

Evidence-Based Medicine Conference

Acupuncture for low back pain

報告者：中醫部 吳瀚德 R3

指導者：林宏隆 主治醫師

日期：2009.05.25

臨床情境 (1)

- This 45-year-old man has history of lumbosacral spondylosis without myelopathy
- This time, he was admitted to 中醫部 due to low back pain.

臨床情境 (2)

- 該患者前來中醫門診，由於曾持續服用藥物效果不顯，故採用**acupuncture+原服用藥物合并治療**，以改善其low back pain。

Asking an answerable question

Q : Is acupuncture effective in treating low back pain?

PICO

Patients or population	patients with low back pain
Intervention	acupuncture
Comparison	routine care
Outcomes	pain reduction or function improvement

Tracking down the best evidence

□ Search Strategy Design

Key words :

acupuncture 、 low back pain

Tracking down the best evidence

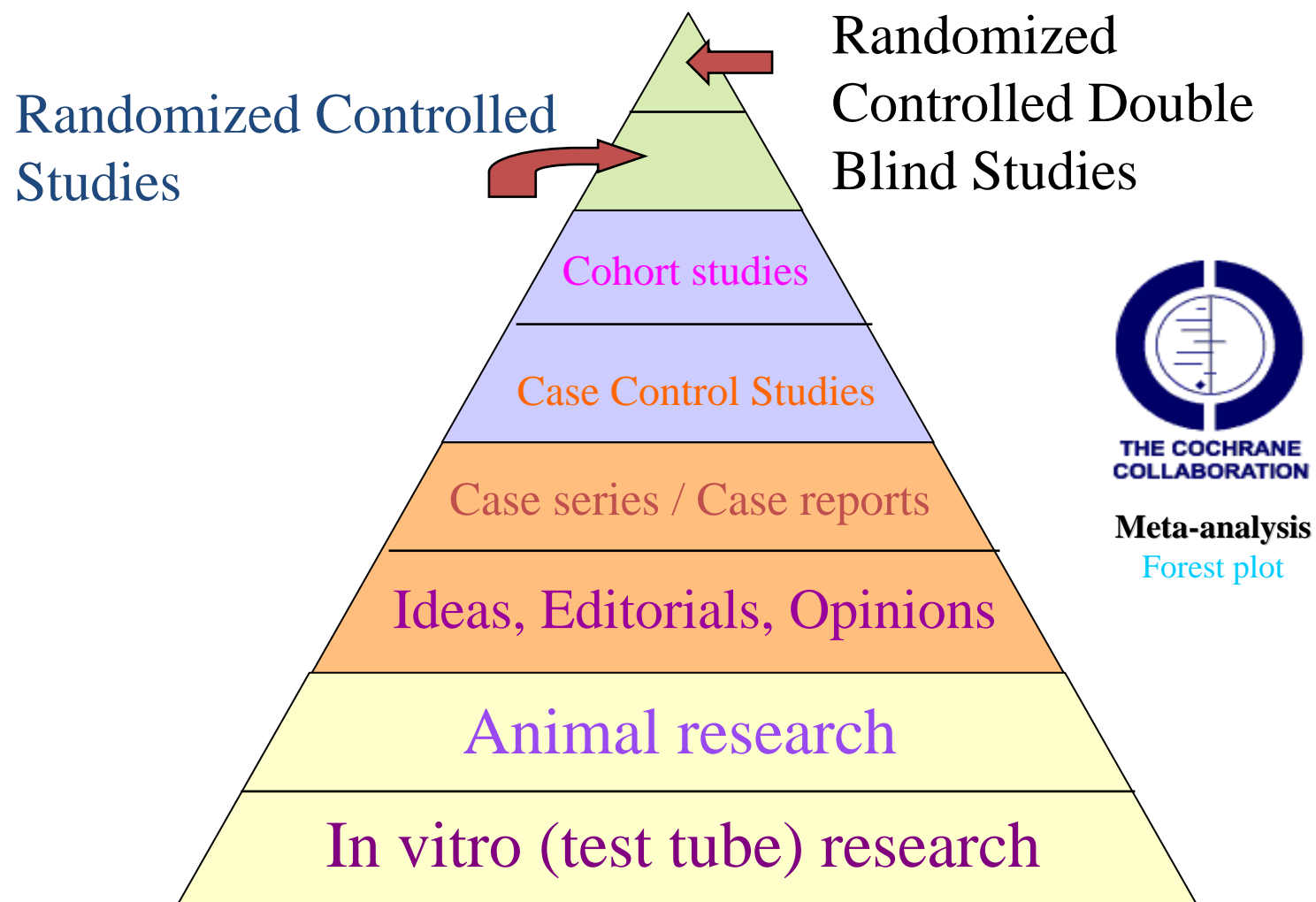
- **ACP Journal** : 找到12篇
- **UptoDate** : 找到1篇
- **Cochrane Library** : 找到115篇
- **PubMed** : 找到312篇

