

認識實證及文獻查閱



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大綱

- 實證的起源
- 實證的目的及重要性
- 實證五步(5A)：問、查、讀、用、審
- 文獻搜尋的技巧
- 實證研究常見的三大偏差及倫理議題
(以母乳哺育相關研究為例)
- 結論

實證的起源

- 實證醫學（evidence-based medicine，EBM），含義-「有目的及正確地運用最好的科學依據指導病人的治療。」
- 其發展最早是記載於清乾隆年間，就當時即有「考證」古代醫書的做法（Woodhouse，1998）。
- 1972年Archie Cochrane提出實證醫學的概念(英國臨床流行病學者)，其強調”隨機對照試驗”(RCT)的重要性，及醫療行為應嚴謹研究及證實有效，才能將醫療資源有效運用。
- David L. Sackettm於1993年成立Cochrane Collaboration 和 Cochrane Library。



實證的目的及重要性

- 因90年代日常醫療中，需大量與疾病診斷、治療、預後判斷和預防方面相關的訊息；
- 過去的醫學理論知識的不斷更新；
- 臨床工作繁忙，醫護人員沒有更多的時間漫無邊際地去搜尋和歸納所需的訊息。
- 專家提出有效查尋和評價科學依據的原則；
- 出版實證醫學期刊，發表有效且供臨床立即可用有價值的研究報告；
- 逐步架構可供快速檢索的網絡訊息系統；
- 找到和運用行之有效的方法。

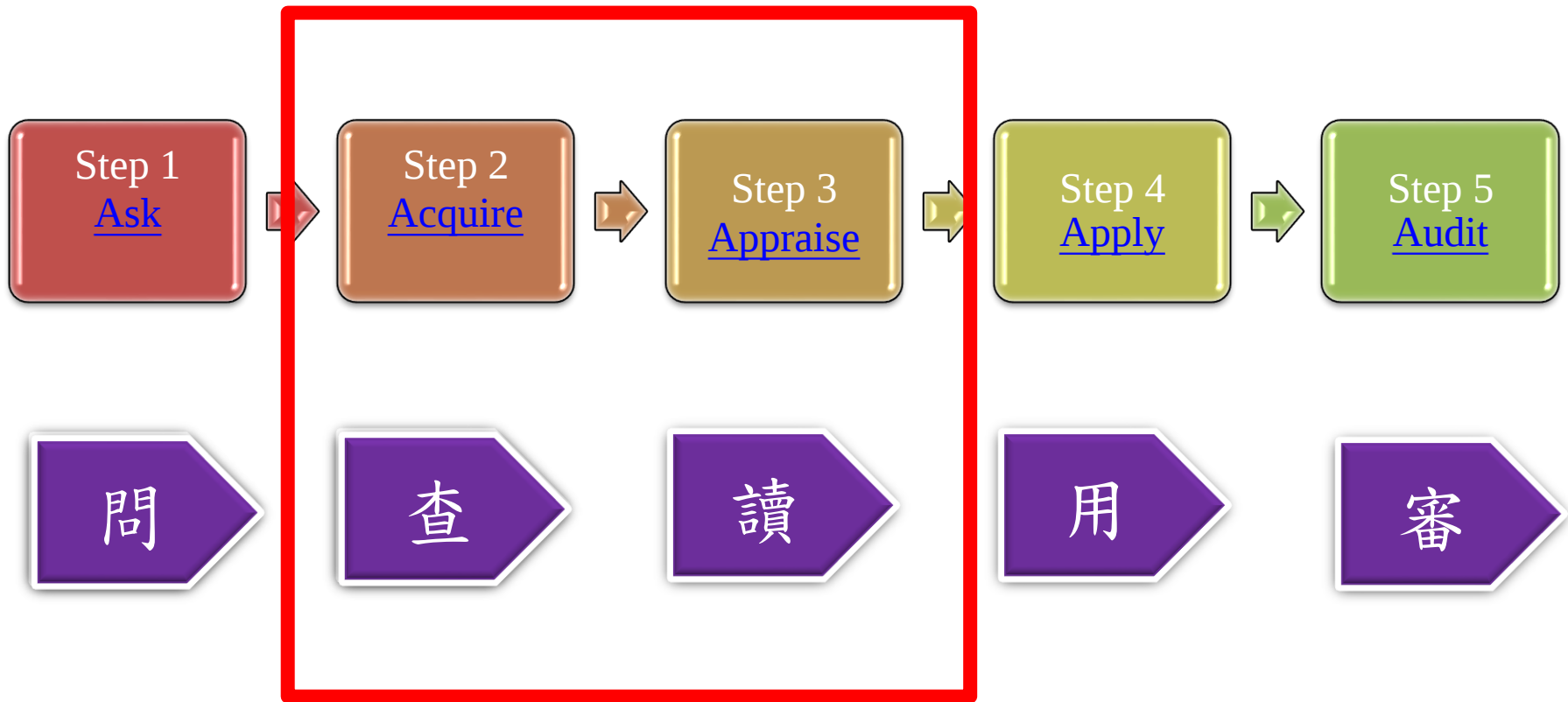
上述因素的研究進展，推動實證醫學在醫療行為模式上的重要地位。

臨床問題~如何解決



- 產婦脹奶要冷敷還是熱敷？
- 哺乳媽媽左側乳房乳腺炎切開引流，右側乳房有硬塊排出還是不要排出乳汁？(餵/不餵？)
- 每次哺餵後要再排出乳汁還是不要？

實證五步 5A



Step One of EBM Process (第一步)

