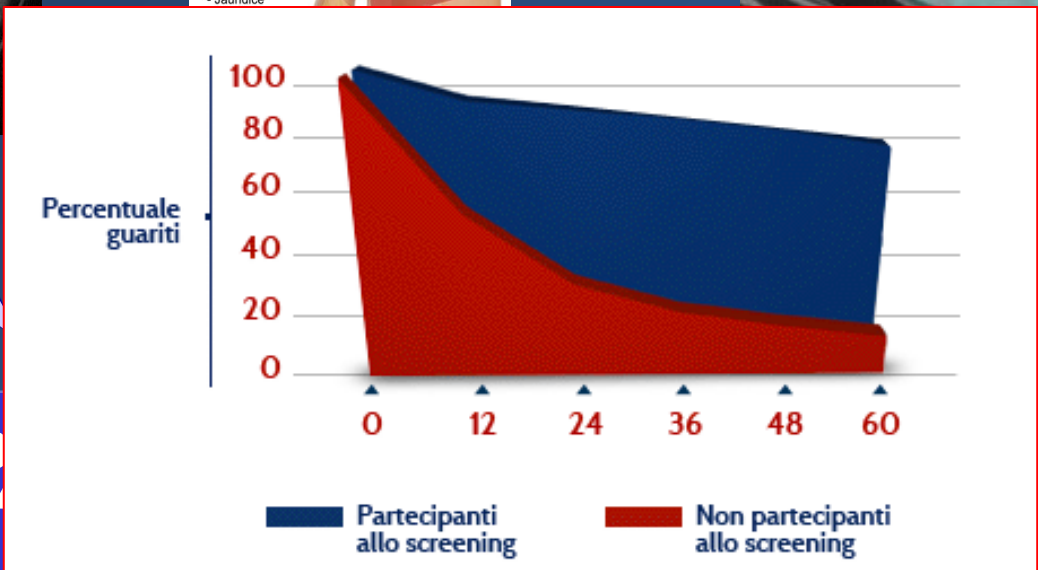
SYMPTOMS: 75% advanced stage

SCREENING: 75% early cases



Most common sites of Cancer metastasis and their symptoms

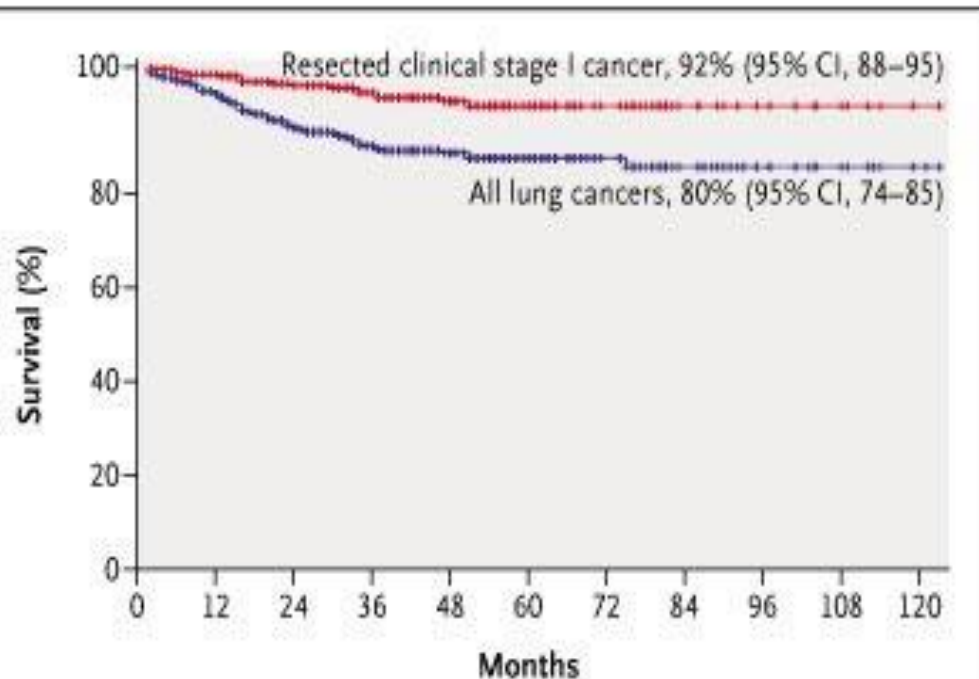
- Brain**
 - Headaches
 - Seizures
 - Vertigo
- Lymph nodes**
 - Lymphadenopathy
- Respiratory**
 - Cough
 - Hemoptysis
 - Dyspnea
- Liver**
 - Hepatomegaly
 - Jaundice



15% survival

75% survival

I-ELCAP (2006 NEJM)



No. at Risk

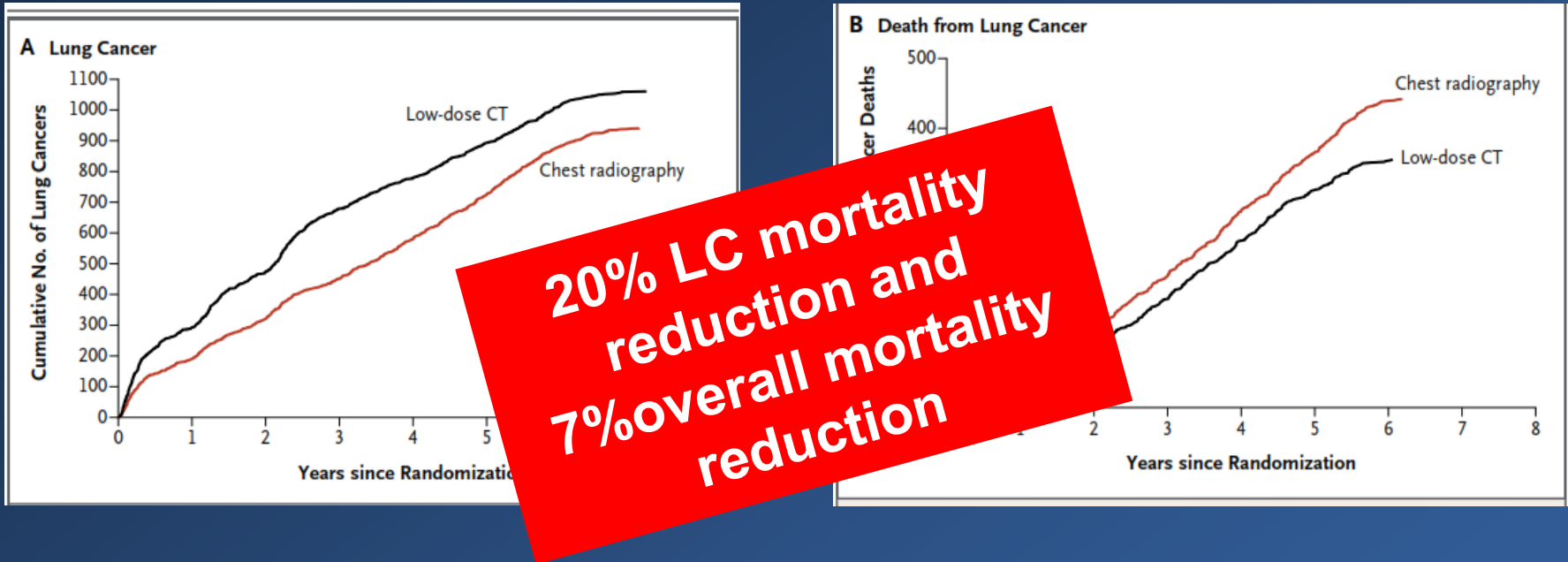
All participants	484	433	356	280	183	90	50	28	16	9	2
Participants undergoing resection	302	280	242	191	120	59	34	18	12	7	1

- 31.000 screen subjects
- 484 tumors
- 80% Survival

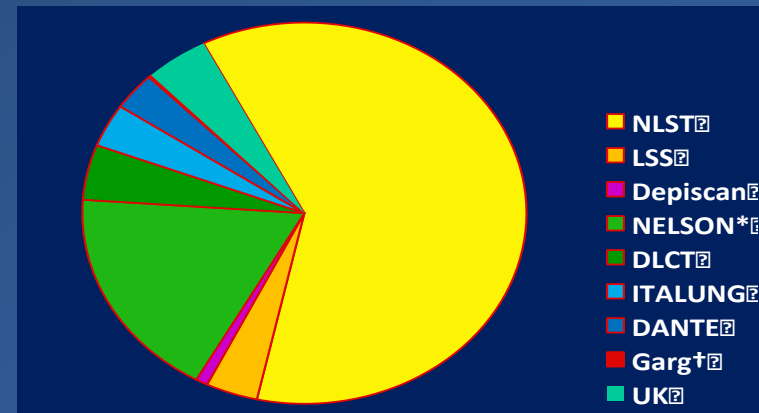
Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

NEJM, 2012

The National Lung Screening Trial Research Team*



DRAWBACKS NLST:
high costs,
high numbers of recalls (27%)
high number of useless
invasive procedures (30%)

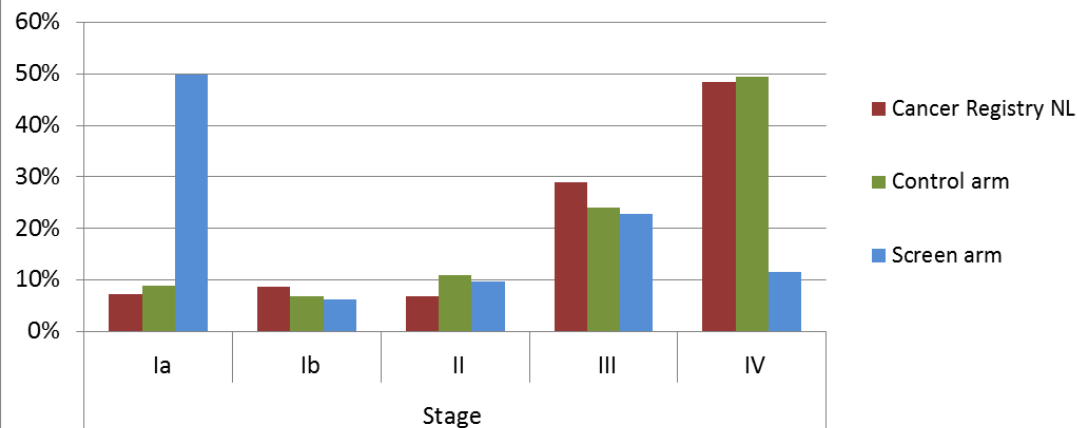


Studio randomizzato europeo NELSON TRIAL RESULTS (2018)

