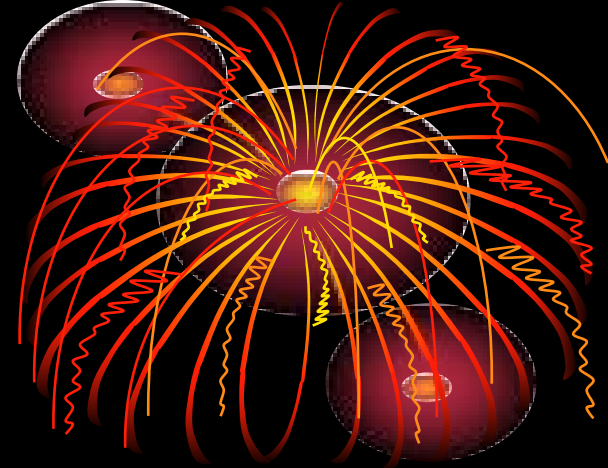# 高雄醫學大學附設中和紀念醫院 100學年度第10次實證醫學月會

2012/02/20

影像醫學部 R2 戴睿廷 / VS 郭禹廷

- **臨床情境分析(Clinical Scenario)**
- Asking: 形成一個可以回答的問題（PICO）
- Acquire: 搜尋過程
- Appraisal: 文獻評讀方式
- Apply: 證據之外推
- Audit: 自我評估

Clinical Scenario

- **2011/06/15 行政院衛生署**
- ⇒**99年國人主要十大死因:**
  心臟疾病占10.8%
- **Screen method:**
- **EKG**
- **Exercise cardiac stress test (treadmill stre test**
- **Radionuclide stress test**
- **Calcium scan (CT)**

99年國人十大死因排行

排名	死亡原因	死亡人數占率
1	惡性腫瘤（癌症）	28.4%
2	心臟疾病	10.8%
3	腦血管疾病	7.0%
4	肺炎	6.2%
5	糖尿病	5.7%
6	事故傷害	4.6%
7	慢性下呼吸道疾病	3.6%
8	慢性肝病及肝硬化	3.4%
9	高血壓疾病	2.9%
10	腎炎、腎徵候群及腎性病變	2.8%

99年國人前十大癌症死亡排行

| 排名	癌症名稱	死亡人數占率
1	肺癌	20.0%
2	肝癌	18.9%
3	結腸直腸癌	11.4%
4	女性乳房癌	4.2%
5	口腔癌	5.8%
6	胃癌	5.5%
7	攝護腺癌	2.5%
8	食道癌	3.8%
9	胰臟癌	3.6%
10	子宮頸癌	1.7%

資料來源／衛生署　　　製表／記者魏怡嘉

Patient's Concern

- 自己沒有心臟病症狀, 定期使用冠狀動脈斷層掃描作為健康篩檢真的可以減少未來得到心臟病的機率嗎?

Background

- **Coronary calcium CT scans = cardiac calcium scoring.**

- Coronary calcium scans use computed tomography **(CT)** to check for the buildup of calcium in plaque on the walls of the coronary arteries.

- Normally, the coronary arteries do not contain calcium.

- Calcium in the coronary arteries is a sign of coronary artery disease (CAD).
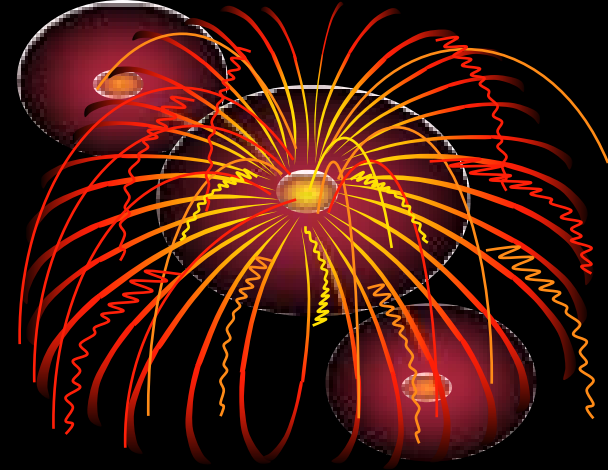
Background
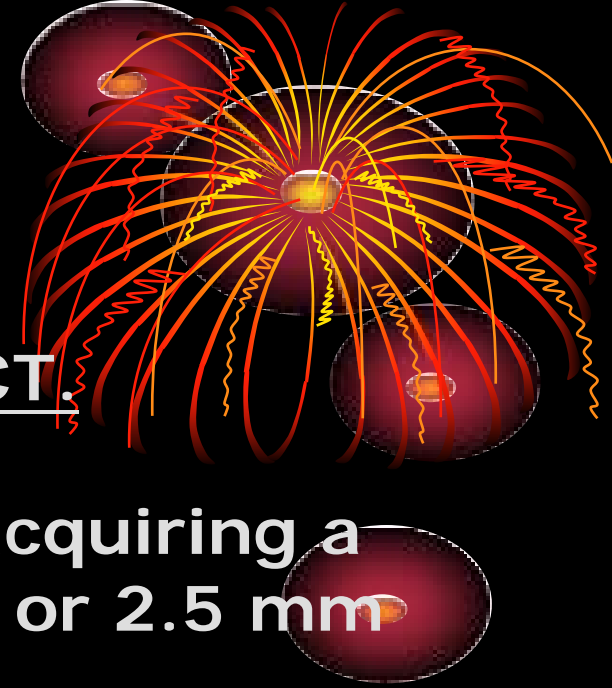
- Scanning using Multi-detected CT.

- The imaging protocol involved acquiring a single scan of 30 to 40 slices of 3 or 2.5 mm thickness.

- Total calcium score was determined by summing lesion-specific scores, calculated according to the Agatston method.

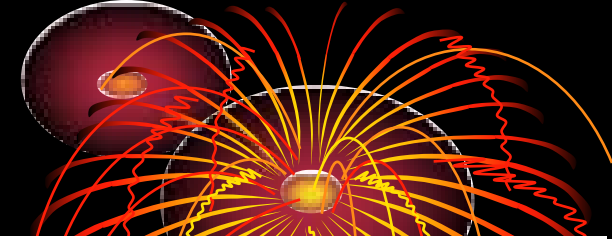- Estimated radiation dose ranged from 1 to 2 mSv. (CXR: 0.03 mSv)

Table 2 Cardiac CT scanning and scoring parameters for application of Agatston coronary calcium scoring (see text for details)

CT Scanner FOV	26 cm
Minimal CT density for calcium	≥130 HU
CT scanner slice collimation	3.0 mm
Minimal calcium area	1 mm² (3 pixels)
Scoring by calcified lesion	calcium area (mm²) × 1 for maximum HU 130–199
Total Agatston Score = sum of all	calcium area (mm²) × 2 for maximum HU 200–299
scores for all calcified lesions in all	calcium area (mm²) × 3 for maximum HU 300–399
coronary arteries	calcium area (mm²) × 4 for maximum HU ≥ 400

Score of each lesion =Area (pixel) x weigted score

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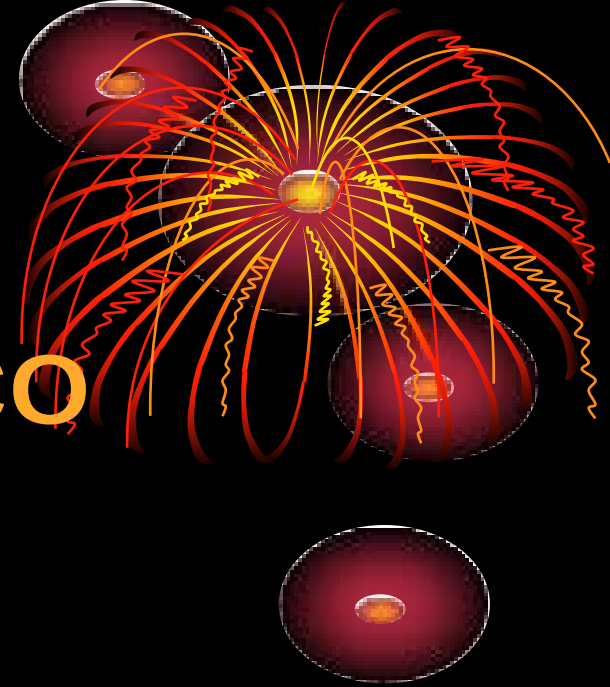 - 將病人的問題寫成**PICO**
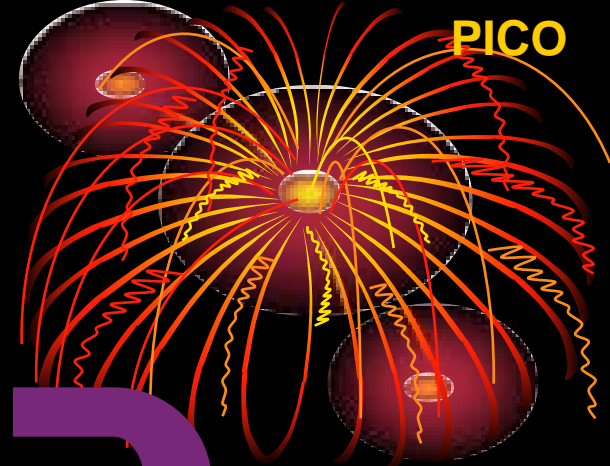- **Acquire**
  - 找資料來回答問題
- **Appraisal**
  - 嚴格評讀文獻
- **Apply**
  - 是否可應用到病人身上
- **Audit**
  - 自我評估