問

- Ask

- 第一個步驟:問問題
- 問什麼問題呢？
 - ✓ 臨床以病人為中心的問題。
 - ✓ 可以被研究回答(answerable)，可以被搜尋(searchable)且精確（specific）的問題。

問題可分為~兩類

◦ Background question :

- 一般是指最「基本」或「概論」的問題，通常有兩類：
 - 由 5W1H (who, what, why, when, where, how ...) 開頭
 - 常是討論一個現象、疾病或問題，或這個現象、疾病或問題的某一特定部分（如：乳腺炎、奶水分泌的原理與機轉或是脹奶的原因）

◦ Foreground question

- 是指「處理某個患者」的特定問題。可能與下列主題有關：
 - Clinical findings (e.g. History or Physical Finding of a patient)
 - Etiology / Harm (病因或危害)
 - Dx / DDx (診斷 或 鑒別診斷)
 - Prognosis (預後)
 - Rx / Prevention (治療或預防)

發展問題 (Question Development)

- **PICO**: 進行成效評估(effectiveness)，介入性研究
- **PICo**: 質性研究
- **CoCoPop**：盛行率與發生率之研究
- **PIRD**：診斷正確性之研究
- **PEO**：病因及危險因子之研究
- **PCC**：範域性文獻回顧之研究

成效文獻回顧(effectiveness reviews)

- 成效的定義: 一個介入措施，當合宜使用時，達到預期效益的程度。
- 目的: 評量介入措施/治療的成效
- 研究設計: 實驗性研究、類實驗性研究、觀察性研究

發展問題

- 聚焦、明確、便於**找到關鍵詞**
- 問題通常由 **PICO** 四個部分組成，**PICO** 就是我們要問的問題。
- 這類問題一定可由「單一研究」回答

1. Participant

2. Intervention or exposure

3. Comparison

4. Outcome

主訴奶水分泌不足的產婦(P)，以背部按摩(I)，是否比乳房穴位按摩(C)所製造的奶水分泌量(O)為多？

P-Patient or Problem

- 是個怎麼的病人（Patient），或是有某種特質或問題（Problem）的病人。
 - 如：這是個「沒有生理/解剖問題」但由「主訴奶水不足」的32歲產婦（Patient）；有乳頭凹陷（Problem）或是 HBsAG 為陽性（Problem）的產婦。
 - 由於 PICO 最後會轉換成檢索用的**關鍵詞**，勿將 PICO 的 **P - Problem** 與 PICO 組合成的 **Question** 混淆；前者是描述病患的**特質**或**特定問題**(如:新生兒缺鐵)；而後者則是將 PICO 四個項目組合成一個問句(如:純哺餵母乳6個月的新生兒是否較為配方奶的新生兒有較佳的生長發育遲緩)。

I-Intervention (Experimental/Exposure group)

- 治療或是暴露組，或是實驗組；一般是我們所感興趣的處置或因子(如:肌膚接觸、親子同室、母嬰不分離)。

C-Comparison (Control group)

- 對照組，可能是一般的治療(如母嬰分開照護)、安慰劑、黃金診斷標準。

O-Outcome

- 要比較什麼成效，是減輕「症狀」、減少「住院日」或「住院次數」、或是減少「並發症」或是延長「壽命」。如：
 - 奶水分泌量
 - 住院天數
 - 體重增加情形
 - 膽紅素指數

PICO評讀

- P --有否對於病人特色及疾病病徵之清楚描述？
- I & C --清楚描述主要/其他介入措施或暴露因素？
- O--正確指出結果成效的測量指標？

是否使用與臨床情境最相關且最重要的指標？

是否有量化測量指標？

是否同時考慮患者療效與可能副作用？



Qualitative Reviews

- 目的: 探討某現象的經驗或意義，聚焦在分析人類的經驗、文化及社會現象。
- 研究設計: 透過質性理念、方法學及資料收集法的質性研究



Qualitative Reviews

- PICo

- Population

- Phenomena of Interest: event. Activity, experience, or process

- Context: setting or distinct characteristics

Qualitative Reviews

- Example:

在COVID-19盛行期間，懷孕婦女選擇生產地點的決策過程為何？

選擇居家生產的經產婦，準備大寶參與生產過程的經驗？



Costs/Economics Reviews

- Aim –
 - To determine the costs associated with a particular approach/treatment strategy, particularly in terms of cost effectiveness or benefit.
 - Useful to inform health policy to achieve equality in healthcare provision to all members of society
- Study Design – Experimental studies; quasi-experimental studies with focus on those including both costs and outcomes of strategies of interest



Costs/Economics Reviews

- Question Development
- PICO
 - Population
 - Intervention
 - Comparator
 - Outcome

Context also considered



Costs/Economics Reviews

- Example:

What is the cost effectiveness of Mohs micrographic surgery compared to other surgical/ablative interventions for non-melanoma skin cancer in developed countries?

Costs/Economics Reviews

Example:

- What is the **cost effectiveness** of **Mohs micrographic surgery** compared to **other surgical/ablative interventions** for **non-melanoma skin cancer** in **developed countries**?

Population

Intervention

Comparison

Outcome

Context



Prevalence or Incidence Reviews

- **Aim** - To determine the prevalence and/or incidence of a certain condition (measure of disease burden). Enable governments, policy makers, health professionals and the general population to inform the development and delivery of health services
- **Study Design** – Mainly observational study designs, including prospective and retrospective cohort, case-control and cross-sectional studies
- **Prevalence** (the proportion of a population who have a certain disease)
- **Incidence** (how often a disease occurs)



Prevalence or Incidence Reviews

- Question Development
- CoCoPop
 - Condition
 - Context
 - Population



Prevalence or Incidence Reviews

- The variable of interest is the **condition** and can be a health condition, disease, symptom, event or factor
- Define **context** or specific setting since prevalence/incidence can be impacted by environmental factors
- Like PICO, **population** characteristics need to be described in detail



Prevalence or Incidence Reviews

- What is the prevalence and incidence of perinatal depression among women in Taiwan?