Lung Cancer Stage (males NL) 7th TNM

Cancer Registry NL - Control Arm - Screen Arm

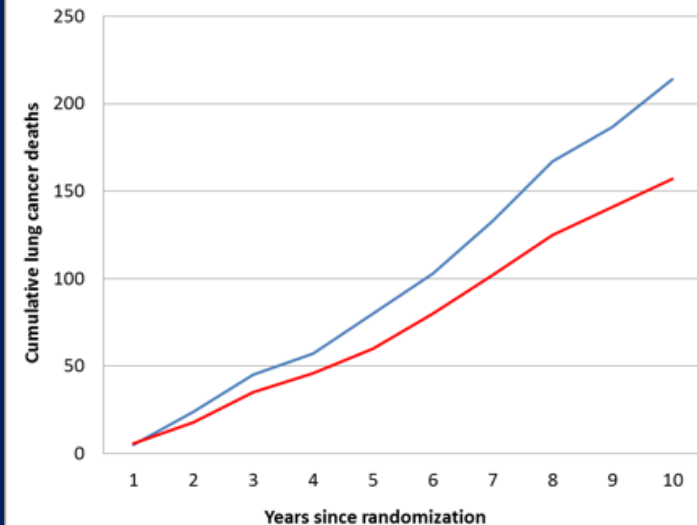
up to December 2011



Control arm:
214 lung cancer deaths

Screen arm:
157 lung cancer deaths

Cumulative lung cancer deaths (Men only)



26-39% (M/F) riduzione della mortalità in 10 years $p=0.003$
Stage shift: 50% stadi Ia, 10% stadio IV

COSMOS : LC LDCT 5200 subjects enrolled in 1 year in a single center followed for 10 years

High rate of stage I disease (mean size 16mm)

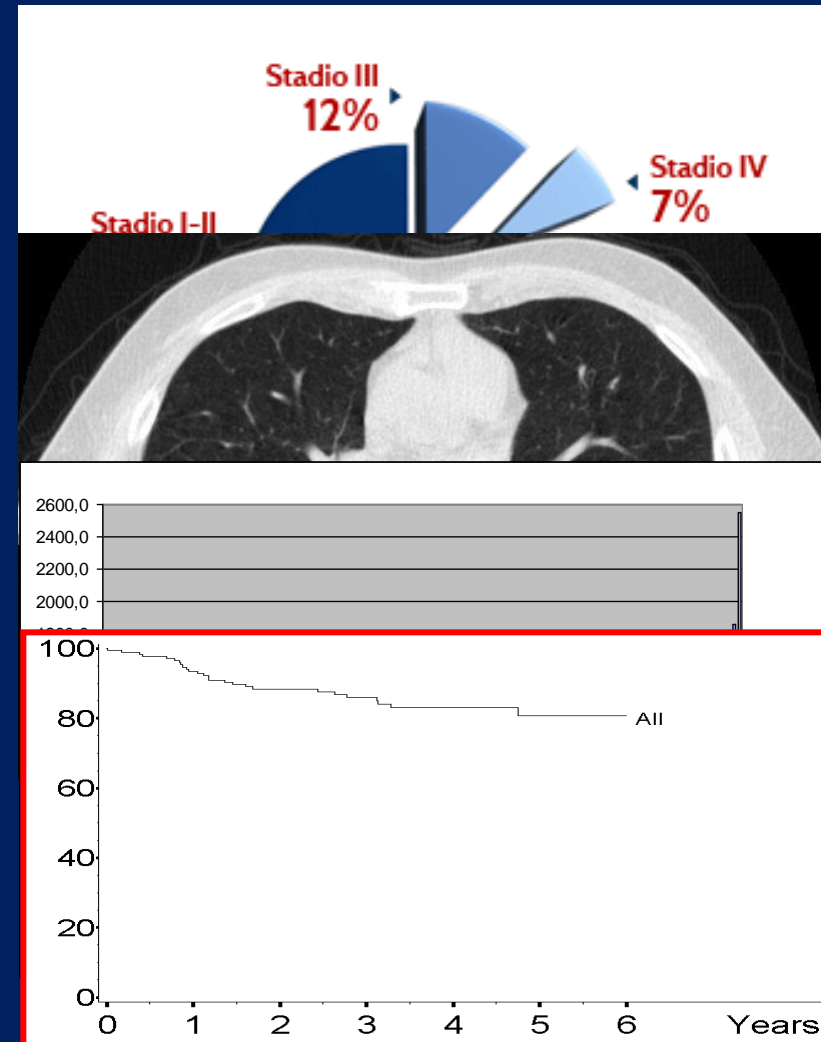
Low number of recalls (5-10%)

Low number of FP cases (1.3 per 1000)

Low overdiagnosed tumors (10% of cases vdt >600)

5 yy survival >75%

Radiation induced cancers (1/108 screen cancers)



NELSON TRIAL

- The largest RCT LDCT screening trial in Europe
- First study to incorporate software calculated volume doubling time (**VDT**) of nodules into a management algorithm to distinguish between positive and negative
- Nodule classification :
 - Negative: <than 50 mm³ (4.6 mm³)
 - Positive : >500 mm³ (> 9.8 mm³)
 - Indeterminate: 50-500 mm³ (3 month FUP)**
- Results: negative 79%; positive 1.6% ; indeterminate 19% of participants
- Two steps approach: overall positivity 2.6% (**but recall rate 21%**)

1. Indeterminate nodules
2. Volumetry



Definition of a positive test result in computed tomography **screening** for **lung cancer**: a cohort study.

Henschke CI, Yip R, Yankelevitz DF, Smith JP; IELCAP
Ann Intern Med. 2013

Baseline Round of Screening – Update 2014

1. FUP in 1 year

Negative (noNCN)

Semi positive (NCN)

Semi positive (NCN) any size

2. FUP 3 months

Positive: NCN 6-14 mm

Suspicious: growth at a malignant rate* on 3 m FUP

3. Immediate work up (PET, biopsy of 1 m LDCT)

Suspicious: NCN > 15 mm

**Work-up ridotto del 36%
senza aumento del ritardo.
diagnostico**

*growth is a

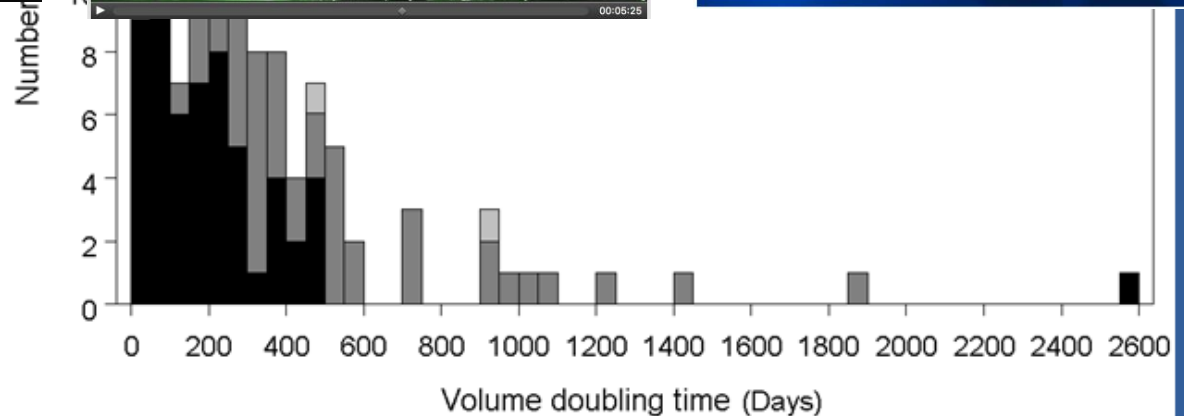
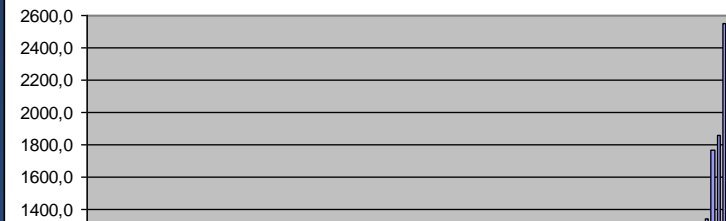
volume is more than:

- a) 65% for nodules 6-7 mm;
- b) 50% for nodules 6-7 mm;
- c) 40% for nodules 8-9 mm;
- d) 30% for nodules > 10 mm

AGGRESSIVENESS OF TUMORS ACCORDING TO VDT and estimation of overdiagnosis

Veronesi G Ann Intern Med. 2012;157:776-784.

