ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ

31ο Έτος

Ημέρες Παθολογίας 2023

"Διλήμματα στην Κλινική Παθολογία"

Ξενοδοχείο
Crowne Plaza
Αθήνα

30 Μαρτίου έως
01 Απριλίου
2023

"Προσυμπτωματικός Έλεγχος Καρκίνου Πνεύμονα"

Ιωάννης Γκιόζος MD, PhD, FCCP
Πνευμονολόγος
Ακαδημαικός Υπότροφος Ε.Κ.Π.Α.
Ογκολογική Μονάδα
Γ΄ Πανεπιστημιακή Παθολογική Κλινική
ΓΝΝΘΑ «Η Σωτηρία»

The problem

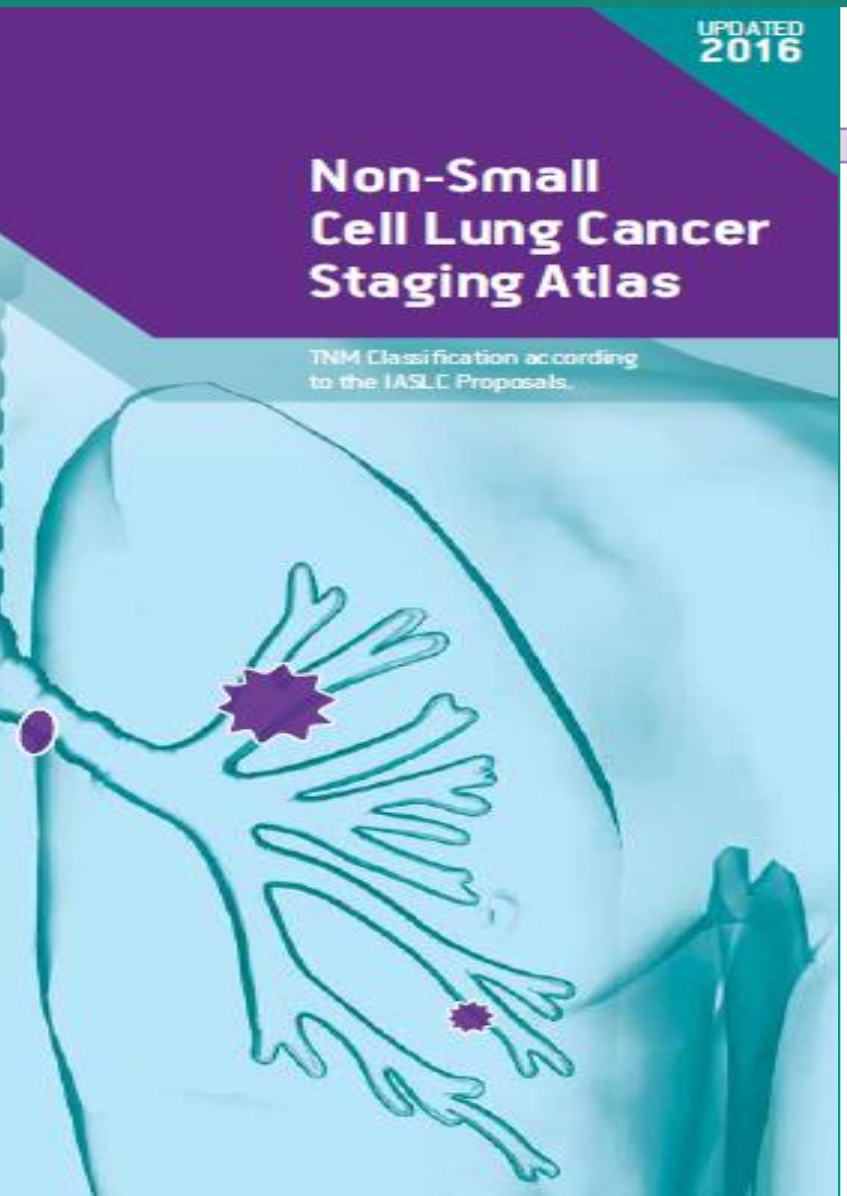
Cancer is a leading cause of death worldwide, accounting for an estimated 9.6 million deaths in 2018. The most common cancers are:

- Lung (2.09 million cases)
- Breast (2.09 million cases)
- Colorectal (1.80 million cases)
- Prostate (1.28 million cases)
- Skin cancer (non-melanoma) (1.04 million cases)
- Stomach (1.03 million cases)

The most common causes of cancer death are cancers of:

- Lung (1.76 million deaths)
- Colorectal (862 000 deaths)
- Stomach (783 000 deaths)
- Liver (782 000 deaths)
- Breast (627 000 deaths)

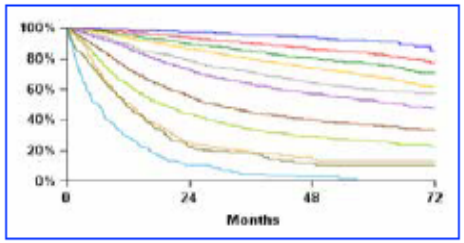
Despite advances in therapy, 5-year survival rates of Lung Cancer Remains Low



Proposals for stage groupings

Clinical Staging

	Events/N	MST	24 months	60 months
IA1	68/781	NR	97%	92%
IA2	505/3105	NR	94%	83%
IA3	546/2417	NR	90%	77%
IB	560/1928	NR	87%	68%
IIA	215/585	NR	79%	60%
IIB	605/1453	66.0	72%	53%
IIIA	2052/3200	29.3	55%	36%
IIIB	1551/2140	19.0	44%	26%
IIIC	831/986	12.6	24%	13%
IVA	336/484	11.5	23%	10%
IVB	328/389	6.0	10%	0%



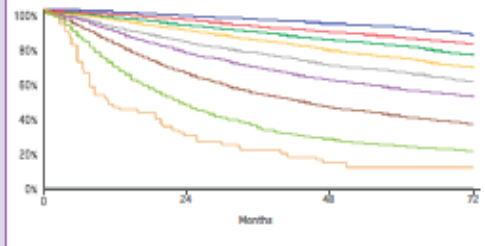
Overall survival expressed as median survival time (MST), 2-year and 5-year survival by clinical stage using the proposed International Association for the Study of Lung Cancer recommendations

Goldstraw P et al. J Thorac Oncol 2016; 11,39-51.

