GENERALITAT VALENCIANA
CONSELLERIA DE SANITAT

REIAL ACADÈMIA DE MEDICINA I CIÈNCIES AFINS DE LA COMUNITAT VALENCIANA

CRIBADO DEL CÁNCER DE PULMÓN

JOSÉ CERVERA DEVAL
Servicio de Diagnóstico por Imagen
FUNDACIÓN INSTITUTO VALENCIANO DE ONCOLOGÍA
IELCAP Valencia

aecc
Contra el Cáncer

I-ELCAP

CRIBAR

- DEFINICIÓN: tr. Seleccionar rigurosamente. (RAE)
- CONDICIONES:
  - DE LA ENFERMEDAD: frecuente y grave, diferenciable de la normalidad, tratable en estadio preclínico reducir la mortalidad.
  - DE LA POBLACIÓN: alta prevalencia, actitud cooperativa y disponer datos demográficos.
  - DE LA PRUEBA DIAGNÓSTICA: Aceptable por la población, reproducible y válida con alto VPP.
  - La incidencia se desplaza a edades más jóvenes.

REAL ACADEMIA ESPAÑOLA

CÁNCER DE PULMÓN. Un serio problema sociosanitario

- Primera causa de muerte de etiología oncológica
- Solo 15% de los pacientes son resecables
- Cuando presentan síntomas el 75% tienen metástasis o está localmente avanzado
- Mal pronóstico (12-15% de supervivencia a los 5 años)
- Estadio IV, supervivencia < 3% a 5 años
- Aumento de la incidencia en la mujer
- Cambio de patrón histológico. Adenocarcinoma

DATOS GLOBALES

El coste sanitario y social del tabaco asciende a 433 euros por español y año

Tweet 0 | Me gusta 2 | +1 0 | Share | Menéame

Efe 21/04/2009 - 15:13

10 comentarios Puntúa la noticia : 1 10 Nota de los usuarios: **7.3** (14votos)

Selección eE | Medio ambiente | Salud

El sobrecoste sanitario y social generado por el tabaco en 2008 ascendió a 16.474 millones de euros, lo que supone 433 euros por cada ciudadano adulto, ha informado el Comité Nacional para la Prevención del Tabaquismo (CNPT), que reúne a cuarenta entidades científicas y profesionales sanitarias.

Los costes sanitarios directos de las cinco enfermedades más frecuentemente asociadas al consumo de tabaco suman **en España cerca de 7.700 millones de euros anuales**.

http://www.eleconomista.es/salud/noticias

PROGRAMAS DE CRIBADO

Memorial Sloan-Kettering Study

Johns Hopkins Study

Mayo Lung Project

Prostate, Lung, Colorectal and Ovarian (PLCO)

Danish Randomized Lung Cancer CT Screening Trial

Detection and Screening of Early Lung Cancer (DANTE) Trial

NELSON Trial

ITALUNG Study

LUSI Trial in Germany

U.K. Lung Screening (UKLS)

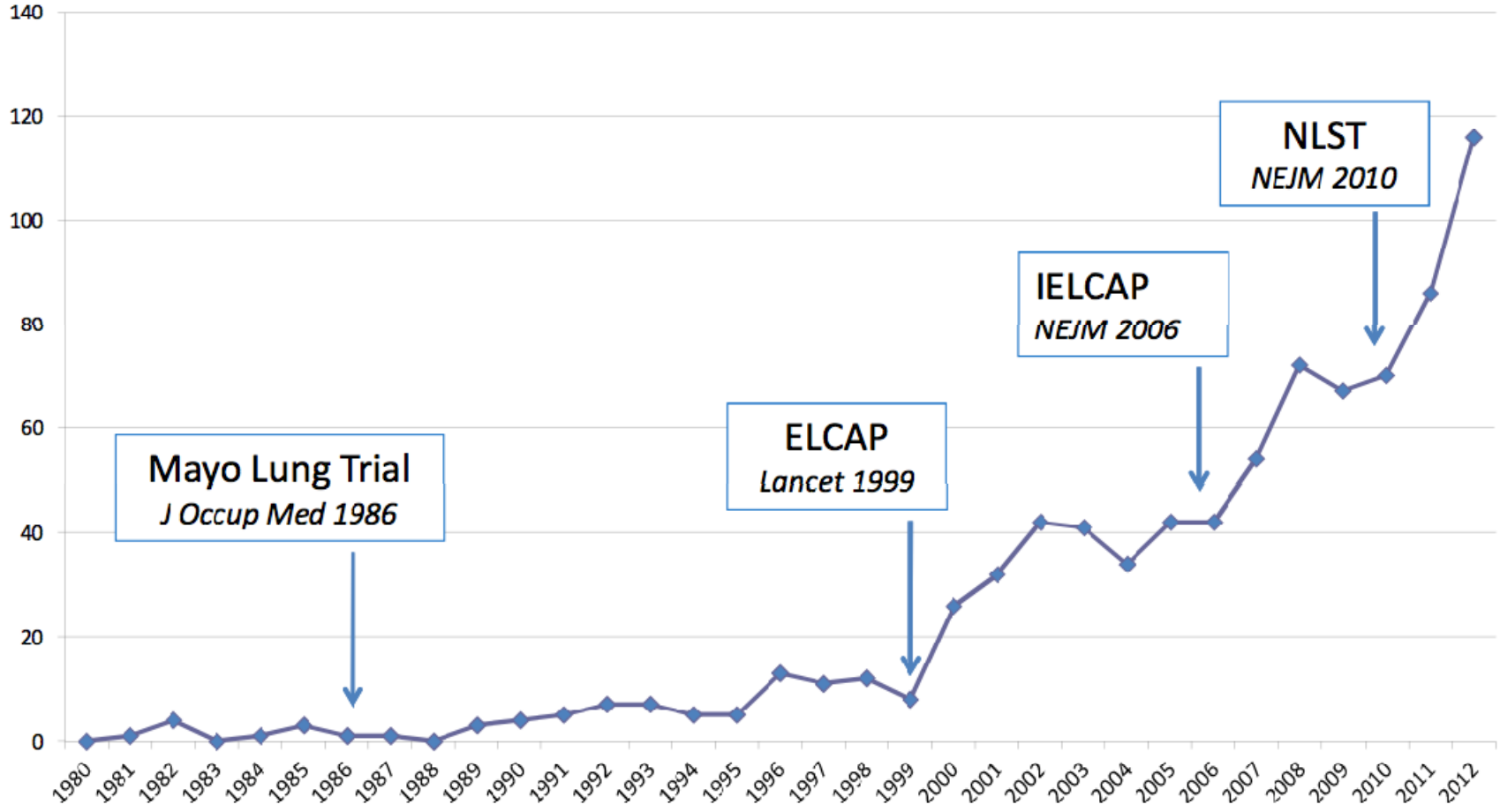
Mayo CT Screening Study

National Lung Screening Trial (NLST)

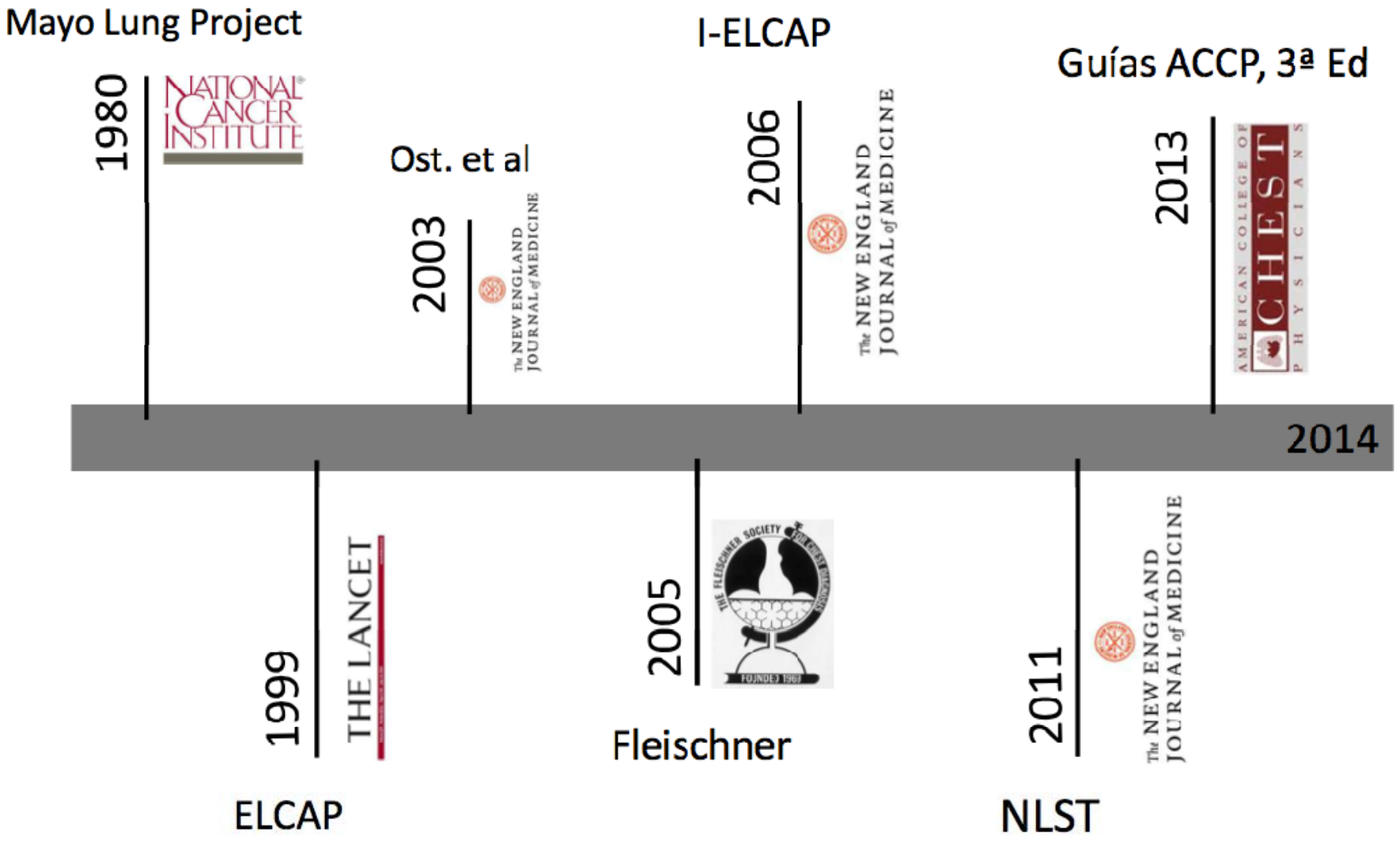
IELCAP

PROGRAMAS DE CRIBADO

Número de Publicaciones. Cribado cáncer pulmón



PROGRAMAS DE CRIBADO



PROGRAMAS DE CRIBADO

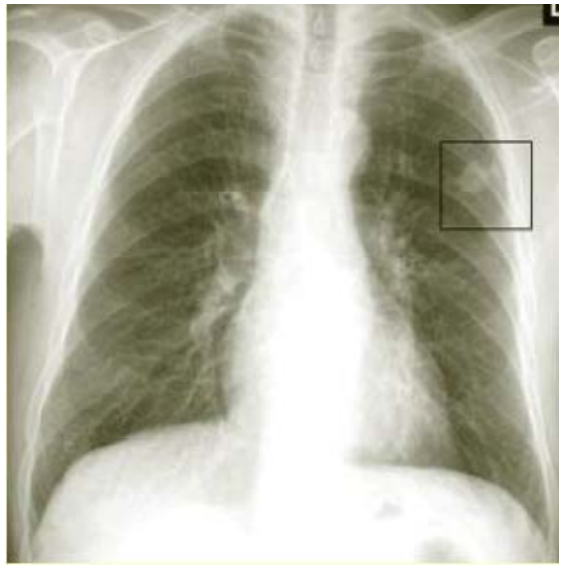
Mayo Lung Project

1980 | National Cancer Institute

ARTICLES

Lung Cancer Mortality in the Mayo Lung Project: Impact of Extended Follow-up

Pamela M. Marcus, Erik J. Bergstralh, Richard M. Fagerstrom, David E. Williams, Robert Fontana, William F. Taylor, Philip C. Prorok



Background: The Mayo Lung Project (MLP) was a randomized, controlled clinical trial of lung cancer screening that was conducted in 9211 male smokers between 1971 and 1983. The intervention arm was offered chest x-ray and sputum cytology every 4 months for 6 years; the usual-care arm was advised at trial entry to receive the same tests annually. No lung cancer mortality benefit was evident at the end of the study. We have extended follow-up through 1996. *Methods:* A National Death Index–PLUS search was used to assign vital status and date and cause of death for 6523 participants with unknown information. The median survival for lung cancer patients diagnosed before July 1, 1983, was calculated by use of Kaplan–Meier estimates. Survival curves were compared with the log-rank test. *Results:* The median follow-up time was 20.5 years. Lung cancer mortality was 4.4 (95% confidence interval [CI] = 3.9–4.9) deaths per 1000 person-years in the intervention arm and 3.9 (95% CI = 3.5–4.4) in the usual-care arm (two-sided *P* for difference = .09). For participants diagnosed with lung cancer before July 1, 1983, survival was better in the intervention arm (two-sided *P* = .0039). The median survival for patients with resected early-stage disease was 16.0 years in the intervention arm versus 5.0 years in the usual-care arm. *Conclusions:* Extended follow-up of MLP participants did not reveal a lung cancer mortality reduction for the intervention arm. Similar mortality but better survival for individuals in the intervention arm indicates that some lesions with limited clinical relevance may have been identified in the intervention arm. [J Natl Cancer Inst 2000;92:1308–16]

PROGRAMAS DE CRIBADO

1999

THE LANCET

ELCAP

- 1000 individuos sanos, >60 años, 10 paquetes/año
- 54 % varones, Mediana Edad=67a. Tabaco=45 paq-año
- Durante 2 años: RX convencional y TC a cada uno
- Nódulos no calcificados:
  - <5 mm: seguimiento 12 meses
  - 5-10 mm: TC en 3 meses (crecimiento)
  - >10 mm: biopsia

	TAC	Radiografía
Con nódulos	233 (23%)	68 (7%)
Nódulos malignos	27 (2.7%)	7 (0.7%)

IA: 22
IB: 1
IIA: 1
IIB: 0
IIIA: 2
IIIB: 1

89%

Henschke CI, McCauley DI, Yankelevitz DF, Naidich DP, McGuiness, G, Miettinen OS et al. Early Lung Cancer Action Project: overall design and findings from baseline screening. **Lancet 1999;354:99-105**

PROGRAMAS DE CRIBADO

2003

The NEW ENGLAND JOURNAL of MEDICINE

The NEW ENGLAND JOURNAL of MEDICINE

CLINICAL PRACTICE

The Solitary Pulmonary Nodule

David Ost, M.D., Alan M. Fein, M.D., and Steven H. Feinsilver, M.D.