- 75% aggressive



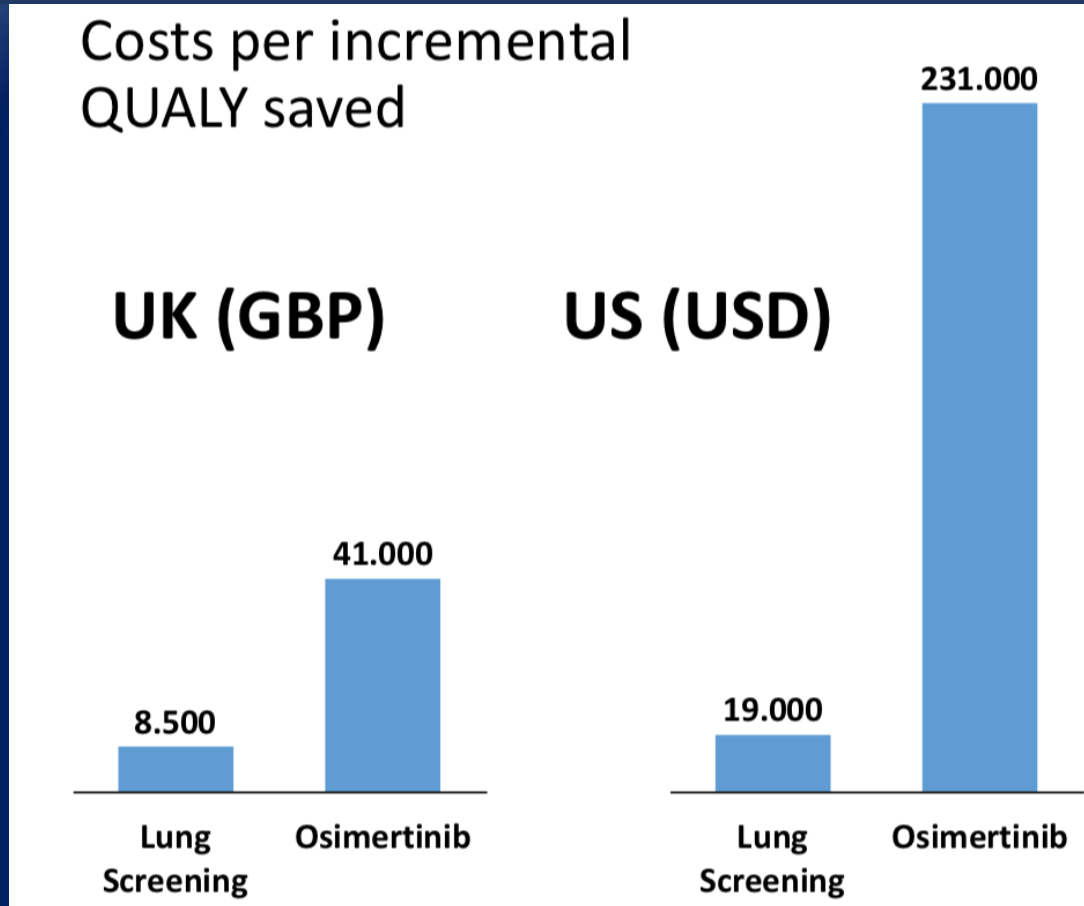
Conservative treatment or wait and see

RISULTATI COSTO EFFICACIA IN ITALIA

LC ICER QUALY 3297 EUROS
1/4 OF THE BREAST CANCER SCREENING ICER

Author	Year	Screening Type	Outcome metric	Incremental Cost [2014 US\$]	Incremental Effect	ICER	[2014 US\$]
Shmueli	2011	One Time	QALY	86 [90.51]	0.0591	1,464	[1540.78]
Bocconi\ICH	EUR (2018)	Repetitive	LY	254.95	0.087	2943	
Marshall	1999	One Time	LY	260 [369.46]	0.0438	5,940	[8440.65]
Pyenson	2014	Repetitive	LY	16053	0.87	18,452	
Pyenson	2012	Repetitive	LY	NR	NR	18,862	[19448.76]
Marshall	1999	Repetitive	QALY	960 [1364.15]	0.0491	19,533	[27756.11]
Villantini	2012	Repetitive	QALY	1546 [1594.09]	0.055	28,240	[29118.50]
Chirikos	2000	Repetitive	LY	76500 [105170.25]	1.582	48,357	[66479.97] [57380.69]
Black	2009	Repetitive	LY and QALY	1631 [1799.77]	0.0316 and 0.0201	52,000 and 81,000	and [89381.46]
Manser	(2002)	Repetitive	QALY	1649 [1623.64]	0.016	105,090	[103473.51]
Mahadevia	2001	Repetitive	QALY	4600 [6148.99]	0.039	116,300	[155462.54]
Beinfeld	2001	One Time	LY	2513 [3359.22] 1778–3637	0.016	151,000	[201847.32] [16909.26–
McMahon	2006	Repetitive	QALY	[2087.88–4270.88]	0.009–0.022	144,000–207,000	243077.31]
Field	2016	One time	LY		0.01–0.04	6325 POUNDS	

Il costo incrementale per anno di vitsia salvato dello screening molto inferiore alcosto. incrementale dei trattamenti dello stadio avanzato



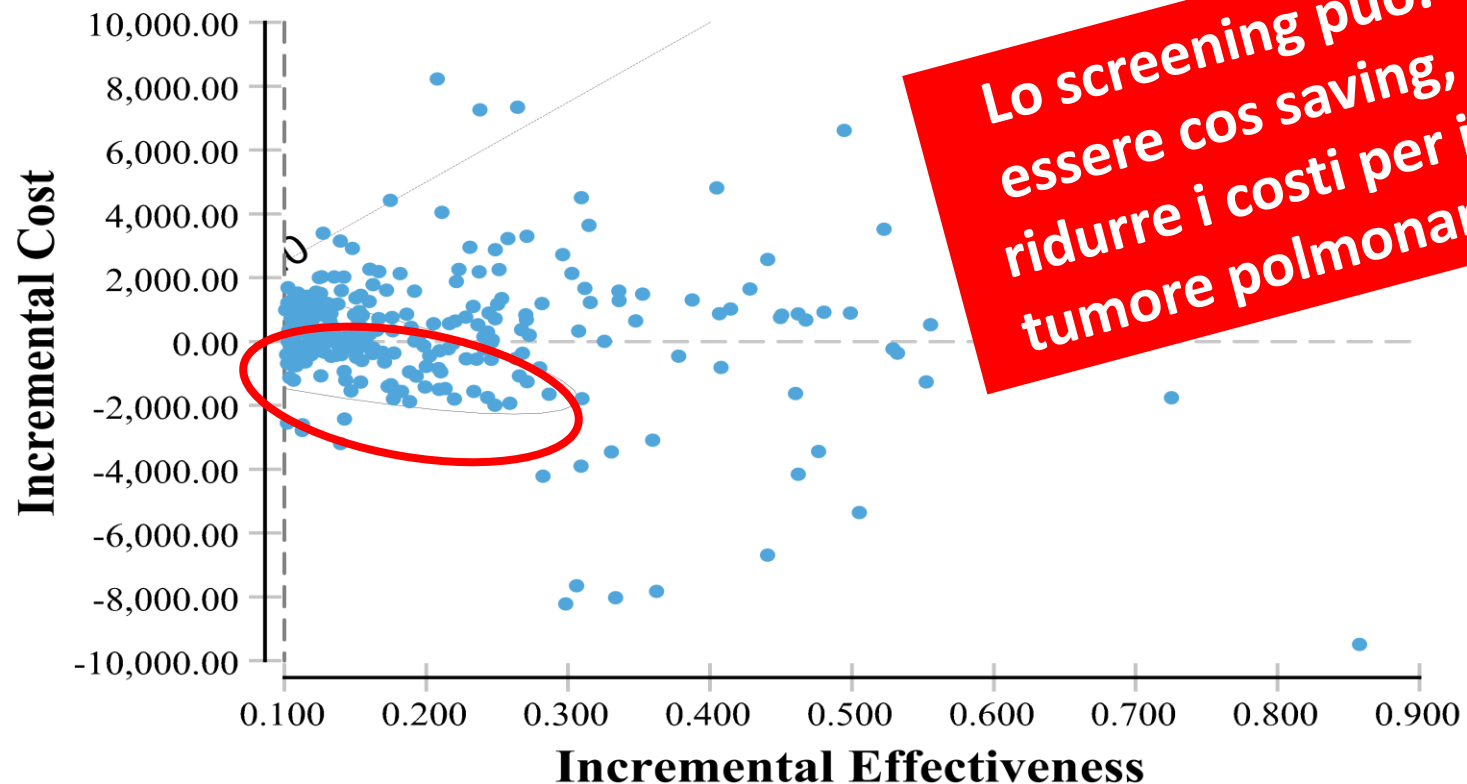
Cost-effectiveness of osimertinib for EGFR-mutation-positive non-small-cell lung cancer after progression of first-line EGFR TKI therapy." J Thorac Oncol. Pyenson, B. S., et al. (2014). "Offering lung cancer screening to high-risk medicare beneficiaries saves lives and is cost-effective: an actuarial analysis." Am Health Drug Benefits

UK: Field, J. K., et al. (2015). "UK Lung Cancer RCT Pilot Screening Trial: baseline findings from the screening arm provide evidence for the potential implementation of lung cancer screening." Thorax.

Bertranou, E., et al. (2017). "Cost-effectiveness of osimertinib in the UK for advanced EGFR-T790M non-small cell lung cancer." J Med Econ:

SENSITIVITY ANALYSIS CEA: MONTECARLO SIMULATION

Incremental Cost-Effectiveness, SCREENING v. USUAL CARE



DISTRIBUTION OF 1095 ITALIAN NEVER, EX- OR CURRENT SMOKERS AGED 55-80 ACCORDING TO SEX, AGE, AND GEOGRAPHIC AREA ITALY 2015

Italians at risk are computed using prevalence figures from DOXA and numbers in each category from ISTAT

	N DOXA (2015)	N ISTAT (2017)	Never smokers (%)	Ex-smokers (%)		Current smokers (%)		Subjects at risk* (%)	Italians at risk° (N)	
				<15 years		<30 PY	≥30 PY			
				<30 PY	≥30 PY					
Total	1095	17,757,163	66.7	3.7	4.6	10.4	7.0	7.6	12.2	2,166,374
Sex										
Men									9.3	1,614,228
Women									6.5	610,564
Age (years)										
55-66									4.5	1,351,552
67-80									9.9	835,175
Geographic Area										
Northern Italy	524	8,316,485	64.0	4.3	4.2	9.7	9.2	8.6	12.8	1,064,510
Central Italy	226	3,584,593	72.9	1.4	3.7	9.3	5.9	6.8	10.5	376,382
Southern Italy and islands	345	5,856,085	66.8	4.3	5.8	12.1	4.3	6.7	12.5	732,011

Policy	Expected cost	Expected outcome (life years)	Incremental cost	Incremental effect	ICER	QALY effect	ICER (QALY)
Screening	€ 1,470.57	19.52					
Usual Care	€ 1,193.21	19.45	€ 277.36	0.068	€ 4,070.00	0.058	€ 4,747.57

The investment to screen 2 millions individuals in Italy
in 5 years

**< 600 milions euros in 5 years =
120 milions /year**

$$120/5000 = 2.4\%$$

In Italy we spend 5000 milions for prevention of
diseases =
4% of cost of health (150.000 millions)

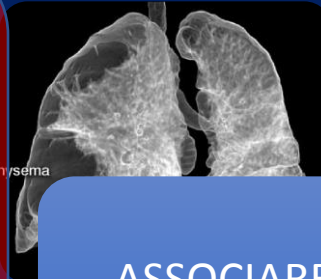
OBIETTIVI PROGETTO SMAC



PROGETTO
PILOTA
TERRITORIO



PREVENZIONE
CARDIOVASC
OLARE CON
CAC



ASSOCIARE
PREVENZIONE
PRIMARIA E
DIAGNOSI
PRECOCE BPCO



VALIDARE
MARCATORI
MOLECOLARI E
BIORADIOMICA
CON AI



ANALISI COSTO EFFICACIA

Study design SMAC

CHE COS'È SMAC?

SMAC (Smokers Multiple Actions) è il programma di screening per la prevenzione e la diagnosi precoce delle patologie polmonari e cardiovascolari con TAC toracica a basso dosaggio, associata a una intensa attività antifumo. È dedicato ai soggetti ad alto rischio. Lo studio è messo a punto dalla dott.ssa Giulia Veronesi, responsabile della Sezione di Chirurgia Robotica diretta dal prof. Marco Alloisio. Il programma sarà attivo dall'1 settembre 2018 per 3 anni.

A CHI È RIVOLTO?

Lo studio si rivolge ai fumatori da più di 30 anni o agli ex fumatori con età superiore ai 55 anni, che non abbiano effettuato negli ultimi 18 mesi una TAC a basso dosaggio.

I partecipanti al programma di screening, dopo la firma del consenso informato, effettuano:

- compilazione di un apposito questionario
- colloquio su stili di vita e prevenzione (fumo, alimentazione, attività fisica e programma personalizzato)
- TAC a basso dosaggio senza contrasto
- prelievo di sangue
- spirometria

Per i partecipanti è previsto un impegno di circa due ore una volta l'anno presso l'ospedale Humanitas di Rozzano.