實證醫學的五大進行步驟

Five Steps to Practice EBM

- Step 1 - converting the need for information (about prevention, diagnosis, prognosis, therapy, causation, etc.) into an answerable **question**
- Step 2 - **searching** the best evidence with which to answer that question
- Step 3 – critically **appraising** the evidence for its validity (closeness to the truth), impact (size of the effect), and applicability (usefulness in our clinical practice)
- Step 4 – **integrating** the evidence with our clinical expertise and patients' unique biology, values and circumstances
- Step 5 – **evaluating** our effectiveness and efficiency in executing steps 1-4 and seeking ways to improve them both for next time

The Evidence Pyramid



Meta - analysis

綜合分析

研究設計與證據的強度 (Bias)

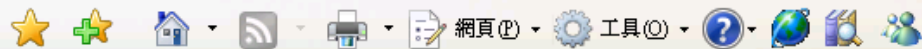
從ACP Journal Club找到的文獻

Effectiveness of Acupuncture for Pragmatic Randomized Trial Evaluating the Clinical and Economic Chronic Low Back Pain

American Journal of Epidemiology

Received for publication October 12, 2005; accepted for
publication March 2, 2006.

Impact factor : 6.020



ACP Journal Club®

The Best New Evidence for Patient Care

ACP ONLINE
ACP
Products & Services

Current Table of Contents	Past Issues	Search	Subscribe
■ About ACP Journal Club	■ Contact Us	Site Map/Help	Classifieds

ACP Journal Club - Search Results

Search for:

Phrases must be in "quotes"

Article type:

- All
- Therapeutics
- Diagnosis
- Clinical Prediction Guide
- Prognosis

Don't use synonyms

[Search Help](#)

Improve your results

The following words don't appear in ACP Journal Club:

acupuncture,

Rephrasing your query using different words may improve results.

Found 12 matches. Showing 1 - 10.

1. OAN: 2007 - German Acupuncture Trials (GERAC) for chronic low back pain: randomized, multicenter, blinded, parallel-group trial with 3 groups.

Objectives

- In a randomized controlled trial plus a nonrandomized cohort, the authors investigated the effectiveness of acupuncture in addition to routine care in the treatment of chronic low back pain

Methods

- ❑ In 2001, German patients with chronic low back pain were allocated to an acupuncture group or a no-acupuncture control group.
- ❑ Persons who did not consent to randomization were included in a nonrandomized acupuncture group.
- ❑ All patients were allowed to receive routine medical care.

Design

- Randomized group (n=3093)
 - Acupuncture group (n=1549, receive immediate acupuncture treatment)
 - Control group (n=1544, receive delayed acupuncture treatment 3 months later)
- Not randomized group (n=8537)
 - Receive immediate acupuncture treatment

Interventions

- ❑ Each patient received a maximum of 15 acupuncture sessions.
- ❑ To assess the effectiveness of acupuncture in general medical practice, we left the acupuncture points and the number of needles used to the discretion of each physician.