Table 1. Assessment of the Risk of Cancer in Patients with Solitary Pulmonary Nodules.

Variable	Risk of Cancer		
	Low	Intermediate	High
Diameter of nodule (cm)	<1.5	1.5–2.2	≥2.3
Age (yr)	<45	45–60	>60
Smoking status	Never smoked	Current smoker (≤20 cigarettes/day)	Current smoker (>20 cigarettes/day)
Smoking-cessation status	Quit ≥7 yr ago or never smoked	Quit <7 yr ago	Never quit
Characteristics of nodule margins	Smooth	Scalloped	Corona radiata or spiculated

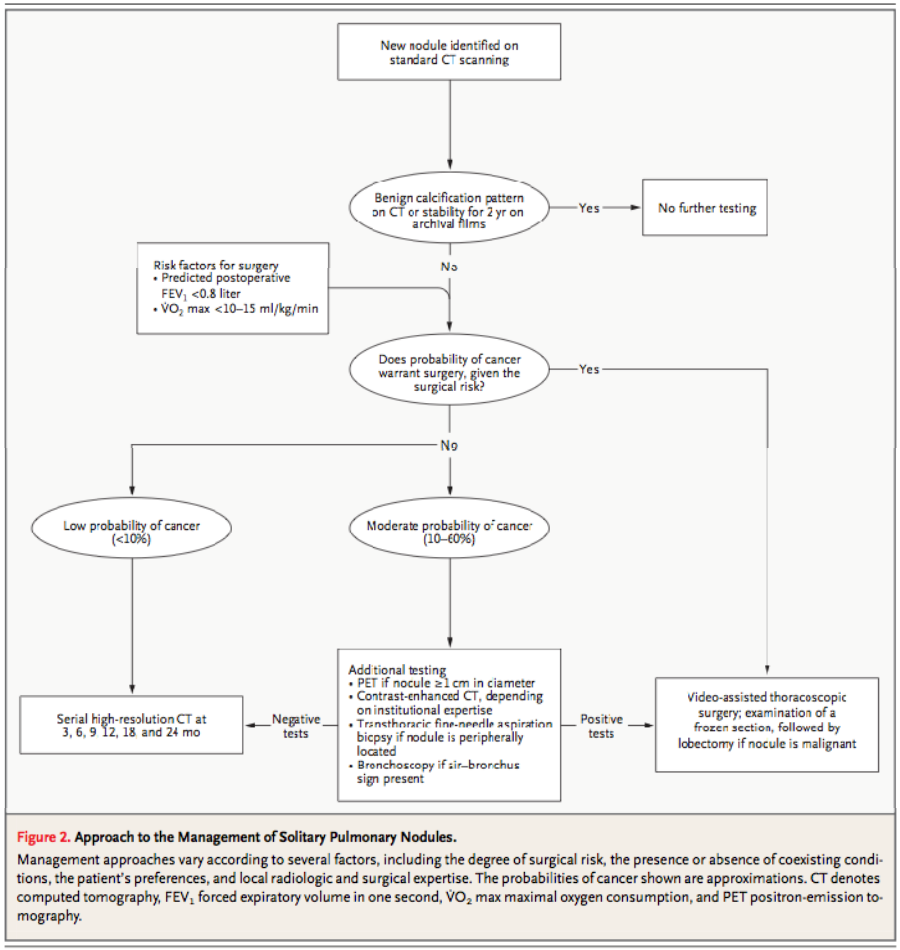


Figure 2. Approach to the Management of Solitary Pulmonary Nodules.

Management approaches vary according to several factors, including the degree of surgical risk, the presence or absence of coexisting conditions, the patient's preferences, and local radiologic and surgical expertise. The probabilities of cancer shown are approximations. CT denotes computed tomography, FEV_1 forced expiratory volume in one second, $\dot{V}O_2$ max maximal oxygen consumption, and PET positron-emission tomography.

PROGRAMAS DE CRIBADO

2005

Fleischner

Fleischner Society Recommendations
Incidental Pulmonary Nodule Follow-up

Recommendations for Follow-up and Management of Nodules Smaller than 8 mm Detected Incidentally at Nonscreening CT

Nodule Size (mm)*	Low-Risk Patient†	High-Risk Patient‡
≤4	No follow-up needed§	Follow-up CT at 12 mo; if unchanged, no further follow-up‖
>4–6	Follow-up CT at 12 mo; if unchanged, no further follow-up‖	Initial follow-up CT at 6–12 mo then at 18–24 mo if no change‖
>6–8	Initial follow-up CT at 6–12 mo then at 18–24 mo if no change	Initial follow-up CT at 3–6 mo then at 9–12 and 24 mo if no change
>8	Follow-up CT at around 3, 9, and 24 mo, dynamic contrast-enhanced CT, PET, and/or biopsy	Same as for low-risk patient

Note.—Newly detected indeterminate nodule in persons 35 years of age or older.

* Average of length and width.

† Minimal or absent history of smoking and of other known risk factors.

‡ History of smoking or of other known risk factors.

§ The risk of malignancy in this category (<1%) is substantially less than that in a baseline CT scan of an asymptomatic smoker.

‖ Nonsolid (ground-glass) or partly solid nodules may require longer follow-up to exclude indolent adenocarcinoma.

Radiology, 2005 Nov;237(2):395-400.

PROGRAMA I-ELCAP

2006

The NEW ENGLAND JOURNAL of MEDICINE

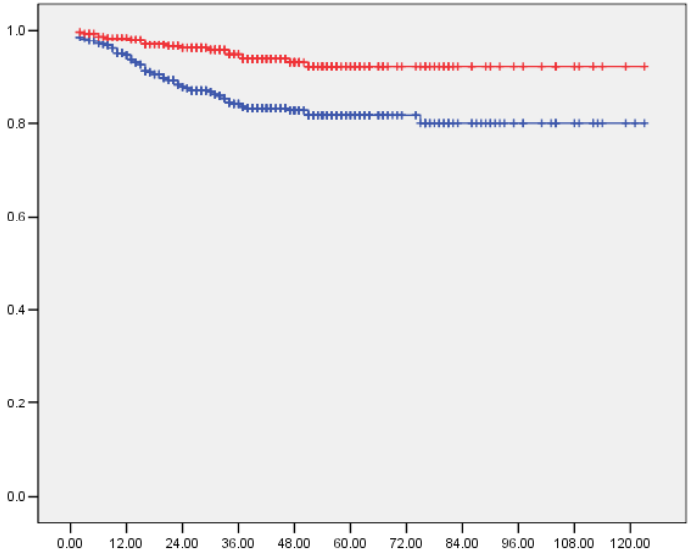
I-ELCAP

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 26, 2006 VOL. 355 NO. 17

Survival of Patients with Stage I Lung Cancer Detected on CT Screening

The International Early Lung Cancer Action Program Investigators*



- 31.567 individuos (1993-2005).
- 484 CP.
- 412 en estadio I clínico (85%).
- Supervivencia 88% a los 10 años.

PROGRAMAS DE CRIBADO

2011

The NEW ENGLAND JOURNAL of MEDICINE

NLST

The NEW ENGLAND JOURNAL of MEDICINE

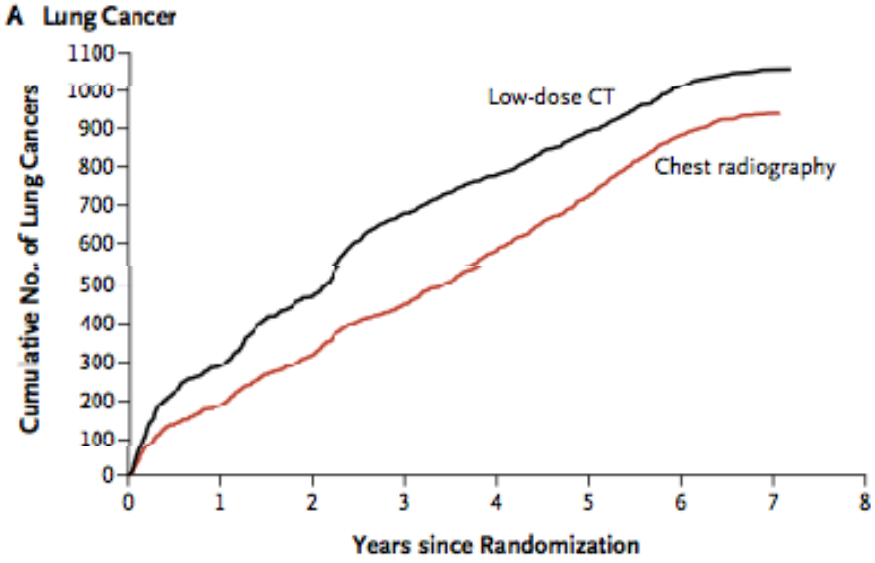
ESTABLISHED IN 1812 AUGUST 4, 2011 VOL. 365 NO. 5

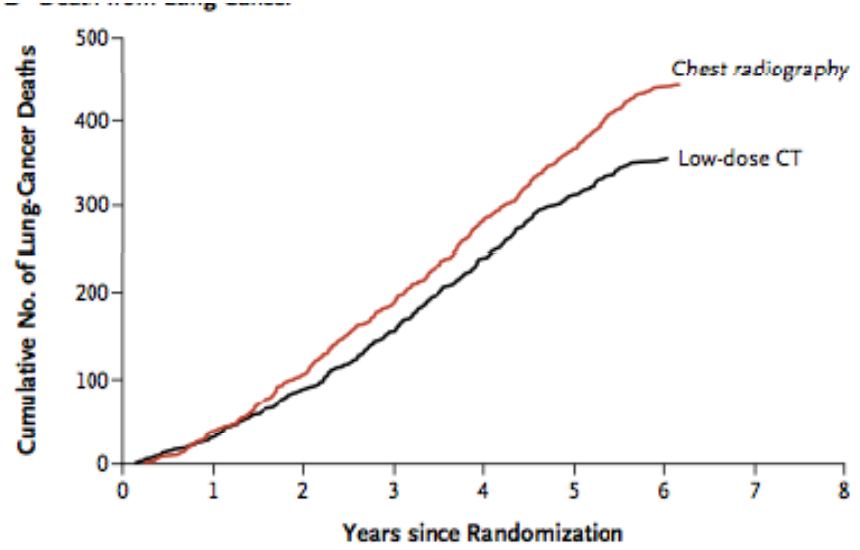
53.454

RX vs TC

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

The National Lung Screening Trial Research Team*





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Todo lo que necesita para su v

CT Scans Cut Lung Cancer Deaths, Study Finds

By GARDINER HARRIS
Published: November 4, 2010

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WASHINGTON — Annual CT scans of current and former heavy smokers reduced their risk of death from lung cancer by 20 percent, a huge government-financed study has found. Even more surprising, the scans seem to reduce the risks of death from other causes as well, suggesting that the scans could be catching other illnesses.

Enlarge This Image

Claudia Henschke

Suspicious nodules that may indicate lung cancer can be seen in a CT scan of the lung (above), but not in an X-ray (below).

Multimedia

Back Story With Gardiner Harris

The findings represent an enormous advance in cancer detection that could potentially save thousands of lives annually, although at considerable expense. Lung cancer will claim about 157,000 lives this year, more than the deaths from colorectal, breast, pancreatic and prostate cancers combined. Most patients discover their disease too late for treatment, and 85 percent die from it.