Gli obiettivi sono:

1. Implementare

il programma di prevenzione e diagnosi precoce del tumore polmonare

2. Prevenire

patologie cardiovascolari e la BPCO correlate al fumo

3. Supportare

un programma attivo per smettere di fumare

4. Validare

un pannello di marcatori molecolari di diagnosi precoce e avviare un programma di radiomica (analisi digitale avanzata delle immagini della TAC).

IN COSA CONSISTE?

QUALI SONO GLI OBIETTIVI?



COMPILA IL QUESTIONARIO



RACCONTA LE TUE ABITUDINI



FAI LA TAC



FAI UN PRELIEVO DEL SANGUE



FAI LA SPIROMETRIA



Ministero della Salute

DIREZIONE GENERALE DELLA RICERCA E DELL'INNOVAZIONE IN SANITA'

BANDO RICERCA FINALIZZATA

PROGETTO SMAC:

UNO SCREENING GRATUITO PER SCOPRIRE
LO STATO DI SALUTE DI POLMONI E CUORE

Sistema Socio Sanitario



Regione Lombardia

ATS Milano
Città Metropolitana

PLCOM2012 RISK MODEL

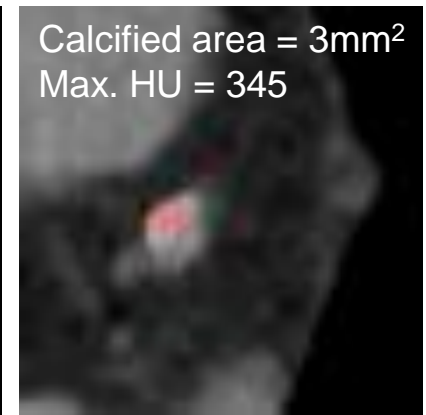
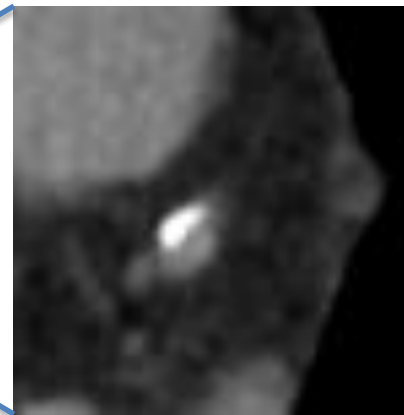
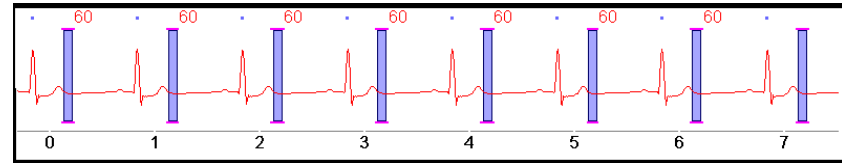
Characteristics to be entered	Enter Values	Centered or referent group	Coefficient	Contribution to estimate	ORs
Age in years	65	62	0,0778868	0,2336604	1,08
Education (enter the number identifying the highest level obtained) 1 = Less than high school grad; 2 = High school grad; 3 = Post high school training; 4 = Some college; 5 = College grad; 6 = Postgraduate/professional.	3	4	-0,0812744	0,0812744	0,92
Body Mass Index (BMI, weight in kilograms/height in meters^2)	27			0	0,97
COPD, emphysema or chronic bronchitis (0=No; 1=Yes)	0			0	1,43
Personal history of cancer (0=No; 1=Yes)				0	1,58
Family history of lung cancer (0=No; 1=Yes)					1,80
Race/ethnicity (select only one from this category)					
White (referent group) (0=No; 1=Yes)					
Black (non-Hispanic) (0=No; 1=Yes)					1,48
Hispanic (0=No; 1=Yes)				0	0,48
Asian (0=No; 1=Yes)				0	0,63
Native Hawaiian/Pacific Islander (0=No; 1=Yes)			0	0	
American Indian/Alaskan Native (0=No; 1=Yes)			1,027152	0	2,79
Smoking status, 0 = Former-smoker 1 = Current-smoker	0		0,2597431	0	1,30
Average number of cigarettes smoked per day	20	0,097845839	-1,822606	-0,178334413	nonlinear
Duration smoked (years)	30	27	0,0317321	0,0951963	1,03
Years ago quit smoking. Enter zero for current smokers.	2	10	-0,0308572	0,2468576	0,97
Model constant			-4,532506	-4,532506	
			xb =	-4,053851713	
			EXP(xb) =	0,0174	
Probability of lung cancer in 6 years =	0,01706				

**Coinvolgimento attivo
dei MMG nella selezione
e reclutamento**

* Reference: Tammemagi et al. *Selection Criteria for Lung-Cancer Screening*. *NEJM*. 2013;368(8):728-36.

Coronary artery calcium (CAC)

Detection and quantification by CT



Agatston score:

$CAC = \text{Area} \times \text{Density factor}$

$CAC = 3\text{mm}^2 \times 3$

CAC = 9

Density factor

130-199 HU 1

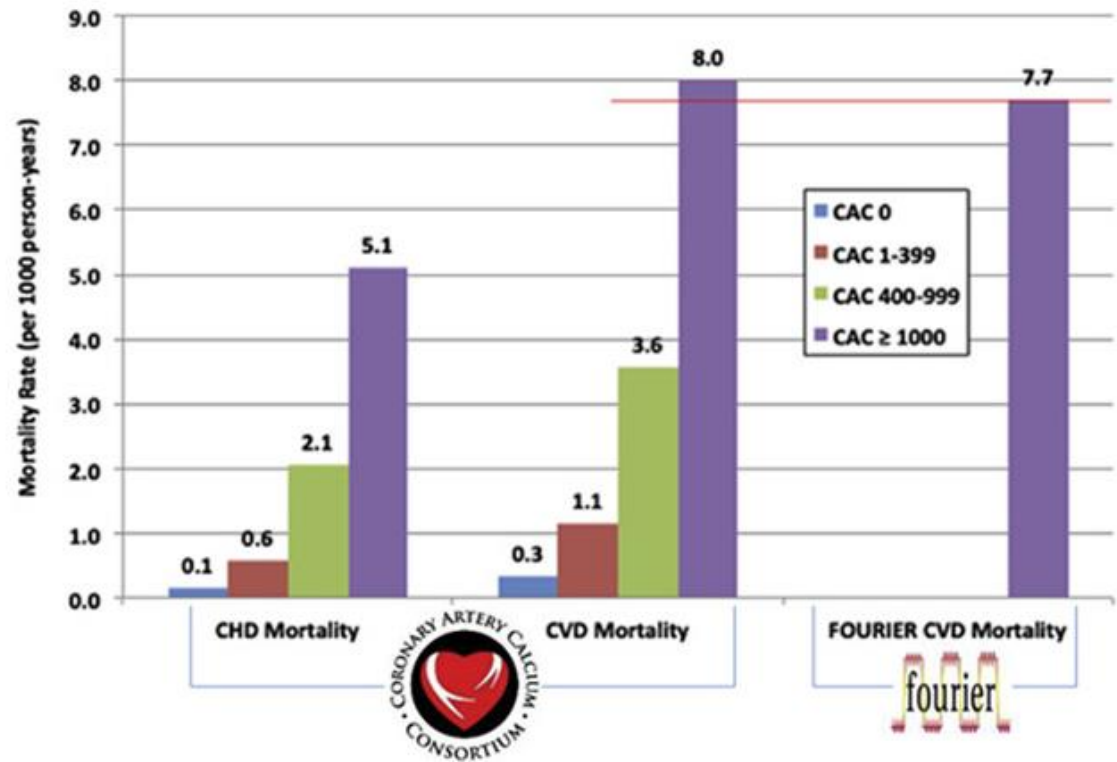
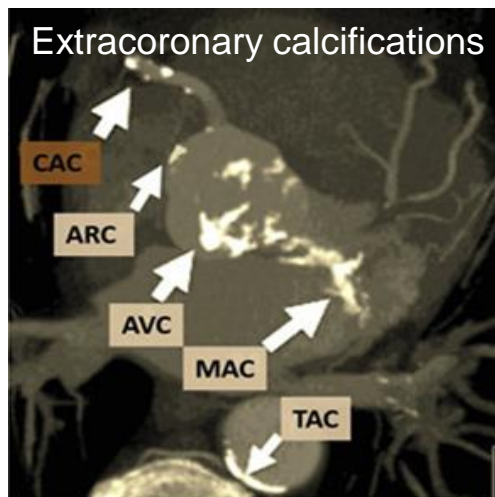
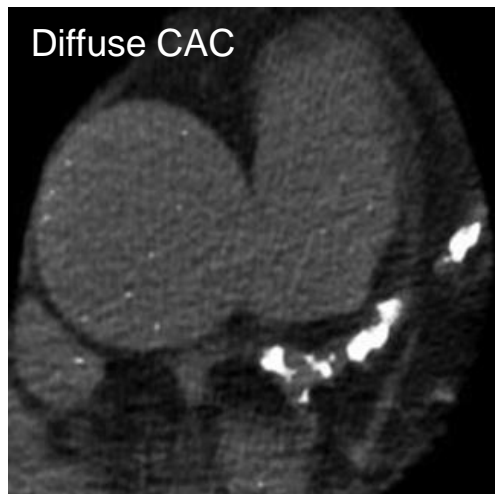
200-299 HU 2