Clinical Question

Patient
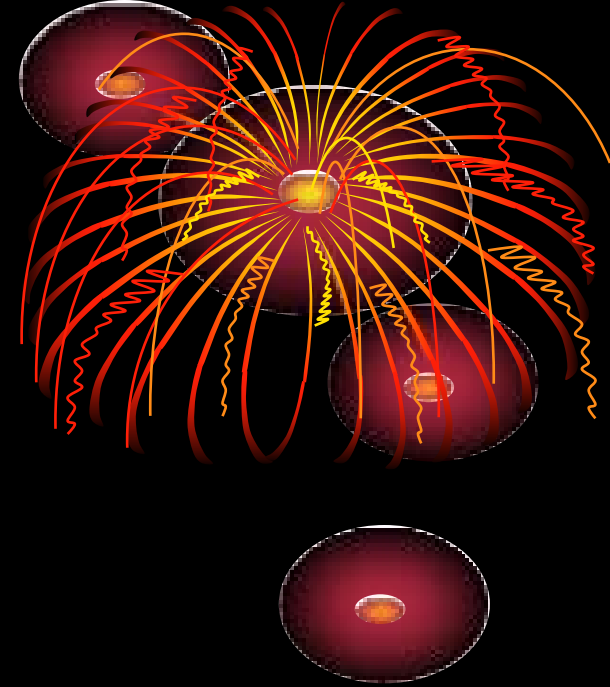Asymptomatic Patient For CAD

Intervention
calcium scan

Comparision
NO calcium scan

Outcome
預防冠狀動脈病變之效果

- **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

Database
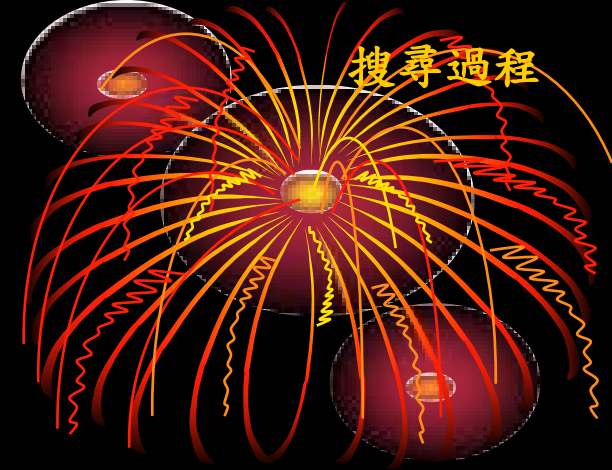
Searching evidence

Medical database

Internet search engine

Prefiltered

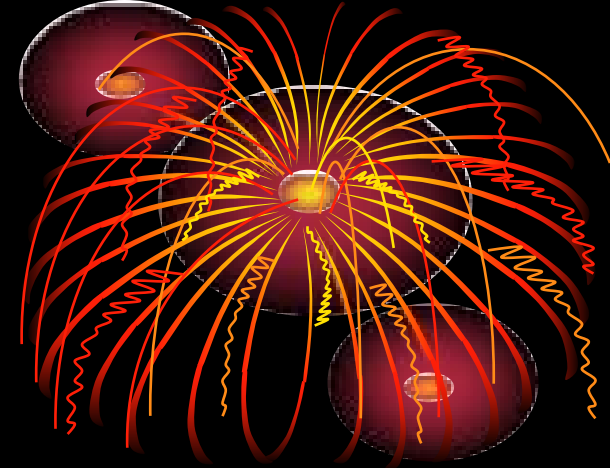**Unfiltered**

- Cochrane library
- EBMR
- ACP journal club

**PubMed
Medline
e-Medicine**

**Google
Yahoo**

Start to Search~

MeSH (Medical Subject Heading)
=> to identify terms

The "5S" levels of organisation of evidence from healthcare research

Not available →

Radiographics
Ovid
ACP medicine
ACP pier →

UpToDate
Dynamed

ACP journal
EBMR →

Cochrane Library →

PubMed Medline →

Examples

Systems — Computerized decision support

Summaries — Evidence based textbooks

Synopses — Evidence based journal abstract

Syntheses — Systematic reviews

Studies — Original journal articles

Secondary database

Primary database

搜尋 EBMR Review

- **Keywords:**

  coronary artery **AND**
  calcium scan **AND**
  asymptomatic

http://ovidsp.tx.ovid.com/spb/ovidweb.cgi

Google

English | Français | Deutsch | Español
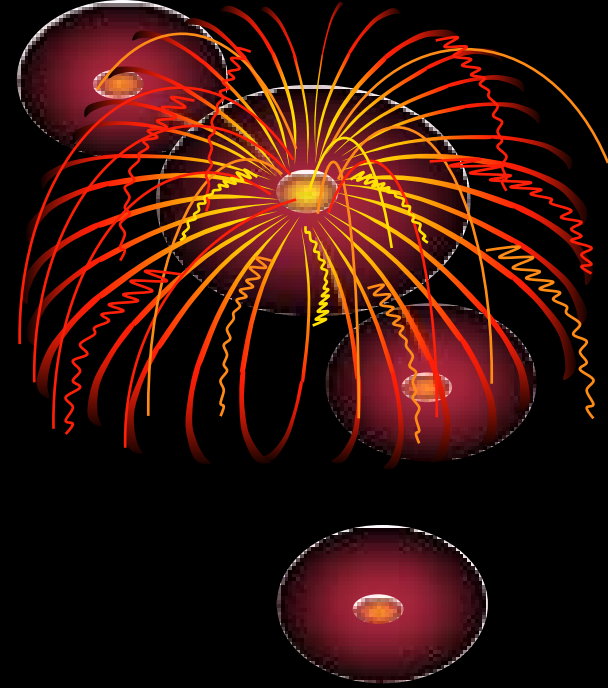
Search History (1 search) (Click to expand)

Remove Duplicates   View Saved

Search   All EBM Reviews - Cochrane DSR, ACP Journal Club, DARE, CCTR, CMR, HTA, and NHSEED

Basic Search   Find Citation   Search Tools   Search Fields   Advanced Ovid Search   **Multi-Field Search**

Enter a search term, select a specific field to search in, and click "Search". Click "Add New Row" to add more terms.

AND   All Fields
AND   All Fields
AND   All Fields
    All Fields

Search »   Add New Row

Limits (Click to expand)

Results Manager (Click to expand)

Customize Display | **Reset Display**   View All Abstracts ☐ Sort By: [-]   Results Per Page: 10

Results of your search: **(fever and children and physical method and antipyretic).af.**

Viewing **1-2** of **2** Results

Remove Duplicates

Search Aid

Your search

Search terms used:
- antipyretic
- children
- fever
- method
- physical

☐ 1. EBM Reviews - Cochrane Database of Systematic Reviews Meremikwu, M. Oyo-Ita, A. **Physical methods** for treating **fever** in **children**.
[Systematic Review] **Cochrane Infectious Diseases Group** Cochrane Database of Systematic Reviews. 4, 2008.
AN: 00075320-100000000-03254
▸ View Abstract

Find Citing Articles

- Abstract
- Complete Reference
- Table of Contents
- EBM Topic Review

☐ 2. EBM Reviews - Cochrane Database of Systematic Reviews Meremikwu, M. Oyo-Ita, A. **Paracetamol for treating fever in children.**
[Systematic Review] **Cochrane Infectious Diseases Group** Cochrane Database of Systematic Reviews. 4, 2008.
AN: 00075320-100000000-02578
▸ View Abstract

Find Citing Articles

- Abstract
- Complete Reference
- Table of Contents
- EBM Topic Review

OvidSP Tips:

Create, view, save, and edit annotations quickly and easily with OvidSP. Annotations are identified as yellow sticky note icons in your results.