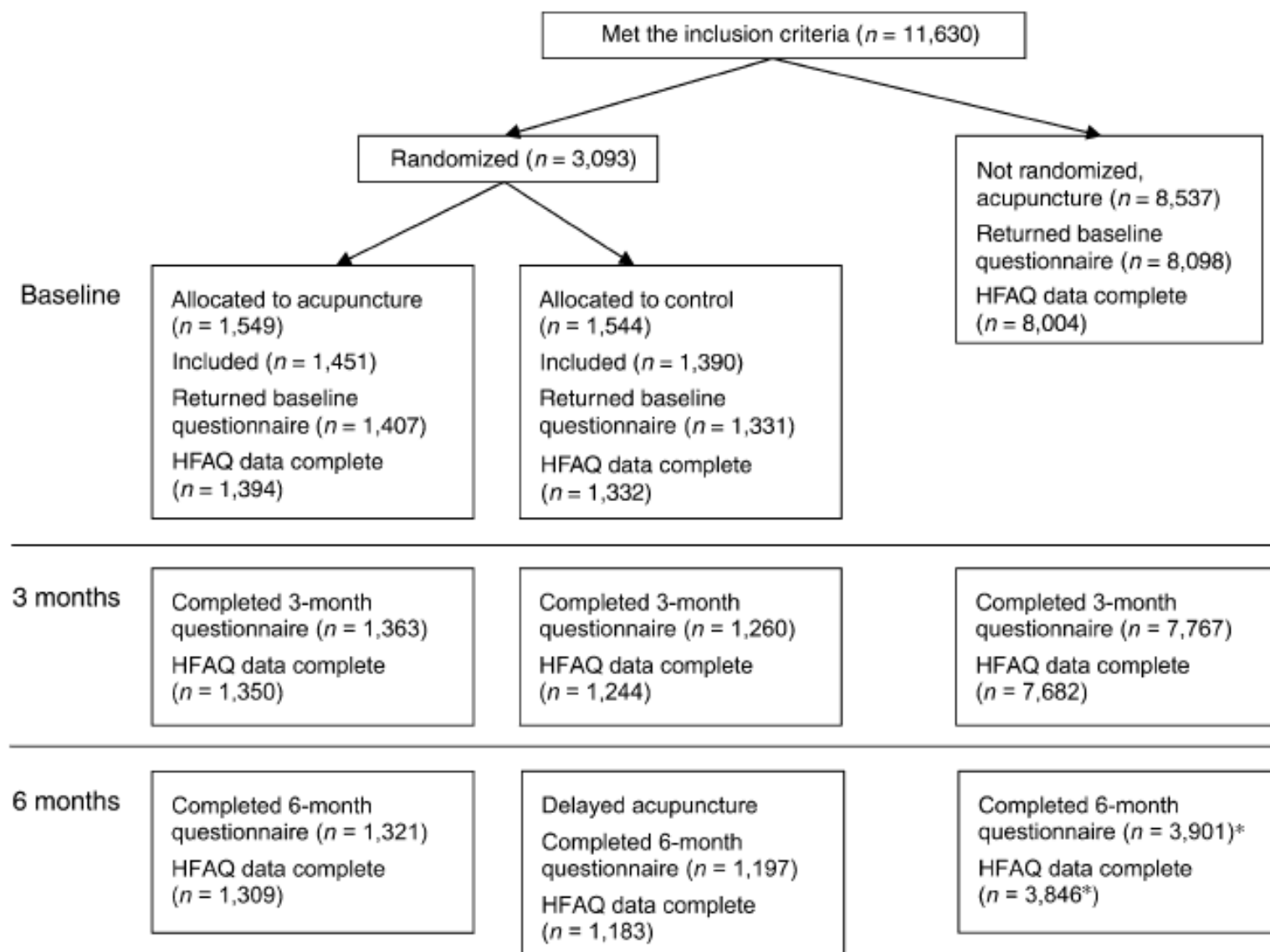


FIGURE 1. Trial flow chart of a study on the effectiveness and cost of acupuncture in the treatment of chronic low back pain, Germany, January 2001–October 2004. (*In the nonrandomized acupuncture group, a random sample of 50% received the questionnaire after 6 months.) HFAQ, Hannover Functional Ability Questionnaire.