No screening method had proved effective at reducing mortality from the disease. Four randomized controlled trials done during the 1970s showed that chest X-rays, while they helped catch cancers at an earlier stage, had no effect on overall death rates. Since then, researchers have suggested that CT scans — which use coordinated X-rays to

EL PAÍS.com | **Sociedad**

Martes, 9/11/2010, 20:33

Inicio | Internacional | España | Deportes | Economía | Tecnología | Cultura | Gente y TV | Sociedad | Opinión | Blogs | Participa

Educación | Salud | Ciencia | El Viajero | El País semanal | Domingo

EL PAÍS.com > Sociedad

13 de 17 en Sociedad | anterior | siguiente

Los TAC son más eficaces para prevenir el cáncer de pulmón que los rayos X

Un estudio estadounidense detecta que las pruebas generalizadas evitan un 20% de las muertes

EMILIO DE BENITO - Madrid - 08/11/2010

Vota | Resultado | 29 votos | Twittear | 8 | Recomendar | 28

La discusión entre quienes defienden que se hagan pruebas a gran escala a la población de riesgo de desarrollar un cáncer de pulmón y los que creen que estas son excesivamente caras y aportan poco tiene un nuevo elemento de juicio. Un estudio del Instituto Nacional del Cáncer de EE UU ha detectado que los TAC (tomografía axial computerizada) es una prueba de imagen más eficaz para detectar los tumores incipientes que los rayos X, con el consiguiente efecto en la curación de los pacientes. En concreto, que se evita un 20% de muertes.

- El cáncer de pulmón será el más mortal en mujeres en 2020

La noticia en otros webs

- webs en español
- en otros idiomas

En el estudio participaron 53.000 personas fumadoras, que se dividieron en dos grupos iguales. A los tres años, la población que se había controlado mediante una placa de rayos X anual registró 442 defunciones; entre los otros, que se sometieron a un TAC por año (una prueba más cara y compleja) los fallecidos fueron 354.

Estos resultados serían lógicamente mejores si en vez de comparar con un grupo al que se sigue con rayos X, se hiciera con un grupo que no se somete a un cribado especial, señalan médicos del Centro de Investigaciones de Medicina Aplicada (CIMA) de la Universidad de Navarra, que habían hecho un estudio similar (el IELCAP).

El problema es que en España ni siquiera está contemplado hacer un cribado anual a todos los fumadores y ex fumadores. La futura ley de Salud Pública prevé que se limiten, y siempre con un estudio previo de su coste y su eficacia. Si no, un ex fumador de más de 50 años debería hacerse cada año prueba de cáncer de pulmón, de colon y de próstata, por ejemplo. O, en el caso de las mujeres, de colon, pulmón, útero y mama, más otras que puedan surgir, lo que multiplicaría las pruebas. Pero los centros

publicidad

Última Hora

Epidemia de cólera en Haití. Las autoridades sanitarias de Haití han declarado hoy "problema de seguridad nacional" la epidemia de cólera que afecta al país y que ha causado 583 muertos, entre ellos uno en el suburbio de Cité Soleil, informa Efe. http://cort.as/0N5Z

el_pais — Menos de 1 minuto

RT @andreu: **Arden diez barcos en Ibiza.** Un incendio afecta a diez embarcaciones depositadas en un solar junto a una nave industrial de Ibiza. Grandes llamas consumen el plástico de los cascos y el combustible. 150 personas han sido desalojadas del Club de Campo de Sant Jordi.

PROGRAMAS DE CRIBADO

CT screening for lung cancer: countdown to implementation

John K Field, David M Hansell, Stephen W Duffy, David R Baldwin

www.thelancet.com/oncology Vol 14 December 2013

Implementation of lung cancer CT screening is currently the subject of a major policy decision within the USA. Findings of the US National Lung Screening Trial showed a 20% reduction in lung cancer mortality and a 6·7% decrease in all-cause mortality; subsequently, five US professional and clinical organisations and the US Preventive Services Task Force recommended that screening should be implemented. Should national health services in Europe follow suit? The European community awaits mortality and cost-effectiveness data from the NELSON trial in 2015–16 and pooled findings of European trials. In the intervening years, a recommendation is proposed that a demonstration trial is done in the UK. In this Review, we summarise the existing evidence and identify questions that remain to be answered before the implementation of international lung cancer screening programmes.

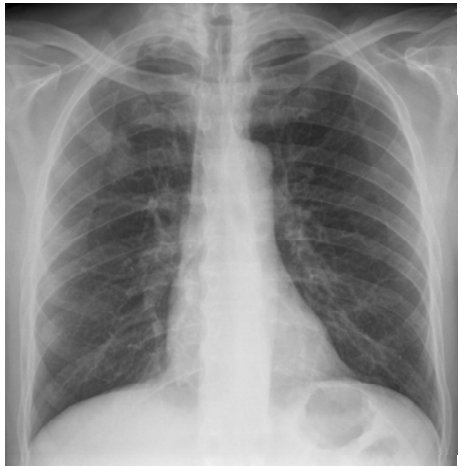
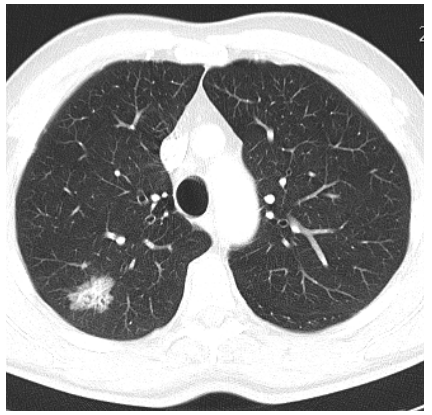
	NCCN	ALA	AATS	ACCP and ASCO	ACS
Age (years)	55–74	55–74	55–79	55–74	55–74
Smoking history (pack-years)	30	30	30	30	30
Last smoked within (years)	15	15	NA	15	15
Other recommendations	20 pack-years, age >50 years, and one other risk factor	..	20 pack-years, age >50 years, and if 5% risk over 5 years	..	..
Interval	Annual	Annual	Annual	Annual	Annual

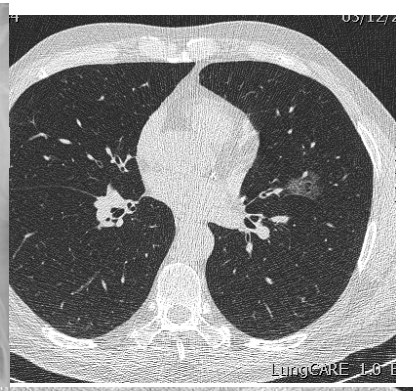
NCCN=National Comprehensive Cancer Network. ALA=American Lung Association. AATS=American Association of Thoracic Surgeons. ACCP=American College of Chest Physicians. ASCO=American Society of Clinical Oncology. ACS=American Cancer Society. NA=not available.

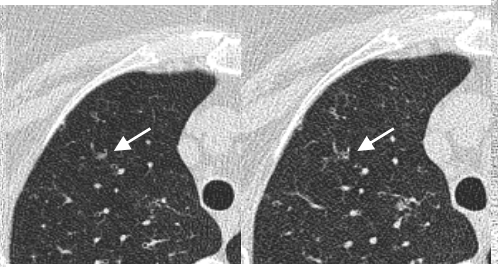
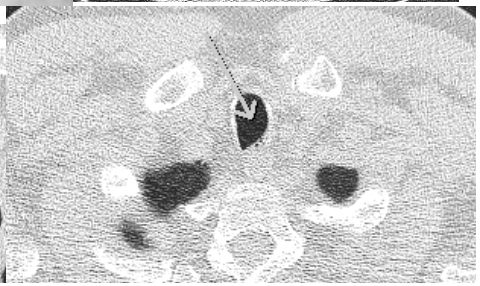
Table 1: **Recommendations for lung disease CT screening**

CRIBADO DE CÁNCER DE PULMÓN

- PROBLEMAS DEL CRIBADO
  - Pequeño = Temprano ?
  - PROBLEMAS DE PERCEPCIÓN
  - TAMAÑO
    - Radiografía convencional
      - Tamaño medio : 2,4 cm
      - Amplio rango 0,7-9,4 cm
      - Aceptable: 1 cm
    - TC
      - <1% nódulos detectables miden 1,5 mm
      - 48% nódulos detectables son < 3mm
      - 3 mm es el tamaño medio de detección
  - LOCALIZACIÓN
    - RADIOGRAFÍA CONVENCIONAL
      - Vértices pulmonares
      - Mediastino e Hilio
      - Costillas
      - Diafragma
    - TC
      - Centrales
      - Periféricos (< 3mm



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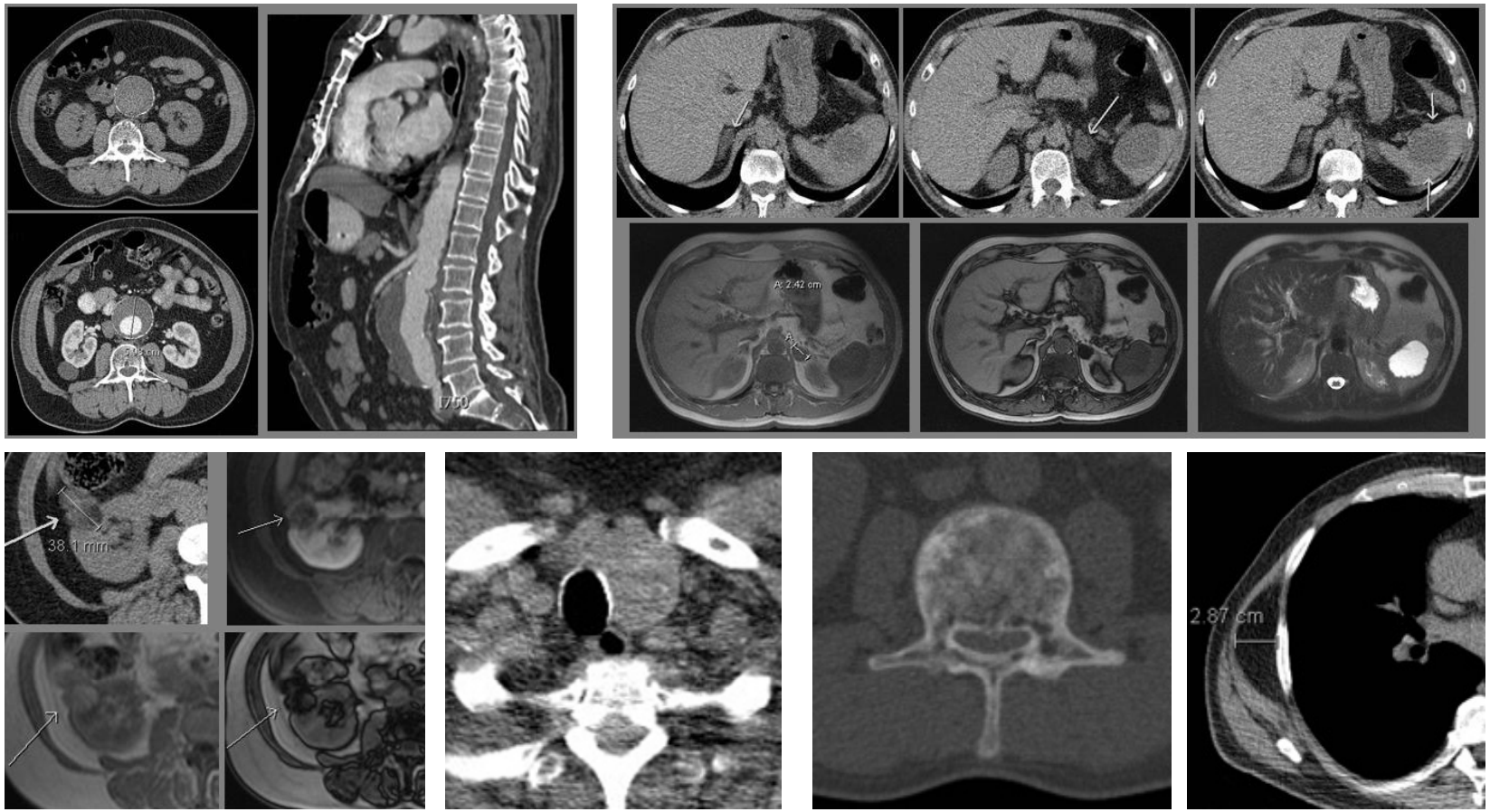
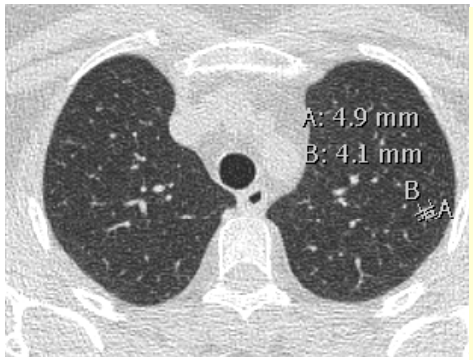
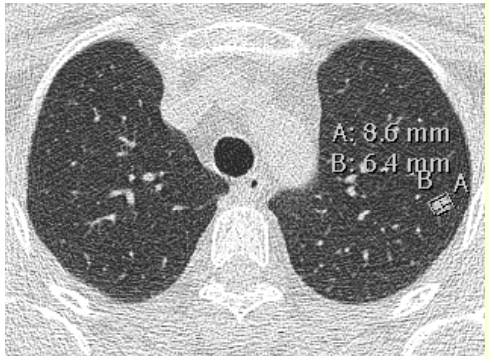
- PROBLEMAS DEL CRIBADO
  - HALLAZGOS INCIDENTALES



CRIBADO DE CÁNCER DE PULMÓN

- PROBLEMAS DEL CRIBADO
  - VALORAR EL CRECIMIENTO DEL NÓDULO (Tiempo doblaje= 30-400 d)



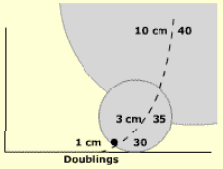


Doubling Time

One cell divides into two, 2 to 4, 4 to 8, 8 to 16 etc. Exponential growth is found in many primary and metastatic malignancies. Use these calculators to determine doubling time.