www.ovid.com

完成

搜尋 Cochrane Library

- **Keywords:**

  coronary artery AND calcium scan AND asymptomatic

檔案(F)　編輯(E)　檢視(V)　我的最愛(A)　工具(T)　說明(H)　　轉換　　選擇
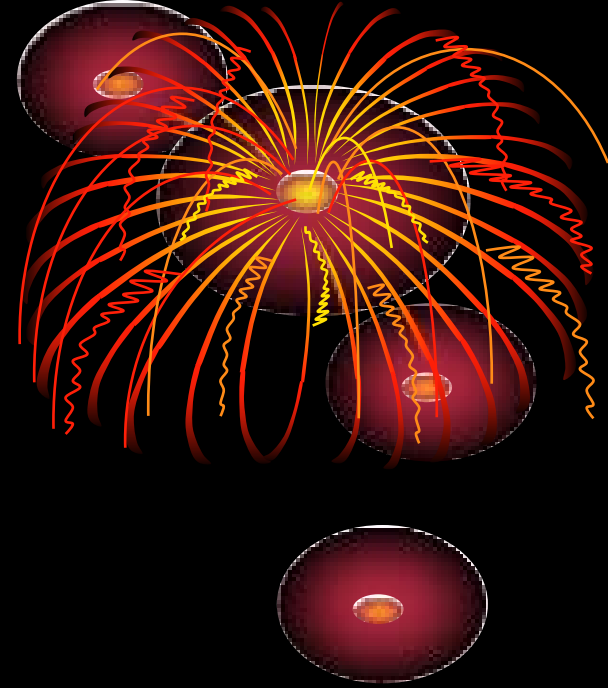
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Independent high-quality evidence for health care decision making

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SEARCH

Title, Abstract or Keywords

Advanced Search >   MeSH Search >
Search History >   Saved Searches >

COCHRANE REVIEWS

By Topic New Reviews Updated Reviews A-Z By Review Group

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Other Reviews Clinical Trials Methods Studies Technology Assessments Economic Evaluations

Search Results

Show Results in:
Cochrane Reviews [0] | Other Reviews [0] | **Clinical Trials [34]** | Methods Studies [0] | Technology Assessments [0] | Economic Evaluations [0] | Cochrane Groups [0]

There are 34 results out of 661393 records for: "coronary artery AND calcium scan, asymptomatic in Title, Abstract or Keywords in Cochrane Central Register of Controlled Trials"

○ Save Search

○ Edit Search

1/34

View: **1-25** | 26-34

Export All Results

Record Information	Sort by: Record Title	Match %	Date

☐ **Impact of coronary artery calcium scanning on coronary risk factors and downstream testing the EISNER (Early Identification of Subclinical Atherosclerosis by Noninvasive Imaging Research) prospective randomized trial.**
Rozanski A, Gransar H, Shaw LJ, Kim J, Miranda-Peats L, Wong ND, Rana JS, Orakzai R, Hayes SW, Friedman JD, Thomson LE, Polk D, Min J, Budoff MJ, Berman DS
2011
New

☐ **Lupus Atherosclerosis Prevention Study (LAPS).**
Petri MA, Kiani AN, Post W, Christopher-Stine L, Magder LS
2011
New

☐ **Calcium/vitamin D supplementation and coronary artery calcification in the Women's Health Initiative.**
Manson JE, Allison MA, Carr JJ, Langer RD, Cochrane BB, Hendrix SL, Hsia J, Hunt JR, Lewis CE, Margolis KL, Robinson JG, Rodabough RJ, Thomas AM, Women's Health Initiative and

Searching Results

Title of article	Impact of Coronary Artery Calcium Scanning on Coronary Risk Factors and Downstream Testing
Content	(1) Compared with the no-scan group, the scan group showed a <u>net favorable change in systolic blood pressure, LDL cholesterol, and waist circumference</u> for those with increased Abdominal girth, and <u>tendency to weight loss</u> among overweight subjects, and <u>Framingham Risk Score.</u>

搜尋 UpToDate

- **Keywords:**

coronary artery **AND**
calcium scan **AND**
asymptomatic
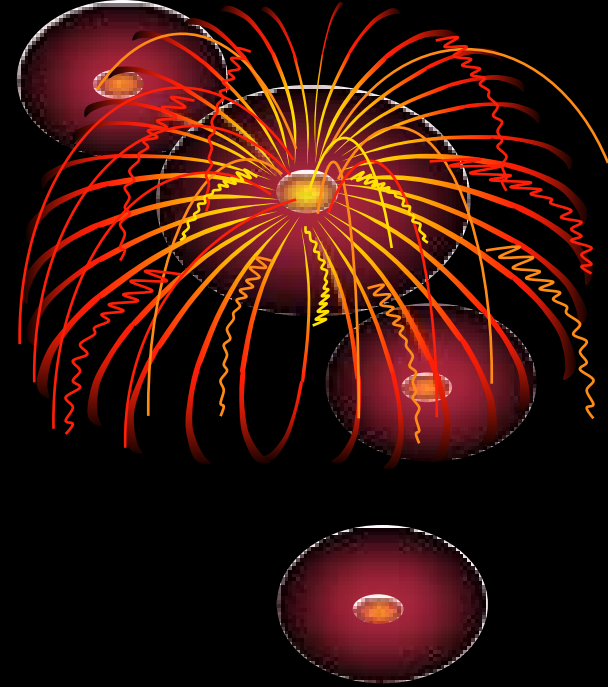
UpToDate. 19.3

coronary artery AND calcium scan /   All Topics ▼   **Search**

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New Search   Patient Info   What's New   Calculators   ▸ Feedback   ▸ Log In

Search Results for "coronary artery AND calcium scan AND asymptomatic"

Topic Outline

◉ All Topics

○ Adult

○ Pediatric

○ Patient

○ Graphics

- **Diagnostic and prognostic implications of coronary artery calcification detected by computed tomography**

- Screening for coronary heart disease in patients with diabetes mellitus

- Screening for coronary heart disease

- Cardiac syndrome X: Angina pectoris with normal coronary arteries

1/4

- Risk factors and epidemiology of coronary artery disease in end-stage renal disease (dialysis)

- Silent myocardial ischemia: Prognosis and therapy

- Prevalence of and risk factors for coronary heart disease in diabetes mellitus

- Clinical manifestations and diagnosis of coronary heart disease in end-stage renal disease (dialysis)

- Treatment of coronary heart disease in end-stage renal disease (dialysis)

- Stress testing for the diagnosis of coronary heart disease

- Clinical features and diagnosis of coronary heart disease in women

- Silent myocardial ischemia: Diagnosis and screening

- Overview of the management of stable angina pectoris

- Management of proximal left anterior descending coronary artery disease

- Coronary artery bypass grafting in patients with cerebrovascular disease

INTRODUCTION

COMPUTED TOMOGRAPHY
- CT scanner types
- CAC scanning
- Radiation exposure

CAC AND CORONARY ARTERY STENOSIS
- CAC scoring
- Importance of ethnicity

CAC AND MYOCARDIAL ISCHEMIA

EMERGENCY DEPARTMENT EVALUATION OF CHEST PAIN

CAC AND PROGNOSIS IN ASYMPTOMATIC PATIENTS
- General predictive value
- Added value to Framingham risk score
  - Identifying high-risk individuals
  - Role in moderate risk patients
  - Effect on prognosis
- Added value to serum CRP
- Added value in smokers
- Serial measurements
  - CAC progression and risk
- Comparison with carotid intima-

網際網路   100%

開始   6 Internet ...   EBM Radio...   lung ca scree...   OCEBM2.JP...   結束鈕(尚...   下午 09:39

Searching Results

Title of article	Diagnostic and prognostic implications of coronary artery calcification detected by computed tomography
Content	(1) CAC scanning — **Routine** screening of asymptomatic patients for coronary disease by CAC scanning is **not** currently recommended.

Searching Results

UpToDate® ONLINE

Title of article	Diagnostic and prognostic implications of coronary artery calcification detected by computed tomography
Content	(2) We do NOT recommend coronary CT scanning for asymptomatic patients with low or high ten-year CHD risk as established by the Framingham. (3) For asymptomatic patients with an intermediate CHD ten year risk (between 10 and 20 percent), coronary CT scanning may be considered.

Framingham/ATP III point scores in men

Age, years	Points
20 to 34	-9
35 to 39	-4
40 to 44	0
45 to 49	3
50 to 54	6
55 to 59	8
60 to 64	10
65 to 69	11
70 to 74	12
75 to 79	13

Total cholesterol mg/dL (mmol/L)	Age 20 to 39	Age 40 to 49	Age 50 to 59	Age 60 to 69	Age 70 to 79
<160 (3.4)	0	0	0	0	0
160 to 199 (3.4 to 5.15)	4	3	2	1	0
200 to 239 (5.17 to 6.18)	7	5	3	1	0
240 to 279 (6.2 to 7.21)	9	6	4	2	1
≥280 (7.24)	11	8	5	3	1

	Age 20 to 39	Age 40 to 49	Age 50 to 59	Age 60 to 69	Age 70 to 79
Nonsmoker	0	0	0	0	0
Smoker	8	5	3	1	1

HDL cholesterol mg/dL (mmol/L)	Points
≥60 (1.55)	-1
50 to 59 (1.29 to 1.53)	0
40 to 49 (1.03 to 1.27)	1
<40 (1.03)	2

Systolic blood pressure, mmHg	Untreated	Treated
<120	0	0
120 to 129	0	1
130 to 139	1	2
140 to 159	1	2
≥160	2	3