300-399 HU 3

≥ 400 HU 4

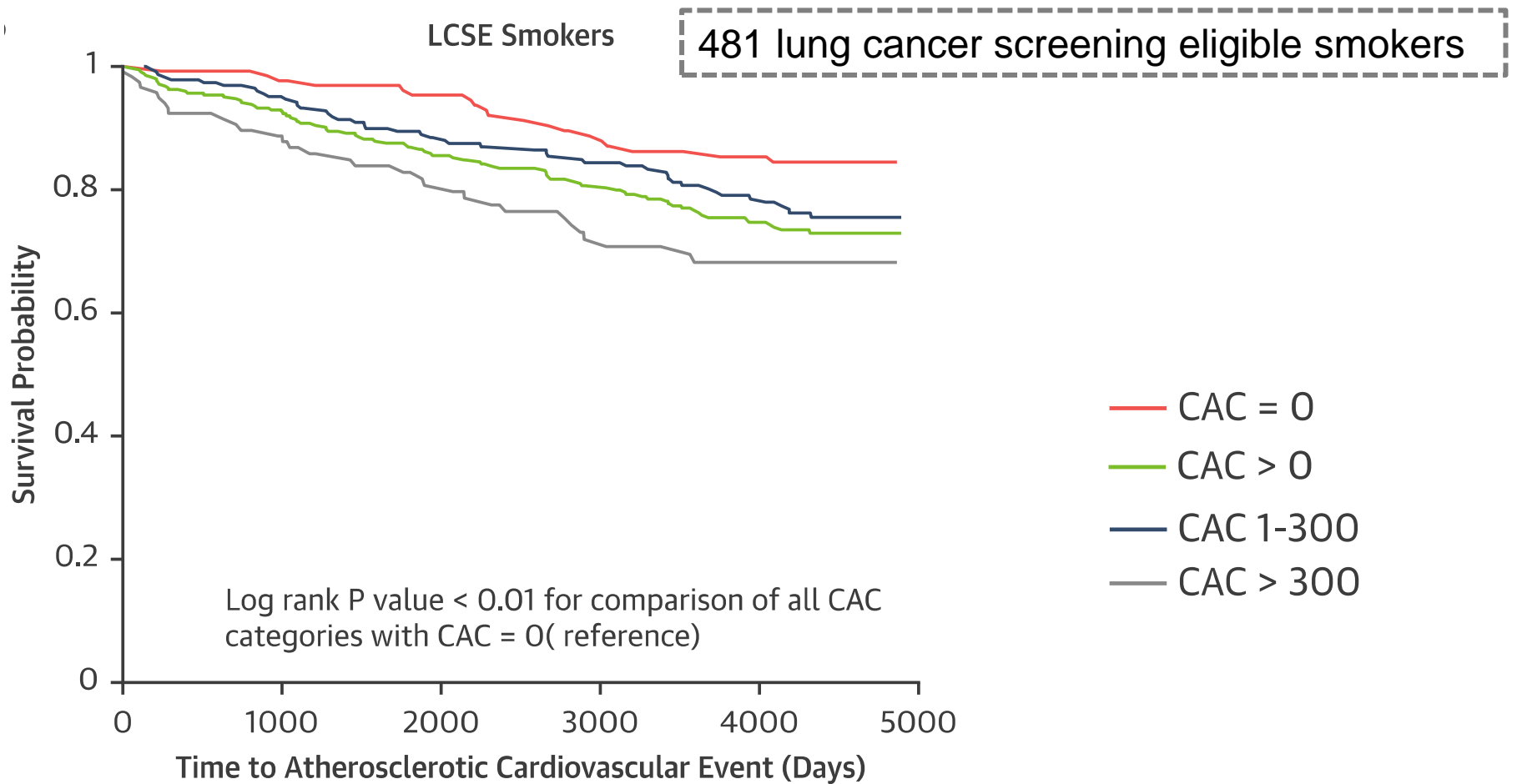
Coronary artery calcium (CAC)

CAC ≥ 1000 in primary prevention patients



Primary prevention patients

Secondary prevention patients



STUDY DESIGN SMAC-1/ SMAC-2/Clearly

- Study Cohort N= 2000
- Start Date: 1° Sept 2018
- Follow-Up: 3 years

GPS based recruitment of age > 55 years old and >30 packs/year PLCO 2012>2, consent to be contacted

Telephone interview with PM and PI and PLCO criteria assessment (risk model 1; LC risk > 0.7)

First appointment: (research nurse)

- IC signed
- Questionnaire + SaO₂
- Blood sample collection
- Spirometry
- Smoking cessation interview, CO dosage and Fagerstrom test and motivational test (expert SCU*)
- LDCT (technician)

Blood Sample:

1. Tissue Bank (mirna, DNA mutation, Exosome antigens, PTX3)
2. IL2, IL 8, CRP
3. CTC (negative controls only + preop sample for LC pts)

Radiologist: Nodules, CAC score, emphysema

Negative nodule

Indeterminate nodule or positive scan

Risk model 2
Periodic LDCT (1 or 2 years)

Pulmonary or CAC criteria positive

Multidisciplinary Consultation

Pulmonologist evaluation

Cardiologist evaluation

Diagnostic Algorithm

- Biopsy+ PET
- 3-6 months LDCT

*SCU: Smoking Cessation Unit

Non-diabetic patients

Statin recommended

LDL levels ≥ 70 mg/dl

Target goal

LDL levels < 70 mg/dl

LDL levels ≥ 100 mg/dl

LDL levels < 100 mg/dl

LDL levels ≥ 115 mg/dl

LDL levels < 115 mg/dl

Score $\geq 10\%$
Very High risk

If CAC score ≥ 300

Cardiac visit

Score $\geq 5\% \& < 10\%$
High risk

LDL levels ≥ 70 mg/dl & < 100 mg/dl

If CAC score ≥ 300

CAC score ≥ 1000

Score $< 5\%$

Statin therapy

Statin therapy
Cardiac visit

Score $< 1\%$
Low risk

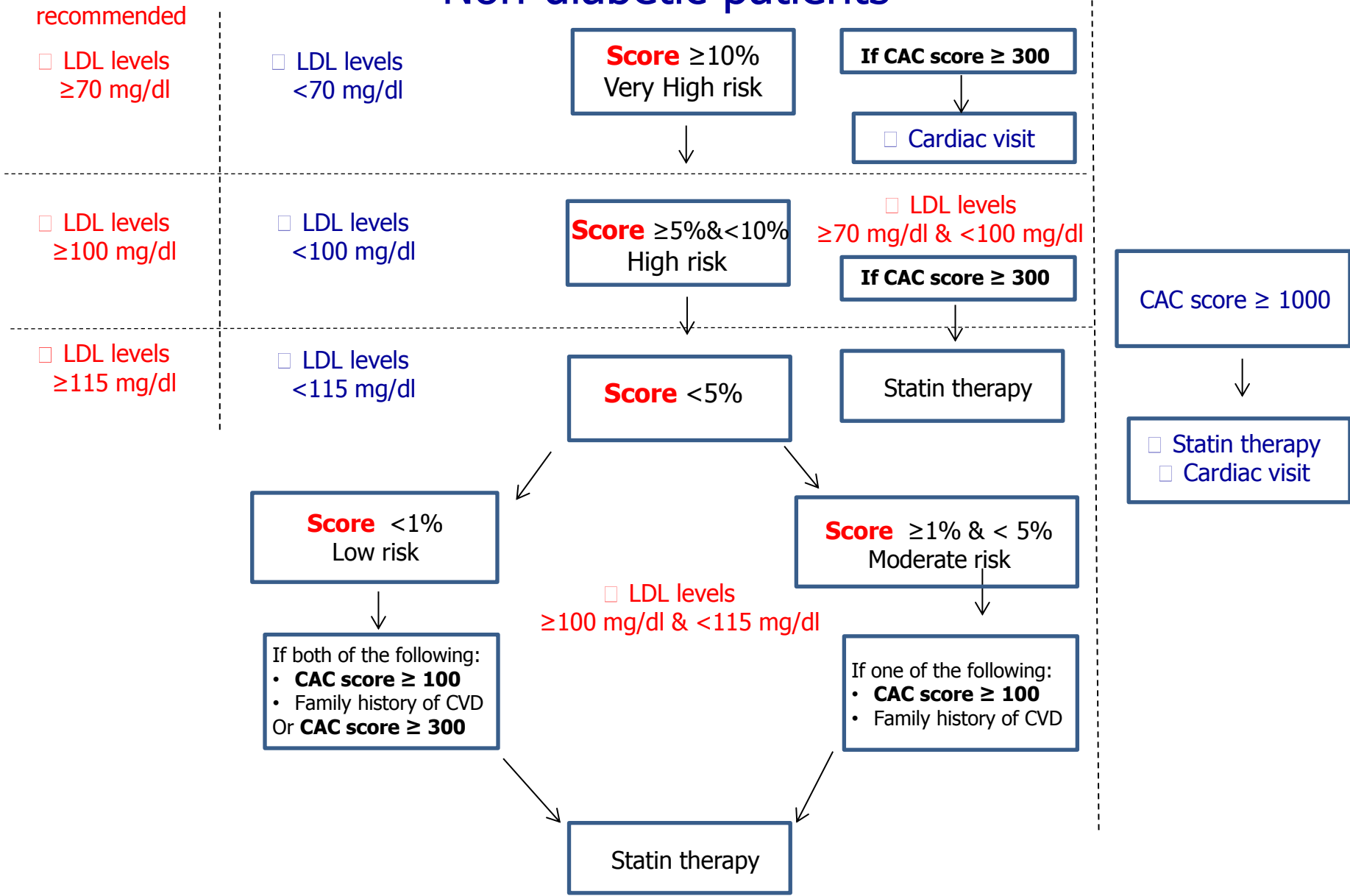
Score $\geq 1\% \& < 5\%$
Moderate risk

If both of the following:
• CAC score ≥ 100
• Family history of CVD
Or CAC score ≥ 300