Condition

Context

Population



Prevalence or Incidence Reviews

- What is the prevalence and incidence of perinatal depression among women in Taiwan?

Condition

Context

Population



Diagnostic Test Accuracy Reviews

- **Aim** - To determine how well a diagnostic test works in terms of its sensitivity and specificity for a particular diagnosis. Important for clinicians to determine the accuracy of the diagnostic tests they use
- **Study Design** – The two main types of studies of diagnostic test accuracy are case–control and cross-sectional.



Diagnostic Test Accuracy Reviews

- Question Development
- PIRD
 - Population
 - Index test
 - Reference test
 - Diagnosis of interest



Diagnostic Test Accuracy Reviews

- Population includes all participants who will undergo the diagnostic test
- Index test refers to the diagnostic test whose accuracy is being investigated; multiple iterations may exist
- Reference test refers to the gold standard test with which the index test will be compared
- Diagnosis of interest relates to which diagnosis is being investigated: may be a disease, injury, disability or pathological condition

Diagnostic Test Accuracy Reviews

- Example:

What is the diagnostic accuracy of non-invasive observational methods for labor progress assessment compared to vaginal examination as a reference assessment during first stage of labor for intrapartum women?

Population

Intervention

Comparison

Diagnosis of
interest

Diagnostic Test Accuracy Reviews

- Example:

What is the diagnostic accuracy of **non-invasive observational methods** for **labor progress assessment** compared to **vaginal examination** as a reference assessment **during first stage of labor for intrapartum women?**

Population

Intervention

Comparison

**Diagnosis of
interest**



Etiology and Risk Reviews

- **Aim** - To determine the association between particular exposures/risk factors and outcomes. e.g. Who is getting the disease? Where is the disease occurring? What factors are associated with the disease?
- **Study Design** – Commonly, epidemiological or observational studies are utilized to investigate etiology and risk
 - Not able to determine causality; rather they are only able to infer correlations or relationships between variables



Etiology and Risk Reviews

- Question Development
- **PEO**
 - Population
 - Exposure of interest
 - Outcome or response



Etiology and Risk Reviews

- **Population** characteristics similar to other frameworks
- The **exposure of interest** refers to a particular risk factor or several factors associated with a disease/condition of interest in a population/group/cohort who have been exposed to them
- Consider **outcomes** relevant to the health issue and important to key stakeholders

Etiology and Risk Reviews

- Example:
- Are children who were exposed to tobacco smoke (maternal smoking) during pregnancy at risk for obesity in childhood?

Population

Exposure

Outcome

Etiology and Risk Reviews

- Example:
- Are **children** who were exposed to **tobacco smoke (maternal smoking)** during pregnancy at risk for **obesity in childhood**?

Population

Exposure

Outcome

Step Two of EBM Process (第二步)

查

- **Acquire**-Acquire is the same as Search. 搜尋 資料.
- 要找什麼樣的數據？
- 就是現今最佳的證據 (best available evidence)
 - ✓ 取決於下面兩個因素
 - quality : 就是指 valid & impact.
 - valid 與否要看他的 study design /methodology
 - ，也就是 level of evidence 愈高的愈好.
 - time : 愈新愈好，最好不要超過五年以上。

Step Two of EBM Process (第二步)續

- 證據品質 (level of evidence)
 - ✓ 目前公認最好的質量-Systemic Review or EBM review ，
也就是 Level I evidence 。
 - ✓ 優先找出包含這些 **Level I evidence** 的數據庫，也就是有人自原始數據庫 (primary database) 整理好的 優質數據庫 (secondary database) 。

Type of Study you would want to find

- ✓ 針對不同的問題，合適的研究方法也不同。
- ✓ 在進行檢索前，要先想想。才能在檢索時，選擇合適的 filter 來篩選合適的研究。
- ✓ Diagnosis (diagnostic testing, clinical examination) - prospective cohort, blind comparison to reference standard
 - ✓ Differential diagnosis - cohort study
- ✓ Prognosis - cohort study (control group in RCT) > Case Control study > Case Series
- ✓ Therapy/Prevention or Etiology/Harm - RCT (if possible/ethical) > Cohort > Case Control > Case Series
- ✓ Cost - Economic Analysis
- ✓ miscellaneous - RCT (**randomized clinical trial**) > Cohort study
 - self-improvement/education
 - quality improvement
 - health services research

證據分級

證據力強
設計嚴謹
偏差少

等級可能因
研究的品質、
或間接性佐
證等因素，
而被降低，
反之亦可能
升高

證據力弱
設計薄弱
偏差多

Level	Therapy/Prevention, Aetiology/Harm
① 1a	Systematic review of RCTs + Meta-Analysis
② 1b	Randomized controlled trial (RCT)
1c	'All-or-none'
2a	Systematic review of cohort studies
③ 2b	Cohort study or poor RCT
2c	'Outcomes' research ; Ecological studies
3a	Systematic review of case-control studies
④ 3b	Case-control study
⑤ 4	Case series
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"

濃縮自: Oxford Centre for EBM Levels of Evidence <http://www.cebm.net/index.aspx?o=1047>
2版亦於2016.6上線: <http://www.cebm.net/index.aspx?o=5653>

資料庫類別

依1-2-3查資料

1. 實證資料庫

- **Cochrane Library 、 Evidence-based medicine,**
- **Evidence-Based Nursing 、 JBI.....**