Proposals for stage groupings

Pathological Staging

	Events/N	MST	24 months	60 months
IA1	139/1389	NR	97%	90%
IA2	823/5633	NR	94%	85%
IA3	875/4401	NR	92%	80%
IB	1618/6095	NR	89%	73%
IIA	556/1638	NR	82%	65%
IIB	2175/5226	NR	76%	56%
IIIA	3219/5756	41.9	65%	41%
IIIB	1215/1729	22.0	47%	24%
IIIC	55/69	11.0	30%	12%

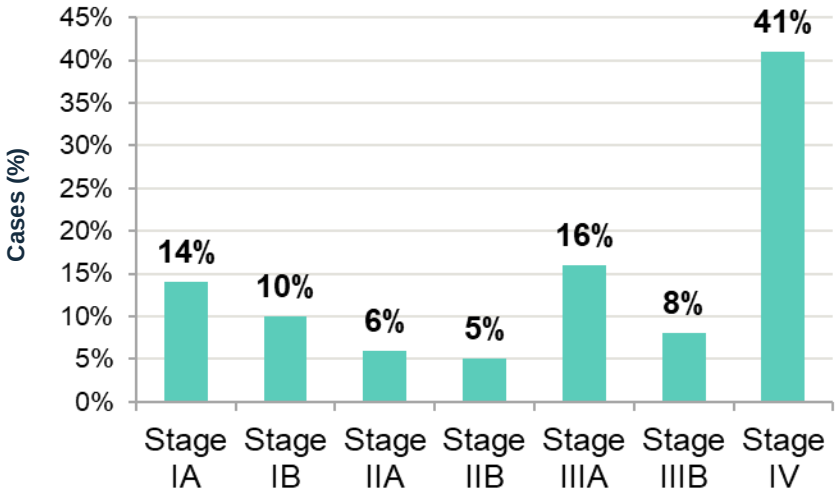


Overall survival expressed as median survival time (MST), 2-year and 5-year survival by pathologic stage using the proposed International Association for the Study of Lung Cancer recommendations

Goldstraw P et al. J Thorac Oncol 2016; 11,39-51.

Lung Cancer Is Commonly Diagnosed at an Advanced Stage, Which Is Associated With a Poor Prognosis[1,2]

Diagnosed Cases of NSCLC, by Stage[1,a]



5-Year Survival for NSCLC Patients[2,b]

[a]Estimated from SEER validation set of proposed 7th edition IASLC staging. [b]Based on the clinical staging of the 8th edition IASLC.
IASLC, International Association for the Study of Lung Cancer; NSCLC, non-small cell lung cancer; SEER, Surveillance, Epidemiology, and End Results Program.
1. Heist RS, Engelman JA. *Cancer Cell.* 2012;21(3):448.e2. 2. Goldstraw P, et al. *J Thorac Oncol.* 2016;11(1):39-51.

Definition of Screening

Screening can be defined as the systematic testing (*process-multidisciplinary program*) of individuals who are asymptomatic with respect to some target disease. The purpose of screening is to prevent, interrupt, or delay the development of advanced disease in the subset with a pre-clinical form of the target disease through early detection and treatment.

Hillman et al. JACR 2004;1(11):861-864

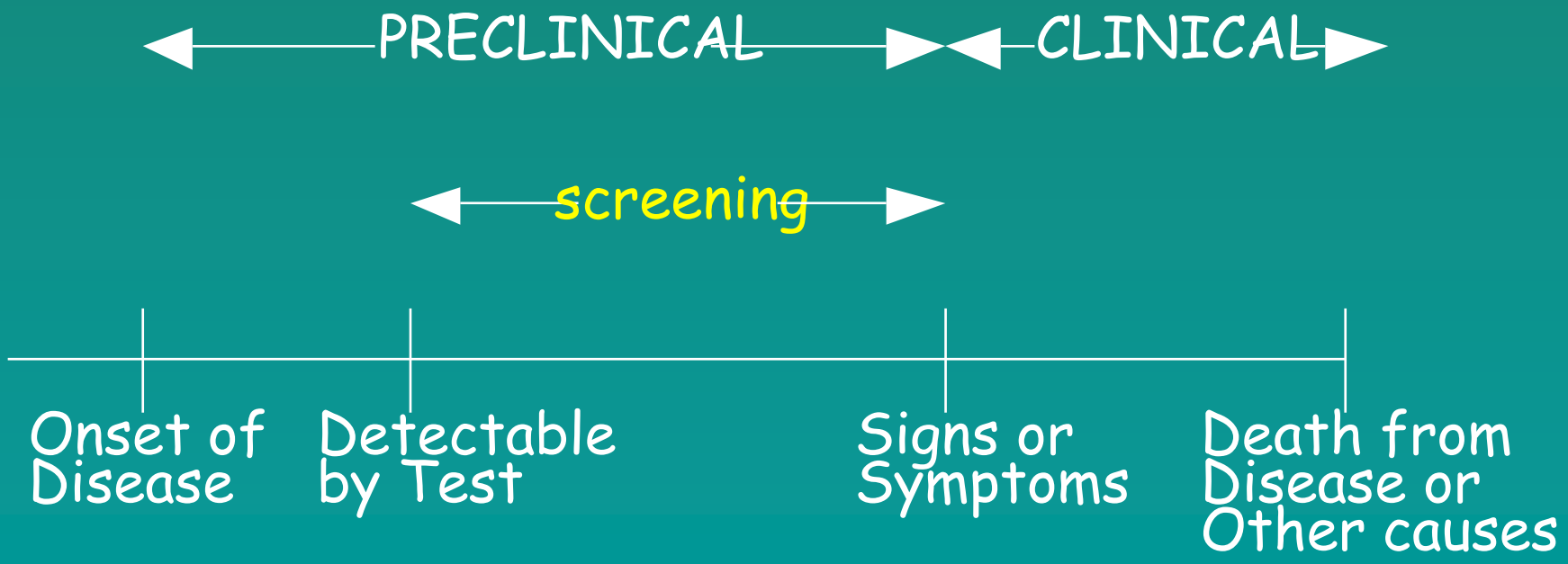
Principles of Screening

Screening vs Diagnosis

Non-patients	Patients
Asymptomatic	Symptomatic
Test non-diagnostic	Test diagnostic
Low prevalence	High prevalence

Principles of Screening

Timeline of Disease



HISTORY OF LUNG CANCER SCREENING

- Randomized trials of screening with the use of Chest X-Ray with or without cytologic analysis of sputum specimens have shown *no reduction in lung cancer mortality.*
- Molecular markers in blood, sputum, bronchial washings-brushings,urine are *not currently suitable for clinical application.*
- Several observational studies have shown that low-dose helical CT of the lung *detects more nodules and lung cancers,* including early-stage cancers, than does chest radiography.