TABLE 1. Baseline characteristics of subjects in a study of acupuncture for treatment of chronic low back pain, Germany, January 2001–October 2004*

Parameter	Randomized groups			Acupuncture groups		<i>p</i> value †	Total (<i>N</i> = 11,378)
	Acupuncture (<i>n</i> = 1,451)	Control (<i>n</i> = 1,390)	<i>p</i> value	Randomized (<i>n</i> = 2,841)	Nonrandomized (<i>n</i> = 8,537)		
Female sex (no. and %)	837 (57.7)	791 (56.9)	0.675	1,627 (57.3)	5,061 (59.3)	0.167	6,689 (58.8)
Age (years)	53.1 (13.5)	52.6 (13.2)	0.370	52.8 (13.3)	52.9 (13.8)	0.731	52.9 (13.7)
>10 years of schooling (%)	25.8	29.2	0.083	27.4	30.8	0.008	26.0
Duration of disease (years)	7.2 (8.0)	7.2 (7.8)	0.820	7.2 (7.9)	6.1 (7.6)	<0.001	6.3 (7.8)
Back function score (HFAQ‡)	61.8 (21.0)	63.3 (20.8)	0.067	62.5 (20.9)	60.6 (22.0)	<0.001	61.1 (21.7)
Back pain score (Low Back Pain Rating Scale§)	25.5 (12.3)	25.0 (12.1)	0.327	25.3 (12.2)	26.0 (12.4)	0.005	25.8 (12.4)
Quality of life score (SF-36‡)							
Physical component	34.3 (9.0)	34.6 (9.6)	0.463	34.5 (9.3)	33.8 (9.1)	0.002	34.0 (9.2)
Mental component	43.3 (10.3)	43.5 (10.1)	0.544	43.4 (10.2)	43.5 (10.2)	0.574	43.5 (10.2)

* All data shown are mean values with standard deviations in parentheses, except for sex (number and percentage) and schooling (percentage).

† Two-sided *t* test or χ^2 test.

‡ HFAQ, Hannover Functional Ability Questionnaire; SF-36, Medical Outcomes Study 36-Item Short Form.

§ Lower values indicate less pain.

TABLE 2. Back function and secondary outcomes for three treatment groups in a study of acupuncture and chronic low back pain (3- and 6-month changes from baseline), Germany, January 2001–October 2004*

Parameter	Randomized groups				Nonrandomized group	Nonrandomized vs. randomized	
	Acupuncture	Control	Acupuncture vs. control			Difference	<i>p</i> value†
			Difference	<i>p</i> value†			
Back function and back pain	Reduction (%)	Reduction (%)			Reduction (%)		
3-month change from baseline							
Back function loss (HFAQ‡)	33.3 (31.4, 35.3)	11.3 (9.5, 13.1)	22.0 (19.3, 24.7)	<0.001	35.5 (34.7, 36.4)	2.2 (0.1, 4.4)	0.044
Back pain loss (Low Back Pain Rating Scale§)	37.0 (35.2, 38.9)	9.8 (7.9, 11.7)	27.2 (24.5, 20.9)	<0.001	39.4 (38.6, 40.1)	2.3 (0.3, 4.3)	0.023
6-month change from baseline¶							
Back function loss (HFAQ)	32.4 (30.3, 34.4)	28.6 (26.5, 30.8)	3.7 (0.7, 6.7)	0.015	35.5 (34.3, 36.8)	3.2 (0.7, 5.7)	0.012
Back pain loss (Low Back Pain Rating Scale§)	33.5 (31.4, 35.7)	30.8 (28.7, 33.0)	2.7 (−0.3, 5.7)	0.082	37.0 (35.7, 38.2)	3.4 (0.9, 5.9)	0.007
Quality of life (SF-36‡)	Mean increase (points)	Mean increase (points)			Mean increase (points)		
3-month change from baseline							
Physical component score	7.0 (6.5, 7.5)	2.3 (1.8, 2.8)	4.7 (4.0, 5.4)	<0.001	7.9 (7.7, 8.1)	0.8 (0.3, 1.4)	0.004
Mental component score	2.4 (1.9, 2.9)	0.3 (−0.2, 0.8)	2.1 (1.4, 2.8)	<0.001	2.1 (1.9, 2.4)	−0.2 (−0.8, 0.3)	0.356
6-month change from baseline¶							
Physical component score	6.9 (6.3, 7.4)	6.3 (5.8, 6.9)	0.6 (−0.2, 1.3)	0.154	8.0 (7.6, 8.3)	1.1 (0.4, 1.7)	0.002
Mental component score	1.5 (1.0, 2.0)	1.3 (0.8, 1.9)	0.2 (−0.6, 1.0)	0.607	1.7 (1.4, 2.0)	0.2 (−0.4, 0.8)	0.535

* All data are percentages or mean point increases, with 95% confidence intervals shown in parentheses.