2. 臨床指引

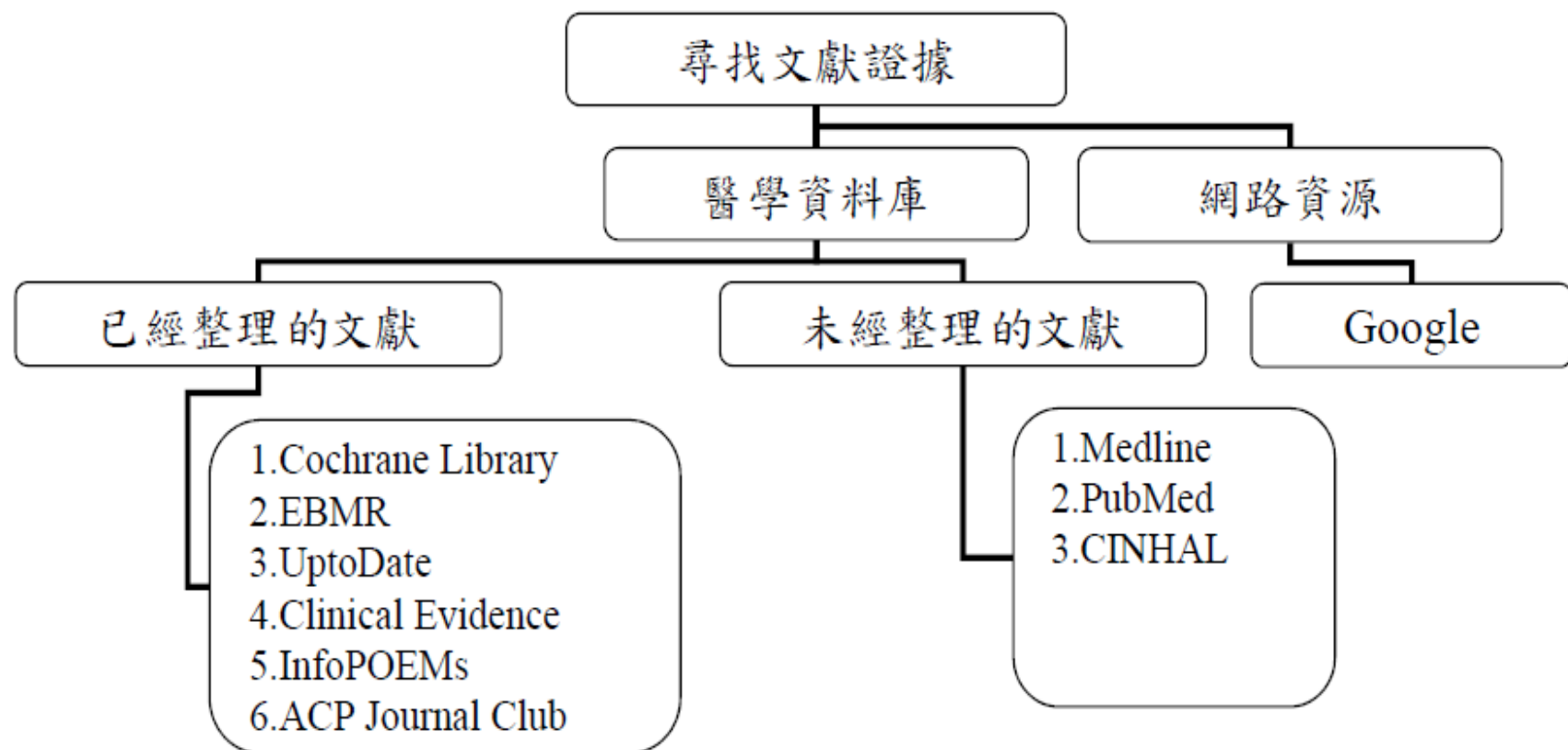
- **NGC: National Guideline Clearinghouse**
- **Joanna Briggs Institute (JBI).....**



3.醫學護理資料庫：

- **CINAHL(護理)、OVID MEDLINE (醫學)**
- **PSYCHLIT(精神心理)、ERIC(教育)**
- **CEPS (思博網)中文全文電子期刊服務....**

常用實證醫學電子資源



搜尋資料的方法

- 單字 vs. “片語”
- 切截字 (...+*\$)
- 同義字
 - 單複數
 - 英美拼法
 - 縮寫
 - 同義字
- 布林邏輯
- 檢索欄位
- 廣狹義詞

單字 vs. “片語”

- 最重要的部份 **Convert your question to a search strategy**
- 將 **P-I-C-O** 分別轉換成不同的字符串／關鍵詞／**MeSH** 再搜尋
- **Combine textwords/keywords & thesaurus/MeSH with OR**
- pain management vs "pain management" vs “pain **adj2** management”

單字 vs. “片語” 範例

How to 

PubMed [Create RSS](#) [Create alert](#) [Advanced](#)

Format: Summary ▼ Sort by: Most Recent ▼ Per page: 20 ▼

Send to ▼

Best matches for pain management:

[Neonatal pain management: still in search for the Holy Grail.](#)

Allegaert K et al. Int J Clin Pharmacol Ther. (2016)

[Pain management in the elderly.](#)

Malec M et al. Med Clin North Am. (2015)

[Pharmacologic Interventions for Pain Management.](#)

Farrar FC et al. Crit Care Nurs Clin North Am. (2017)

[Switch to our new best match sort order](#)