Initial Film Date	23/11/1998	Enter dates as dd/mm/yyyy
Final Film Date		Today
Days between studies		

Find number of days between studies | Restaurar



Initial Diameter (mm)	
Final Diameter (mm)	
Time between studies (days)	
Doubling Time (days)	

Calculate Doubling Time | Restaurar

Initial Volume (mm^3)	
Final Volume (mm^3)	
Time between studies (days)	
Doubling Time (days)	

Calculate Doubling Time | Restaurar

Model of Exponential Growth - click to play

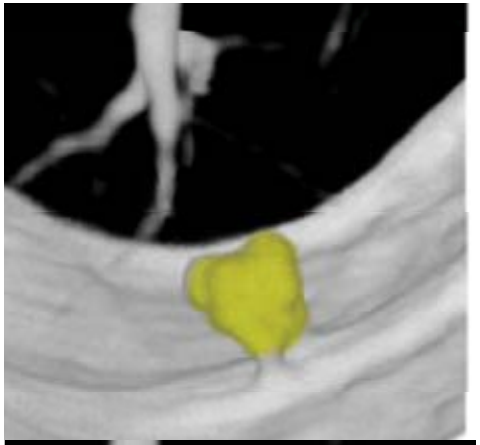
Play

Clinical Value of Growth Rate:

- Differential diagnosis
- Predictor of longevity
- Planning screening programs
- Evaluate therapy
- Study natural history

Growth rate of malignant tumors generally between **30** and **500** days (median **100** days).

Error rate in measuring growth rate: 7%



www.chestx-ray.com

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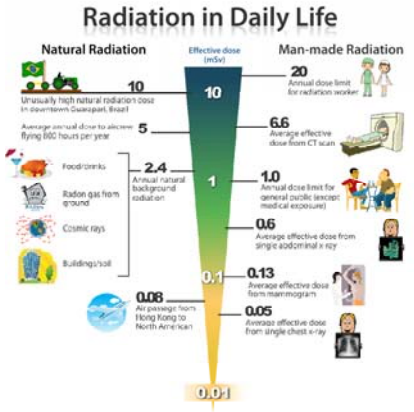
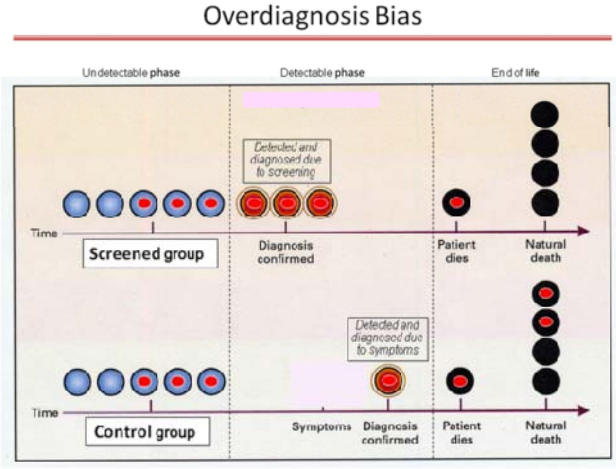


- PROBLEMAS DEL CRIBADO
  - INTRINSECOS:
    - Número de rondas y frecuencia
    - Definir población diana
    - Punto corte del tamaño del nódulo:
      - 28 % positivo (≥4 mm) : 96.4% fueron FP, 4.2% procedimiento quirúrgico y 2.2% biopsia
      - 1.4% complicaciones serias
    - Psicológico: Ansiedad
    - Irradiación: 55 a 79 a., >25 CT
    - Coste
  - SOBREDIAGNÓSTICO:
    - 18% EN NLST:
      - 22.5 % eran de células no pequeñas (IC 95%, 9.7%-34.3%)
      - 78.9 % eran bronquioloalveolar (IC 95%, 62.2%-93.5%)



Harris RP, et al. JAMA 9 dec 2013.

Patz EF, et al. JAMA 9 dec 2013.

PROGRAMA I-ELCAP

www.ielcap.org

- Estudio de cohorte, no aleatorio
- 49 Centros
- Voluntarios asintomáticos
- Mismo protocolo aunque flexible
- TC baja dosis
- Estudio basal y seguimiento anual

Criterios de inclusión:

- Mayores de 50 años

- Fumadores >15 p/año

- No haber padecido enfermedad maligna previa

PROGRAMA I-ELCAP

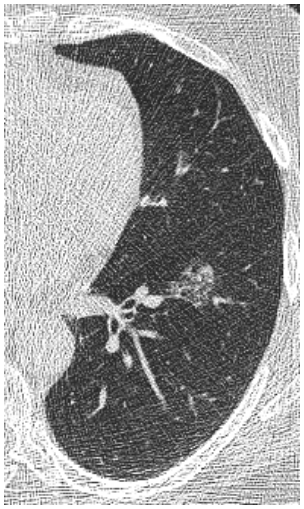
www.ielcap.org

- PROTOCOLO DE IMAGEN:
  - **4 (16) MDCT**
  - **Inspiración máxima**
  - **No contraste i.v.**
  - **Colimación fina <1,25 mm (1 mm, pitch 1,1)**
  - **Tiempo medio de scan 10-15 segundos**
  - **Radiación tan baja como sea posible manteniendo la calidad (<120kV, <40mAs)**
  - **Dosis radiacion: <2 mSv (1,4 mSv)**

PROGRAMA I-ELCAP

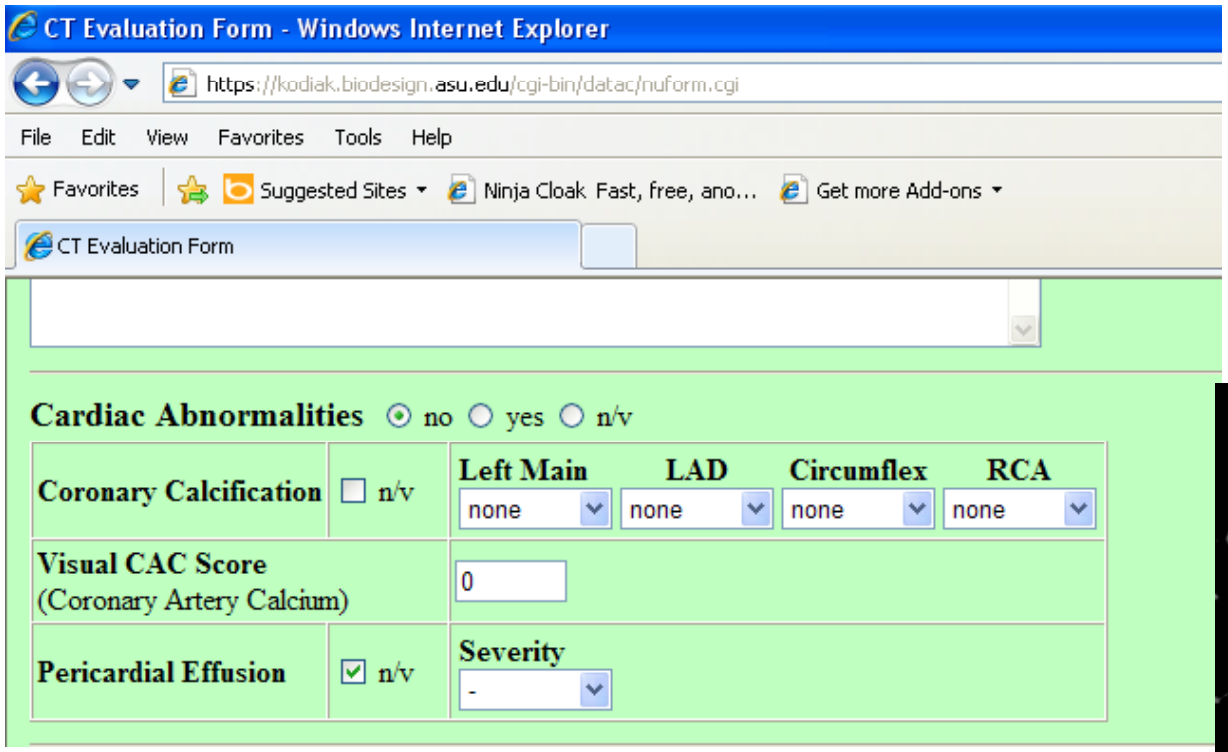
www.ielcap.org

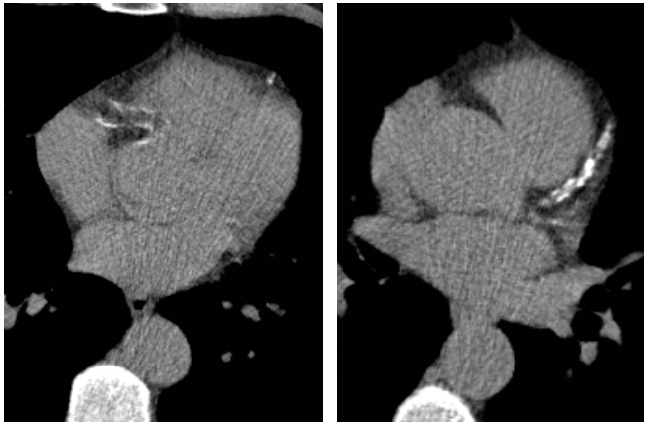
- CONSISTENCIA NODULO:
  - **SÓLIDOS:**
  - **PART-SOLID:**
  - **NO SÓLIDO/ GROUND-GLASS**
- CONTORNOS:
- CALCIFICACION
- ESPICULACION
- ANORMALIDADES PARENQUIMA
- CRECIMIENTO: **< 5mm >50%**
  5-9mm >30%
  ≥10mm >20%

