實證醫學報告

101.03.05

高醫家庭醫學科 辛明容住院醫師
陳美瑾主治醫師

臨床場景(clinical scenario)分析

- 病人基本資料：
  - 56 y/o female
  - Past history: denied any systemic disease
  - Family history : denied
- 主訴/相關症狀:
  - Denied any discomforts
  - Smoking: denied
  - 主訴爲最近看到新聞報導諸多名人罹患肺癌，以及醫師呼籲定期肺癌篩檢，因此要求胸部電腦斷層掃描檢查，以篩檢肺癌。

早期肺癌無症狀 醫師籲定期篩檢

國立教育廣播電台 作者：康紀漢 | 國立教育廣播電台 – 2012年2月16日 上午10:06

藝人鳳飛飛日前因爲罹患肺癌不幸辭世，新光醫院胸腔內科主任高尚志表示，肺癌初期大約有7成的患者沒有症狀，一旦出現症狀通常有8成都已經是晚癌的肺癌患者，他呼籲國人每年最好可以定期做一次低劑量胸部電腦斷層檢查，才能夠提早發現肺癌，及早治療，獲得更多治癒的機會。

肺癌位居國人癌症死因的第一名，近年來有愈來愈多名人，包括藝人鳳飛飛、文英阿姨、舞蹈家羅曼菲和前法務部長陳定南等人，都是因爲肺癌而過世，甚至像是副總統蕭萬長、樞機主教單國璽和國防部長高華柱等人，也罹患了肺癌，顯示出國人得到肺癌有愈來愈增加的趨勢。

不抽菸 也會得肺癌

台灣新生報 作者：【記者蘇湘琴／台北報導】| 台灣新生報 – 2012年2月16日 上午12:04

五十七歲陳女士沒有抽菸習慣，平常也沒有不適症狀，偶然機會至醫院做健康檢查，經由低劑量胸部電腦斷層檢查，發現肺部有傳統X光難以診斷出的微小可疑病灶，醫師便爲陳女士動手術切除病灶，發現是零點六八公分早期肺癌，開刀後近兩年沒有任何復發跡象。

根據衛生署統計，每年約有八千兩百一十九人死於肺癌，一年約有一萬例以上新增病例，且有上升趨勢。研究指出，肺癌新增病例數上升和吸菸人口增加、都會空氣污染有關，女性則可能是基因遺傳引起。肺癌是非常惡性的腫瘤，癌細胞生長快速，且很容易轉移，總體五年存活率不到百分之十五。晚期患者平均存活期不到一年。早期診斷、及早治療是戰勝肺癌不二法門。

新光醫院胸腔內科高尚志醫師指出，胸部X光很難發現小於一公分的腫瘤，而低劑量胸部電腦斷層（LDCT）對早期肺癌的敏感度比X光檢查高出六倍，可有效發現零點五公分以上惡性腫瘤，且只要及早發現，一公分以內的早期肺癌五年存活率可達百分之九十二。

高尚志醫師建議民眾每年健康檢查應納入低劑量胸部電腦斷層檢查，以定期檢視肺部健康狀況。

EBM的步驟

- **Asking**
  - 將病人的問題寫成**PICO**
- **Acquire**
  - 找資料來回答問題
- **Appraisal**
  - 嚴格評讀文獻
- **Apply**
  - 是否可應用到病人身上
- **Audit**
  - 自我評估

Asking

1. 提出Background question
   - 用how,who,what,which,when,why爲字根的問題
2. 提出Foreground question
   - 寫成PICO

Background question
用how,who,what,which,when,why爲字根的問題

- What are the risk factors of lung cancer?
- What are the current guidelines or recommendations for lung cancer screening?

What are the risk factors of lung cancer?

- Risk factors of lung cancer
  - Smoking
    - account for approximately 90 percent of all lung cancers
  - Radiation therapy (RT)
  - Environmental toxins
    - exposure to second-hand smoke, asbestos, radon, metals (arsenic, chromium, and nickel), ionizing radiation, and polycyclic aromatic hydrocarbons.
  - Genetic factors/ Family history
  - Pulmonary fibrosis
  - HIV infection

In Asia, 60 to 80 percent of women with lung cancer are never-smokers.

From: Overview of the risk factors, pathology, and clinical manifestations of lung cancer

What is the current guidelines or recommendations for screening?

UpToDate ONLINE

Guidelines for lung cancer screening

Organization	Recommendation	Year
US Preventive Services Task Force	Evidence is insufficient to recommend for or against screening asymptomatic persons for lung cancer with either low-dose computerized tomography, chest x-ray, sputum cytology, or a combination of these tests.	2004
American College of Chest Physicians	Recommends against the use of low-dose CT, chest radiographs, or sputum cytology for lung cancer screening, including smokers or others at high risk, except in the context of a clinical trial.	2007
American Cancer Society	Informed individual decision-making; if testing is chosen, spiral CT should be performed only in centers with multidisciplinary specialties experienced in screening and treatment.	2006
American Academy of Family Physicians	Recommends against the use of chest x-ray and/or sputum cytology in asymptomatic persons.	1997
Canadian Task Force on the Periodic Health Examination	Recommends against the use of chest x-ray in asymptomatic persons. Evidence is insufficient to recommend for or against screening with spiral CT in asymptomatic persons.	2003
National Comprehensive Cancer Network	Recommends annual low-dose CT scan screening for high-risk individuals (age 55 to 74 years with 30 pack-year history of smoking or 20 pack-year history with an additional risk factor).	2011

Foreground questions
-寫成PICO

P (patient)	never-smokers
I (intervention)	annual low-dose chest CT screen for lung cancer
C (comparison)	annual chest X-ray screen for lung cancer
O (outcome)	Overall survival rates