Point total	10-year risk, percent	Point total	10-year risk, percent
0	1	9	5
1	1	10	6
2	1	11	8
3	1	12	10
4	1	13	12
5	2	14	16
6	2	15	20
7	3	16	25
8	4	≥17	≥30

搜尋結果

資料庫	符合篇數/查詢篇數
EBMR Reviews	2 / 4
Cochrane Library	1 / 34
UpToDate	1 / 4

The "5S" levels of organisation of evidence from healthcare research

Sources	Level	Examples
Not available		Computerized decision support
	Systems	
Ovid / ACP medicine / ACP pier / Up to date / Dynamed	Summaries	Evidence based textbooks
ACP journal club / Evidence-Based Medicine(BMJ)	Synopses	Evidence based journal abstract
Cochrane Library	Syntheses	Systematic reviews
PubMed / SUMsearch / Google	Studies	Original journal articles

Secondary database

Primary database
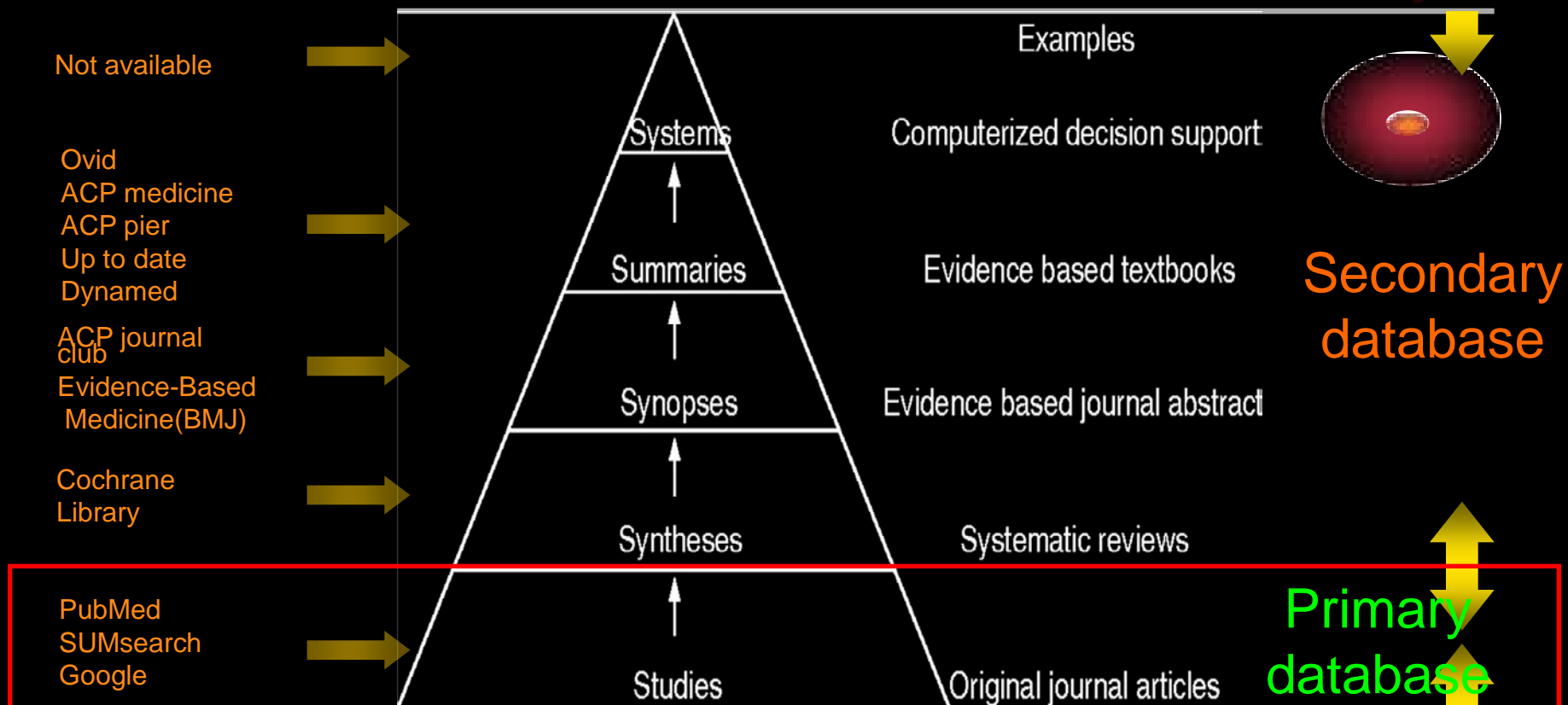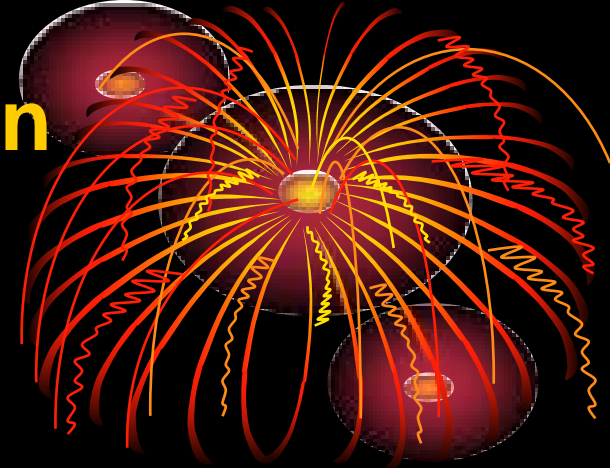
搜尋 Pub Med—Clinical Queries

- **Keywords:**

  coronary artery **AND**
  calcium scan **AND**
  asymptomatic

http://www.uptodate.com/contents/diagnostic-and-prognostic-implications-of-coronary-artery-calcification-detected-by-computed-tomography?source=search_result&search=coronary+artery+AND+calcium+scan

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H) 🔄轉換 ▾ 📋選擇

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19.3
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coronary artery AND calcium scan AND asymptomatic - PubMed - NCBI - Windows Internet Explorer

http://www.ncbi.nlm.nih.gov/pubmed

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🆂 NCBI   Resources ⊡   How To ⊡   My NC

PubMed.gov   PubMed ▾   coronary artery AND calcium scan AND asymptomatic   ⊗   **Search**
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National Institutes of Health   📶 RSS   Save search   Limits   Advanced

Display Settings: ⊡ Summary, 20 per page, Sorted by Recently Added   **1/22**   Send to: ⊡   Filter your results:

⚠ Limits Activated: Humans, All Adult: 19+ years, published in the last 3 years Change Remove   All (22)

                                                                                            Free Full Text (5)

Results: 1 to 20 of 22   Review (1)
                                        << First < Prev Page 1 of 2 Next > Last >>

☐ Impact of unexpected factors on quantitative myocardial perfusion and **coronary** flow reserve in young,
1. **asymptomatic** volunteers.   Man
    Sdringola S, Johnson NP, Kirkeelde RL, Cid E, Gould KL.   4 free full-text articles in PubMe
    JACC Cardiovasc **Imaging**. 2011 Apr;4(4):402-12.   Central
    PMID: 21492816 [PubMed - indexed for MEDLINE]
    Related citations   Comparison of the atherosclerotic burde
                                                                                            asymptomatic patients vs n [J Nucl Card

☐ Impact of subclinical hypothyroidism on the **coronary artery** disease in apparently healthy subjects.   Health behavior modification after electro
2. Park YJ, Lee YJ, Choi SI, Chun EJ, Jang HC, Chang HJ.   computed tomography **and** pl [J Behav M
    Eur J Endocrinol. 2011 Jul;165(1):115-21. Epub 2011 Apr 13.
    PMID: 21490120 [PubMed - indexed for MEDLINE]   Review Using noncontrast cardiac CT a
    Related citations   **coronary artery** c [Vasc Health Risk Man

☐ Prevalence of **coronary artery calcium** scores and silent myocardial ischaemia was similar in Indian   Se
3. Asians and European whites in a cross-sectional study of **asymptomatic** subjects from a U.K. population
    (LOLIPOP-IPC).   **Find related data**
    Jain P, Kooner JS, Raval U, Lahiri A.
    J Nucl Cardiol. 2011 May;18(3):435-42. Epub 2011 Apr 9.   Database: Select ▾
    PMID: 21479755 [PubMed - indexed for MEDLINE]
                                                                                            Find items

Searching Results

Title of article	Using noncontrast cardiac CT and coronary artery calcification measurements for cardiovascular risk assessment and management in asymptomatic adults (Vascular health and risk management, July 2010)
Content	Calcium scan is best applied in the medium/intermediate risk, asymptomatic adult regardless of ethnicity across broad age ranges for both men and women to improve CHD risk assessment and management.