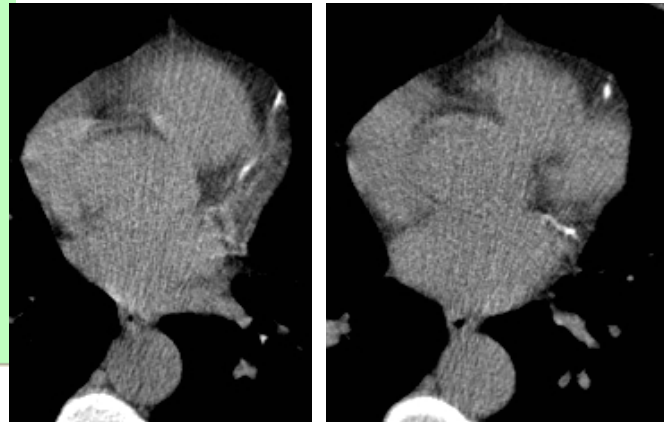


PROGRAMA I-ELCAP

Valoración visual del Score Coronario







Mínima= < 1/3 de longitud
Moderada= 1/3 a 2/3 longitud
Severa= >2/3 logitud

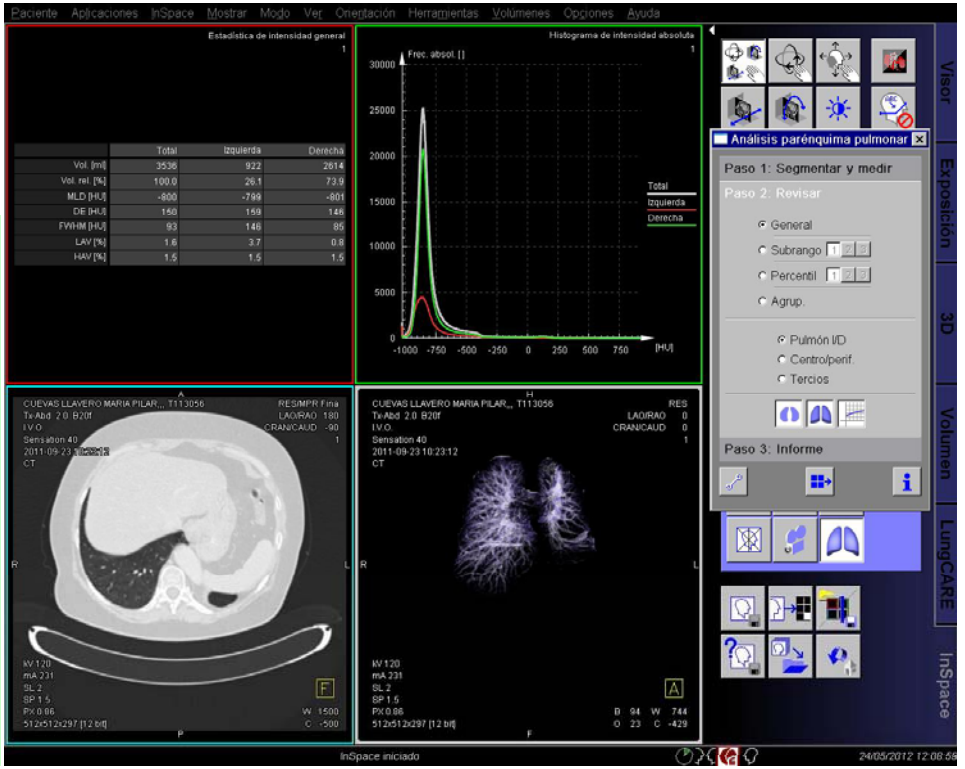
PROGRAMA I-ELCAP

Valoración de Enfisema

Other Parenchymal Abnormalities ○ no ⊙ yes ○ n/v

Emphysema	☐ n/v	○ none ⊙ mild ○ moderate ○ severe				
		RUL	**RML**	**RLL**	**LUL**	**LLL**
Cysts/Blebs/Bullae	○ no ⊙ yes ○ n/v	☑	☐	☐	☑	☐
Small Airways Disease/Bronchiolectasis	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Bronchiectasis	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Interstitial lung disease (other than honeycombing)	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Honeycombing	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Regional or Diffuse Consolidation (focal - put in nodule grid)	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Scarring	○ no ⊙ yes ○ n/v	☑	☐	☐	☑	☐
		apical	☐ unilateral		☑ bilateral	
Rounded Atelectasis	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Other Atelectasis	⊙ no ○ yes ○ n/v	☐	☐	☐	☐	☐
Bronchial Resection Margin	⊙ N/A ○ Normal ○ Abnormal ○ n/v	☐ Right ☐ Left				
Pleural Abnormalities						
Pleural Effusion	☐ n/v	**Right** none	**Left** none			
Pleural Thickening/Fissural Plaques	⊙ no ○ yes ○ n/v	☐ Right ☐ Left ☐ Calcification				
Pleural Tumor	⊙ no ○ yes ○ n/v	**Describe:**				

Additional Comments on Parenchymal or Pleural Abnormalities (including post-op changes)



PROGRAMA I-ELCAP

Valoración de MAMA, HUESO Y ABDOMEN SUPERIOR

Breast Abnormalities ⊙ no ○ yes ○ n/v

	Abnormalities		Specify
Right Breast	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	
Left Breast	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	

Additional Comments on Breast Abnormalities

Bone Abnormalities

	Abnormalities
Bones	⊙ no ○ yes ○ n/v

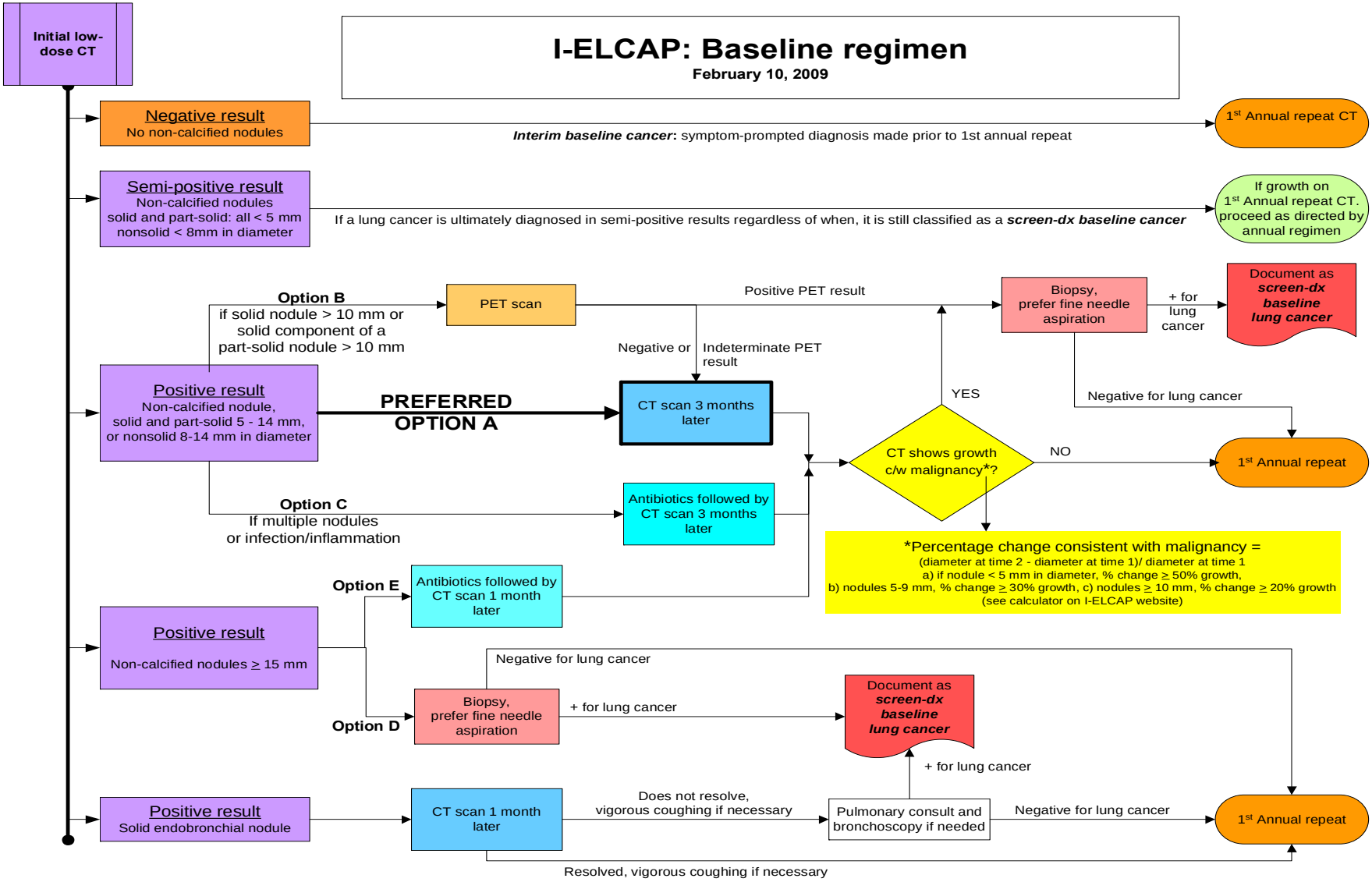
Specify Bone Abnormalities

Abdominal Abnormalities ○ no ⊙ yes ○ n/v

	Abnormalities		Specify
Gall Bladder	○ no ⊙ yes ○ n/v	☐ Cholecystectomy ☑ Stones ☐ Sludge ☐ Other	
Spleen	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	
Liver	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	
Pancreas	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	
Adrenals	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	
Kidneys	⊙ no ○ yes ○ n/v	☐ Calcification ☐ Cyst ☐ Mass ☐ Other	