Acquire
搜尋最有用的資料

先從已經過評讀的database開始找起
(system,summary,synopses,synthesis)
最後再找尚未經過嚴格評讀的study

Finding out The Correct Keywords

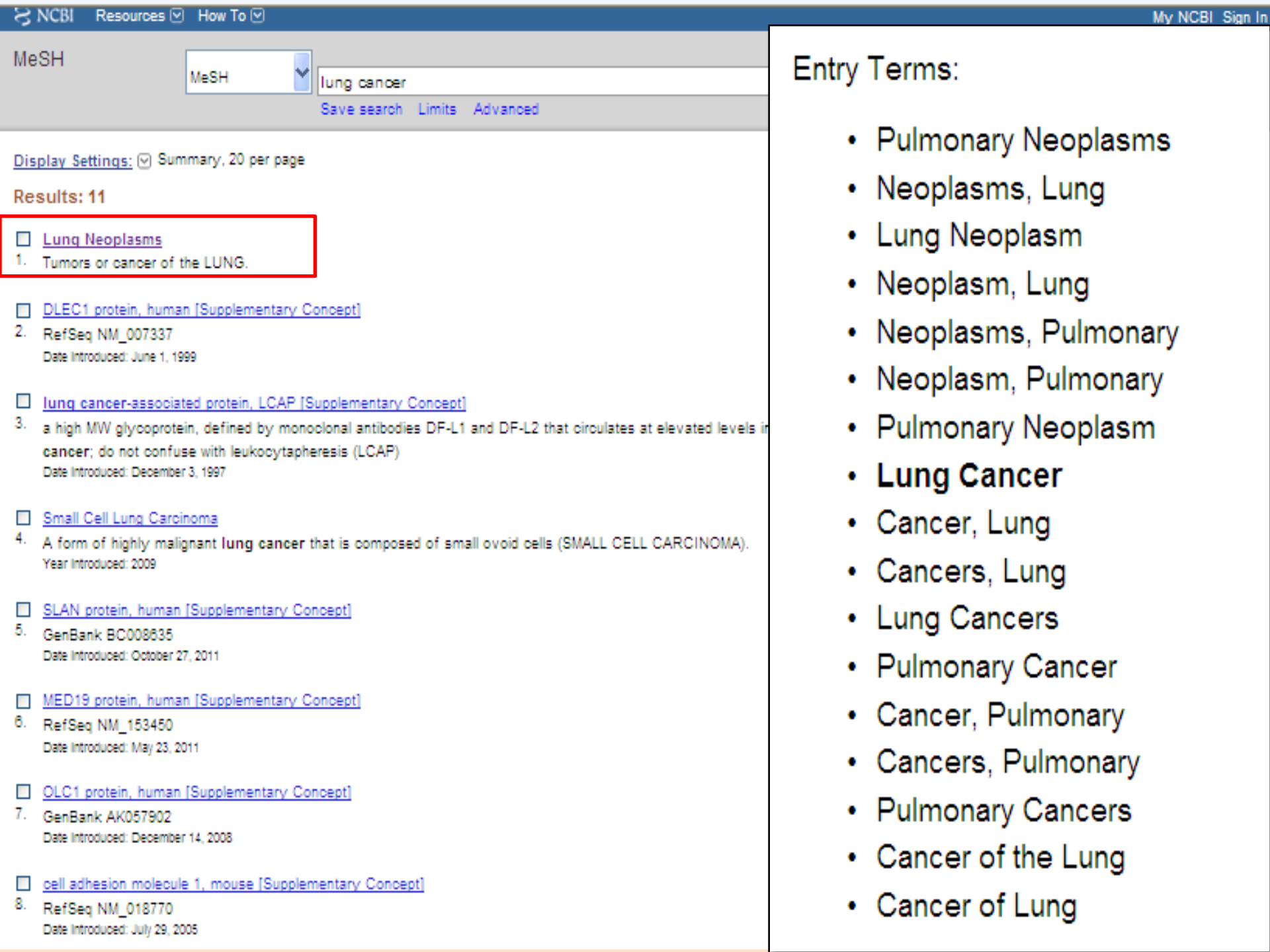
Keywords from questions

↓

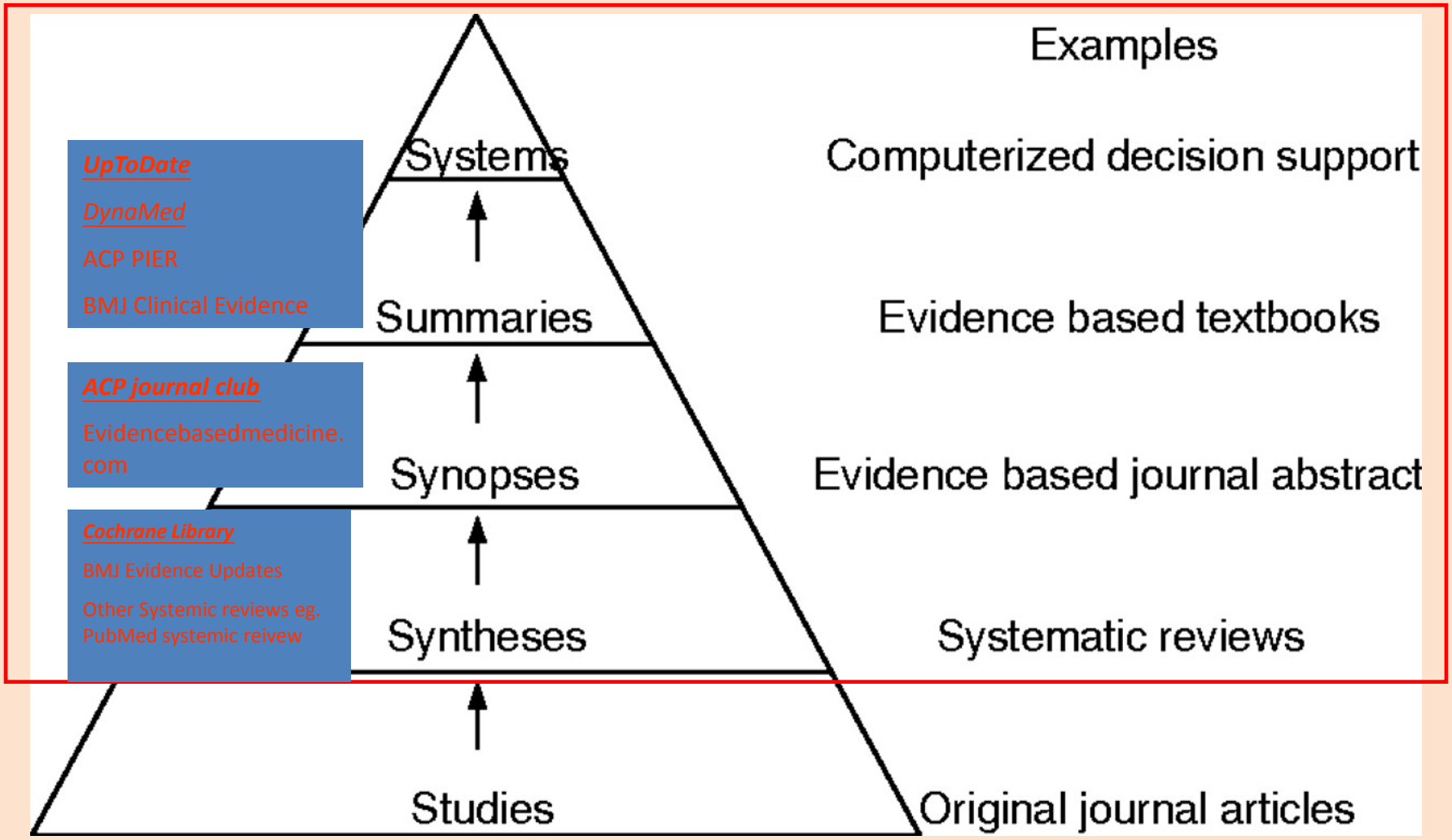
Use **MeSH** to help identify terms

↓

The correct keyword for search


NCBI Resources How To
My NCBI Sign In
MeSH
MeSH
lung cancer
Save search Limits Advanced
Display Settings: Summary, 20 per page
Results: 11
Lung Neoplasms
1. Tumors or cancer of the LUNG.
DLEC1 protein, human [Supplementary Concept]
2. RefSeq NM_007337
Date Introduced: June 1, 1999
lung cancer-associated protein, LCAP [Supplementary Concept]
3. a high MW glycoprotein, defined by monoclonal antibodies DF-L1 and DF-L2 that circulates at elevated levels i
cancer; do not confuse with leukocytapheresis (LCAP)
Date Introduced: December 3, 1997
Small Cell Lung Carcinoma
4. A form of highly malignant lung cancer that is composed of small ovoid cells (SMALL CELL CARCINOMA).
Year Introduced: 2009
SLAN protein, human [Supplementary Concept]
5. GenBank BC008635
Date Introduced: October 27, 2011
MED19 protein, human [Supplementary Concept]
6. RefSeq NM_153450
Date Introduced: May 23, 2011
OLC1 protein, human [Supplementary Concept]
7. GenBank AK057902
Date Introduced: December 14, 2008
cell adhesion molecule 1, mouse [Supplementary Concept]
8. RefSeq NM_018770
Date Introduced: July 29, 2005
Entry Terms:
Pulmonary Neoplasms
Neoplasms, Lung
Lung Neoplasm
Neoplasm, Lung
Neoplasms, Pulmonary
Neoplasm, Pulmonary
Pulmonary Neoplasm
Lung Cancer
Cancer, Lung
Cancers, Lung
Lung Cancers
Pulmonary Cancer
Cancer, Pulmonary
Cancers, Pulmonary
Pulmonary Cancers
Cancer of the Lung
Cancer of Lung