Search results

Items: 1 to 20 of 111841

<< First < Prev Page 1 of 5593 Next > Last >>

單字 vs. “片語” 範例

PubMed ▼ "pain management" |
Create RSS Create alert Advanced

Format: Summary ▼ Sort by: Most Recent ▼ Per page: 20 ▼

Best matches for "pain management":

[Interdisciplinary chronic pain management: past, present, and future.](#)

Gatchel RJ et al. Am Psychol. (2014)

[Pain management in trauma: A review study.](#)

Ahmadi A et al. J Inj Violence Res. (2016)

[Principles of Burn Pain Management.](#)

James DL et al. Clin Plast Surg. (2017)

Switch to our new best match sort order

Search results

Items: 1 to 20 of 50327

<< First < Prev Page 1 of 2517

切截字 *

- **Text words/keywords**，更好是能善用 **truncation(捨去)** 的功能
- 如，你要找有關 **breastfeeding** 的資料，但論文中有時以 **breastfed** 或是 **breast feeding** 表示。這時可以用 **breast\$ or breast*** 代表所有 **breast** 開頭的字符串！
- 在 Medline@OVID 爲 \$，在 PubMed 爲 *

切截字 *

PubMed

breastfeeding

Create RSS

Create alert

Advanced

Format: Summary ▾ Sort by: Most Recent ▾ Per page: 20 ▾

Best matches for breastfeeding:

[Breastfeeding and Breast Cancer Risk Reduction: Implications for Black Mothers.](#)

Anstey EH et al. Am J Prev Med. (2017)

[Breastfeeding and depression: a systematic review of the literature.](#)

Dias CC et al. J Affect Disord. (2015)

[Racial and ethnic disparities in breastfeeding.](#)

Jones KM et al. Breastfeed Med. (2015)

Switch to our new best match sort order

Search results

Items: 1 to 20 of 51707

<< First < Prev Page 1 of 2586

切截字 *

PubMed

breast*

[Create RSS](#) [Create alert](#) [Advanced](#)

Format: Summary ▾ **Sort by:** Most Recent ▾ **Per page:** 20 ▾

Send to ▾

Best matches for breast*:

[Abbreviated protocol breast MRI: The past, present, and future.](#)

Greenwood HI et al. Clin Imaging. (2018)

[An unusual presentation of adenoid cystic carcinoma of the breast with metastatic disease in the clavicle.](#)

Glover TE et al. BJR Case Rep. (2017)

[Breast Implant-Associated Lymphoma.](#)

Kricheldorff J et al. Dtsch Arztebl Int. (2018)

[Switch to our new best match sort order](#)

Search results

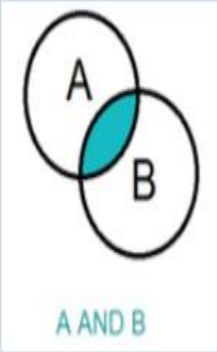
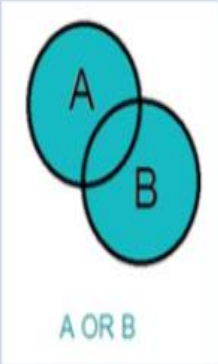
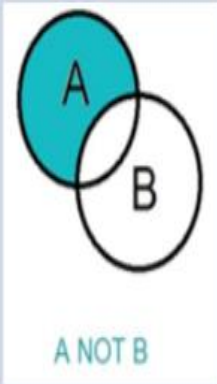
Items: 1 to 20 of 474282

<< First < Prev Page 1 of 23715 Next > Last >>

同義字

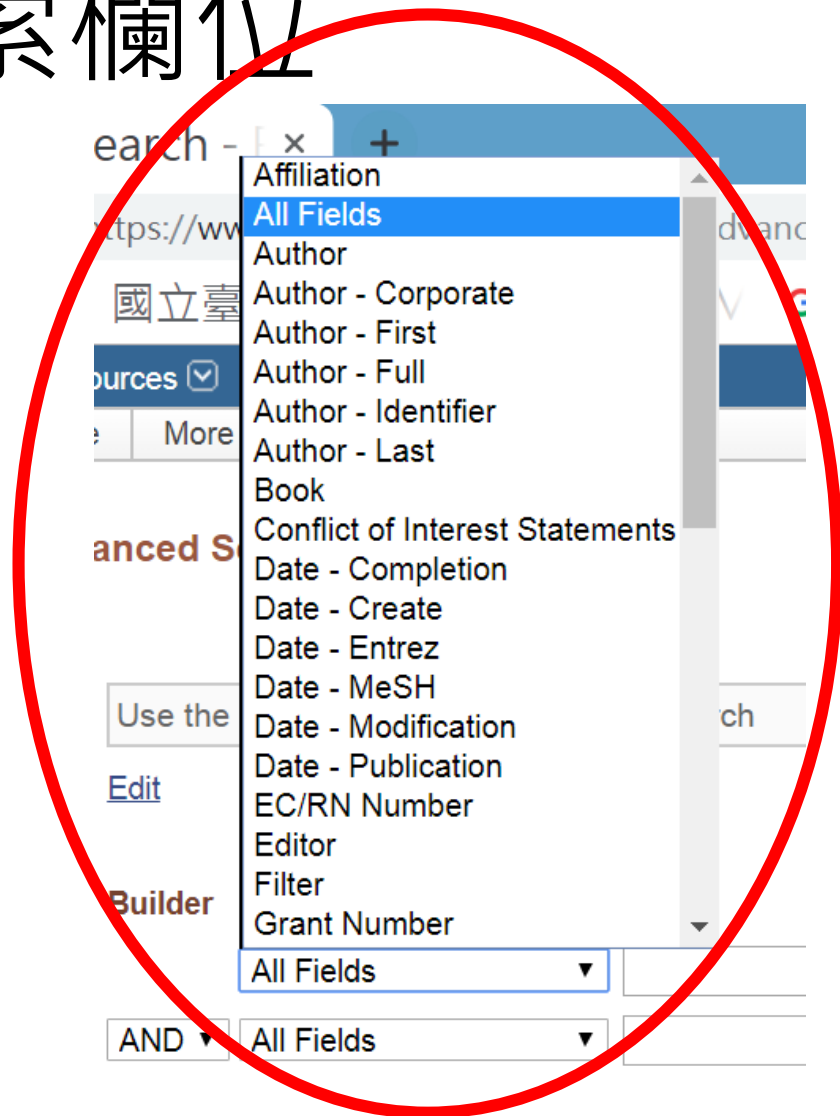
- 單複數 newborn, newborns; foot vs feet
- 英美拼法 labor vs labour
- 縮寫 baby-friendly hospital initiative (BFHI)
- 同義字 breast milk, human milk; breastfeeding / lactation....