THE EVIDENCE : 2 POWERED FROM 9 INTERNATIONAL LUNGCANCER SCREENING STUDIES IN EU AND US 2000-2020

NLST LDCT vs CXR — Age 55–75 years, ≥30 PY smoking, <10 years ex-smoker (*n* = 53,454) — LDCT reduces lung cancer-related mortality (HR 0.80; *P* < 0.004)

NELSON[a] LDCT vs no intervention — Age 55–75 years, ≥15 PY smoking, <10 years ex-smoker (*n* = 15,789) — LDCT reduces lung cancer-related mortality (HR 0.76, 95% CI 0.62–0.94 in men)

Unpowered studies

DANTE LDCT vs no intervention — Age 60–74 years, ≥20 PY smoking, <10 years ex-smoker (*n* = 2,811) — Non-significant reduction of lung cancer-related mortality (HR 0.99)

DEPISCAN LDCT vs CXR — Age 50–75 years, ≥15 PY smoking, <15 years ex-smoker (*n* = 765) — LDCT enables the detection of more lung cancers than CXR (8 vs 1)

DLCST[a] LDCT vs CXR — Age 50–70 years, ≥20 PY smoking, <10 years ex-smoker (*n* = 4,104) — Non-significant reduction of lung cancer-related mortality (HR 1.03)

ITALUNG LDCT vs no intervention — Age 55–69 years, ≥20 PY smoking, <10 years ex-smoker (*n* = 3,206) — Non-significant reduction of lung cancer-related mortality (HR 0.7)

MILD LDCT vs no intervention — Age ≥49 years, ≥20 PY smoking, <15 years ex-smoker (*n* = 4,099) — LDCT reduces cumulative risk of 10 year lung cancer-related mortality (HR 0.61; *P* = 0.02)

LUSI[a] LDCT vs no intervention — Age 50–69 years ≥15 PY smoking, <10 years ex-smoker (*n* = 4,052) — LDCT reduces lung cancer-related mortality only in women (HR 0.31; *P* = 0.04)

UKLS[a] LDCT vs no intervention — Age 50–75 years, LLP_{v2}-defined 5 year lung cancer risk ≥5% (*n* = 4,055) — 67% Stage I lung cancers in screening arm; mortality results to be published

Oudkerk, M., Liu, S. *et al.* Lung cancer LDCT screening and mortality reduction - evidence, pitfalls and future perspectives. ***Nat Rev Clin Oncol*** **(2020)**

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Professor of Radiology / University of Groningen
CSO iDNA- Institute for Diagnostic Accuracy
The Netherlands

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 4, 2011 VOL. 365 NO. 5

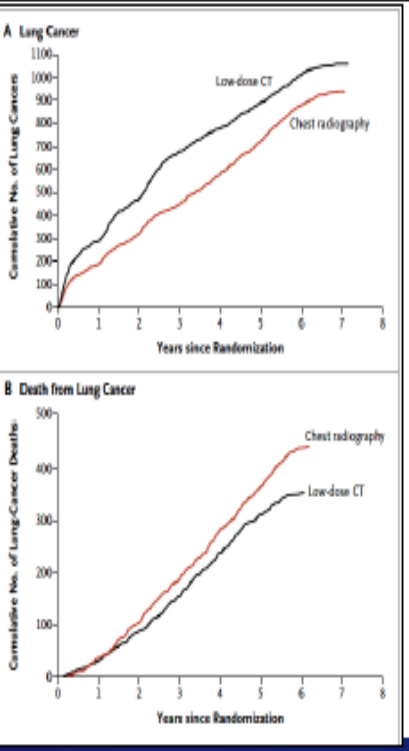
Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

The National Lung Screening Trial Research Team*

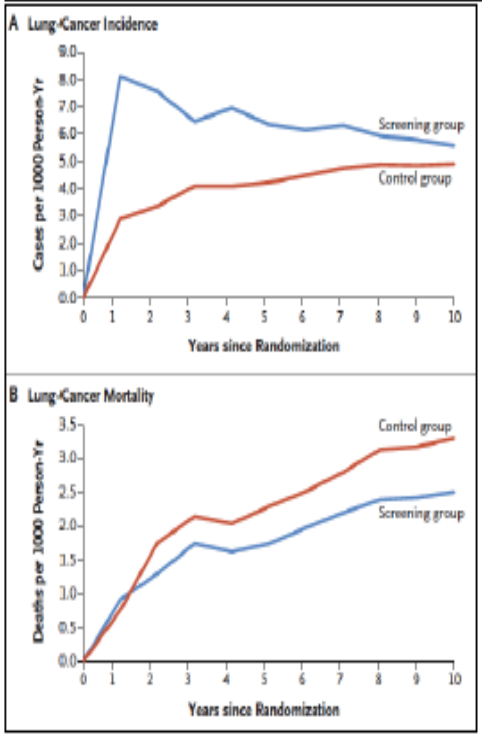
ORIGINAL ARTICLE

Reduced Lung-Cancer Mortality with Volume CT Screening in a Randomized Trial

H.J. de Koning, C.M. van der Aalst, P.A. de Jong, E.T. Scholten, K. Nackaerts, M.A. Heuvelmans, J.-W.J. Lammers, C. Weenink, U. Yousaf-Khan, N. Horeweg, S. van 't Westeinde, M. Prokop, W.P. Mali, F.A.A. Mohamed Hoesein, P.M.A. van Ooijen, J.G.J.V. Aerts, M.A. den Bakker, E. Thunnissen, J. Verschakelen, R. Vliegenthart, J.E. Walter, K. ten Haaf, H.J.M. Groen, and M. Oudkerk