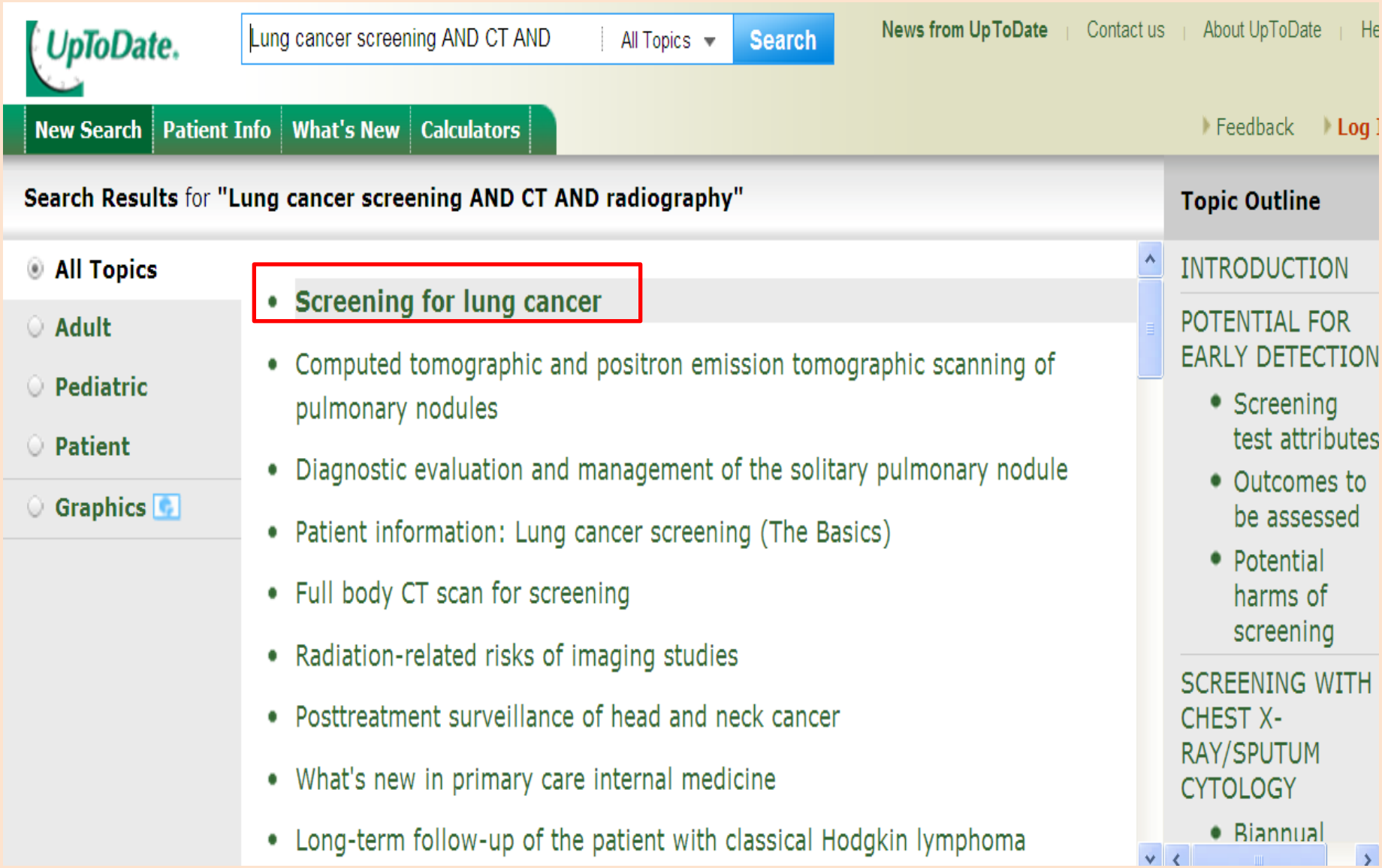
Secondary database



搜尋summary

- Key words:
  - Lung cancer screening
  - Computed Tomography
  - Radiography

搜尋到的文章標題


UpToDate.
Lung cancer screening AND CT AND
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Patient Info
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Calculators
Feedback
Search Results for "Lung cancer screening AND CT AND radiography"
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Patient
Graphics
Screening for lung cancer
Computed tomographic and positron emission tomographic scanning of pulmonary nodules
Diagnostic evaluation and management of the solitary pulmonary nodule
Patient information: Lung cancer screening (The Basics)
Full body CT scan for screening
Radiation-related risks of imaging studies
Posttreatment surveillance of head and neck cancer
What's new in primary care internal medicine
Long-term follow-up of the patient with classical Hodgkin lymphoma
INTRODUCTION
POTENTIAL FOR EARLY DETECTION
Screening test attributes
Outcomes to be assessed
Potential harms of screening
SCREENING WITH CHEST X-RAY/SPUTUM CYTOLOGY
Biannual

搜尋到的文章內容

Title	Screening for lung cancer
content	● Detection of early-stage cancers through screening may allow more limited treatment and improved cancer cure rates. ● Randomized controlled trials of chest x-ray based screening and non-randomized cohort studies of CT based screening demonstrate: ■ Chest x-ray and CT screening frequently detect early stage asymptomatic lung cancers in screened individuals. ■CT screening is significantly more sensitive than chest x-ray for identifying small, asymptomatic lung cancers. ■Chest x-ray screening does not reduce mortality from lung cancer.

搜尋到的文章內容

Title	Screening for lung cancer
content	●Patients who currently smoke or have a history of smoking should be advised of the risks and benefits of screening for lung cancer. ■We suggest annual screening with low dose helical CT scanning for those who meet all of the following criteria(Grade 2A). 1. Are in general good health 2. Are at increased risk for lung cancer 3. Have access to centers whose radiologic, pathologic, surgical and other treatment capabilities 4. Are able to manage the cost of annual screening and the possible need for subsequent evaluation of abnormal findings ■We recommend NOT screening for lung cancer with chest x-ray (Grade 1A). ● Other large randomized trials are ongoing and guidelines from professional organizations are undergoing revisions.

將搜尋到的結果應用到我的病人身上

- 這篇文章提到Chest x-ray及CT screening皆可以偵測到早期無症狀的肺癌，但只有CT screening可有效降低肺癌死亡率。
- 然而，這篇文章只有提到對於smoker接受肺癌篩檢的建議，並沒有提到針對never-smoker肺癌篩檢的部分，無法回答我的問題。

搜尋Synopses

ACP Journal Club®
The Best New Evidence for Patient Care℠

- Key words:
  - Lung cancer screening
  - Computed Tomography
  - Radiography

ACP Journal Club - Search Results

Search for: Lung cancer screening AND Computed To Go

Phrases must be in "quotes"

Article type:
- All
- Therapeutics
- Diagnosis
- Clinical Prediction Guide
- Prognosis

Don't use synonyms

Search Help

Found 4 matches. Showing 1 - 4.

1. 2011 - Screening with low-dose computed tomography reduced lung cancer mortality in high-risk patients

2. 2003 - Review: More frequent compared with less frequent chest radiographic screening may increase lung cancer mortality