† Two-sided *t* test.

‡ HFAQ, Hannover Functional Ability Questionnaire; SF-36, Medical Outcomes Study 36-Item Short Form.

§ Lower values indicate less pain.

¶ The control group also received acupuncture.

Results

- ❑ Patients with chronic low back pain treated with acupuncture in addition to routine care showed significant improvements in symptoms and quality of life compared with patients received routine care alone.
- ❑ Obviously, such an approach also has its methodological limitations.

Appraisal

證據等級

Level	與[治療/預防/病因/危害]有關的文獻
1a	用多篇RCT所做成的綜合性分析(SR of RCTs)
1b	單篇RCT
1c	All or none
2a	用多篇世代研究所做成的綜合性分析
2b	單篇cohort及低品質的RCT
2c	Outcome research / ecological studies
3a	SR of case-control studies
3b	Individual case-control studies
4	Case-series(poor quality)
5	沒有經過完整評讀醫學文獻的專家意見

Critical Appraisal of Therapy Study

- ❑ Are the results of the trial valid (效度如何) ?
 - ❑ Was the assignment of patients to treatment randomized? (隨機分配嗎?) **Yes**
 - ❑ Were the groups similar at the start of the trial? (試驗開始時不同組條件是否相似?) **Yes**
 - ❑ Were all patients who entered the trial accounted for and were they analysed in the groups to which they were randomized? (所有進入試驗者皆列入統計，並依所分配的組別計算?) **Yes**
 - ❑ Were measures objective or were the patients and clinicians were blinded? (結果的測量客觀，或病人及醫師不知道所接受的治療為何?) **No**
- ❑ What were the results?
 - ❑ How large was the treatment effect (治療效果有多大)? **Yes**
 - ❑ How precise was the estimate of the treatment effect (治療效果的預測多準確)? **Yes**
- ❑ Will the results help me in my patient care ? **Yes**

從ACP Journal Club找到的文獻

German Acupuncture Trials (GERAC) for Chronic Low Back Pain

Randomized, Multicenter, Blinded, Parallel- Group Trial With 3 Groups

*Michael Haake, PhD, MD; Hans-Helge Müller, PhD; Carmen
Schade-Brittinger; Heinz D. Basler, PhD; Helmut Schäfer, PhD;
Christoph Maier, PhD, MD*

2007 American Medical Association.

Background

- ❑ To our knowledge, verum acupuncture has never been directly compared with sham acupuncture and guideline-based conventional therapy in patients with chronic low back pain.

Methods (1)

- A patient- and observer-blinded randomized controlled trial conducted in Germany involving 340 outpatient practices, including 1162 patients aged 18 to 86 years with a history of chronic low back pain for a mean of 8 years.

Methods (2)

- ❑ Patients underwent ten 30-minute sessions, generally 2 sessions per week, of verum acupuncture (n=387) according to principles of traditional Chinese medicine; sham acupuncture (n=387) consisting of superficial needling at non-acupuncture points; or conventional therapy, a combination of drugs, physical therapy, and exercise (n=388).
- ❑ Von Korff Chronic Pain Grade Scale questionnaire

Table 4. Primary Outcome: Pairwise Comparison of Treatment Response 6 Months After Randomization^a

Treatment Response	Intergroup Difference	P Value^b
Group 1 vs group 3 47.6 (42.4 to 52.6) vs 27.4 (23.0 to 32.1)	20.2 (13.4 to 26.7)	<.001
Group 2 vs group 3 44.2 (39.2 to 49.3) vs 27.4 (23.0 to 32.1)	16.8 (10.1 to 23.4)	<.001
Group 1 vs group 2 47.6 (42.4 to 52.6) vs 44.2 (39.2 to 49.3)	3.4 (-3.7 to 10.3)	.39

^aEach group comprised 387 patients. Values are given as percentage of patients (95% confidence interval). Group 1, verum acupuncture; group 2, sham acupuncture; group 3, conventional therapy.

^bUnadjusted; Fisher exact test (intention-to-treat analysis).