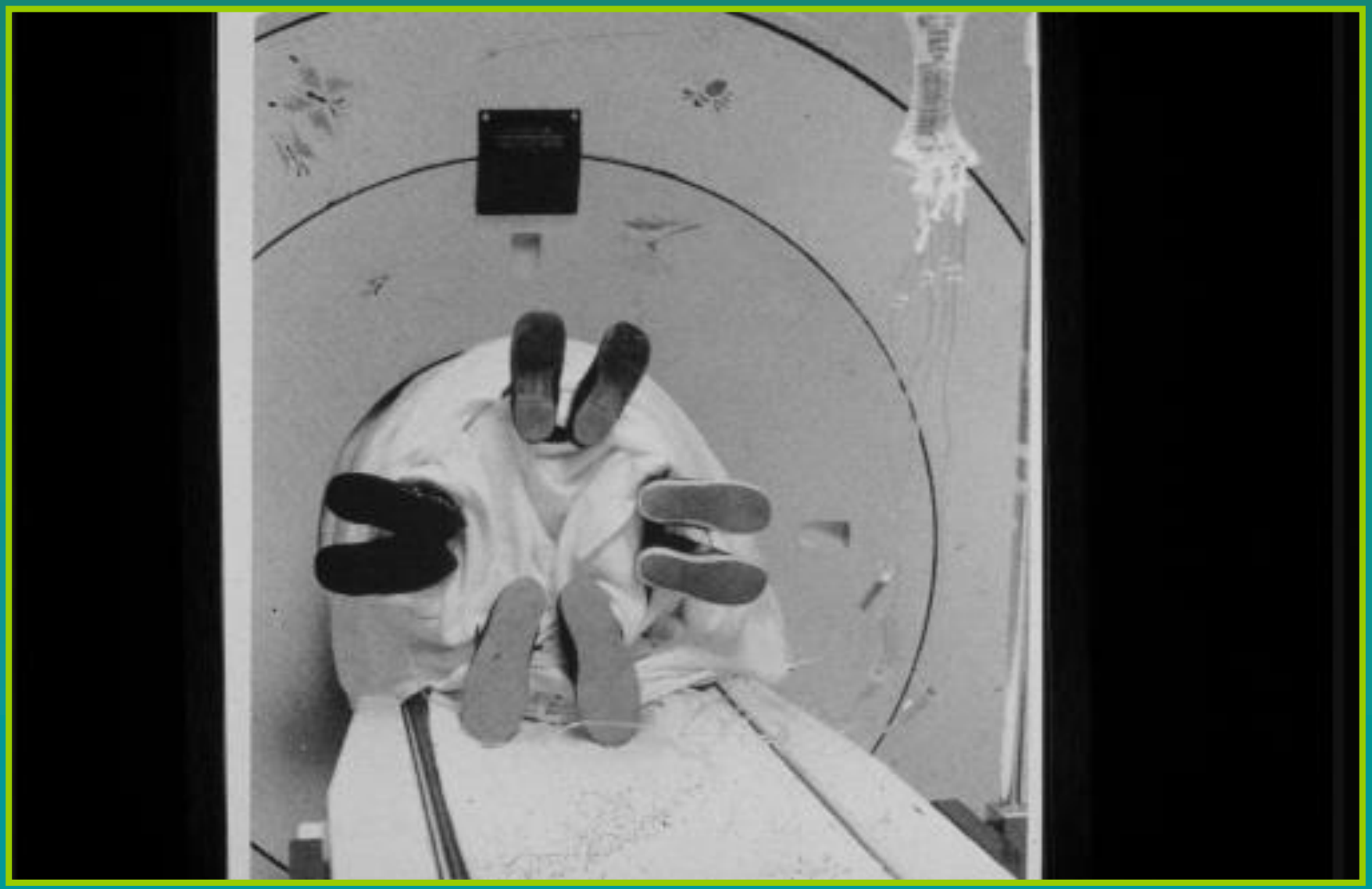
- ✓ 20% relative reduction in lung cancer– specific mortality after 7 years of follow-up in the LDCT arm.
- ✓ At the cost of a high false positive rate, with 24% of screenings classified as positive of which 96% were proven to be falsely positive



- ✓ NELSON Trial reported a mortality reduction of 24% in men and 33% in women.
- ✓ The adopted volumetry-based nodule management strategy allowed reducing the false positive rate to only 1.2%.

N Engl J Med 2011;365:395-409
N Engl J Med 2020; 382:503-513

WHO SHOULD WE SCREEN IN CLINICAL PRACTISE?



Lung Cancer Screening Advocacy

USPSTF LCS Guideline Recommendations & Eligibility

	Population	Recommendation	Grade
1996	Asymptomatic persons	Routine screening of asymptomatic persons for lung cancer with chest radiography or sputum cytology is not recommended.	D
2004	Asymptomatic Adults	The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against screening asymptomatic persons for lung cancer with either low dose computerized tomography (LDCT), chest x-ray (CXR), sputum cytology, or a combination of these tests.	I
2013	Adults Aged 55-80, with a History of Smoking	The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.	B
2021	Adults ages 50 to 80 years who have a 20 pack-year smoking history, currently smoke, or have quit within the past 15 years	The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults ages 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.	B

Doubles number of people eligible; many more African American & female smokers will be eligible, addressing data that African Americans & women tend to smoke fewer cigarettes than white men & African Americans have a higher risk of lung cancer than white people

RADIOLOGY

STATE OF THE ART: CONCISE REVIEW

Lung Screening Benefits and Challenges: A Review of The Data and Outline for Implementation

Jacob Sands, MD,[a,*] Martin C. Tammemägi, PhD,[b] Sebastien Couraud, MD, PhD,[c]
David R. Baldwin, MD, FRCP,[d] Andrea Borondy-Kitts, MS, MPH,[e]
David Yankelevitz, MD,[f] Jennifer Lewis, MD,[g,h,i] Fred Grannis, MD,[j]
Hans-Ulrich Kauczor, MD,[k] Oyunbileg von Stackelberg, PhD,[k] Lecia Sequist, MD,[l]
Ugo Pastorino, MD,[m] Brady McKee, MD[n]

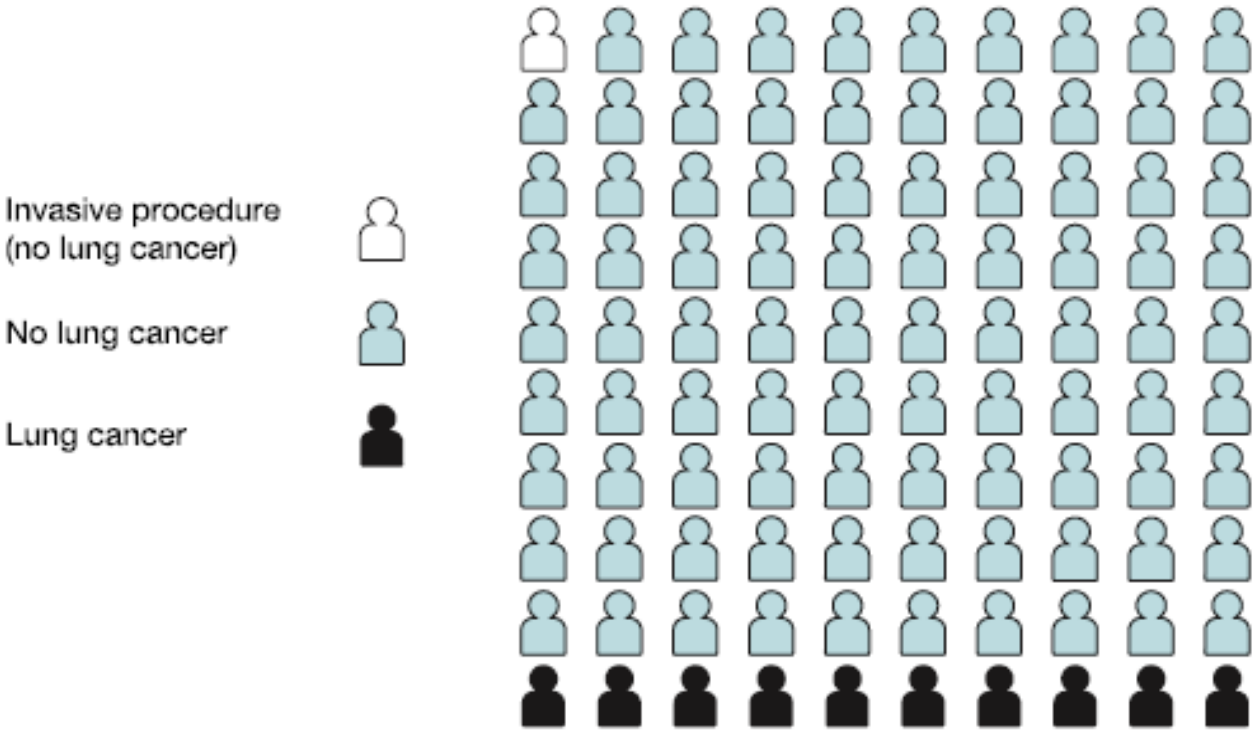
January 2021

Lung Screen Review and Implementation Outline

Journal of Thoracic Oncology Vol. 16 No. 1: 37–53, January 2021

Lung Screening Shared Decision-Aid

A Lung screening outcomes over full duration of screening eligibility



IASLC

Lung Screening Benefits and Challenges: A Review of The Data and Outline for Implementation