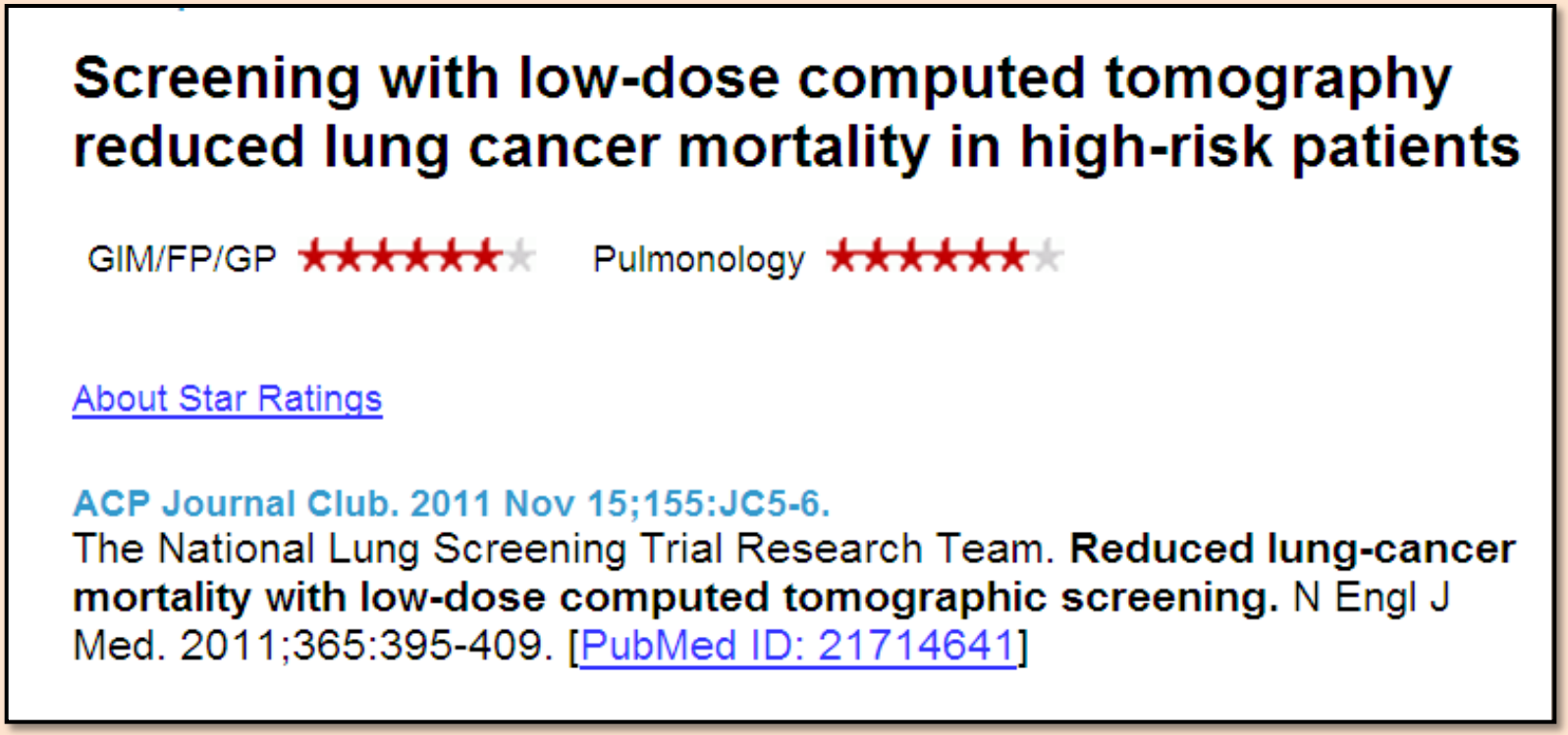
3. 2009 - Screening with spiral CT did not reduce lung cancer mortality in older male smokers

4. 2010 - Low-dose computed tomography was associated with higher risk for false-positive lung cancer screening than chest radiography

< Prev 1 Next >

搜尋到的文章標題

- Title



- Level of evidence: Ib (Individual randomized controlled trial)

搜尋到的文章內容

ACP Journal Club®
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- **Question**
  - In patients at high risk for lung cancer, does screening with low-dose computed tomography (CT) reduce lung cancer mortality compared with radiographic screening?
- **Methods**
  - **Design:** Randomized controlled trial (National Lung Screening Trial [NLST]).
  - **Setting:** 33 clinical centers in the USA.
  - **Patients:** 53454 patients 55 to 74 years of age who had a cigarette smoking history of 30 pack-years (if former smokers, had quit within the previous 15 years)
  - **Intervention:** 3 annual screenings, beginning shortly after randomization,
    1. low-dose CT screen (*n* = 26 722)
    2. single-view posteroanterior chest radiography (*n* = 26 732)
  - **Follow-up period:** Median 6.5 years (up to 7.4 y).
  - **Patient follow-up:** 96% (intention-to-treat analysis).
- **Outcomes:** Lung cancer mortality.
  - Secondary outcomes: lung-cancer incidence, all-cause mortality, and adverse events.

Main results

Low-dose computed tomography (CT) vs single-view posteroanterior chest radiography in patients at high risk for lung cancer†

Outcomes	CT	Radiography	At a median 6.5 y	
			RRR (95% CI)	NNT (CI)
Lung cancer mortality	1.3%	1.7%	20% (8 to 30)	308 (188 to 837)
All-cause mortality	7.0%	7.5%	6% (0.2 to 12)	219 (111 to 5631)
			RBI (CI)	NNT (CI)
Diagnosis of incident lung cancer	4.0%	3.5%	13% (3 to 23)	224 (130 to 801)

- The number needed to treat (NNT) to prevent 1 additional lung cancer death was 308, which compares favorably with the NNT for mammography in women in their 50s (NNT = 1339 to prevent 1 breast cancer death) and the NNT for flexible sigmoidoscopy to prevent 1 additional colorectal cancer death (NNT = 489).

搜尋到的文章內容

ACP Journal Club®
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- **Conclusion**
  - In patients at high risk for lung cancer
    - screening with low-dose computed tomography reduced lung cancer mortality compared with radiographic screening.

將搜尋到的結果應用到我的病人身上

- 這篇文章指出對於高危險性族群的肺癌篩檢，利用低劑量胸部電腦斷層較胸部X光能有效降低死亡率。
- 然而，這篇文章沒有提到針對never-smoker肺癌篩檢的部分，無法回答我的問題。

搜尋synthesis

- Key words:
  - Lung cancer
  - Computed Tomographic Screening

Search Results

Show Results in:
Cochrane Reviews [0] | Other Reviews [0] | **Trials [3]** | Methods Studies [0] | Technology Assessments [0] | Economic Evaluations [0] | Cochrane Groups [0]

There are 3 results out of 667476 records for: "Lung cancer AND Computed Tomographic Screening in Title, Abstract or Keywords in Cochrane Central Register of Controlled Trials"

Save Search
Edit Search

View: 1-3

Export All Results

和ACP journal club是同一篇文章

Record Information

Sort by: Record Title | Match % | Date

Reduced lung-cancer mortality with low-dose computed tomographic screening.
National Lung Screening Trial Research Team, Aberle DR, Adams AM, Berg CD, Black WC, Clapp JD, Fagerstrom RM, Gareen IF, Gatsonis C, Marcus PM, Sicks JD
2011
New

Screening by chest radiograph and lung cancer mortality: the Prostate, Lung, Colorectal, and Ovarian (PLCO) randomized trial.
Oken MM, Hocking WG, Kvale PA, Andriole GL, Buys SS, Church TR, Crawford ED, Fouad MN, Isaacs C, Reding DJ, Weissfeld JL, Yokochi LA, O'Brien B, Ragard LR, Rathmell JM, Riley TL, Wright P, Caparaso N, Hu P, Izmirlian G, Pinsky PF, Prorok PC, Kramer BS, Miller AB, Gohagan JK, Berg CD, PLCO Project Team
2011
New