LDL levels ≥ 100 mg/dl & < 115 mg/dl

If one of the following:
• CAC score ≥ 100
• Family history of CVD

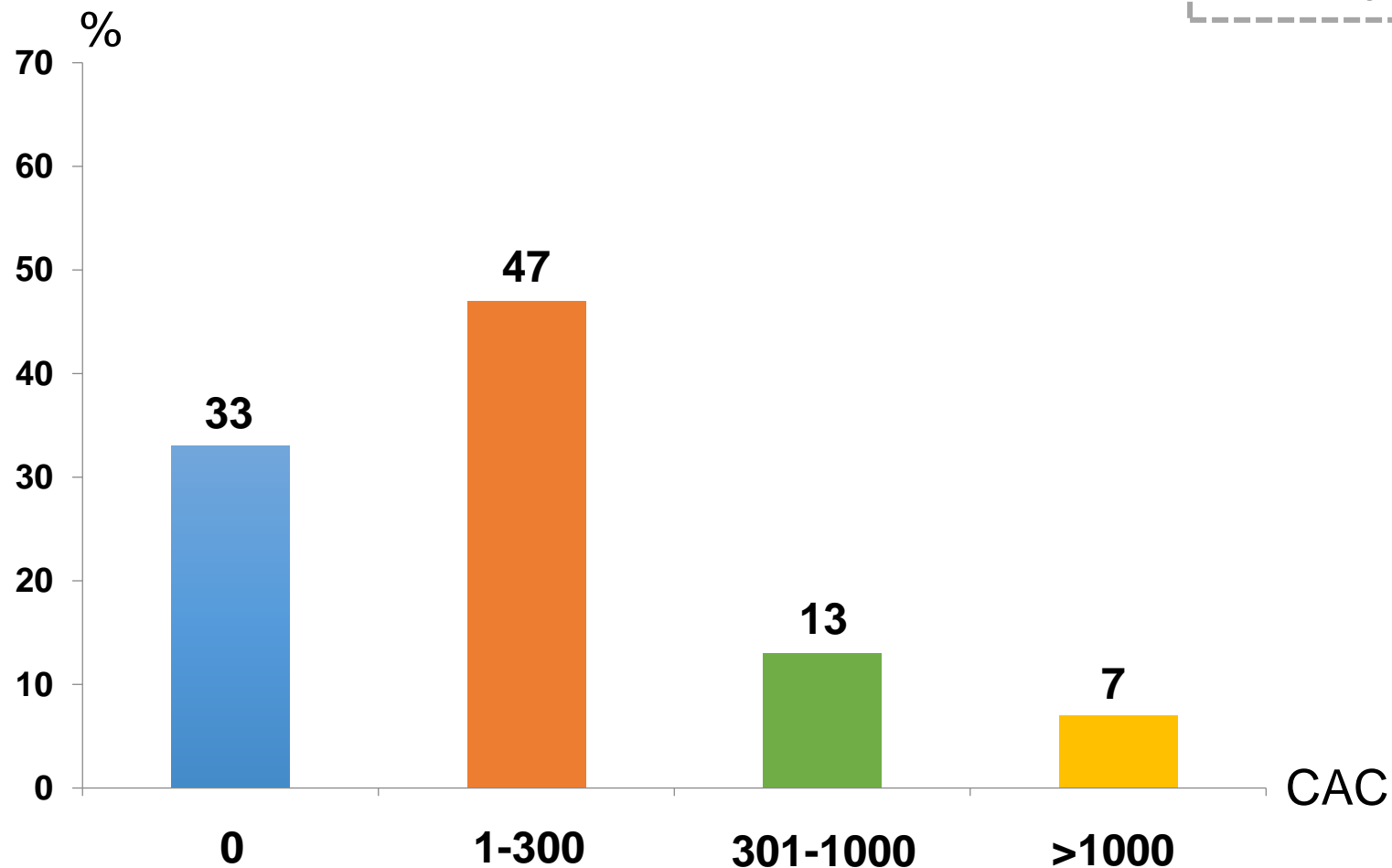
Statin therapy



Preliminary results

CAC distribution

N=260

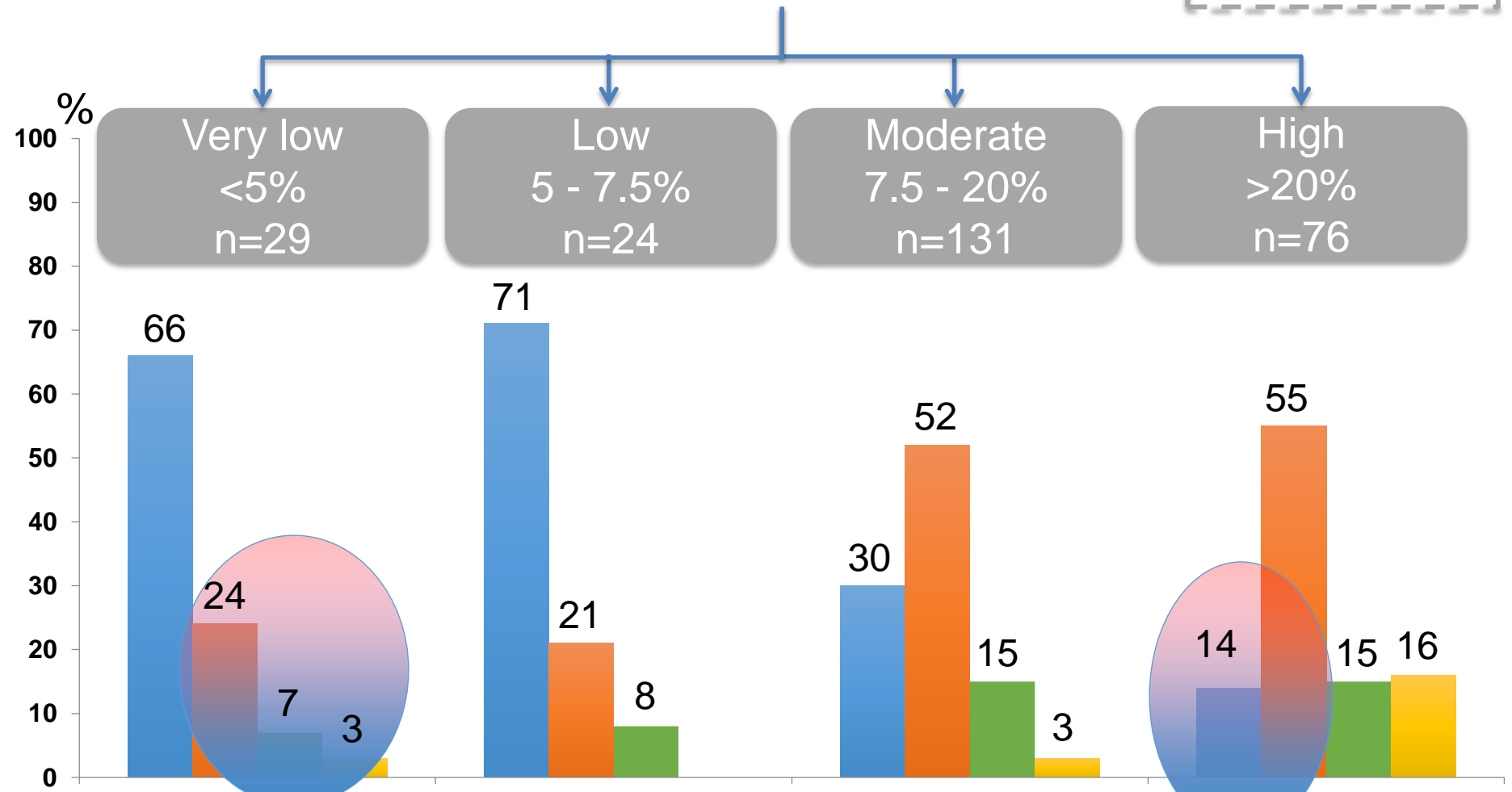


Si ringrazia Alexia Rossi per il contributo

Preliminary results

CAC distribution according to ASCVD risk class

ASCVD risk class



Si ringrazia Alexia Rossi per il contributo

Non-diabetic patients

Statin recommended

LDL levels ≥ 70 mg/dl

Target goal

LDL levels < 70 mg/dl

LDL levels ≥ 100 mg/dl

LDL levels < 100 mg/dl

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Score $\geq 5\% \& < 10\%$
High risk

LDL levels ≥ 70 mg/dl & < 100 mg/dl

If CAC score ≥ 300

CAC score ≥ 1000

Score $< 5\%$

Statin therapy

Statin therapy
Cardiac visit

Score $< 1\%$
Low risk

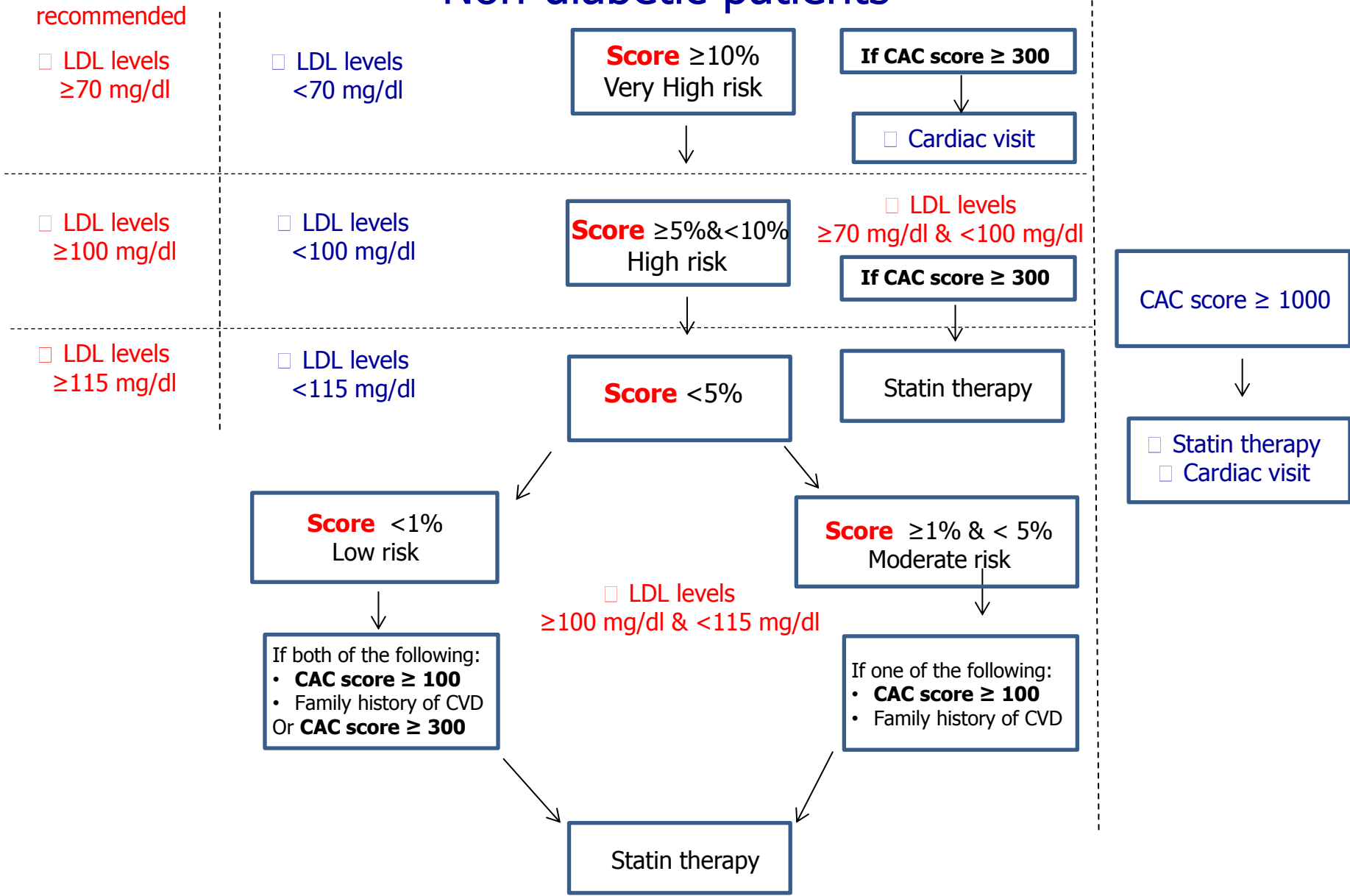
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Statin therapy