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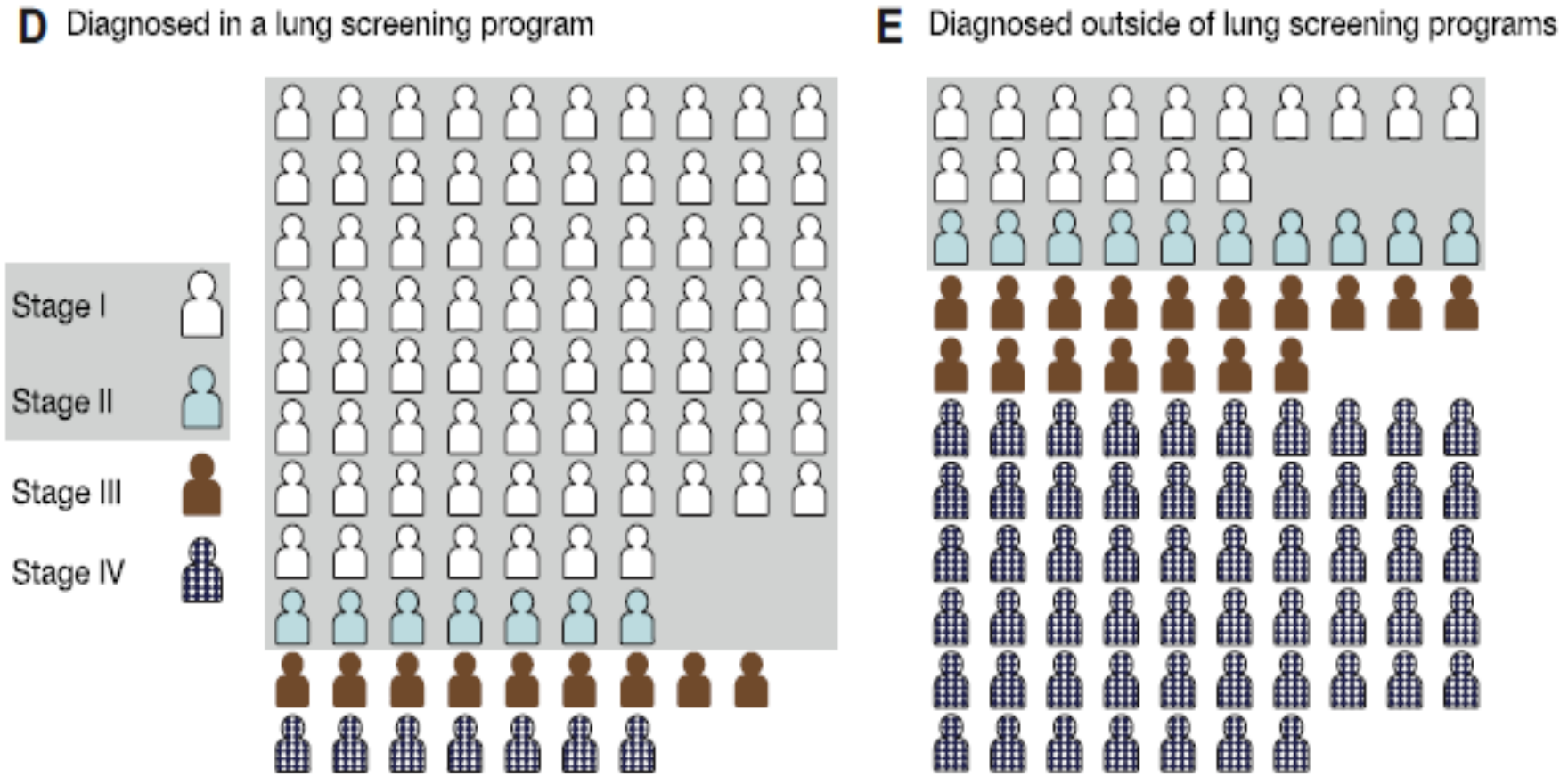
Journal of Thoracic Oncology Vol. 16 No. 1: 37–53, January 2021



IASLC

Lung Screening Benefits and Challenges: A Review of The Data and Outline for Implementation

Check for updates

Jacob Sands, MD,[a,*] Martin C. Tammemägi, PhD,[b] Sebastien Couraud, MD, PhD,[c] David R. Baldwin, MD, FRCP,[d] Andrea Borondy-Kitts, MS, MPH,[e] David Yankelevitz, MD,[f] Jennifer Lewis, MD,[g,h,i] Fred Grannis, MD,[j] Hans-Ulrich Kauczor, MD,[k] Oyunbileg von Stackelberg, PhD,[k] Lecia Sequist, MD,[l] Ugo Pastorino, MD,[m] Brady McKee, MD[n]

Table 3. Common perceived Barriers to Lung Cancer Screening

Perceived barrier	Comments
Unwanted consequences of radiation exposure 	Risk of radiation seems nonexistent or too low to be measurable No reported cases of radiation-induced malignancy
False-positive findings/ overdiagnosis 	False-positive findings occur less frequently than those that have been reported "False discovery" has been misinterpreted/misreported as "false-positive" No difference in rates of diagnosis between CTLS and chest radiography groups; suggests that overdiagnosis is not a major concern
Unnecessary invasive procedures 	Low numbers of resections of benign nodules Need to consider balance between resection of benign nodules and watching lung cancer progress without action Implementing a standardized system reduces the number of unnecessary interventions

Journal of Thoracic Oncology Vol. 16 No. 1: 37–53, January 2021

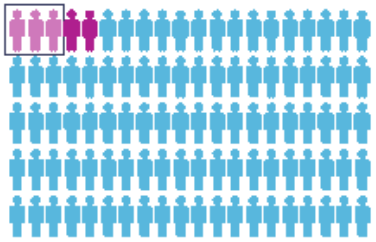
CTLS, computed tomographic lung screening.

LUNG CANCER SCREENING FOR PEOPLE WHO HAVE SMOKED

Screening can find lung cancer early and treatment can reduce the chance of dying from this disease.[1,2]

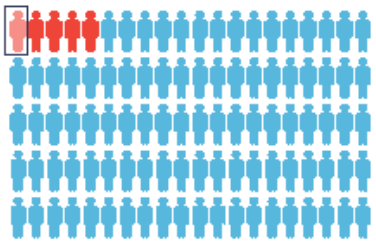
Of 100 people who have annual screening and recommended follow-up...