布林邏輯

交集 A AND B	聯集 A OR B	差集 A NOT B
縮小檢索範圍  A AND B	擴大檢索範圍  A OR B	排除不相關的範圍  A NOT B

檢索欄位

- 篇名 Title
- 關鍵字 Keywords
- 摘要 Abstract
- 控制詞彙 MeSH Terms / CINAHL Headings
- 全文 Full Text
- 所有欄位 All Fields





廣狹義詞

Complementary Therapies (廣義詞)，以下為狹義詞

Acupuncture Therapy

Medicine, Traditional

Sensory Art Therapies

Art Therapy

Dance Therapy

Music Therapy

Play Therapy

Spiritual Therapies

Meditation

Mental Healing

Yoga

以breastfeeding为例

NCBI Resources How To Sign in to NCBI

PubMed.gov US National Library of Medicine National Institutes of Health

PubMed breastfeeding Search

Create RSS Create alert Advanced Help

Article types
Clinical Trial
Review
Customize ...

Text availability
Abstract
Free full text
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Publication dates
5 years
10 years
Custom range...

Species
Humans
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Search results

Items: 1 to 20 of 44701

<< First < Prev Page 1 of 2236 Next > Last >>

☐ [Postpartum Health Information Seeking Using Mobile Phones: Experiences of Low-Income Mothers.](#)
1. Guerra-Reyes L, Christie VM, Prabhakar A, Harris AL, Siek KA.
Matern Child Health J. 2016 Sep 17. [Epub ahead of print]
PMID: 27639571
[Similar articles](#)

☐ [The Impact of Maternal Obesity on Breastfeeding.](#)
2. Ramji N, Quinlan J, Murphy P, Crane JM.
J Obstet Gynaecol Can. 2016 Aug;38(8):703-711. doi: 10.1016/j.jogc.2016.03.013. Epub 2016 May 28.
PMID: 27638980
[Similar articles](#)

☐ [Nonpharmacologic Management of Neonatal Abstinence Syndrome: An Integrative Review.](#)
3. Edwards L, Brown LF.
Neonatal Netw. 2016;35(5):305-13. doi: 10.1891/0730-0832.35.5.305.
PMID: 27636895
[Similar articles](#)

☐ [Effectiveness of breast massage in the treatment of women with breastfeeding problems: a systematic review protocol](#)
4. Briggs AM, Jordan JE, Ackerman IN, Van Doornum S.
BMJ Open. 2016 Sep 15;6(9):e012139. doi: 10.1136/bmjopen-2016-012139.
PMID: 27633637 **Free Article**
[Similar articles](#)

☐ [The Relationship Between Breastfeeding, Postpartum Depression, and Postpartum Weight in Mexican American Women.](#)
8. Reifsnider E, Flowers J, Todd M, Babendure JB, Moramarco M.
J Obstet Gynecol Neonatal Nurs. 2016 Sep 12. pii: S0884-2175(16)30293-3. doi: 10.1016/j.jogn.2016.05.009. [Epub ahead of print]
PMID: 27632434
[Similar articles](#)

☐ [Timing of HIV Seroreversion Among HIV-Exposed, Breastfed Infants in Malawi: Type of HIV Rapid Test Matters](#)
9. Test & Matters

Results by year

Download CSV

Related searches

exclusive breastfeeding
breastfeeding benefits
breastfeeding duration
breastfeeding support
breastfeeding obesity

PMC Images search for breastfeeding

Find items

Search details

"breast feeding"[MeSH Terms] OR ("breast"[All Fields] AND "feeding"[All Fields]) OR "breast feeding"[All Fields]

MeSH word

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Builder

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breastfeeding (17587)
breastfeeding/baby (1)
breastfeeding/baby friendly (1)
breastfeeding/breastmilk (2)
breastfeeding/contraception (1)
breastfeeding/cultural (1)
breastfeeding/drinking (1)
breastfeeding/economics (1)
breastfeeding/en (1)
breastfeeding/feeding (1)

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MeSH word

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The files are updated each week day Monday-Friday by 6AM EST.