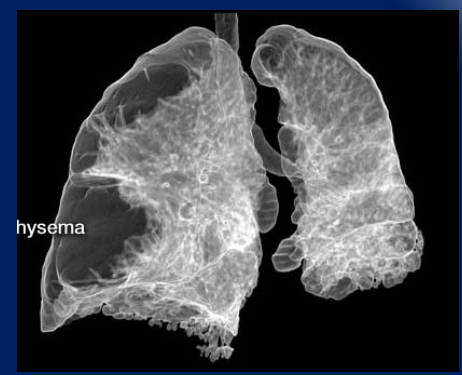
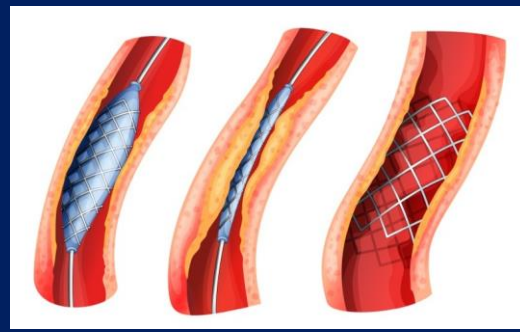
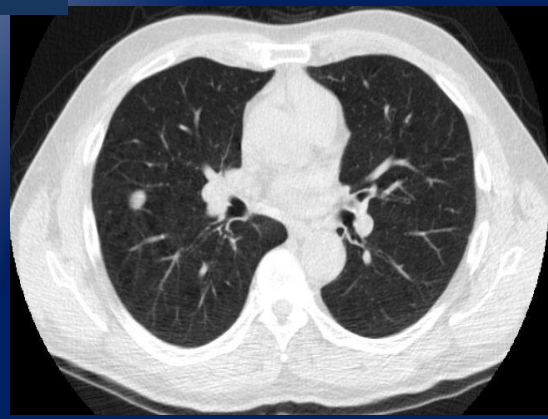


Chemoprevention and antismoking campaign

SCREENING WITH LD CT

Calcium score

COPD

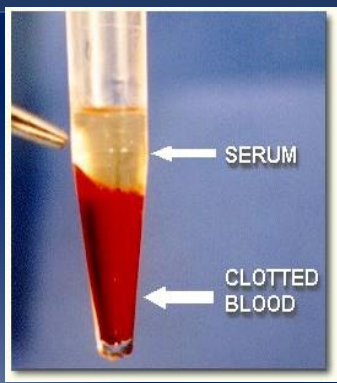


screening del tumore polmonare. e altre patologie associate al fumo

BioMOLECULAR DIAGNOSIS:
MicroRNA; CTC
Exosome antigens
ctDNA mutation
radiomica

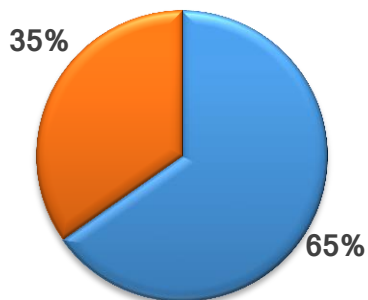
Health economy assesment

Recruitment strategy target population



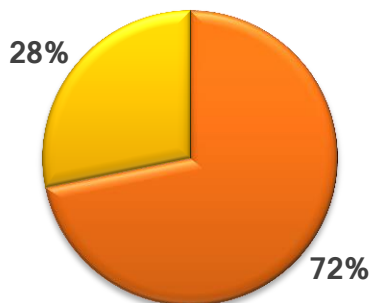
ANALISI POPOLAZIONE SMAC (10/9/2018-1/3/2019 =719)

ARRUOLATI



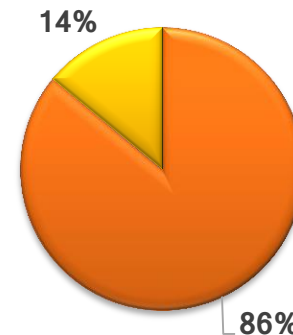
■ M ■ F

Maschi



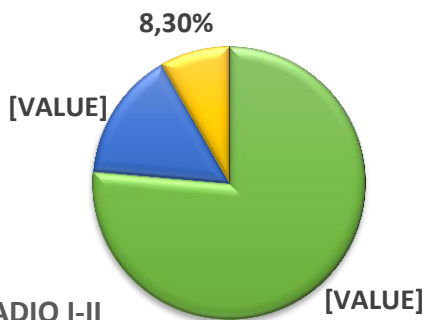
■ FUMATORI ■ EX FUMATORI

Femmine

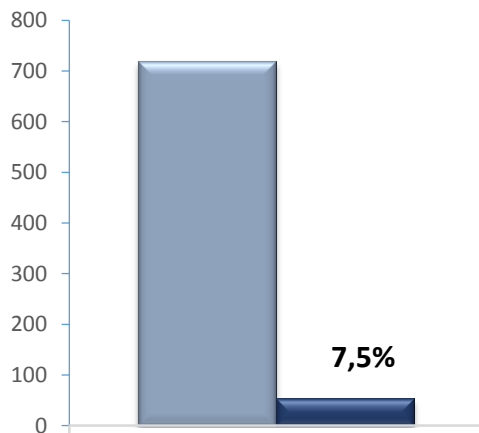


■ FUMATORI ■ EX FUMATORI

Tumori

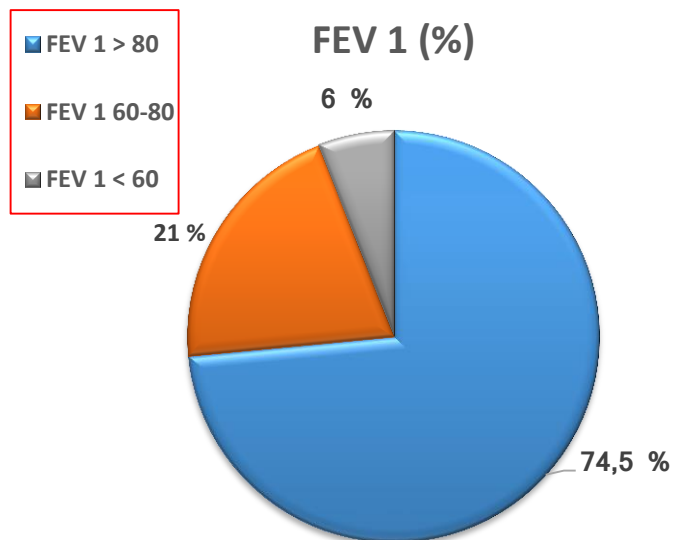


■ STADIO I-II
■ STADIO III
■ STADIO IV



■ ARRUOLATI
■ RICHIAMI

FEV 1 (%)



■ FEV 1 > 80
■ FEV 1 60-80
■ FEV 1 < 60

SOFTWARE, VOLUMETRIA E AI

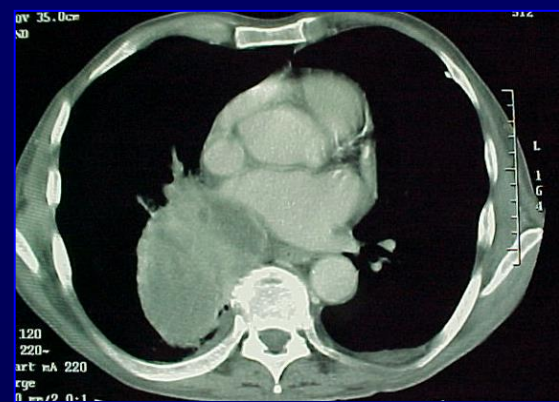
The image displays a medical software interface for chest CT scans, comparing two different slices. The interface is divided into several panels:

- Left Panel (Navigation and Settings):**
 - Confronta e abbina
 - Ispezione torace
 - Registrazione: Colleg (Applica registrazione)
 - Divisione in finestre: Polmone, Mediast., Osso
 - Spessore strato: 5.00 mm (Origin)
 - Raccogli rilevazioni: Contrassegna nodulo 3D, Contrassegna nodulo 2D
 - Mostra rilevazioni
 - Mostra suggerimenti dai precedenti
 - Table with columns: Corrente, Indietro
 - Buttons: Corrisp., Annulla corrisp., Crea filmato o serie, Esci
- Top Left Panel (Scan 1):**
 - 21 Mar, 2019 / 9:11:35.00
 - MEDIASTINO 0.625
 - Serie 2 - Slice 104*
 - Pos. slice: 226.3 mm
 - FOV 319.0 mm
 - Spessore 2.50 mm
 - Zoom 1.00
 - MIP WL -600 WW 1600
 - Slice 104* Rilevaz. 3
- Top Right Panel (Scan 2):**
 - 20 Dec, 2018 / 13:10:58.00
 - MEDIASTINO 0.625
 - Serie 2 - Slice 107*
 - Pos. slice: 138.8 mm
 - FOV 360.0 mm
 - Spessore 2.50 mm
 - Zoom 1.13
 - MIP WL -600 WW 1600
 - Slice 107* Rilevaz. 3
- Bottom Panels (Detailed Views):**
 - Medio X
 - Rilevaz. 3
 - Preferiti
 - Tipo di nodule
 - Assiale
- Right Panel (Measurements):**
 - Tipo di nodulo: Indefinito
 - Asse lungo assiale: 7.1 (mm)
 - Asse corto assiale: 5.1 (mm)
 - Diametro assiale medio: 6.1 (mm)
 - Asse coronale lungo: 7.2 (mm)
 - Asse coronale corto: 5.7 (mm)
 - Diametro coronale medio: 6.5 (mm)
 - Asse sagittale lungo: 7.2 (mm)
 - Asse sagittale corto: 4.7 (mm)
 - Diametro sagittale medio: 6.0 (mm)
 - Volume: 109.0 (mm³)
 - HU media ± DS: -514.8 ± 48.3
 - Massa del nodulo: 52.9 (mg)
 - Ipotesi: SÌ NO
 - Label: Indefinito

In the center, a diagram shows four concentric green circles representing the layers of AI technology, from innermost to outermost:

- Artificial Neural Networks
- Deep Learning
- Machine Learning
- Artificial Intelligence

EVOLUTION OF SURGICAL APPROACH



**2001
LDCT**

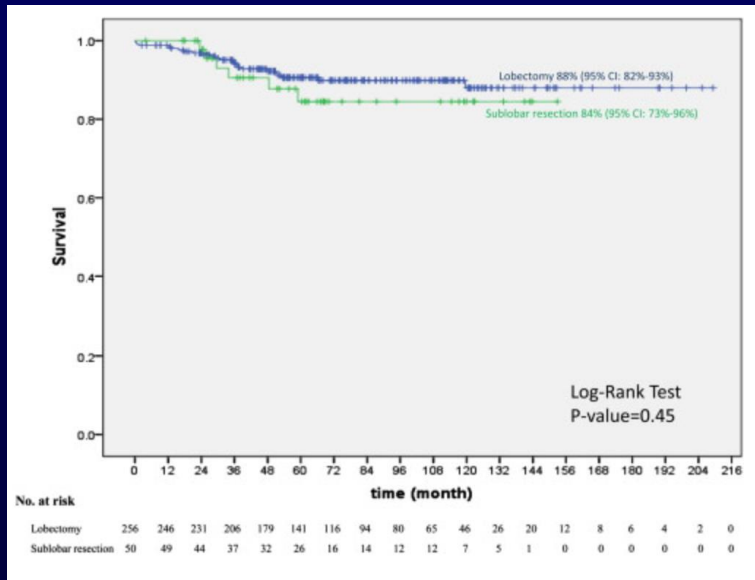


**Robotic
surgery
2006**



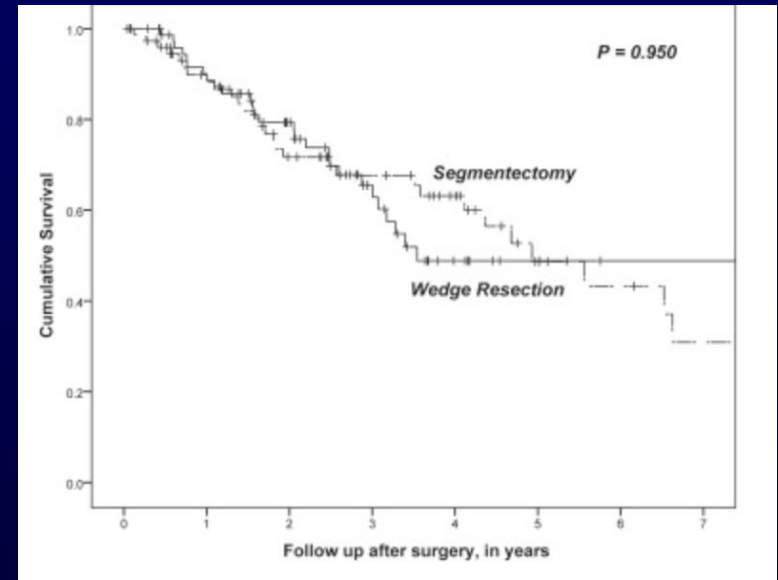
Sublobar resection is equivalent to lobectomy for clinical stage 1A lung cancer in solid nodules