About **5** are likely to be diagnosed with lung cancer. **Three** (60%) of those 5 are likely to be diagnosed with early-stage disease.[2]



Of 100 people who DO NOT have annual screening and recommended follow up...

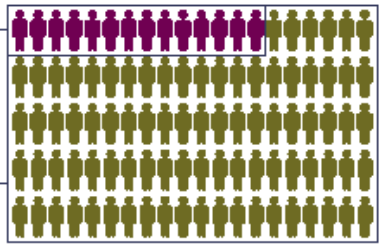
About **5** are likely to be diagnosed with lung cancer. Only **1** (20%) of those 5 is likely to diagnosed with early-stage disease.[2]



Among 100 people who are screened...

About **14** are likely to be advised to have follow-up evaluations such as imaging, needle biopsy, bronchoscopy, or thoracic surgery, which may have complications.[3]

& About **86** are likely to be advised to have follow-up repeat screening in a year.[3]



Over-diagnosis

Screening may find a cancer or some other condition that is not likely to cause harm.

Safety

Exposure to radiation from a screening test (low-dose computed tomography) about the same as a back x-ray.

Cost

Screening and diagnostic follow-up are covered by Medicare, and by most state Medicaid and private insurance plans.

Quitting Smoking

Quitting Smoking can reduce the risk of developing lung cancer and many other types of cancer, and can improve overall health.

Please let your healthcare provider know how you feel about being screened.

I don't want to be screened.				I'm unsure about screening.				I want to be screened.		
0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

1 The National Lung Cancer Screening Trial Research Team. Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening. The New England Journal of Medicine 2011;365:395-409.

2 deKoning et al. Reduced Lung-Cancer Mortality with Volume CT Screening in a Randomized Trial. The New England Journal of Medicine 2020;365:382:503-13.

3 Pinsky PF et al. Performance of Lung-RADS in the National Lung Screening Trial: A Retrospective Assessment. Annals of Internal Medicine 2015;162(7):485-91.

Jefferson Health.

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

Decision Counseling Guide for Lung Cancer Screening

People have many reasons to and NOT to be screened for lung cancer, such as fears/worries/concerns and beliefs about screening importance/convenience, cancer risk/susceptibility, screening efficacy/accuracy, and social support for screening/altruism. Let's talk about how you feel and what you want to do.

STEP ONE: Enter up to three (3) reasons that support the decision to or not to be screened.

Reasons to be screened versus NOT to be screened

Reasons NOT to be screened versus to be screened

STEP TWO: Select and enter only the top 3 reasons from STEP ONE. Reason 1 will have the most influence on your decision, followed by Reasons 2 and 3. Indicate the influence of each reason by checking one box (Almost None to Overwhelming). If there is only one reason, indicate the level of influence of the reason and go to STEP FOUR. Otherwise, indicate the level of influence for all reasons and go to STEP THREE.

	Almost None	A Little	Some	Much	Very Much	Overwhelming
Reason 1	☐	☐	☐	☐	☐	☐
Reason 2	☐	☐	☐	☐	☐	☐
Reason 3	☐	☐	☐	☐	☐	☐

STEP THREE: Indicate how much more important one reason is than another by checking one box for each comparison. If there are two reasons, compare the importance of 1 v 2 and go to STEP FOUR. If there are three reasons, compare the importance of 1 v 2, 2 v 3, and 1 v 3 and go to STEP FOUR.

	About the Same	A LIttle More	Some-what More	Much More	Very Much More	Overwhelmingly More
Reason 1 compared to Reason 2.	☐	☐	☐	☐	☐	☐
Reason 2 compared to Reason 3.	☐	☐	☐	☐	☐	☐
Reason 1 compared to Reason 3.	☐	☐	☐	☐	☐	☐

STEP FOUR: Indicate how you feel about screening on a scale of 0 to 10 (0 = I really don't want to be screened to 10 = I really want to be screened) and make an action plan.

I don't want to be screened — I'm unsure — I want to be screened

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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 Mascalchi, 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

Lung cancer screening with low-dose CT can save lives. This European Union (EU) position statement presents the available evidence and the major issues that need to be addressed to ensure the successful implementation of low-dose CT lung cancer screening in Europe. This statement identified specific actions required by the European lung cancer screening community to adopt before the implementation of low-dose CT lung cancer screening. This position statement recommends the following actions: a risk stratification approach should be used for future lung cancer low-dose CT programmes; that individuals who enter screening programmes should be provided with information on the benefits and harms of screening, and smoking cessation should be offered to all current smokers; that management of detected solid nodules should use semi-automatically measured volume and volume-doubling time; that national quality assurance boards should be set up to oversee technical standards; that a lung nodule management pathway should be established and incorporated into clinical practice with a tailored screening approach; that non-calcified baseline lung nodules greater than 300 mm³, and new lung nodules greater than 200 mm³, should be managed in multidisciplinary teams according to this EU position statement recommendations to ensure that patients receive the most appropriate treatment; and planning for implementation of low-dose CT screening should start throughout Europe as soon as possible. European countries need to set a timeline for implementing lung cancer screening.

Lancet Oncol 2017

Published Online
November 27, 2017
http://dx.doi.org/10.1016/S1470-2045(17)30861-6

Center for Medical Imaging, University Medical Center Groningen, University of Groningen, Groningen, Netherlands (Prof M Oudkerk MD, R Vliegenthart MD, M A Heuvelmans MD); **Department of Radiology, Royal Brompton Hospital, London, UK** (A Devaraj MD); **Institute of Clinical Radiology and Nuclear Medicine**

- To date we only have evidence for **annual** LDCT lung cancer screening, **however.. ..**
- Management of lung nodules by the lung cancer MDTs should be according to the EUPS recommendations.
- The EUPS Expert Group recommends planning for implementation of LDCT screening should be started **throughout Europe** **now**.