搜尋 Medline

- **Keywords**:

  coronary artery **AND** calcium scan **AND** asymptomatic
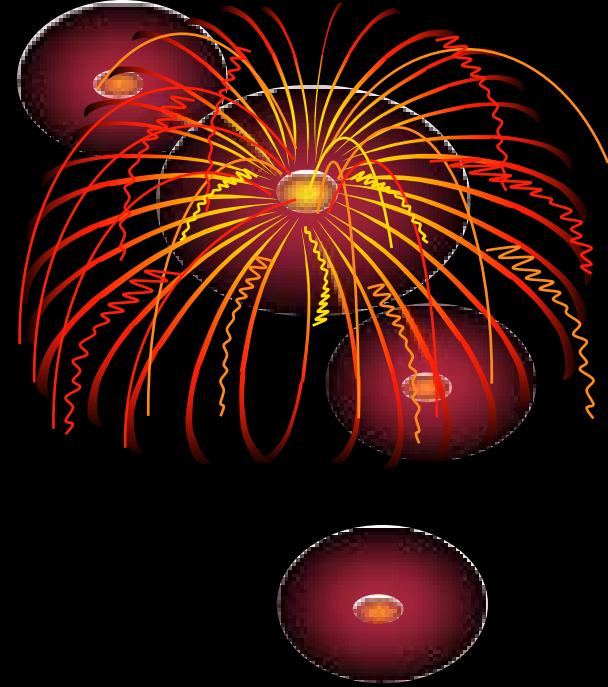
檢索中： **MEDLINE** | 選擇資料庫 »

coronary artery 於 選取欄位 (可加選)

AND calcium scan 於 選取欄位 (可加選)

AND asymptomatic 於 選取欄位 (可加選) 新增資料列

檢索 清除

基本檢索 | 進階檢索 | 視覺檢索 | ▶ 檢索歷史

3/32

Relevance 排序 頁面選項 資料夾 列印

▶ 32 以下檢索的結果...

縮小檢索結果

☐ 連結的全文
☐ 有摘要
☑ 英文

出版日期
1996 — 2011

Detection of silent **coronary artery** disease by computed tomographic **scan**: **coronary artery calcium** versus noninvasive **coronary** angiography.

(**eng**; includes abstract) By Morcillo Serra C, Roca JM, Masip J, Delás J, Rení M, Schembari A, López-Perna Y, Bechich S, **Coronary Artery** Disease [Cor **Artery** Dis], ISSN: 1473-5830, 2011 Mar; Vol. 22 (1), pp. 73-80; PMID: 21150777

主題: Spain; Calcinosis radiography; Coronary Angiography methods; Coron. Artery Disease radiography; Coronary Stenosis radiography; Tomography, X Ray Computed; Middle Aged: 45-64 years; All Adult: 19+ years; Female; Ma

資料庫: MEDLINE

Searching Results

OVID   MEDLINE
<1966 to Present>

|	
Title of article	Health behavior modification after electron beam CT and physician consultation (Journal of behaviral medicine, April 2011)
Content	This study suggests that seeing and being counseled on the presence and extent of <u>coronary artery calcium is significantly associated with behavior change.</u> (increasing *exercise* (odds ratio = 1.34, P = 0.02), changing *diet* (odds ratio = 1.40, P < 0.01), and changing *alcohol* intake)

搜尋結果
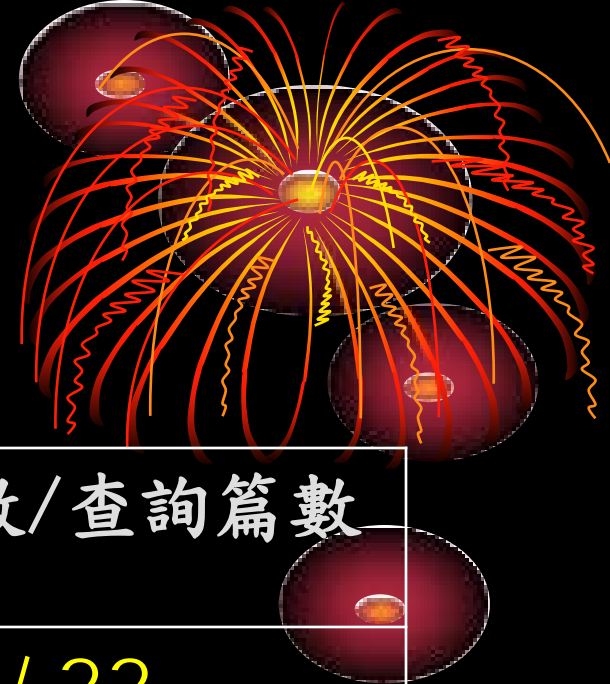
資料庫	符合篇數/查詢篇數
PubMed (Clinical Queries)	1 / 22
Medline	3/ 32

Result
搜尋到的文章標題及文獻等級
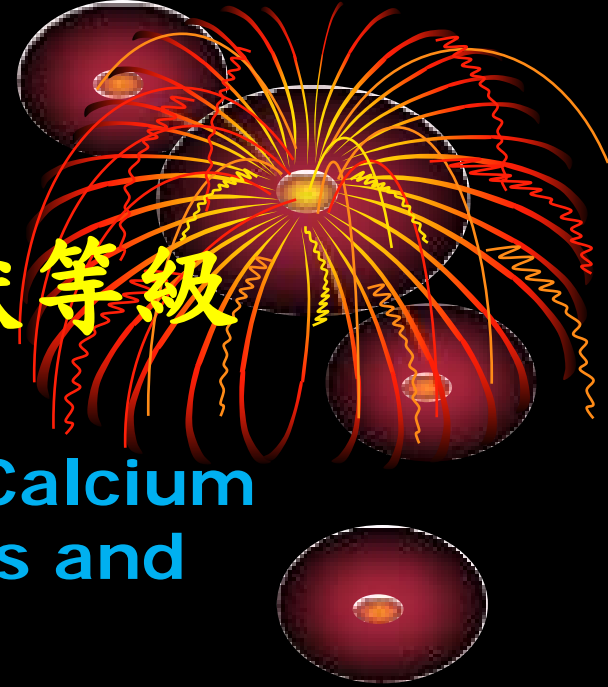
- 標題：**Impact of Coronary Artery Calcium Scanning on Coronary Risk Factors and Downstream Testing**

- 文獻：**Journal of the American College of Cardiology Vol. 57, No. 15, 2011**

- 等級： **Ib**

- 建議等級：**A**

**EXPEDITED PUBLICATION**

Impact of Coronary Artery Calcium Scanning on Coronary Risk Factors and Downstream Testing

The EISNER (Early Identification of Subclinical Atherosclerosis by Noninvasive Imaging Research) Prospective Randomized Trial

Oxford Center for EBM: Levels of Evidence

Recommendation	Level	Therapy/Prevention/Etiology/Harm
A	1a	系統性回顧 **Systematic review** **(**分析數個隨機臨床對照試驗, 其結果均類似**)**
A	**1b**	**設計良好, 結果精確 之隨機臨床對照試驗**
A	1c	**All or none**
B	2a	系統性回顧 **(**分析數個世代研究, 其結果均類似**)**
B	2b	世代研究 **Cohort study**; 設計粗糙之隨機臨床對照試驗
B	2c	**"Outcomes" Research; Ecological studies**
B	3a	系統性回顧 **(**分析數個病例 **-** 對照研究, 其結果均類似**)**
B	3b	病例 **-** 對照研究 **Case-control study**
C	4	某家醫院的十年經驗; 設計不良之世代研究 及病例 **-** 對照研究
D	5	未經考證之專家個人意見, 基礎研究, 細胞實驗, 生理實驗, 動物實驗…的結果
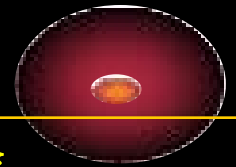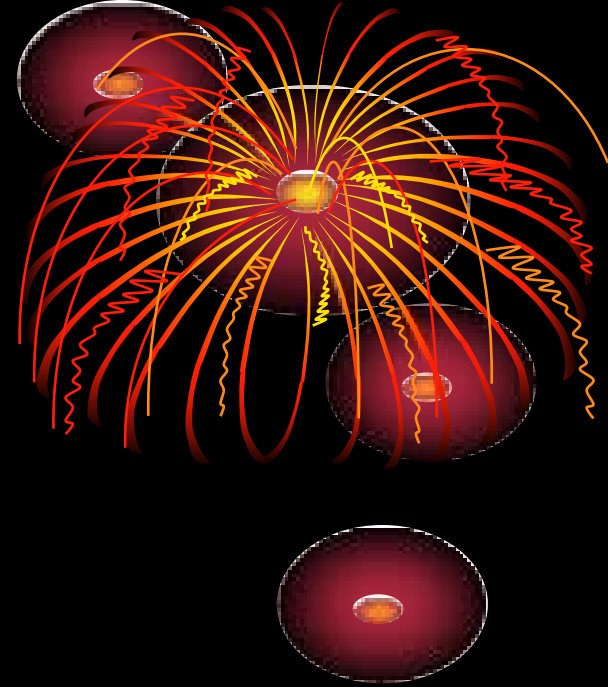
- **Asking**
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  - 嚴格評讀文獻
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- **Audit**
  - 自我評估