Nasser K. Altorki, MD,^a Rowena Yip, MPH,^b Takaomi Hanaoka, MD,^c Thomas Bauer, MD,^d



Anatomical Segmentectomy and Wedge Resections Are Associated with Comparable Outcomes for Patients with Small cT1N0 Non-Small Cell Lung Cancer

Nasser K. Altorki MD^a, Mohamed K. Kamel MD^a, Navneet Narula MD^b, Galal Ghaly MD^a, Abu Nasar MS^a, Mohamed Rahouma MD^a, Paul C. Lee MD^a, Jeffery L. Port MD^a, Brendon M. Stiles MD^a



WEDGE AND SEGMENTS ARE ADEQUATE ONCOLOGICAL OPERATION FOR VERY EARLY STAGE TUMOR (SUBSOLID, SLOW GROWING, LOW SUV)

Activation Date: June 15, 2007
Includes Update #4

CANCER AND LEUKEMIA GROUP B

CALGB 14050

A PHASE III RANDOMIZED TRIAL OF LOBECTOMY VERSUS LIMITED RESECTION FOR SMALL (≤ 2 CM) PERIPHERAL NON-SMALL CELL LUNG CANCER

**Clinical practice guidelines today:
multifocal lung cancer
elderly or high risk operable candidates
selected recurrent tumors
tumors less than 2 cm where segmentectomy
achieves at least a 1:1 parenchymal margin
no regional nodal disease**

J Clin Oncol 27(3):271-274
doi:10.1093/jco/hyp156
Advance Access Publication 22 November 2009

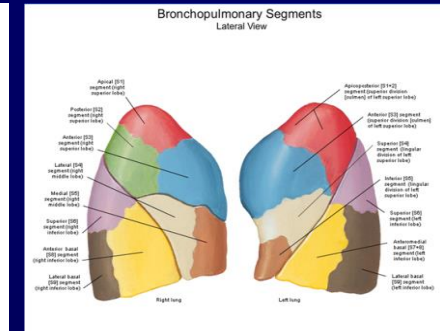
A Phase III Randomized Trial of Lobectomy Versus Limited Resection for Small-sized Peripheral Non-small Cell Lung Cancer (JCOG0802/WJOG4607L)

Kenichi Nakamura¹, Hisashi Saji², Ryu Nakajima³, Morihito Okada⁴, Hisao Asamura⁵, Taro Shibata¹, Shinichiro Nakamura⁶, Hirohito Tada³ and Masahiro Tsuboi⁷

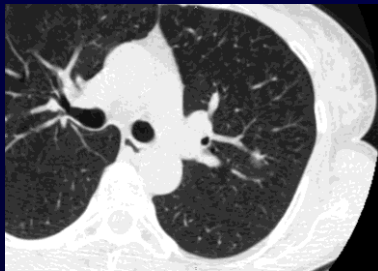
Robotic Anatomic Segmentectomy of the Lung: Technical Aspects and Initial Results

Alessandro Pardolesi, MD, Bernard Park, MD, Francesco Petrella, MD,
Alessandro Borri, MD, Roberto Gasparri, MD, and Giulia Veronesi, MD

Division of Thoracic Surgery, European Institute of Oncology, Milan, Italy; and Division of Thoracic Surgery, Hackensack University Medical Center, Hackensack, New Jersey



Robotic anatomic lung segmentectomy is feasible, safe and reproducible in different centres
Robotic system, by improving ergonomic, surgeon view and precise movements, may make minimally invasive segmentectomy easier to adopt and perform



American Cancer Society Lung Cancer Screening C

Richard Wender, MD¹; Elizabeth T. H. Fontha
Graham A. Colditz, MD, DrPH²; Timothy R. Church, P
Christophe
Samuel J. LaMont
Daniel C. S



National
Comprehensive
Cancer

NCCN Guidelines Version 1.2012

Annals of Internal Medicine



U.S. Preventive Services
TASK FORCE

www.USPreventiveServicesTaskForce.org

International Association for the Study of Lung Cancer Computed Tomography Screening Workshop 2011 Report

John K. Field, PhD, FRCPath, * Robert A. Smith, MD, † Denise R. Aberle, MD, ‡
Matthijs Oudkerk, M
Jesper Holst Pedersen, M
Ignacio I. Wistuba, MD,
IASLC

ESR/ERS white paper on lung cancer screening

Statement from ESTS regarding CT screening for Lung Cancer in Europe

Jesper Holst Pedersen, MD, DMsci, FECTS (chairman) (1), Witold Rzyman, MD, PhD, FEBS (2). Giulia Veronesi MD, PhD (3). Thomas A. D'Amico, MD, Prof (4). Paul Van

an Nackaerts⁴.
von Stackelberg^{1,9}.
y (ESR) and the

Schil
Gaeta

2nd ESMO Consensus Conference on Lung Cancer: early-stage non-small-cell lung cancer consensus

Lancet Oncology 2017

European position statement on lung cancer screening

Matthijs Oudkerk, Anand Devaraj, Rozemarijn Vliegenthart, Thomas Henzler, Helmut Prosch, Claus P Heussel, Gorka Bastarrika, Nicola Sverzellati, Mario Mascali, Stefan Delorme, David R Baldwin, Matthew E Callister, Nikolaus Becker, Marjolein A Heuvelmans, Witold Rzyman, Maurizio V Infante, Ugo Pastorino, Jesper H Pedersen, Eugenio Paci, Stephen W Duffy, Harry de Koning, John K Field

PERCHE SI ALLO SCREENING del TUMORE POLMONARE (LCS)

- Gli ex fumatori hanno rischio oncologico elevato per 15 anni dopo stop fumo
- Tumori riscontrati con LCS 80% srv a 5 anni rispetto a 15% senza LCS
- Con LCS riduzione della mortalita per ca polmonare 20-40%
- CEA 3000 euro per anno di vita salvato aggiustato per qualita di vita
- Calcium score con TC screening valore aggiunto per ridurre rischio cardiovascolare
- Trattamenti poco invasivi come la segmentectomia

Ministero della Salute

Direzione generale della prevenzione

WORKSHOP SCREENING POLMONE

17 GENNAIO 2019 (orario: 10-17)

SEDE: Ministero della Salute- Auditorium v. Ribotta 5_00144 Roma

OBIETTIVO: sulla base delle nuove evidenze di efficacia dello screening, definire gli obiettivi di un HTA funzionale alla definizione di una policy

ORGANIZZAZIONE:

- il WS è articolato in tre sessioni con relazioni sulle nuove conoscenze e discussione (con interventi multi-stakeholders) degli aspetti da approfondire per un solido policy making
- alla fine della giornata ci sarà la sintesi dei quesiti da sottoporre a HTA

SEGRETERIA SCIENTIFICA: Federici A (DGPrev.); Zappa M (ONS); Veronesi (Humanitas); Marchetti (ISS); Galeone-Spizzichino (DG prev); De Maria (ACC); Giorgi Rossi (AUSL R-E)



**LUNG CANCER SCREENING WORKING GROUPS AND
SYSTEMATIC REVIEW TO DEFINE THE POLICY IN
EUROPEAN COUNTRIES**

Milan 27th Nov 2018



**Session 1: screening strategies,
epidemiology and public health**

1. Come reclutare individui ad alto rischio sul territorio
2. Come identificare popolazione target, quale modello rischio e quale intervallo di screening
3. Come identificare popolazione a rischio per esposizione ad asbesto
4. Qual'è la dimensione economica

High-risk individuals
recruitment strategy



Harry de Koning

Target population and
screening interval definition



John Field

High-risk people among
smokers?



Sergio Iavicoli



Simone Ghislandi

*CERGAS and Department of
Social and Political Sciences
Bocconi University, Milan,
Italy*



Session 2: Standardisation of LDCT reading parameters within nodules detection and surgical treatment

1. Quali parametri di acquisizione, protocollo di lettura e report dei noduli
2. Quale protocollo diagnostico per noduli solidi e non solidi
3. Quale trattamento locale, ruolo chirurgo e del MTB

Session 3: Smoking cessation activity and other collateral benefits of screening

CT acquisition and reading protocol and lung nodules reports



Matthijs Oudkerk

Diagnostic algorithm of solid and non-solid nodules



Claudia I. Henschke

Joint Discussion
Local treatment in fit and unfit patients



Collateral benefit and findings of LDCT information



Joseph Shemesh

Smoking cessation activity and lifestyle education



Dr Rachael Murray

How we can integrate chemoprevention study within screening programs



Ugo Pastorino

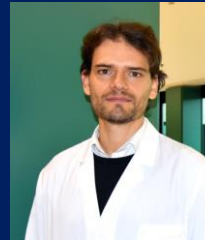
Collateral benefit of LDCT screening: emphysema and COPD



David Baldwin

Lo staff smac

Zainab Al Harraq
Manuel Profili
Ezio Lanza
Alexia Rossi
Ferrante Giuseppe
Pietro Bruschini
Ramona Patrinoiu
Stefania Spina
Antonio Spinillo
Alessandro Apollo
Emanuela Fina
Jasmine Migliavacca
Giovanna Finocchiaro
Daniela Pistillo
Beniamino Pagliaro
Isabella Bolengo
Daria Volpe
Maria Giulia Pascucci
Ufficio Stampa
Gestione Operativa
Gestione PARC
Aci Global
Grant Office
Comitato Etico
....ecc ecc



GRAZIE PER L'ATTENZIONE

SMAC@humanitas.it