[Go to 2017 MeSH](#)Search: [Find Exact Term](#)[Find Terms with ALL Fragments](#)[Find Terms with ANY Fragment](#)[MeSH on Demand](#)[MeSH vocabulary suggestions](#)**Search Options:**☒ **All Terms**☐ Main Heading Terms☐ Qualifier Terms☐ Supplementary Concept Terms☐ MeSH Unique ID☐ Text words in Annotation & Scope Note☐ Search in these fields of chemicals:☐ Heading Mapped To (HM) (Supplementary List)☐ Indexing Information (II) (Supplementary List)☐ Pharmacological Action (PA)☐ CAS Registry/EC Number/UNII Code (RN)☐ Related Registry Number (RR)

Appraise評價

- 第三個步驟就是研讀我們找到的文獻（Best available evidence）！
 - ✓ 論文好壞，最重要的決定就在研究方法。
- 不同的研究主題，合適的研究方法也不同。（參考[Levels of evidence table](#)）
- 想一想
 - ✓ 針對你的問題，那種研究的質量最高？
 - ✓ 若沒有，還有其他合適的研究方法嗎？

文獻證據等級-Oxford Center

Level	Therapy/Prevention, Aetiology/Harm
1 a	將隨機對照臨床研究(Randomized Clinical Trial, RCT)以系統性評論(systemic review, SR)後的結果。
b	具有嚴格的信賴區間的個別 RCT 研究。
c	無論使用何種研究方法，但其研究結果為完全正面、完全負面或完全無效果(all or none)的研究結果。
2 a	將同構型的世代研究(cohort studies)以系統性評論的結果。
b	個別世代研究或是質量較不足的 RCT 研究。
c	以多數結果為基礎的研究，及生態學的研究("Outcomes" research; ecological studies)。
3 a	個案對照研究的系統性文獻回顧
b	單一的個案對照研究
4	病例統計報告，以及質量較不足的個案對照研究。
5	未經嚴謹評估的意見，或者基礎生理學、一般實驗室研究及必要原則。

Step Four of EBM Process (第四步)

用

- Apply 應用
- 第四個步驟-將研讀的文獻應用於病人照護上！
- 此步驟最重要的--就是要"有效利用"

Step Four of EBM Process (第四步) 續

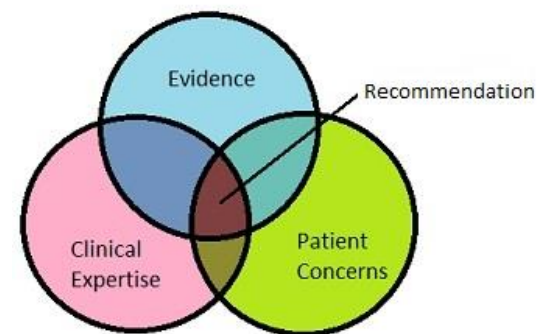
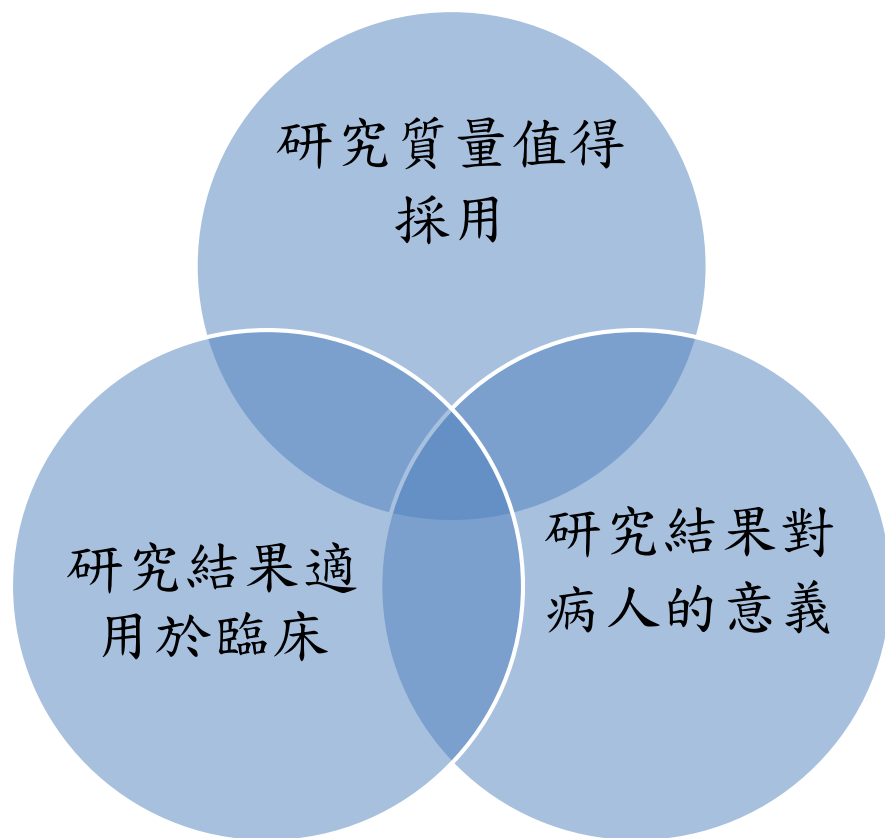
- 要注意~
 - ✓ 研究中的個案族群和你的個案相似嗎？
 - 若不相似，應用上要小心。
需注意：
 - 合邏輯嗎？
 - Do no Harm! 不要傷害
 - ✓ 研究結果對病人的實際意義為何？可行嗎？重要嗎？病人同意嗎？
 - 優缺點為何？資源或費用許可嗎？有何風險？

Step Five of EBM Process (第五步)

審

- Audit審核
- 第五個步驟-- 驗收成果
- 評估診斷工具或治療效果，可為下次相似個案之參考。
- 反復練習一至五個的步驟，將可提高效率，縮短時間，之後能更迅速找到解決問題之最佳方案。

評價實證資料的三個方向



研究是否值得採用？

品質

- 研究設計、進行及分析是否已經盡量減少
- 選擇、測量及干擾偏差

量

- 回答此特定問題的研究數量是否足夠
- 整體研究的樣本數
- 效果量(影響幅度)、勝算比(**Odds ratio**)