Appraisal--VIP
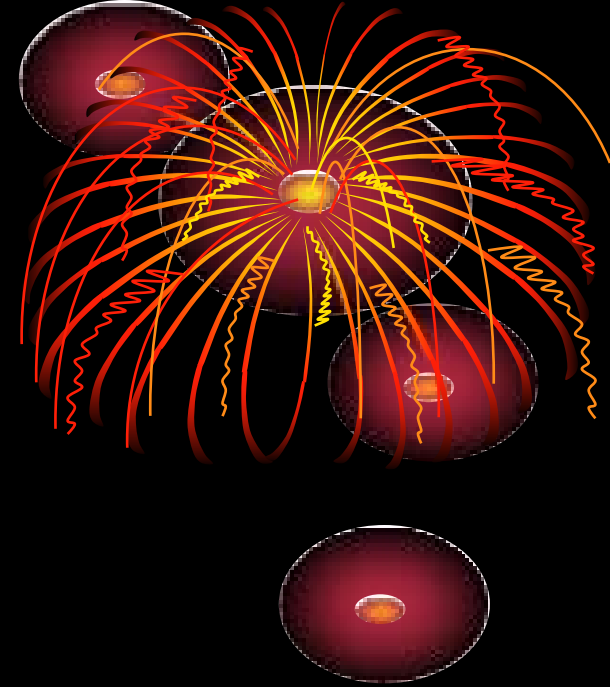
- **Validity**
  - 可信度（效度）
- **Impact (Importance)**
  - 影響程度
- **Practice**
  - 臨床可使用性

- **Validity**
  - 可信度(效度)
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  - 臨床可使用性

檔案(F)　編輯(E)　檢視(V)　我的最愛(A)　工具(T)　說明(H)

上一頁　　　　　　　搜尋　　我的最愛

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Quickfinder　　Go

CEBM > EBM Tools > Critical Appraisal > Overview
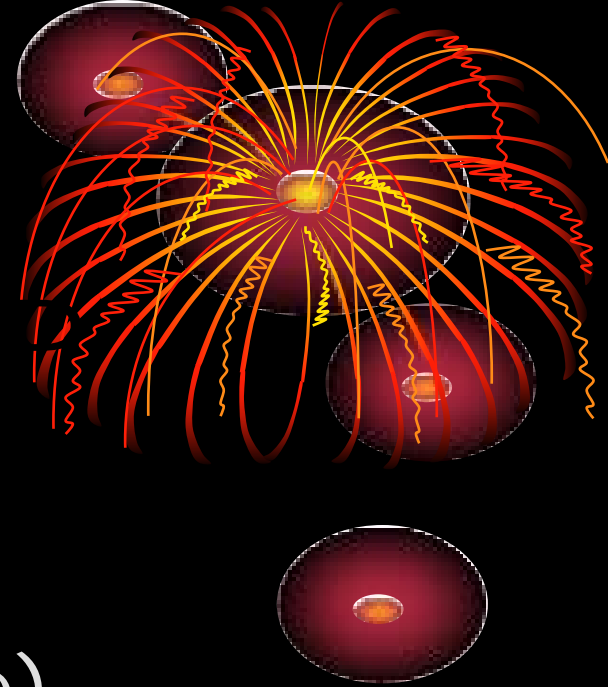
Asking Focused Questions

Finding the Evidence

Critical Appraisal

　Study Designs

　Explanations and Examples

　Critical Appraisal Sheets

　EBM Calculators

　CATmaker

Making a Decision

Evaluating Performance

Designing Research

Critical Appraisal

This section contains useful tools and downloads for the critical appraisal of medical evidence. Example appraisal sheets are provided together with several helpful examples. Below, you can download our calculators, as well as our PC-based software tool **CATmaker**.

Critical Appraisal Sheets

Systematic Review Critical Appraisal Sheet

Diagnostic Critical Appraisal Sheet

RCT Critical Appraisal Sheet

PICO Critical Appraisal Sheet (PDF)

PICO Critical Appraisal Sheet (MS-Word)

Educational Prescription Critical Appraisal Sheet (PDF)

Explanations & Examples

Pre-test probability

SpPin and SnNout

Likelihood Ratios

NNTs

Calculators

All-purpose 2x2 Table
The "CATmakers Scratching Post"
Download (Adobe Flash format)

Interactive Nomogram
Generates post-test probabilities from

CATmaker

CATmaker is a computer-assisted critical appraisal tool, which helps you create Critically Appraised Topics (CATs), for

CATmaker

What's New

THE PAUL GLASZIOU FILES
a series of interviews with proponents of evidence-based medicine and evidence-based practice from around the world
More Information

Workshop on Evidence-Based Practice 1 day Workshop
27th November 2009
More Information

CEBM in Action

Paul Glasziou
EBM in Practice

Carl Heneghan
Diagnostic Tests

Related Links

Are the results of the study Valid? (效度如何?)

- *Was the assignment of patients to treatments <u>randomised?</u>*
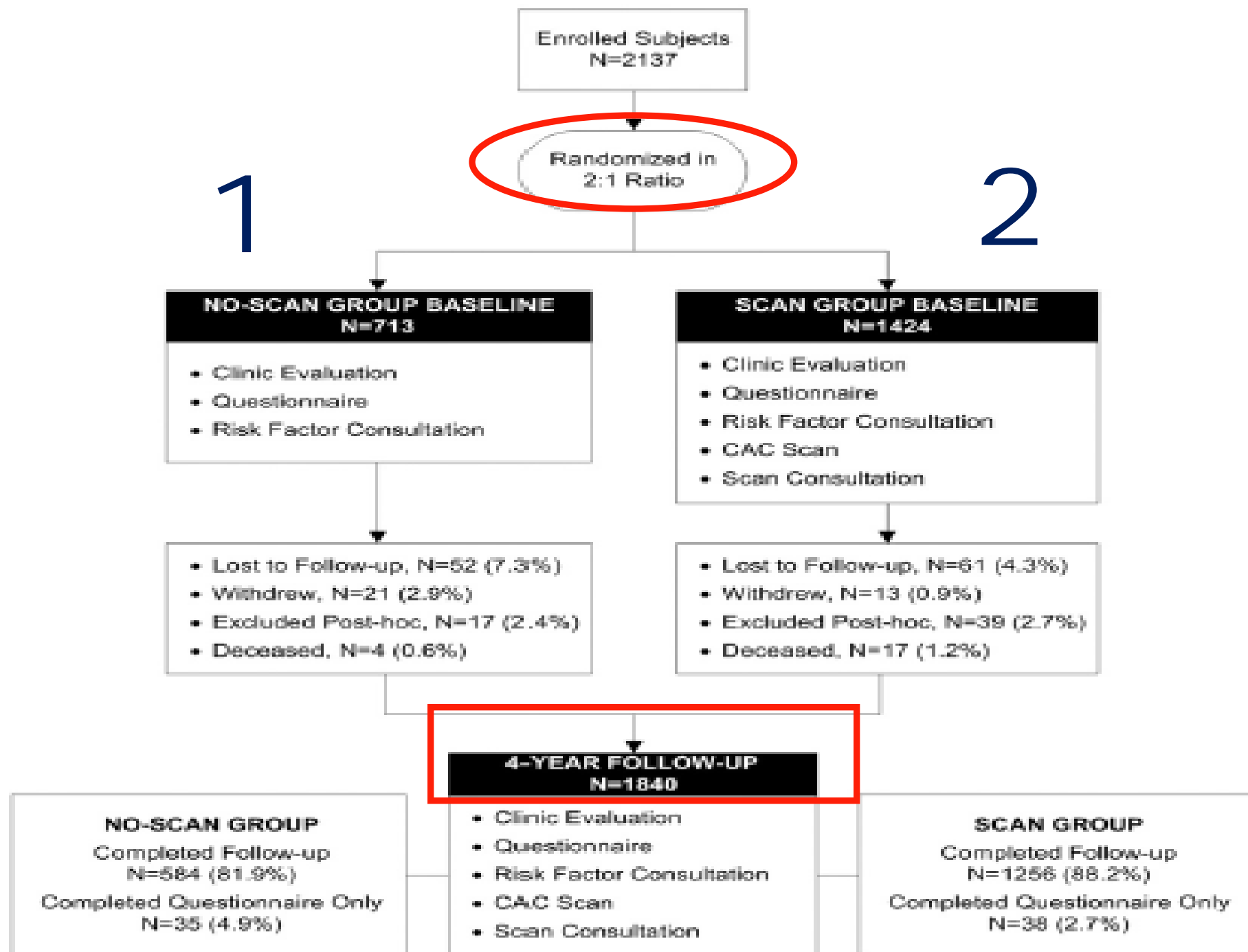
■ 是	□ 否	□ 不清楚

評論：

➤ Selected: middle-aged individuals with CAD risk factors

➤ Excluded: subjects with history of cardiac or cerebrovascular disease or chest pain, age 80 years, pregnancy, and prior CAC scanning.