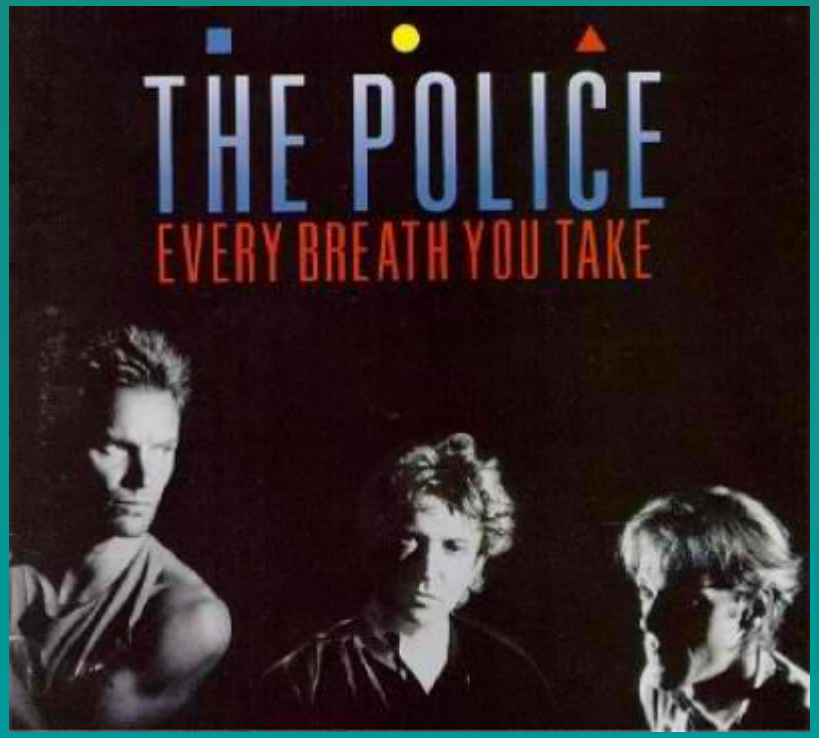
TAKE HOME MESSAGE:

- Lung Screening has the potential to prevent MANY deaths from lung cancer with minimal risks.
- Patients tend to follow the advise of their trusted physicians.
- Important that primary care understands the trye benefits and risks when discussing with patients

Hellenic National Guidelines

Thank you for your attention

"Every breath you take
I' ll be watching you"



What about risk of radiation exposure??

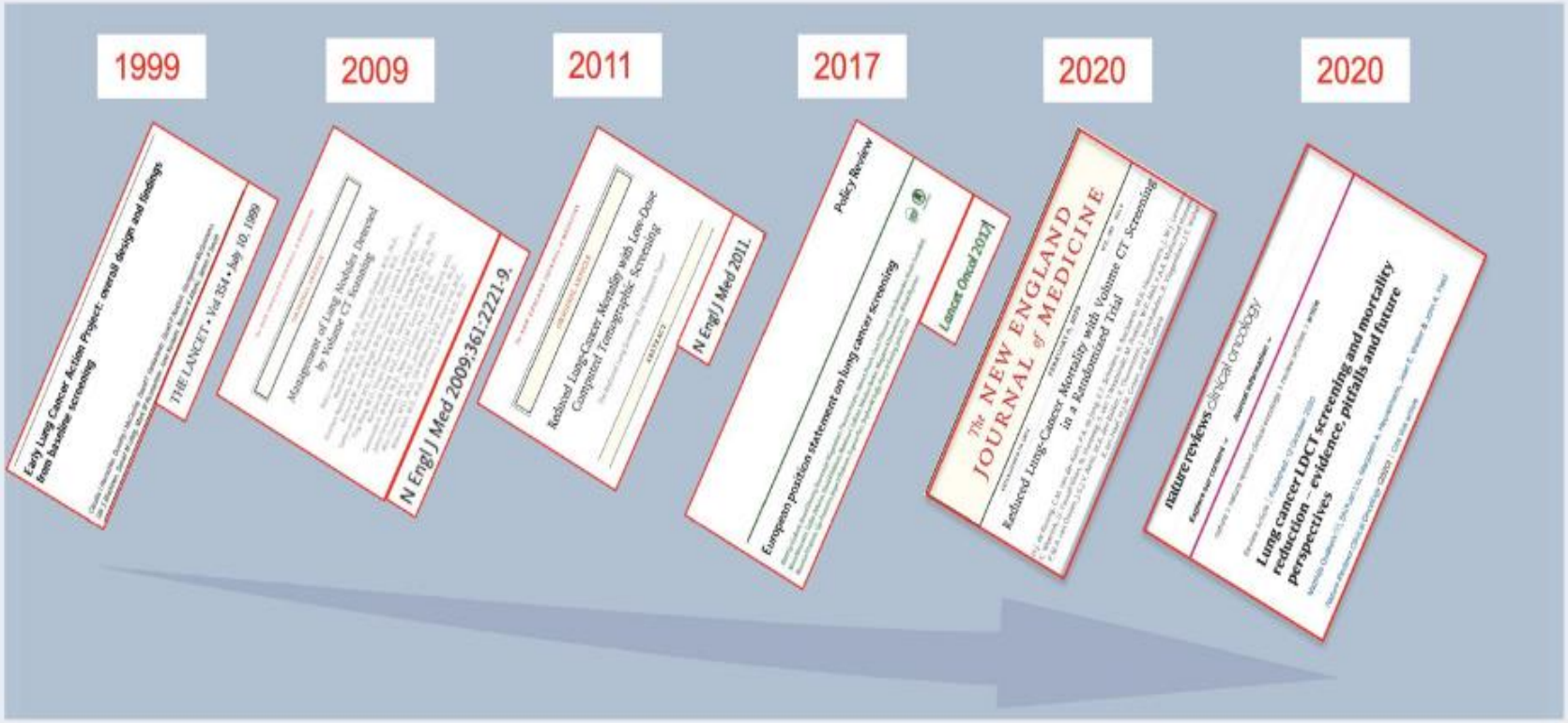
According to the Health Physics Society, the risk of radiation in the diagnostic realm (<100 mSv) is either too low to measure or nonexistant

10-30 year latency period to develop secondary malignancies from RT exposure

LDCT	1 mSv	Years of annual lung screening
Mammogram	.7 mSv	
Lumbar Spine Films	2 mSv	2
Diagnostic Chest CT	10 mSv	10
Triphasic CT AB/P	25 mSv	25
Background Exposure	3 mSv/year	3
Colorado	11.8 mSv/year	11.8
Occupational Exposure	50 mSv/year	50
Transatlantic Flight	.1 mSv	10 flights = 1 LDCT

Figure by Andrea McKee

THE EVIDENCE: Lung cancer CT Screening Milestones



WCLC ES21.04 – Sept 14 2021

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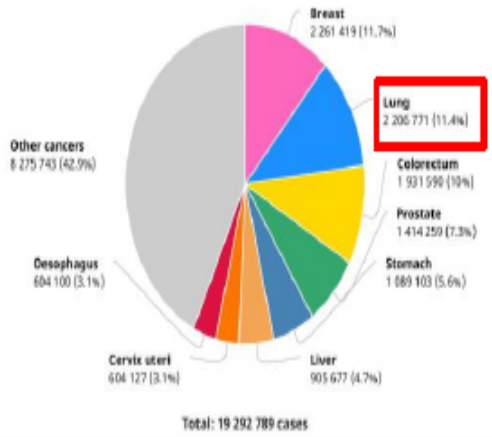
The Netherlands