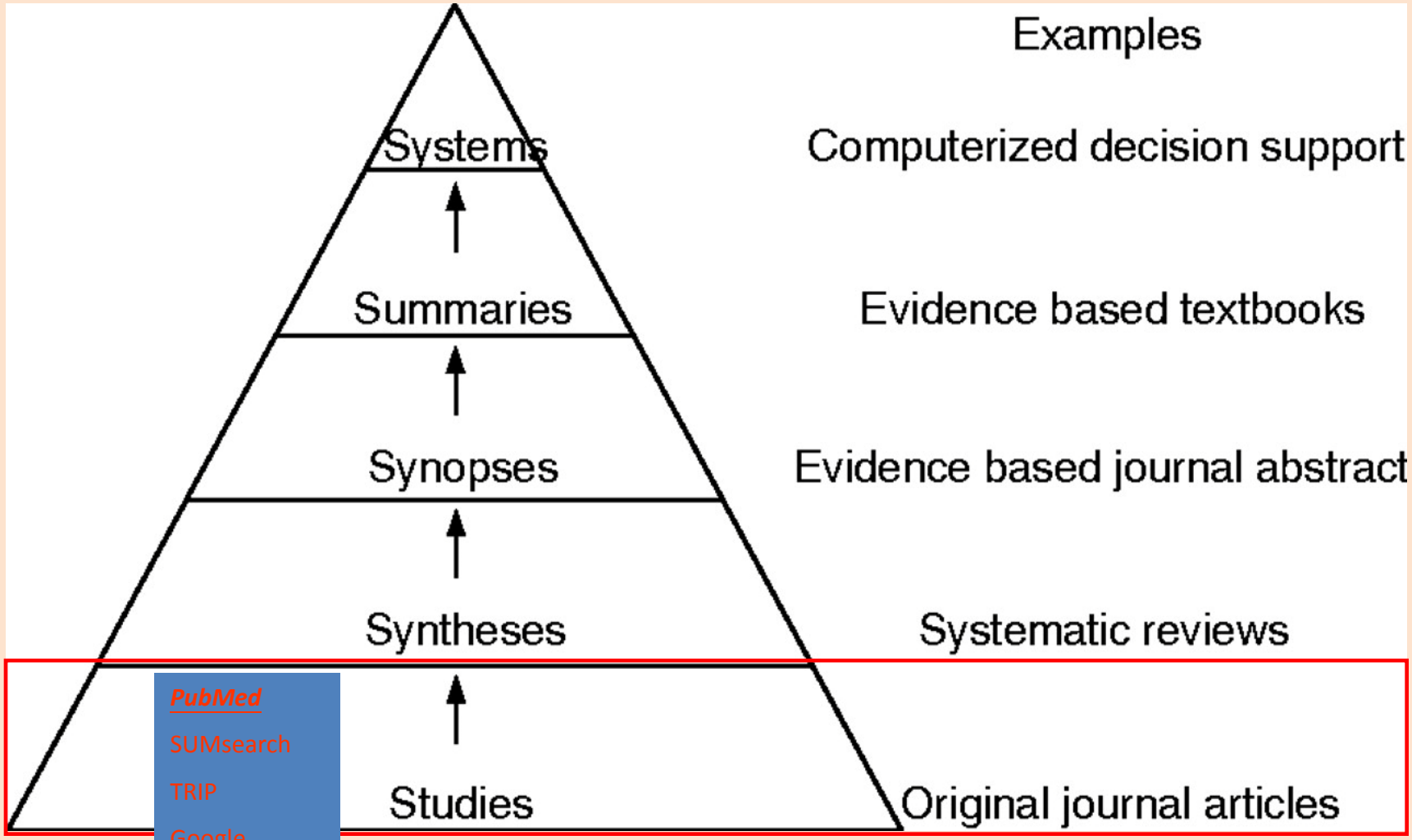
Pulmonary nodules: volume repeatability at multidetector CT lung cancer screening.
Marchianò A, Calabrò E, Civelli E, Di Tolla G, Frigerio LF, Morosi C, Tafaro F, Ferri E, Sverzellati N, Camerini T, Mariani L, Lo Vullo S, Pastorino U
2009

Select All (to export citations)

Export Selected Citations | Export All Results

View: 1-3

Primary database



搜尋study

- Key words:
  - Lung cancer screening
  - Computed Tomography

- Limits Activated: English, published in the last 5 years

Display Settings: Summary, 20 per page, Sorted by Recently Added

Send to:

252. Efficacy of **CT screening** for **lung cancer** in never-smokers: analysis of Japanese cases detected using a low-dose **CT** screen.

Kondo R, Yoshida K, Kawakami S, Shiina T, Kurai M, Takasuna K, Yamamoto H, Koizumi T, Honda T, Kubo K.

Lung Cancer. 2011 Dec;74(3):426-32. Epub 2011 Jun 12.

PMID: 21663997 [PubMed - in process]

Related citations

Related citations

2. Indeterminate pleural metastasis on contrast-enhanced chest **CT** in non-small cell **lung cancer**: improved differential **diagnosis** with (18) F-FDG PET/**CT**.

Jung MY, Chong A, Seon HJ, Choi S, Kim YH, Shin SS, Kim JW, Bom HS.

Ann Nucl Med. 2012 Feb 18. [Epub ahead of print]

PMID: 22350956 [PubMed - as supplied by publisher]

Related citations

3. Direct nodal sampling by echoendoscopy in **lung cancer**: the clinician's expectations: Direct nodal sampling by echoendoscopy in **lung cancer**.

Schuhmann M, Eberhardt R, Herth FJ.