➤ After recruitment, **subjects were randomized into a group** that was either scheduled for CAC scanning (scan group) or not (no-scan group) **with the ratio of randomization was 2:1**.(To encourage subjects' enrollment into our study, the ratio of randomization was 2:1)

•*Were the groups similar at the start of the trial?*

■是	□ 否	□ 不清楚

評論：

➤The *Results* have a table of

"**Baseline Characteristics**" comparing the randomized groups on a number of variables that could affect the outcome.

➤The 2 groups were comparably matched in terms of age, sex, socioeconomic factors, cardiac risk factors, medication use, and Framingham Risk Score (FRS).

Table 1	Baseline Characteristics			
Parameters	Overall (n = 1,934)	No-Scan Group (n = 623)	Scan Group (n = 1,311)	p Value
Age, yrs	58.5 ± 8.4	58.4 ± 8.2	58.6 ± 8.5	0.75
Male	1,015 (52.5%)	327 (52.5%)	688 (52.5%)	1.00
Race/ethnicity				
Caucasian	1,487 (77.0%)	493 (79.1%)	994 (76.0%)	
African-American	97 (5.0%)	26 (4.2%)	71 (5.4%)	
Asian/Pacific Islander	202 (10.5%)	62 (10.0%)	140 (10.7%)	
Hispanic/Latino	81 (4.2%)	23 (3.7%)	58 (4.4%)	
Other	64 (3.3%)	19 (3.0%)	45 (3.4%)	0.59
Level of education				
<High school	13 (0.7%)	3 (0.5%)	10 (0.8%)	
High school/tech	156 (8.3%)	43 (7.1%)	113 (8.9%)	
Some college	412 (21.9%)	137 (22.5%)	275 (21.6%)	
College	533 (28.3%)	197 (32.3%)	336 (26.4%)	
Graduate education	767 (40.8%)	230 (37.7%)	537 (42.3%)	0.87*
Annual income				
<$20,000	75 (4.2%)	26 (4.5%)	49 (4.0%)	
$20,000–$39,000	188 (10.5%)	58 (10.0%)	130 (10.7%)	
$40,000–$59,000	262 (14.6%)	77 (13.3%)	185 (15.3%)	
$60,000–$79,000	289 (16.1%)	97 (16.8%)	192 (15.8%)	
$80,000–$99,000	243 (13.6%)	78 (13.5%)	165 (13.6%)	
≥$100,000	734 (41.0%)	243 (42.0%)	491 (40.5%)	0.55*
Cardiac risk factors				
Hypertension	1,108 (57.3%)	355 (57.0%)	753 (57.4%)	0.85
High cholesterol	1,498 (77.5%)	468 (75.1%)	1,030 (78.6%)	0.09
Diabetes mellitus	158 (8.2%)	52 (8.4%)	106 (8.1%)	0.85
Past smoker	803 (41.5%)	254 (40.8%)	549 (41.9%)	0.65
Current smoker	111 (5.7%)	37 (5.9%)	74 (5.6%)	0.80
Family history of CAD	513 (26.5%)	155 (24.9%)	358 (27.3%)	0.26
Body mass index, kg/m^2	26.4 (23.9, 29.9)	26.3 (23.8, 29.7)	26.5 (23.9, 29.9)	0.23

- *Aside from the allocated treatment, were groups treated equally?*

■ 是	□ 否	□ 不清楚

評論：

<Comparison of CAD risk factors at 4 years in the randomized groups>

- Fasting lipid profile and serum glucose; systolic and diastolic blood pressure; height; weight; and waist circumference. Ten-year risk of CAD by the Framingham Risk Score (FRS)

<Comparison of medical resource utilization>

antihypertensive or lipid-lowering medications,

Were all patients who entered the trial accounted for? (were they analysed in the groups to which they were randomised?)

■ 是	□ 否	□ 不清楚

評論：

- Trial participants were asked to return for a follow-up clinic visit at 4 years.
- Of the 2,137 enrolled subjects, 584/713 (81.9%)no-scan subjects and 1,256/1424 (88.2%) scan subjects, completed the follow-up.
- *Lost to follow-up, withdrew from the trial, or died before 4-year follow-up.*

- *Were measures objective or were the patients and clinicians kept "blind" to which treatment was being received?*
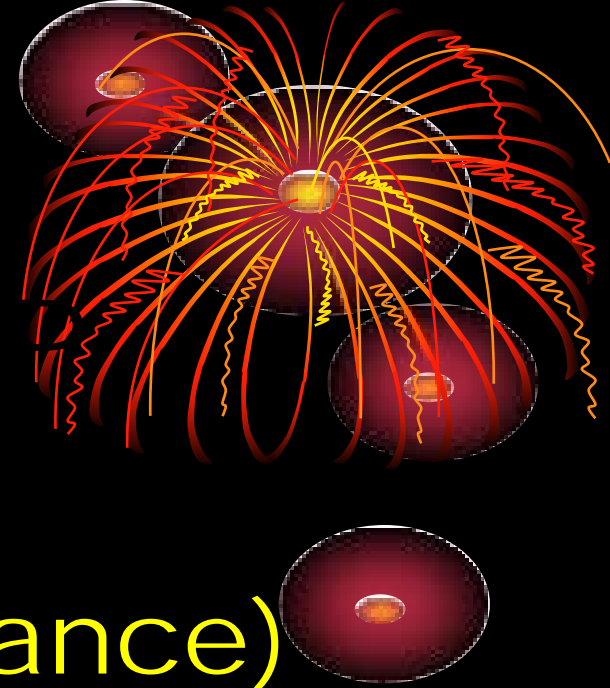
□是	□否	■不清楚
\<Method\> **No "double-blinded" study method was mentioned.**		

- **Validity**
  - 可信度（效度）
- **Impact (Importance)**
  - 影響程度
- **Practice**
  - 臨床可使用性

How many trials included and how many participants?
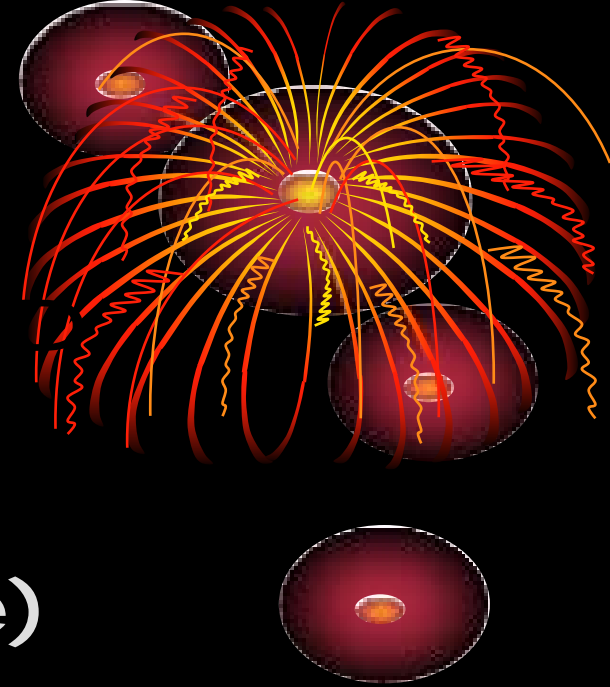
□是	□否	■不清楚

評論：

•We assigned **2,137 volunteers** to groups that either did undergo CAC scanning or did not undergo CAC scanning.

•The primary end point was **4-year** change in coronary artery disease risk factors and Framingham Risk Score.

- **Validity**
  - 可信度(效度)
- **Impact (Importance)**
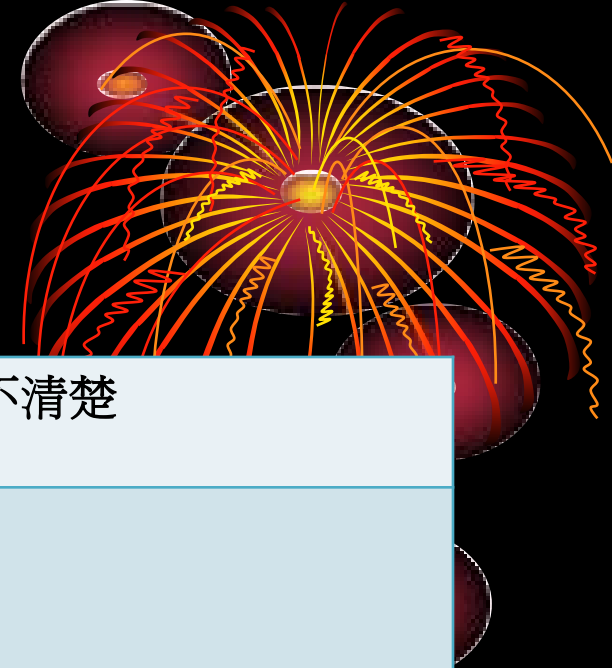 - 影響程度
- **Practice**
  - 臨床可使用性

Main result

(1) <u>CAC scanning can improve cardiac management</u> without incurring significant increase in downstream medical costs.