Additional Comments on Abdominal Abnormalities

PROGRAMA I-ELCAP



Initial low-dose CT

I-ELCAP: Baseline regimen

February 10, 2009

NEGATIVO/ SEMIPOSITIVO

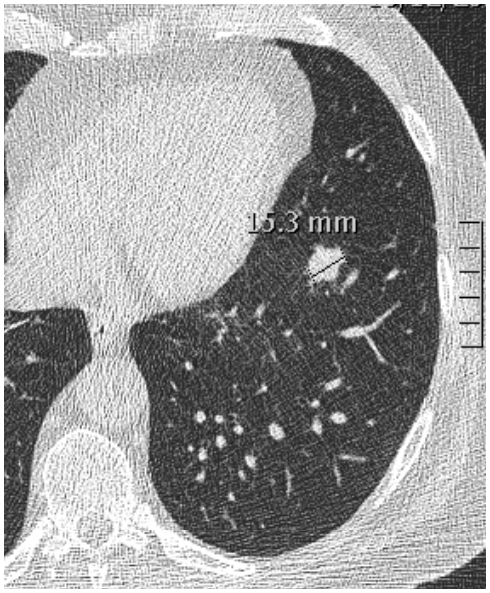
Sólido / Parc. sólido < 5mm → Anual

No sólido *CUALQUIER TAMAÑO* → Anual

POSITIVO **Sólido / P. S. 5-14mm** → **3 M**

No crece → STOP → Anual

Crece → **BIOPSIA**



Initial low-dose CT

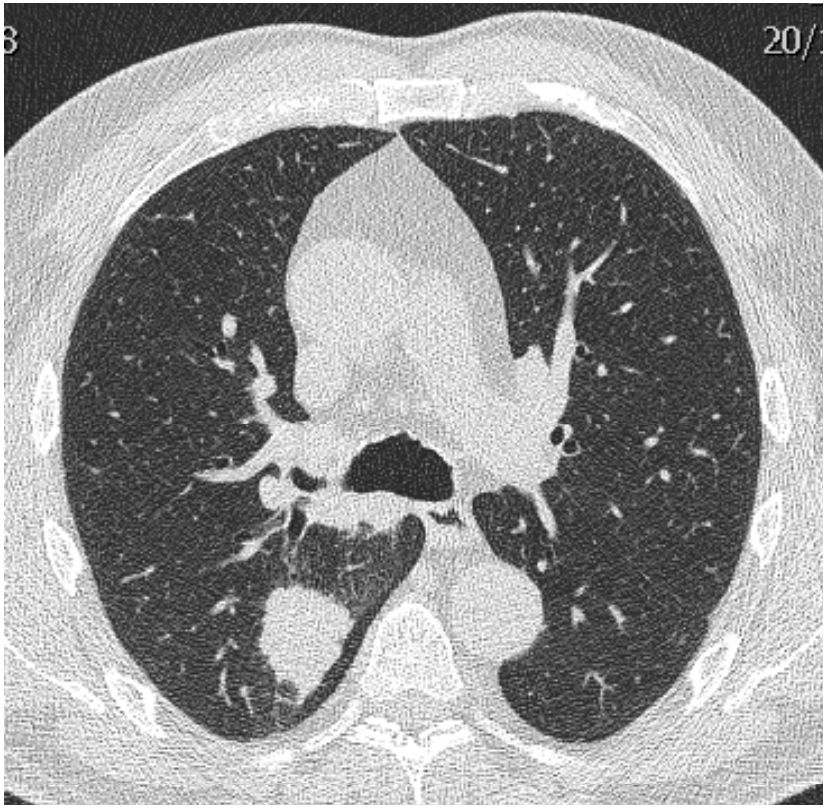
I-ELCAP: Baseline regimen

February 10, 2009

POSITIVO Sólido / P. S. ≥ 15mm → Muy sugestivo de carcinoma

↓

BIOPSIA



Initial low-dose CT

I-ELCAP: Baseline regimen

February 10, 2009

POSITIVO

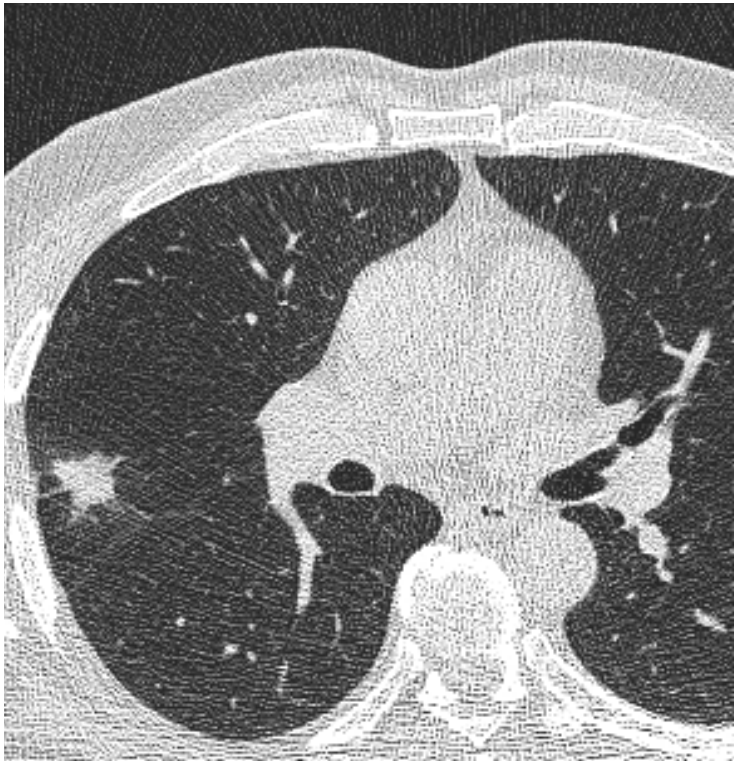
Sólido / P. S. ≥ 15mm

Múltiples S / P. S

→ **Infección / Inflamación**

↓

Abt + CONTROL 1 / 3 M



↓

Resolución parcial o completa

↓

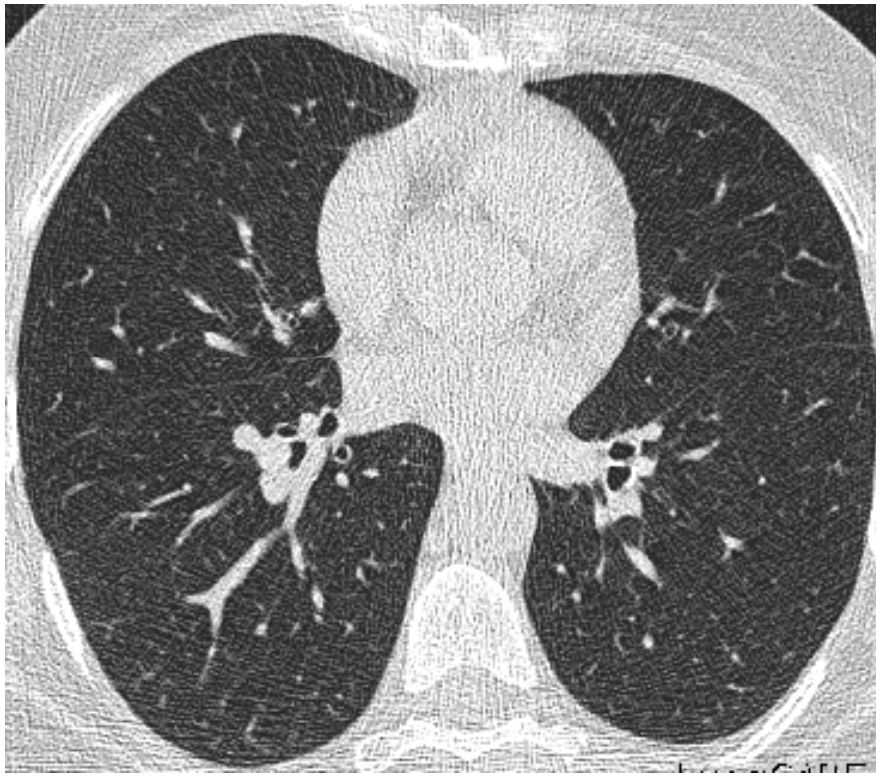
CONTROL ANUAL

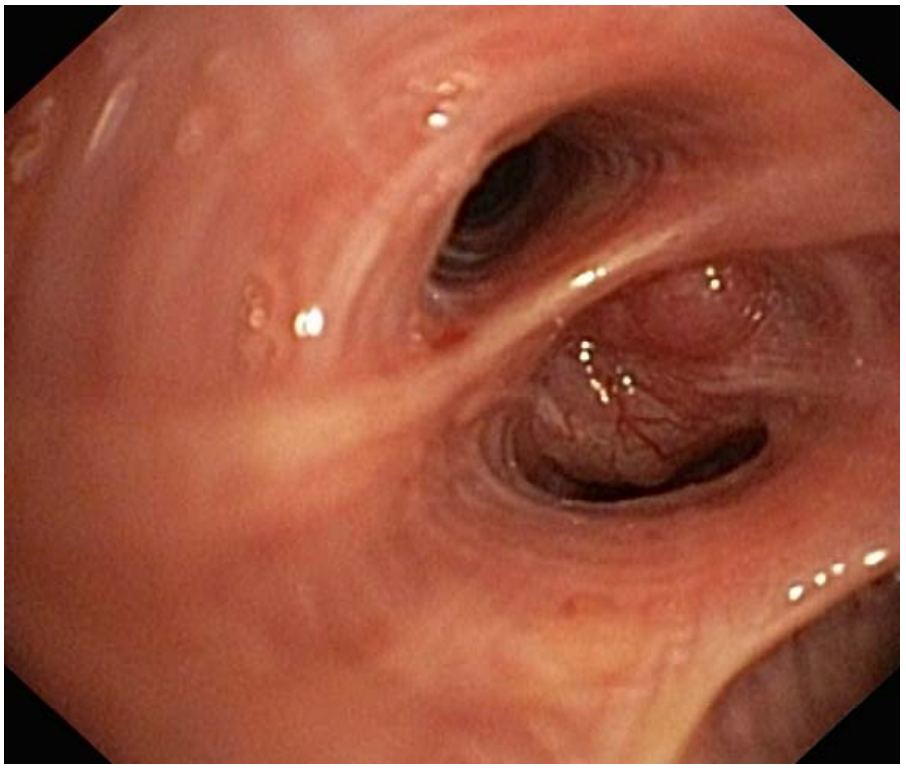
Initial low-dose CT

I-ELCAP: Baseline regimen

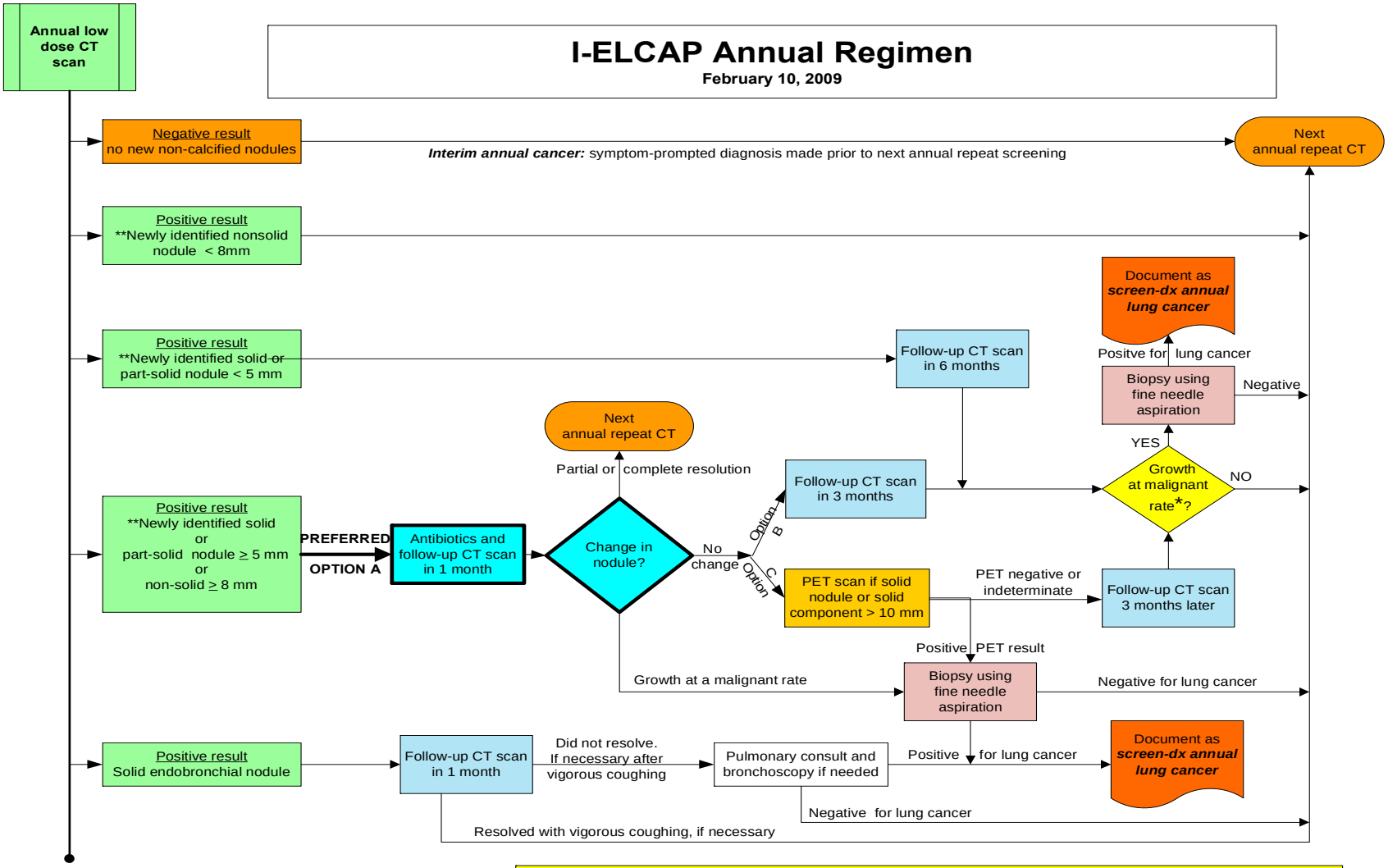
February 10, 2009

POSITIVO → **Endobronquial ≥5 mm** → **Control 1 mes**





PROGRAMA I-ELCAP



**Newly seen nodules include those not previously identified but recognized in retrospect on the prior CT because they are growing

*Percentage change consistent with malignancy =
(diameter at time 2 - diameter at time 1)/ diameter at time 1
a) if nodule < 5 mm in diameter, % change ≥ 50% growth; b) nodules 5-9 mm, % change ≥ 30% growth; c) nodules >, % change ≥ 20% growth
(see calculator on I-ELCAP website)

Annual low dose CT scan

I-ELCAP Annual Regimen

February 10, 2009

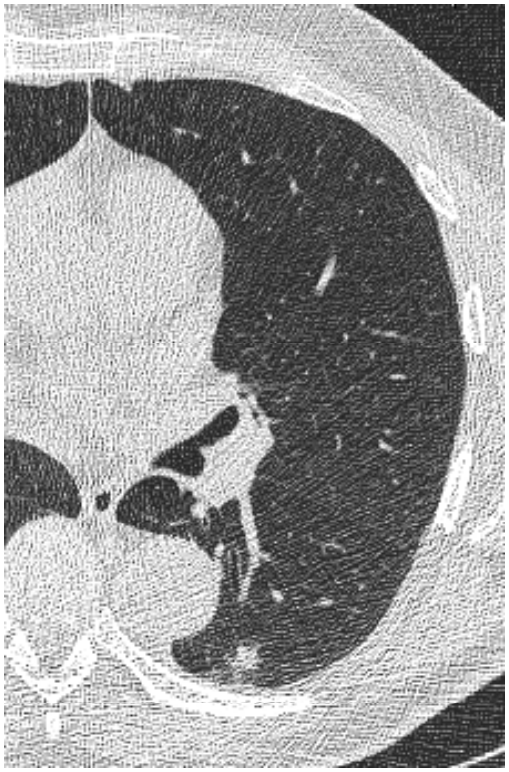
POSITIVO

Nuevo, sólido o parte sólida < 5mm

→ **Control 6 meses**

- No crece → **CONTROL ANUAL** STOP
- Crece → **BIOPSIA**

Nov 2009



May 2010

AP: ADC (micropapilar 45%, acinar 30%, sólido 20% y papilar 5%). Embolización linfática.