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```
(("lung neoplasms"[MeSH Terms] OR
("lung"[All Fields]
AND "neoplasms"[All Fields])
OR "lung neoplasms"[All Fields]
OR ("lung"[All Fields]
```

Search

See more...

搜尋到的文章標題

- **Title:**

Efficacy of CT screening for lung cancer in never-smokers: Analysis of Japanese cases detected using a low-dose CT screen

From: Lung cancer 74(2011)426-432

- Objective
  - To evaluate the efficacy of CT screening for lung cancer in never-smokers.
- Patients and methods
  - a retrospective study
  - A total of 556 never-smoker patients who were diagnosed with a primary lung cancer were admitted to Shinshu University Hospital.
  - Time: between January 2000 and December 2008
  - The total study cohort comprised:
    1. **CT screened group** : 218 patients were evaluated by low-dose CT screening annually
    2. **X-ray screened group** :160 patients were assessed by X-ray screening annually
    3. **symptomatic-prompted group** : 82 patients presented with some symptoms
    4. The remaining 96 patients were diagnosed with a lung cancer during a follow up for another disease.
- Outcome measurements: 5-year overall survival rates

Table 1

Comparison of the clinicopathological characteristics of the three study groups including all histological types of lung cancer.

	CT screen (n = 218)	X-ray screen (n = 160)	Symptomatic (n = 82)	P value
Sex ratio (male/female)	22:78	21:79	27:73	0.55
Age (years)	65.1 ± 11.5	67.5 ± 11.5	66.6 ± 13.2	0.13
Maximum size of tumor on CT (mm)	12.2 ± 10.1	25.6 ± 16.1	36.1 ± 17.5	<0.01
Serum CEA (ng/ml)	2.8 ± 3.3	9.7 ± 43.4	67.6 ± 169.2	<0.01
Clinical TNM stage				<0.01
IA (%)	193 (88.5)	76 (47.5)	19 (23.2)	
IB (%)	13 (6.0)	27 (16.9)	8 (9.7)	
II (%)	4 (1.8)	13 (8.1)	5 (6.1)	
IIIA (%)	3 (1.4)	13 (8.1)	3 (3.7)	
IIIB (%)	1 (0.5)	12 (7.5)	7 (8.5)	
IV (%)	4 (1.8)	19 (11.9)	40 (48.8)	
Treatment				<0.01
Lung resection (%)	98 (45.0)	126 (78.7)	31 (37.8)	
Non-surgical treatment for c-stage I or II (%)	8 (3.7)	3 (1.9)	2 (2.4)	
Non-surgical treatment for c-stage III or IV (%)	4 (1.8)	28 (17.5)	47 (57.4)	
Observation for BAC (%)	108 (49.5)	3 (1.9)	2 (2.4)	
Histological type				<0.01
BAC	142 (65.1)	20 (12.5)	5 (6.1)	
Adenocarcinoma (excluding BAC)	71 (32.6)	116 (72.5)	61 (74.4)	
Squamous cell carcinoma	2 (0.9)	8 (5.0)	6 (7.3)	
Large cell carcinoma	1 (0.5)	4 (2.5)	3 (3.7)	
Small cell carcinoma	2 (0.9)	4 (2.5)	4 (4.8)	
Others	0 (0.0)	8 (5.0)	3 (3.7)	
Death from lung cancer	8 (3.7)	46 (28.8)	52 (63.4)	<0.01

advanced cases

sub-analysis

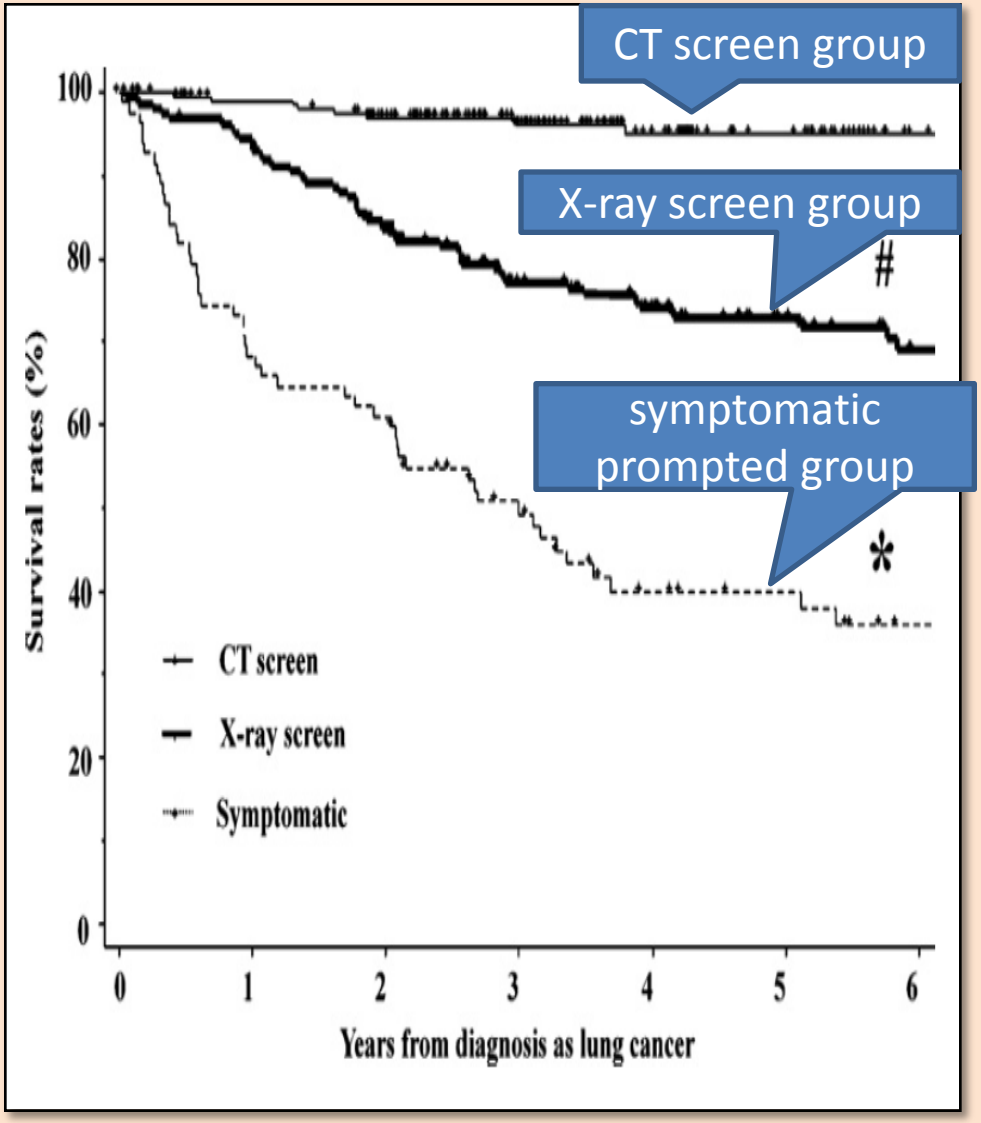
Table 2

Comparison of the clinicopathological characteristics of the three study groups excluding bronchioloalveolar carcinoma. (sub-analysis)

	CT screen ($n=76$)	X-ray screen ($n=140$)	Symptomatic ($n=77$)	P value
Sex ratio (male/female)	20:80	23:77	27:73	0.54
Age (years)	67.9 ± 9.6	67.6 ± 11.6	66.7 ± 13.4	0.78
Maximum size of tumor on CT (mm)	21.0 ± 11.3	27.3 ± 16.4	37.8 ± 16.7	<0.01
Serum CEA (ng/ml)	3.2 ± 3.8	10.6 ± 45.9	70.5 ± 172.4	<0.01
Clinical TNM stage				<0.01
IA (%)	53 (69.7)	56 (40.0)	14 (17.1)	
IB (%)	11 (14.5)	27 (19.3)	8 (10.5)	
II (%)	4 (5.3)	13 (9.3)	5 (6.6)	
IIIA (%)	3 (3.9)	13 (9.3)	3 (3.9)	
IIIB (%)	1 (1.3)	12 (8.6)	7 (9.2)	
IV (%)	4 (5.3)	19 (13.5)	40 (52.7)	
Treatment				<0.01
Lung resection (%)	64 (84.2)	109 (77.8)	28 (36.4)	
Non-surgical treatment for c-stage I or II (%)	8 (10.5)	3 (2.1)	2 (2.6)	
Non-surgical treatment for c-stage III or IV (%)	4 (5.3)	28 (20.0)	47 (61.0)	
Histological type				0.25