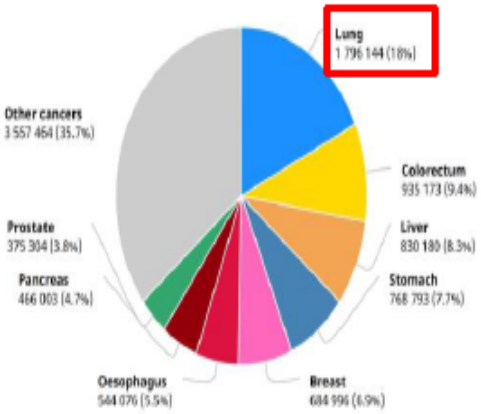
High morbidity & mortality

Number of New cases in 2020



Total: 19 292 789 cases

Number of deaths in 2020



Total: 9 958 133 deaths

Reduction in mortality from screening

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 4, 2011 VOL. 365 NO. 5

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

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 FEBRUARY 6, 2020 VOL. 382 NO. 6

Reduced Lung-Cancer Mortality with Volume CT Screening in a Randomized Trial

Reduce mortality with low-dose CT screening of 20%

24.2% with low-dose CT and 6.9% with radiography over all three rounds. A total of 96.4% of the positive screening results in the low-dose CT group and 94.5% in the radiography group were false positive results. The incidence of lung cancer was 645 cases per 100,000 person-years (1060 cancers) in the low-dose CT group, as compared with 572 cases per 100,000 person-years (941 cancers) in the radiography group (rate ratio, 1.13; 95% confidence interval [CI], 1.03 to 1.23). There were 247 deaths from lung cancer per 100,000 person-years in the low-dose CT group and 309 deaths per 100,000 person-years in the radiography group, representing a relative reduction in mortality from lung cancer with low-dose CT screening of 20.0% (95% CI, 6.8 to 26.7; P=0.004). The rate of death from any cause was reduced in the low-dose CT group, as compared with the radiography group, by 6.7% (95% CI, 1.2 to 13.6; P=0.02).

***NEJM*, 2012**

group, similar to the values at years 8 and 9. Among women, the rate ratio was 0.67 (95% CI, 0.38 to 1.14) at 10 years of follow-up, with values of 0.41 to 0.52 in years 7 through 9.

CONCLUSIONS

In this trial involving high-risk persons, lung-cancer mortality was significantly lower among those who underwent volume CT screening than among those who underwent no screening. There were low rates of follow-up procedures for results suggestive of lung cancer. [Funded by the Netherlands Organization of Health Research and Development and others; NELSON Netherlands Trial Register number, NL580.)

***NEJM*, 2020**

Meanings: Lung Cancer Screening

National Lung Cancer Screening Trial

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

N Engl J Med 2011; 365:395-409 | August 4, 2011

The National Lung Screening Trial Research Team*

20% lung cancer mortality reduction

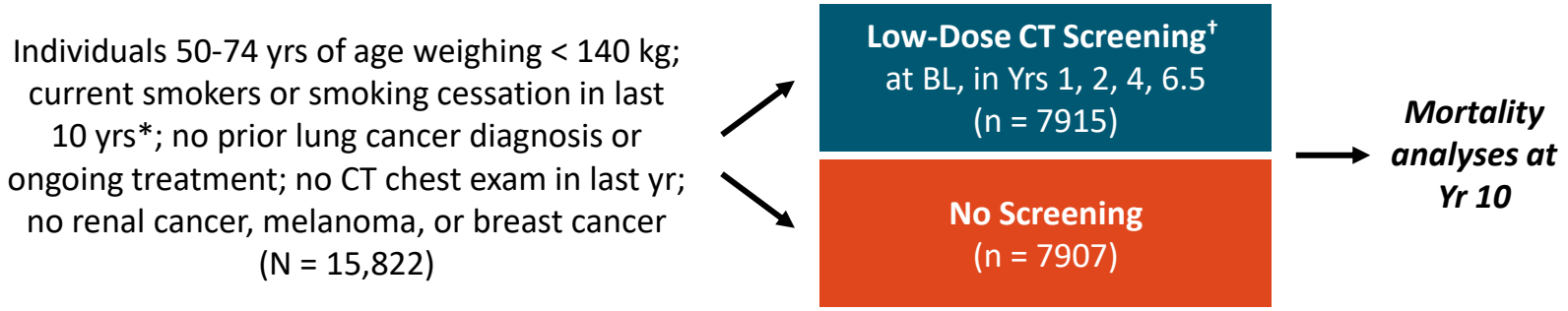
6.9% all cause mortality reduction

screen 320 individuals to save 1 from lung cancer death

8 yrs & > 50,000 subjects randomized to LDCT vs. CXR

NELSON: Study Design

- Randomized, controlled trial with population-based registry recruitment in the Netherlands and Belgium



*Smoking history: > 10 cigarettes/day for > 30 yrs or > 15 cigarettes/day for > 25 yrs.
†Central reading of CTs with measured volume, volume doubling time of nodules.

- Primary endpoint: lung cancer mortality reduction ≥ 25% at Yr 10
  - Initially 80% power to show specified mortality reduction for high-risk males

de Koning HJ, et al. WCLC 2018. Abstract PL02.05. TrialRegister.nl. ISRCTN63545820.

NELSON

Effect of Screening

NLST: 20% (p< 0.05)

DANTE / MILD: 17% (n.s.)

Lung cancer mortality Reduction (95% CI)	Year 8	Year 9	Year 10
MALES	25% P=0.015 (5%-41%)	24% P=0.012 (5%-40%)	26% P=0.003 (9%-40%)
FEMALES	61% P=0.0037 (22%-82%)	53% P=0.0069 (16%-75%)	49% P=0.0543 (-4%-65%)

Randomization: 23-12-2003 to 06-07-2006

Follow-up: 23-12-2003 to 31-12-2015

Follow-up 94%

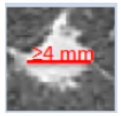
Adapted from De Koning H et al. IASLC 2018, Toronto

Radboudumc

SCOPE

DESIGN

METHOD

	NLST	NELSON
Country	USA	BE/NL
Enrollment	2002–2004	2003–NR
Number of Centers	33	4
Number of screens		3
Screening planned at years	1, 2 and 3	1, 2 and 4
Comparison	LDCT vs. Xray	LDCT vs. usual care
Population		
Age	55–74	50–69 (50–75)
Smoking (pack-years)	≥30	>15 *
Sex	both (male 59%)	men ° (male 84%)
Years since quit	≤15	≤10
Patients Screened, *n*	26,722 vs. 26,732	7907 vs. 7915
Planned follow-up, y	>7	10
Nodule Size warranting Follow-up	2011 	2009  + VDT
		2014 ≥100 mm³ (≥5 mm) + VDT
LC diagnosed at screening, %	1.02	0.9
5 mm Reduction of LC mortality	20%	26% [a]

*, ≥15 cigarettes/day for 25 years or ≥10 cigarettes/day for 30 years; °, both in Belgium; VDT, volume doubling time; [a], in men.

Cancers **2019**, *11*, 212; doi:10.3390/cancers11020212