Annual low dose CT scan

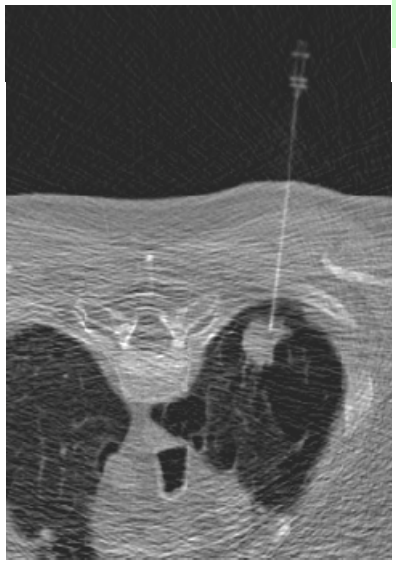
I-ELCAP Annual Regimen

February 10, 2009

POSITIVO

Nuevo, sólido o parte sólida ≥ 5mm

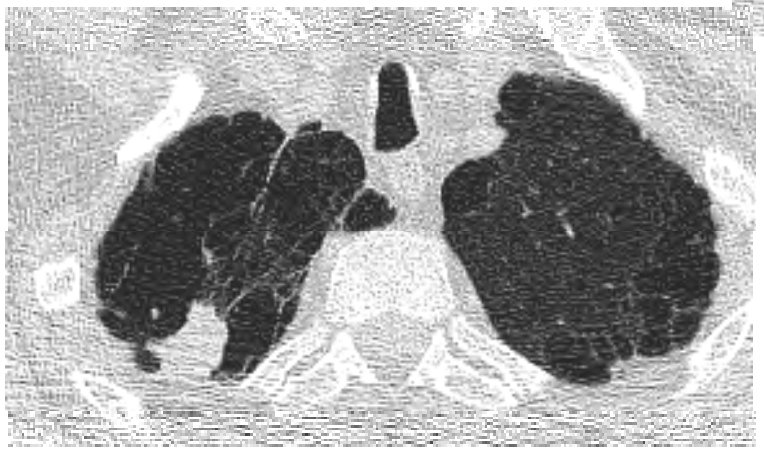
→ **Control 1 mes +/- Abt**



Crece

BIOPSIA

Julio 2012



Agosto 2012

Annual low dose CT scan

I-ELCAP Annual Regimen

February 10, 2009

POSITIVO

Nuevo, sólido o parte sólida ≥ 5mm

→ **Control 1 mes +/- Abt**

Resolución parcial/ completa

CONTROL ANUAL

STOP

Annual low dose CT scan

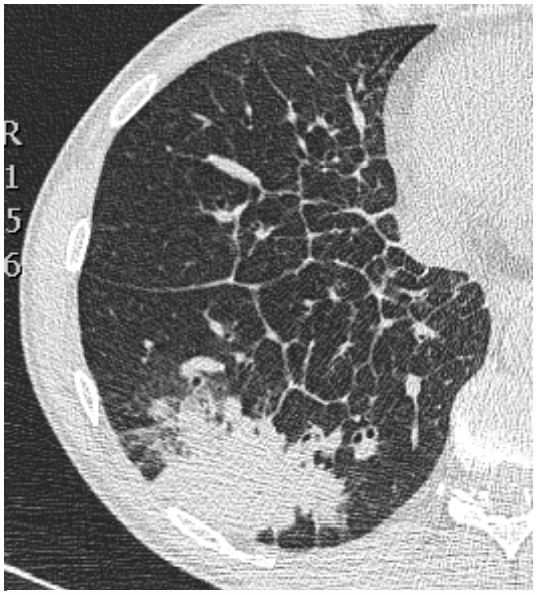
I-ELCAP Annual Regimen

February 10, 2009

POSITIVO

Nuevo, sólido o parte sólida ≥ 5mm

→ **Control 1 mes +/- Abt**



Sin cambios

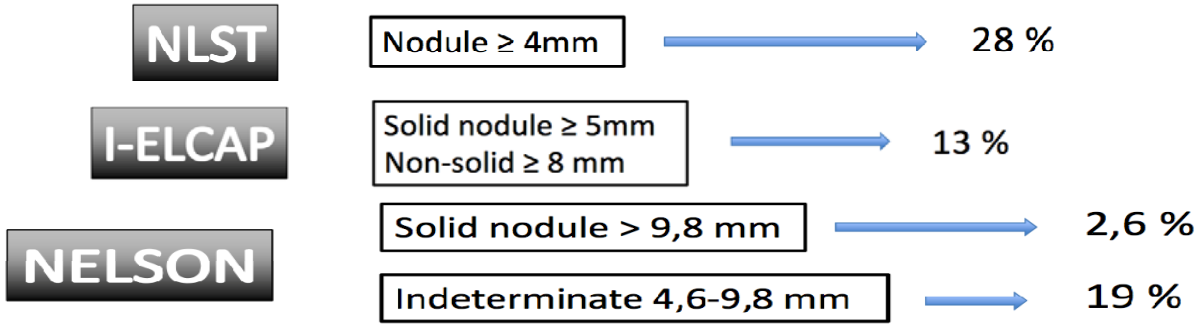
PET

– **+**

CONTROL 3 M

BIOPSIA

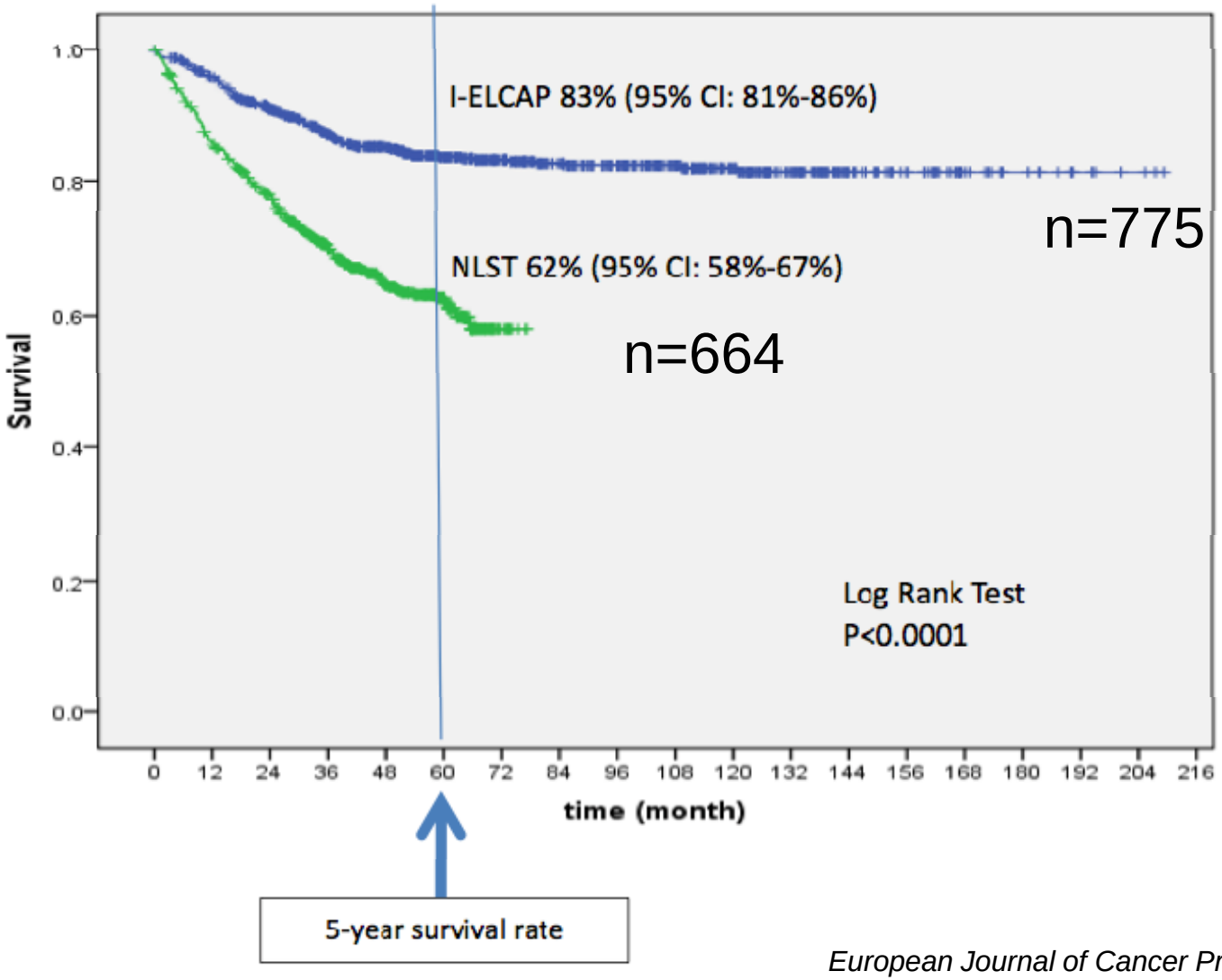
RESULTADOS



Estadio	IELCAP N=775	NLST N=644	NELSON N=209
Estadio I	602 (78%)	400 (62%)	148 (71%)
Estadio II	37 (5%)	46 (7%)	14 (7%)
Estadio IIIA	83 (11%)	59 (9%)	30 (14%)
Estadio IIIB	25 (3%)	50 (8%)	7 (3%)
Estadio IV	28 (3%)	80 (12%)	10 (5%)
Unknown	0 (0%)	9 (1%)	0 (0%)

European Journal of Cancer Prevention 2014.

RESULTADOS



European Journal of Cancer Prevention 2014.

NUESTROS RESULTADOS

Periodo: junio 2008 – abril 2014

POBLACION INCLUIDA	6070	Tamaño max (mm)	Media Tamaño (mm)
Total Nódulos	19251		
-Sólidos	15629	62	4.2
-Part-solid	421	44	7.65
-GGO	1982	21.5	6.07

NUESTROS RESULTADOS

POBLACION INCLUIDA	6070
Cáncer de pulmón	96
Metástasis melanoma	1
Linfoma	1
Tumores benignos	4
TOTAL	102
Otros cánceres	33

Falsos Positivos

1 Neumonitis granulomatosa
1 Lesión fibrosa colagenizada
1 Histiocitosis
1 Nódulo antracótico

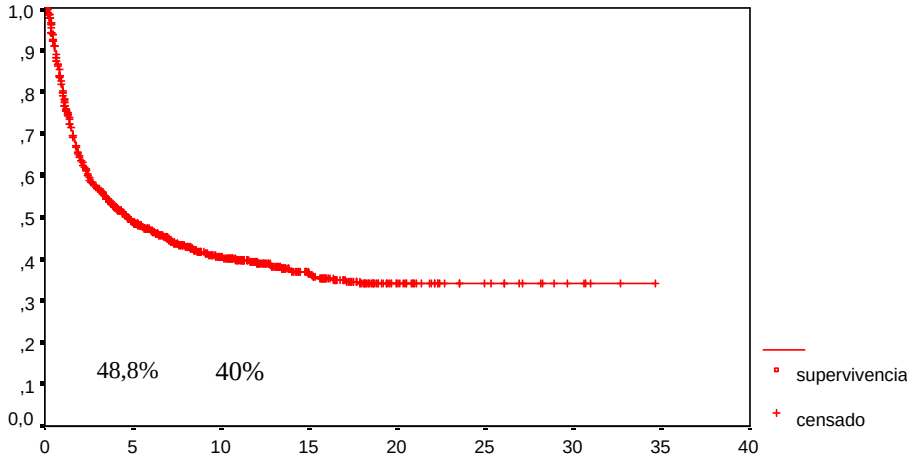
73.8 Estadio I

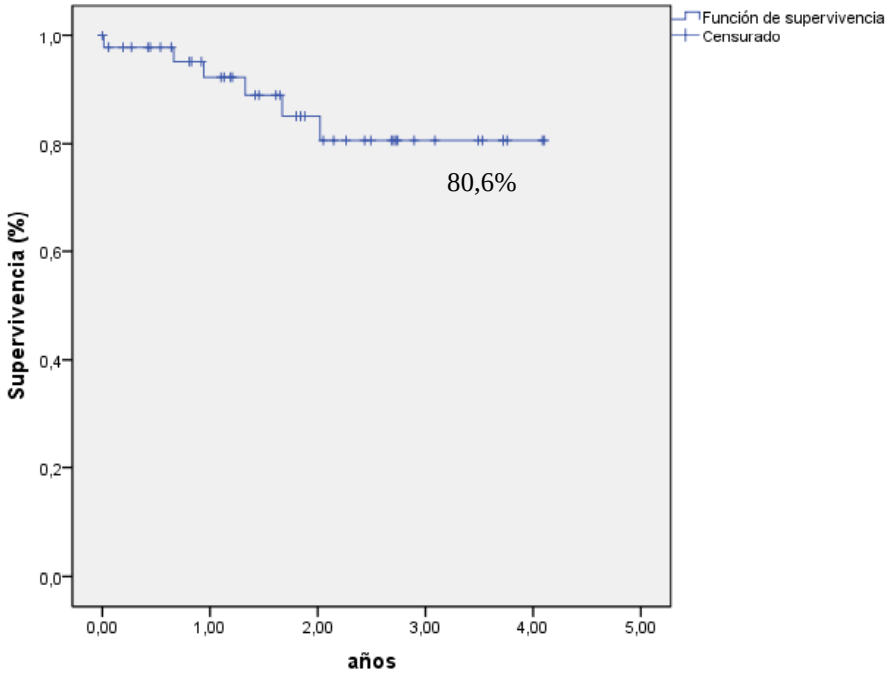
Varones: 73.9%
Mujeres: 26.1%
Edad : 59 ± 5,5 (rango 50-73)
Tabaco: 44.3 ± 16.8 (rango 20-90)
Fumador activo: 73.9%)
Tamaño tumoral: 17.7± 1.8 (rango 4-55)