Adenocarcinoma (excluding BAC)	71 (93.5)	116 (82.8)	61 (79.2)	
Squamous cell carcinoma	2 (2.6)	8 (5.7)	6 (7.8)	
Large cell carcinoma	1 (1.3)	4 (2.9)	3 (3.9)	
Small cell carcinoma	2 (2.6)	4 (2.9)	4 (5.2)	
Others	0 (0.0)	8 (5.7)	3 (3.9)	
Death from lung cancer	8 (10.5)	46 (32.9)	52 (68.4)	<0.01

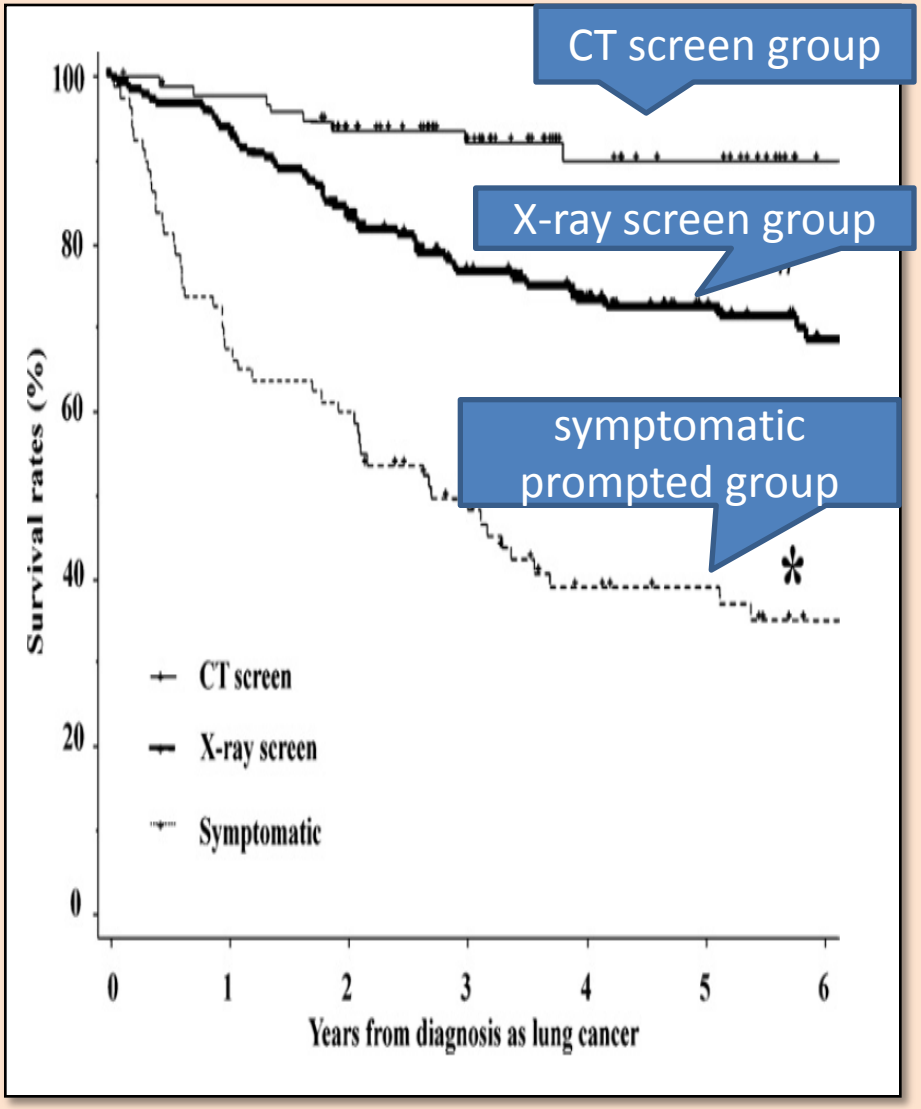
advanced cases

Overall survival outcomes for all histological cases of lung cancer in the current never-smoker cohorts.



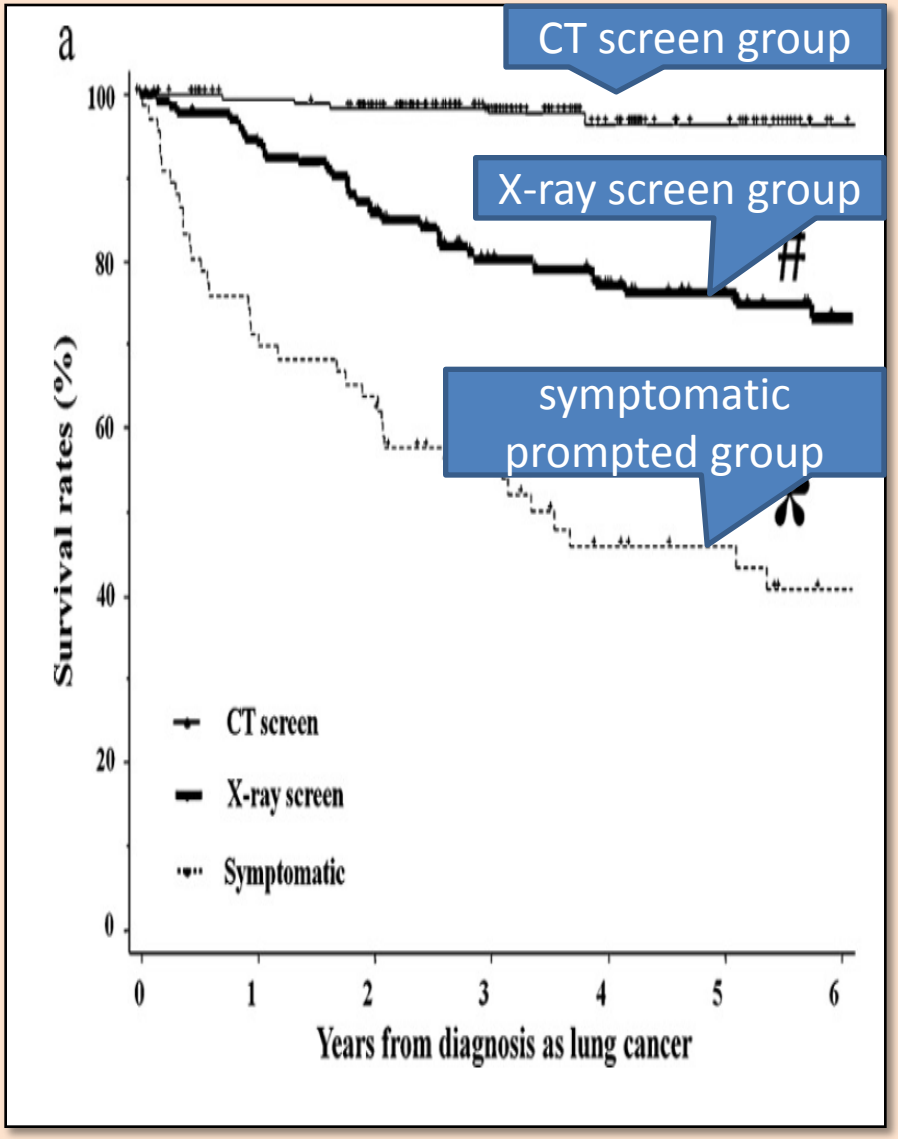
- The 5-year overall survival rates were
  - 95.0% in the CT screen group
  - 73.0% in the X-ray screen group
  - 40.0% in the symptomatic prompted group.
- The survival rate for the CT screen group was superior to that of the X-ray screen ($P < 0.01$) or symptomatic-prompted ($P < 0.01$) groups.

Sub-analysis of the overall survival outcomes but excluding all BAC cases.



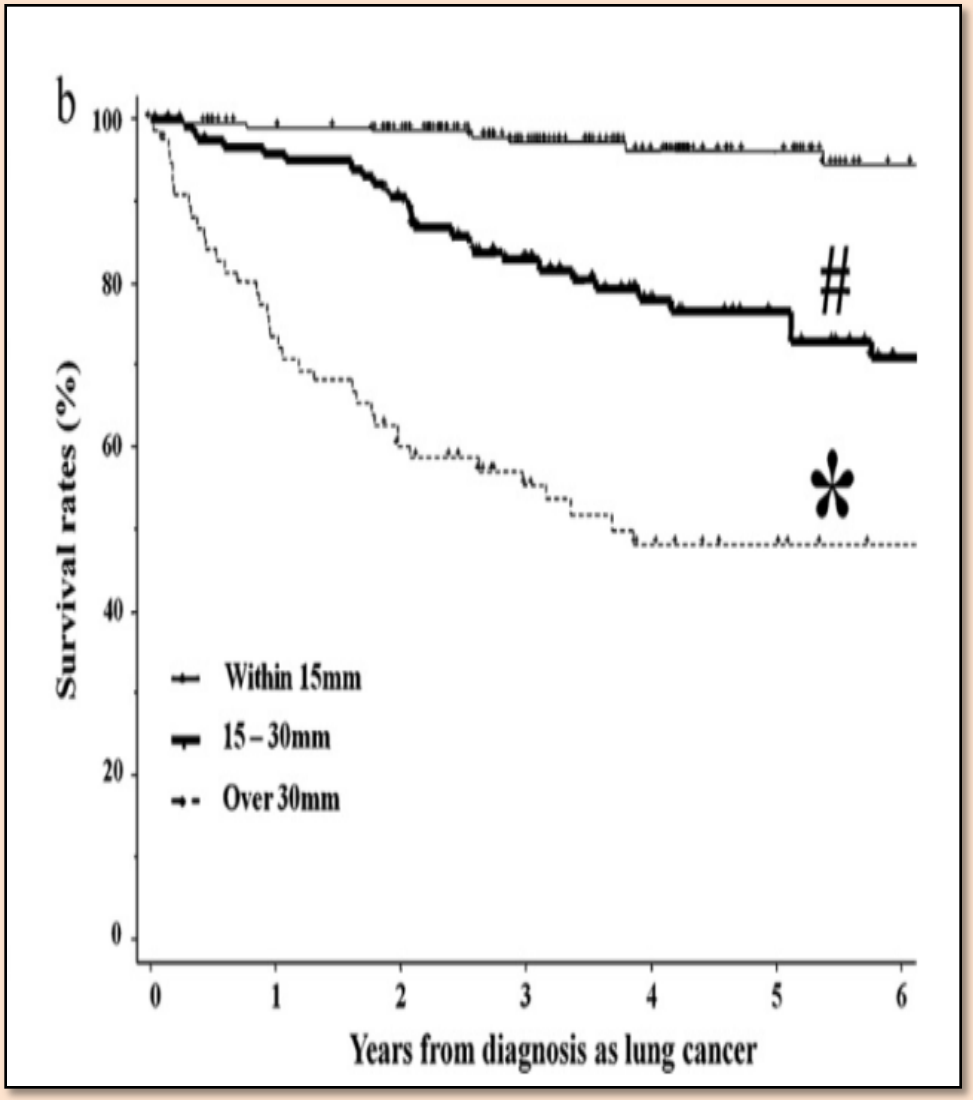
- The 5-year-survival rates in this case were
  - 89.9% in the CT screen,
  - 72.6% in the X-ray screen
  - 39.1% in the symptomatic-prompted sub-groups.
- The survival rate for the CT screen group was superior to that of the X-ray screen group ($P < 0.01$) or symptomatic-prompted group ($P < 0.01$).

Overall survival outcomes associated with adenocarcinoma



- In this sub-analysis, the 5-year-survival rates
  - 96.5% in the CT screen
  - 76.1% in the X-ray screen
  - 45.8% in the symptomatic-prompted groups
- The survival rate among this CT screen sub-group was superior to that of the X-ray screen sub-group with adenocarcinoma($P < 0.01$) and in symptomatic-prompted sub-group ($P < 0.01$).

The 5-year-survival rates for patients with adenocarcinomas



- The 5-year-survival rates for patients with adenocarcinomas
  - within 15 mm: 96.1%
  - 15–30 mm :76.4%
  - over 30 mm: 48.0%
- The survival rate for patients with adenocarcinomas with diameters of within 15 mm was superior to that for the lesions of 15–30 mm (#P < 0.01) and greater than 30 mm (*P < 0.01).
- Adenocarcinoma shows a strong correlation between tumor size and survival rate.

- Results
  - CT screening is associated with features such as a smaller tumor size on detection and a higher ratio of stage I cancers compared with the X-ray screening and symptomatic-prompted groups.
  - We further found that the 5-year-survival rates in the CT screen patients were excellent and by all histological types were superior to either X-ray screen or symptomatic-prompted groups for all patients.
  - A CT-screen was found to be one of the independent prognostic factors for lung cancer (HR, 0.28; 95% CI, 0.12–0.72) and based on this would be expected to reduce the risk of lung cancer death by 78% (HR 0.22; 95% CI 0.09–0.52, $P < 0.01$), compared with non-screened cases in these cohorts.

將搜尋到的結果應用到我的病人身上

- 根據此篇retrospective study可知:
  - 針對never-smokers，利用每年低劑量電腦斷層掃描篩檢，和每年胸部X光相較，可提高早期肺癌篩檢率，並可有效降低死亡率。

Appraisal (嚴格評讀）

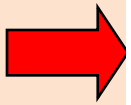
使用AAMPICOT model來評讀文獻

Item	Criteria for prognosis appraisal	Comments (評論並說明你的根據)
Answer	此文獻有沒有回答我的問題？	有
Authors	作者群是這領域的專家嗎？	是
	有沒有利益衝突？	沒有利益衝突(they have no conflict of interest)
Method	本文獻研究設計是屬於以下那一類SR,RCT,Cohort,Case-contro,Case series or report,Expert opinion	retrospective study

Population	取樣是否爲隨機取樣？	否
	取的樣本是否具代表性？其特性是否接近我的病人？	是(針對never-smokers)
	分組是否是隨機分組？	否
	分組是否採用盲法？	否
Intervention	給予實驗組的處置是否描述清楚，並且是臨床可行的？	Annual low-dose CT screened group
Comparison	給予對照組的處置是否描述清楚，並且是臨床可行的？	Annual X-ray screened group