(2) Further work <u>should assess patients who are suitable candidates for CAC scanning</u> based on clinical consensus and current guidelines

Implication for practice

■是	□否	□不清楚
評論：		

(1) CAC scanning

(2) WHO are Suitable candidates?

Results

Title of article	Diagnostic and prognostic implications of coronary artery calcification detected by computed tomography
Content	(3) <u>For asymptomatic patients with an intermediate CHD ten year risk</u> (between 10 and 20 %), coronary CT scanning may be considered when the result is reasonably expected to lead to a change in management.
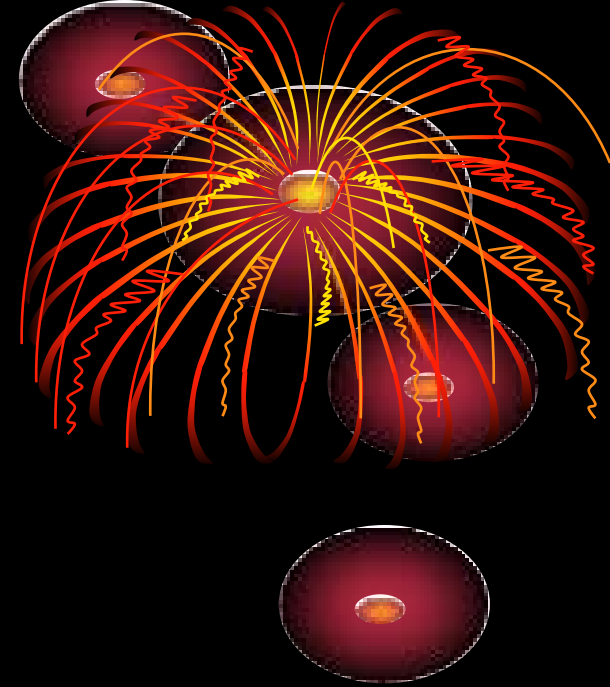
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  - 嚴格評讀文獻
- **Apply**
  - 是否可應用到病人身上
- **Audit**
  - 自我評估

這個研究的病人是否和我們的病人類似?

□是	□否	■不清楚

Table 1 Baseline Characteristics

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這個治療在我們的診療環境是否合理？

■是	□否	□ 不清楚
評論：		

- 是否有這個自費項目 ➔ Yes
- 是否容易取得 ➔ Yes
- 是否符合經濟效益(花費不會太高) ➔ ?
  => NT $ 9000（高醫:自費）

我們的病人從治療中得到什麼好處或壞處？

評論：

- **Benefit:**
  - **Physical:** 減少未來冠狀動脈疾病的發生
  - **Psychological:** 減少疾病恐慌, 正面生活動力
 - **Economical:** 減少國家因治療冠狀動脈疾病龐大的醫療支出
- **Harms:**
  - **Radiation dose**

Representative values and ranges of effective dose estimates reported in the literature for selected radiological studies[1]

| Exam	Representative effective dose value (mSv)	Range of reported effective dose values (mSv)
Chest x-ray PA and lateral	0.1	0.05-0.24
CT chest	7	4-18
CT abdominal	8	4-25
CT pelvis	6	3-10
Coronary calcium CT*	3	1-12
64-slice coronary CTA•		
Without tube current modulation	15	12-18
With tube current modulation[2]	9	8-18
Dual source coronary CTA•		
With tube current modulation	13	6-17
Prospectively triggered coronary CTA[3]•	3	2-4
Diagnostic invasive coronary angiogram	7	2-16
Percutaneous coronary intervention or radiofrequency ablation	15	7-57

可以給病人的建議為何？
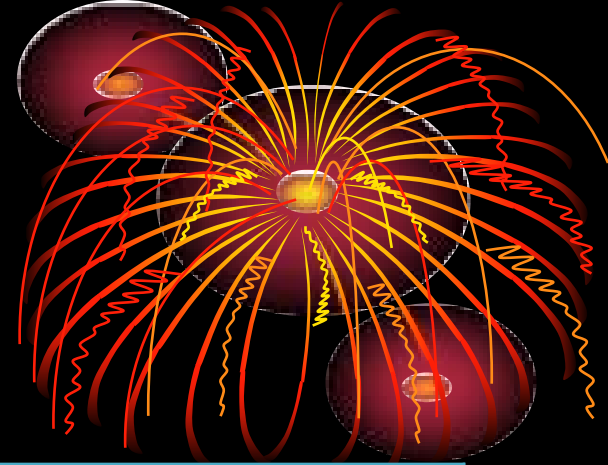
評論：

- 若經濟狀況許可, 以Framingham量表介於中度危險因子者, 建議進行。

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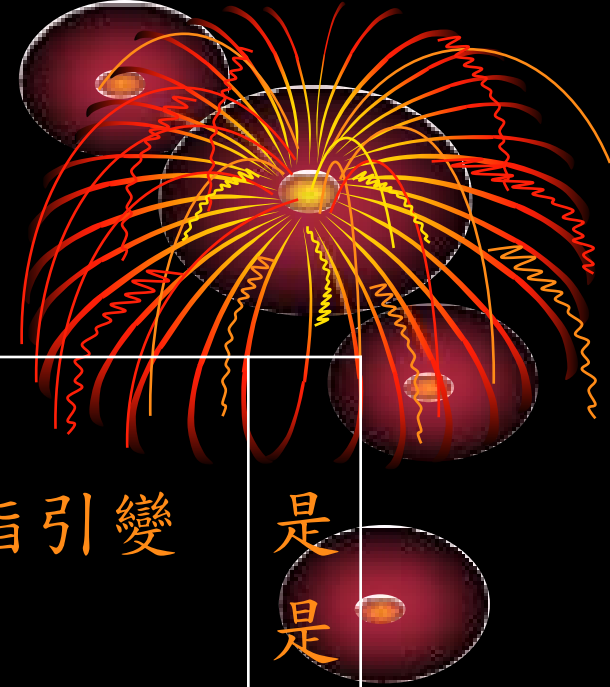 - 嚴格評讀文獻
- **Apply**
  - 是否可應用到病人身上
- **Audit**
  - 自我評估
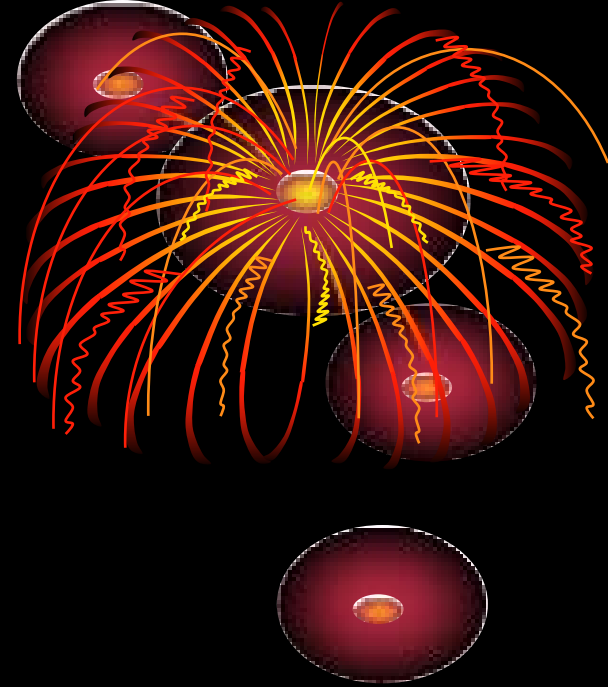
自我評估：結論
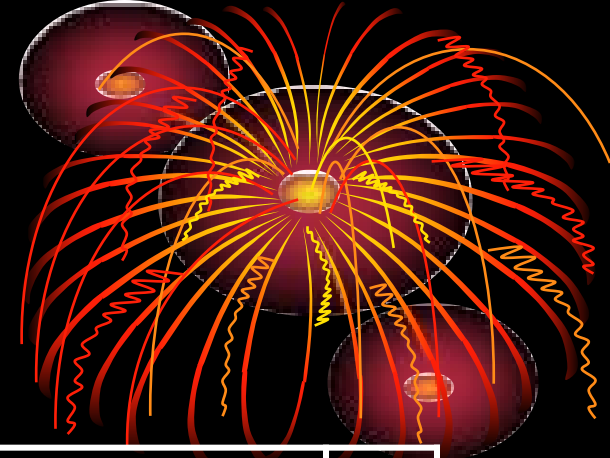
Step 1: Asking 1. 我有提出任何臨床問題嗎？ 2. 我提出的是結構完整的問題？	有 是
Step 2: Acquire 1. 我知道在我的臨床領域中現有的最佳證據來源？ 2. 在搜尋方面我變得更有效率？	是 是

Step 3: Appraisal 1.對我而言，應用此研究證據之評讀指引變得更簡單？ 2.我是否盡全力做評讀了？	是 是
Step 4: Apply 1.我盡力將審慎評估之結果融入診療中？ 2.我是否將搜尋到的最佳證據應用到我的臨床工作中？	是 是

Thanks for your attention ~~