一致性

- 類似的其他研究是否得到相似的研究結果

(Agency for health care research and quality, 2002)



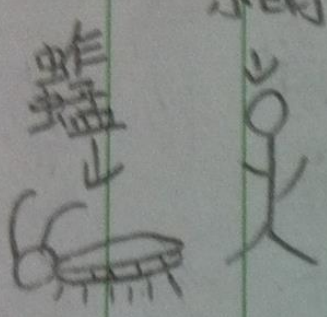
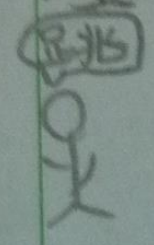
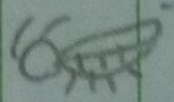
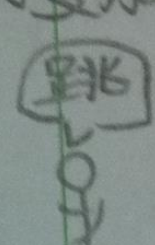
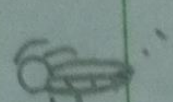
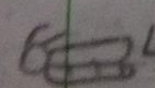
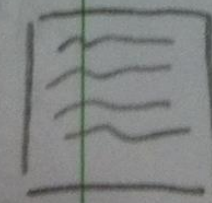
常見的三大偏差及倫理

- 選樣偏差
- 統計偏差
- 推論偏差
- 違反研究倫理

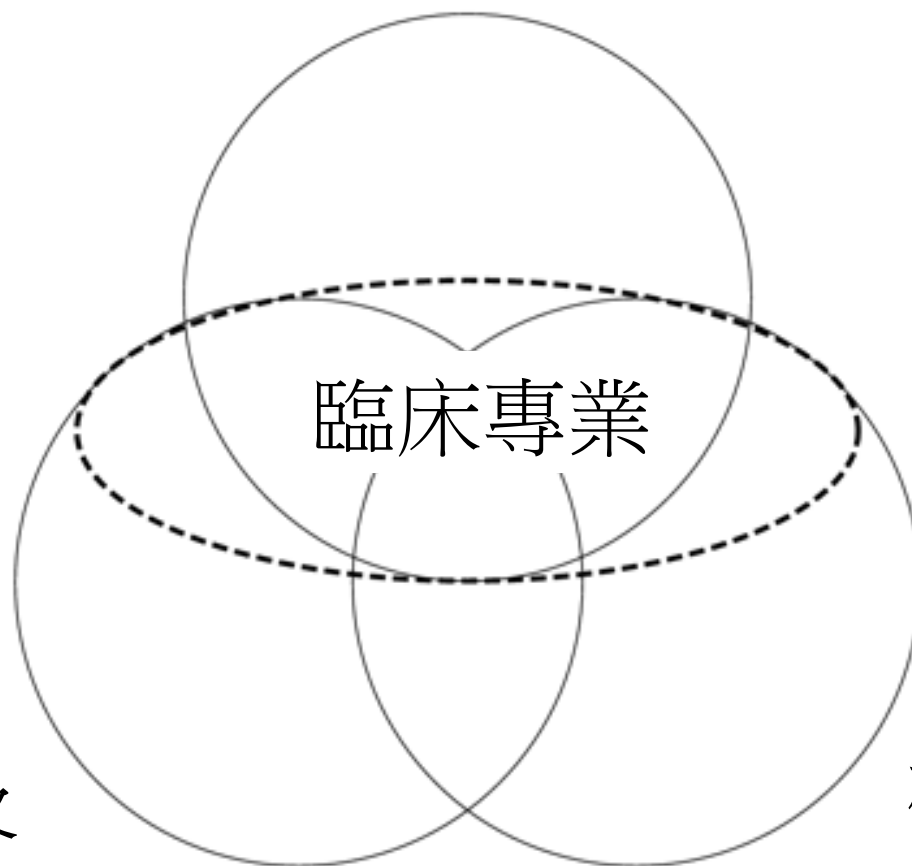
統計分析中常見的五個錯誤

- 誤解統計顯著的意義
 - 統計意義不代表臨床意義
- 試著證明虛無假設
 - 不拒絕虛無假設並無法證明虛無假設是對的，我們看到所有烏鴉都是黑色，並不能證明烏鴉是黑色這句話是對的，因為很有可能白色的烏鴉只是尚未被發現而已。
- 把相關當作因果 (如圖)
- 對信賴區間的錯誤認知
 - 95%信賴區間為代表真實的母體數值有95%的機率落在特定的區間中，或是宣稱95%信賴區間指的是有95%的數據點落在特定區段中(X)
 - 當我們不斷重複同樣的抽樣行為並用一樣的方式計算信賴區間，我們會有95%的比例捕捉到母體真實的數值
- 忽視統計方法背後的假設(如:母數分析的基本假定為常態分布、樣本數>30等)

統計推論偏差

1 小明 	2 切掉兩隻腳 腳...  	3 再切兩隻腳 ...  
4 再切兩隻腳 ...  不動 	5 小明寫下實驗後的心得... 	6 蚱蜢被切掉兩隻腳後，會變成犛子。

臨床狀況以及情境



病人喜好以及
採取的行動

研究證據

Haynes RB. Evid Based Med 2002;7:36-38

實證醫學之展望

- 終身學習工具 ~ 醫學教育增加實證醫學訓練
- 發現臨床問題，進而帶動研究風氣
- 將有限的資源運用於具有實證的醫療
- 臨床指引制定(學會、健保署、醫院、及病人團體)

制定各種疾病的臨床診療指引及設立本土醫學數據庫，也是躋身國際舞臺所不可或缺，如何整合與發揮國內學界的力量，是本世紀重要的醫學課題。

謝謝聆聽