Outcome	測量了那些結果？結果爲何？	•5-year overall survival rates •CT will improve the survival rate and decrease the rate of advanced cancers in never-smokers via the annual screening system.
	這些結果是否有臨床重要性？	是
	是否用客觀的方式測量？是什麼方法？	是(5-year overall survival rates)
	做了那些去除bias的動作？	是 (sub-analysis which excluded pure BAC lesions)
	是否呈現結果的「數值」，「p值」，「信賴區間」，「檢力」？	是(呈現數值、P值和信賴區間)
Time	測量結果的時間點是否合宜？	是(5-year overall survival rates)
	追蹤時間是否夠長？	是
	文獻發表時間？	2011.06

Oxford Centre for Evidence-based Medicine Levels of Evidence (May 2001)



Level	Prognosis
1a	SR (with homogeneity*) of inception cohort studies; CDR† validated in different populations
1b	Individual inception cohort study with ≥ 80% follow-up; CDR† validated in a single population
1c	All or none case-series
2a	SR (with homogeneity*) of either retrospective cohort studies or untreated control groups in RCTs
2b	Retrospective cohort study or follow-up of untreated control patients in an RCT; Derivation of CDR† or validated on split-sample§§§ only
2c	"Outcomes" Research
3a	
3b	
4	Case-series (and poor quality prognostic cohort studies***)
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"

Grades of Recommendation

A	consistent level 1 studies
B	consistent level 2 or 3 studies or extrapolations from level 1 studies
C	level 4 studies or extrapolations from level 2 or 3 studies
D	level 5 evidence or troublingly inconsistent or inconclusive studies of any level

實證醫學結果小結

- Lung cancer screening

smokers	Annual Chest X-ray	Chest X ray screening does not reduce mortality from lung cancer.(UpToDate)
	Annual Low-dose Chest CT	Screening with low-dose CT reduced lung cancer mortality compared with radiographic screening. (NEJM)
Never-smokers	Annual Chest X-ray	Chest X-ray screening does not reduce mortality from lung cancer.(UpToDate)
	Annual Low-dose Chest CT	**•There are few studies that evaluate the efficacy of CT screening for lung cancer in never-smokers.** •In this retrospective study: CT will improve the survival rate and decrease the rate of advanced cancers in never-smokers via the annual screening system.

Apply
將EBM結果應用到病人身上

一、結合實證醫學的結果、臨床專業經驗給予病人建議以去學術化的語言給予病人建議

二、結合病人價值(生活品質、社會經濟脈絡)， 幫助病人做出最後的決定

醫療現況	病人意願
目前guideline對於非吸菸者的肺癌篩檢並沒有明確建議，然而隨著越來越多的罹癌個案報導也讓民眾更加關注此議題。	此病患願意接受自費胸部電腦斷層掃描來作為肺癌的篩檢。
生活品質	**社會脈絡**
利用胸部電腦斷層掃描作為肺癌篩檢，可早期發現與治療肺癌，改善生活品質及提升存活率。	一般民眾對於肺癌篩檢的認知不一，醫療相關單位應加強宣導肺癌的認知與篩檢，也需要更多可靠的證據來證實電腦斷層掃描篩檢的成效。

總結

- 針對非吸菸者(never-smokers)是否需要接受lung cancer的CT screen ，目前仍缺乏radomnized control study或是large-scale prospective study之證據.
- 根據此篇retrospective study可知:
  - 針對never-smokers，利用每年低劑量電腦斷層掃描篩檢，和每年胸部X光相較，可及早診斷早期肺癌，提高早期肺癌診斷率，並可有效降低死亡率。
  - 但目前仍欠缺台灣本土的相關研究，也必須考量疾病篩檢的成本效益問題。
- 未來需努力的方向包含
  - cost-effectiveness analysis
  - appropriate population targets
  - screening frequency
  - Side effects of radiation exposure

Audit
（自我評估）

在「提出臨床問題」方面的自我評估

- 我提出的問題是否具有臨床重要性？有，
- 我是否明確的陳述了我的問題？
  - 我的foreground question 是否可以清楚的寫成PICO？是
  - 我的background question是否包括what, when, how, who等字根？有
- 我是否清楚的知道自己問題的定位？（亦即可以定位自己的問題是屬於診斷上的、治療上的、預後上的或流行病學上的），並據以提出問題？知道(預後)
- 對於無法立刻回答的問題，我是否有任何方式將問題紀錄起來以備將來有空時再找答案？有

在「搜尋最佳證據」方面的自我評估

- 我是否已盡全力搜尋？有
- 我是否知道我的問題的最佳證據來源？知道
- 我是否從大量的資料庫來搜尋答案？是
- 我工作環境的軟硬體設備是否能支援我在遇到問題時進行立即的搜尋？是
- 我是否在搜尋上愈來愈熟練了？是
- 我會使用「斷字」、布林邏輯、同義詞、MeSH term，限制(limiters)等方法來搜尋？是

關於「嚴格評讀文獻」方面的自我評估

- 我是否盡全力做評讀了？是
- 我是否了解Number need to treat 的意義？是
- 我是否了解worksheet每一項的意義？是
- 評讀後，我是否做出了結論？是

關於「應用到病人身上」的自我評估

- 我是否將搜尋到的最佳證據應用到我的臨床工作中？是
- 我是否能將搜尋到的結論如NNT, LR用病人聽得懂的方式解釋給病人聽？可
- 當搜尋到的最佳證據與實際臨床作為不同時，我如何解釋？以實證醫學的結果來做解釋

效率評估

- 這篇報告，我總共花了多少時間？10 hours
- 我是否覺得這個進行實證醫學的過程是值得的？值得，對查詢EBM有概念多了。
- 我還有那些問題或建議？無

Thank you for your attention.