NUESTROS RESULTADOS

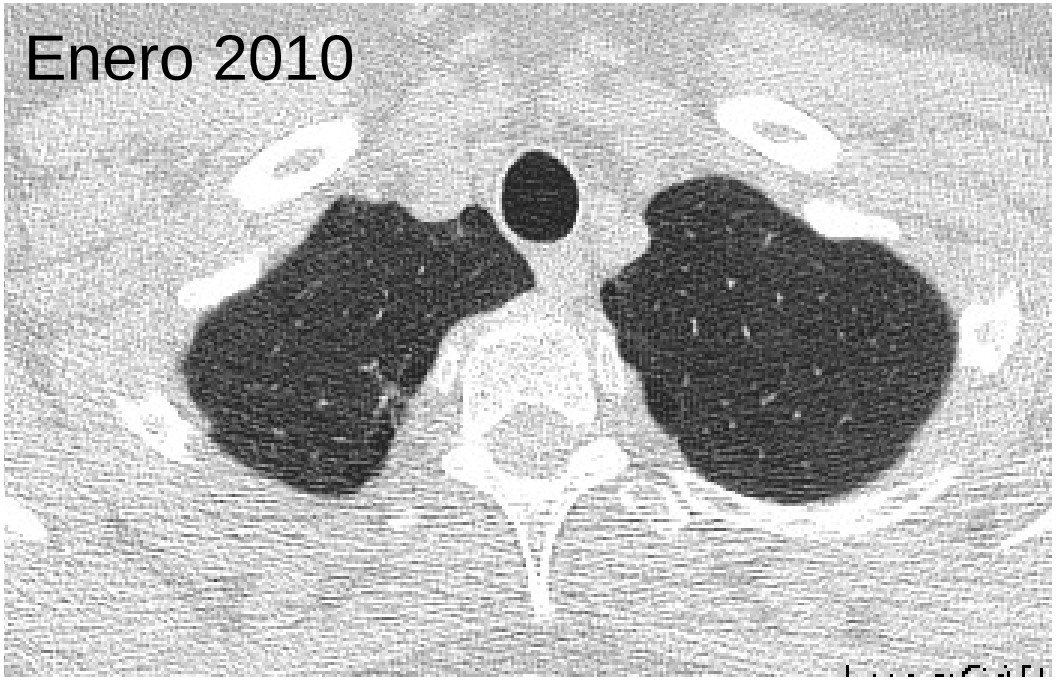
Supervivencia global

1733 pacientes

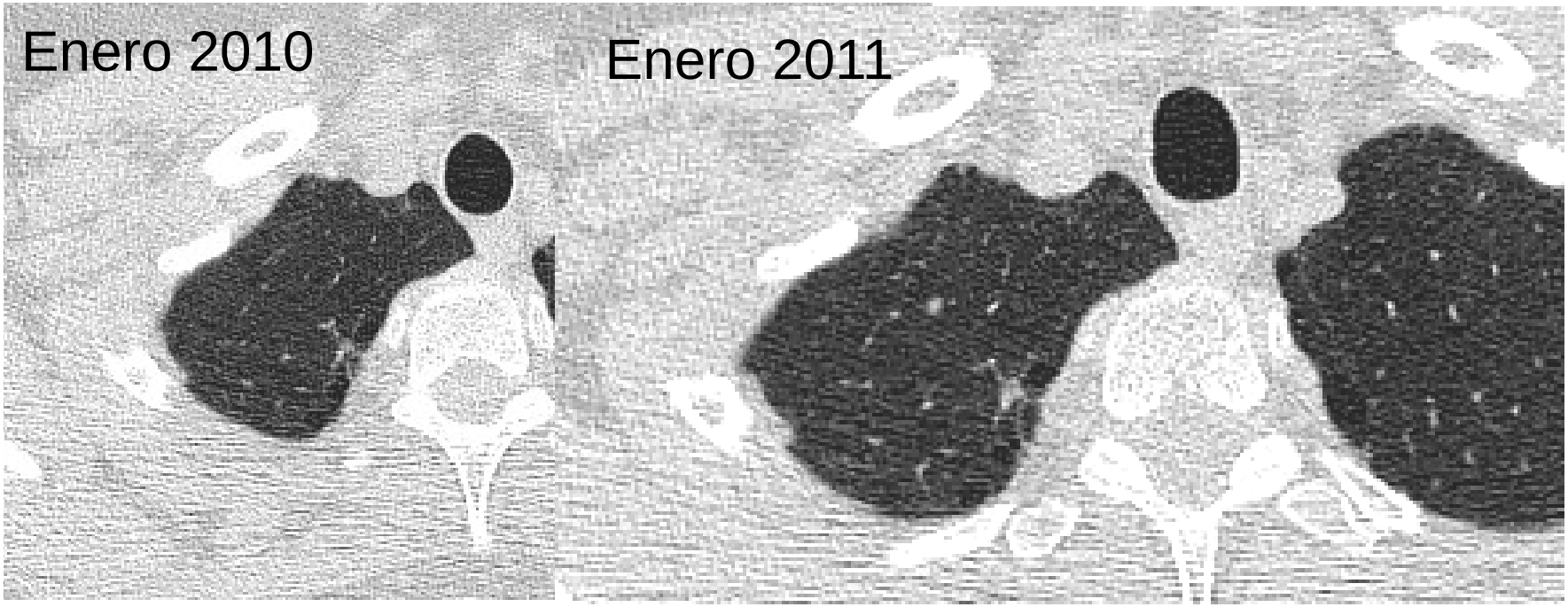




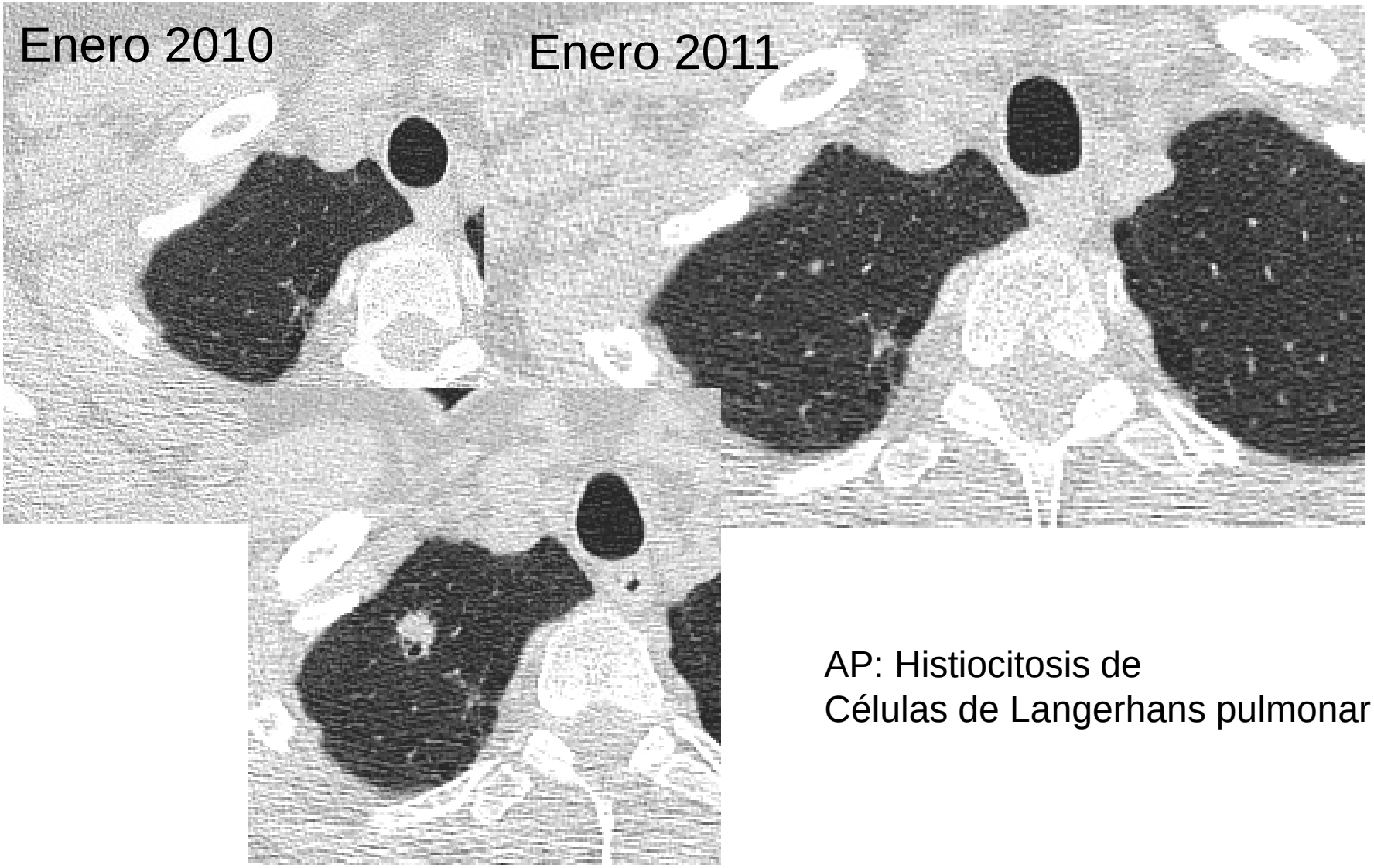
FALSOS POSITIVOS



FALSOS POSITIVOS

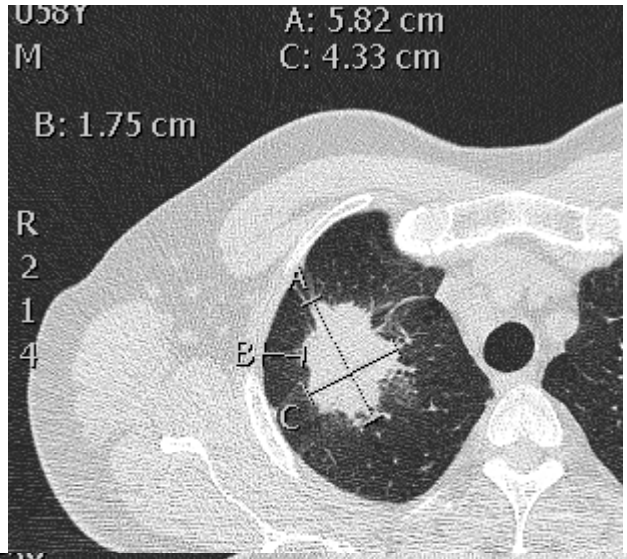


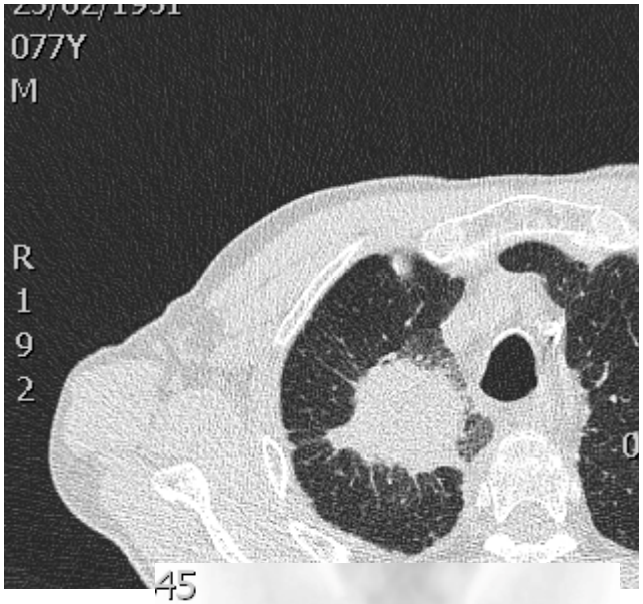
FALSOS POSITIVOS

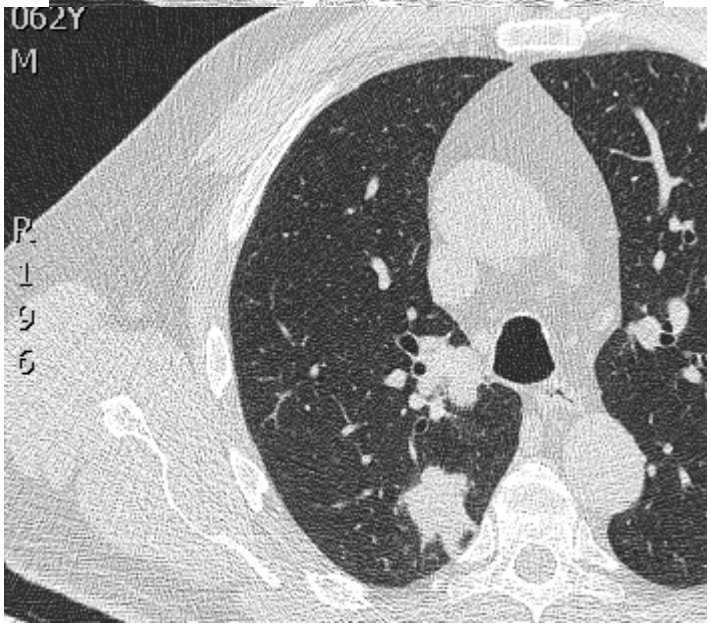


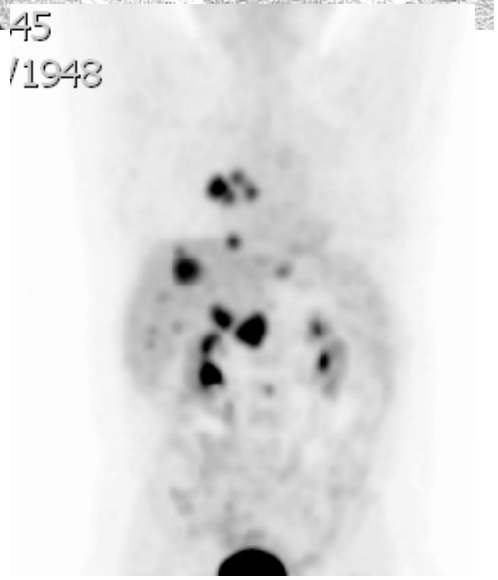
AP: Histiocitosis de
Células de Langerhans pulmonar

INOPERABLES









CONCLUSIONES

- Cribado con Radiografía de tórax: no efectivo.
- Cribado con TCBD:
  - ✧ Protocolo consensuado de seguimiento de nódulos:
    - ✧ Diámetro
    - ✧ Consistencia
    - ✧ Riesgo de cáncer
  - ✧ Aumento de detección de tumores en estadios precoces.
  - ✧ Aumento de supervivencia.
  - ✧ Disminución de mortalidad (20%).
- TCBD es seguro y con mínimas variaciones entre guías.

CRIBADO DE CÁNCER DE PULMÓN

Recomendaciones de cribado

- American Association for Thoracic Surgery (AATS)
- American College of Chest Physicians (ACCP)
- American Society of Clinical Oncology (ASCO)
- American Cancer Society
- International Association for the Study of Lung Cancer (IASLC)
- National Comprehensive Cancer Network (NCCN)

JAMA, March 20,2013-vol 309,No.11


31
PROHIBIDO FUMAR
MUCHAS GRACIAS