Table 5. Treatment Response After 6 Months^a

Treatment Response	Therapy		
	Conventional	Sham Acupuncture	Verum Acupuncture
CPGS			
Success ^b	132 (34.1)	197 (50.9)	<u>229 (59.2)</u>
HFAQ			
Success ^c	195 (50.4)	251 (64.9)	<u>281 (72.6)</u>
Combined CPGS and HFAQ			
Success ^d	223 (57.6)	277 (71.6)	<u>304 (78.5)</u>
Total No. of patients	387	387	387
Combined GCPS, HFAQ, and unblinded patients			
Nonresponders ^e	164 (42.4)	125 (32.3)	112 (28.9)
Responders	223 (57.6)	262 (67.7)	275 (71.1)
Overall treatment response including proscribed rescue medication			
Nonresponders ^f	281 (72.6)	216 (55.8)	203 (52.4)
Responders	106 (27.4)	171 (44.2)	184 (47.6)
Total No. of Patients	387	387	387

Abbreviations: CPGS, Von Korff Chronic Pain Grade Scale; HFAQ, Hanover Functional Ability Questionnaire for measuring back pain-related functional limitations.

^a Values are given as number of patients (percentage).

^b Success was defined as 33% improvement or better on 3 pain-related items on the GCPS.

^c Success was defined as 12% improvement or better on the back-specific HFAQ.

^d Success was defined as 33% improvement or better on 3 pain-related items on the CPGS or as 12% improvement or better on the back-specific HFAQ.

^e Patients who had no success in the combined CPGS, HFAQ, or unblinded groups.

^f Patients who had no success in the combined CPGS, HFAQ, or unblinded groups; missed the 6-month assessment; or had recourse to other than permitted concomitant therapies during follow-up, regardless of symptom improvement.

Conclusions

- ❑ Low back pain improved after acupuncture treatment for at least 6 months.
- ❑ Effectiveness of acupuncture, either verum or sham, was almost twice that of conventional therapy.

Appraisal

證據等級

Level	與[治療/預防/病因/危害]有關的文獻
1a	用多篇RCT所做成的綜合性分析(SR of RCTs)
1b	單篇RCT
1c	All or none
2a	用多篇世代研究所做成的綜合性分析
2b	單篇cohort及低品質的RCT
2c	Outcome research / ecological studies
3a	SR of case-control studies
3b	Individual case-control studies
4	Case-series(poor quality)
5	Case-series(poor quality)

Critical Appraisal of Therapy Study

- ❑ Are the results of the trial valid (效度如何) ?
 - ❑ Was the assignment of patients to treatment randomized? (隨機分配嗎?) **Yes**
 - ❑ Were the groups similar at the start of the trial? (試驗開始時不同組條件是否相似?) **Yes**
 - ❑ Were all patients who entered the trial accounted for and were they analysed in the groups to which they were randomized? (所有進入試驗者皆列入統計，並依所分配的組別計算?) **Yes**
 - ❑ Were measures objective or were the patients and clinicians were blinded? (結果的測量客觀，或病人及醫師不知道所接受的治療為何?) **Yes**
- ❑ What were the results?
 - ❑ How large was the treatment effect (治療效果有多大)? **Yes**
 - ❑ How precise was the estimate of the treatment effect (治療效果的預測多準確)? **Yes**
- ❑ Will the results help me in my patient care ? **Yes**

從Cochrane Library找到的文獻

Acupuncture and dry-needling for low back pain

Cochrane Database of Systematic Reviews,
Issue 2, 2009

BROWSE
Cochrane Reviews: [By Topic](#) | [New Reviews](#) | [Updated Reviews](#) | [A-Z](#) | [By Review Group](#)
Other Resources: [Other Reviews](#) | [Clinical Trials](#) | [Methods Studies](#) | [Technology Assessments](#) | [Economic Evaluations](#)
[More Info](#) [Advanced Search](#) | [MeSH Search](#) | [Search History](#) | [Saved Searches](#)

SEARCH
acupuncture,back pain Title, Abstract or Keywords

Search Results

Show Results in:
Cochrane Reviews [115] | [Other Reviews \[178\]](#) | [Clinical Trials \[3916\]](#) | [Methods Studies \[80\]](#) | [Technology Assessments \[113\]](#) | [Economic Evaluations \[163\]](#) | [Cochrane Groups \[0\]](#)

There are 115 results out of 5785 records for: "acupuncture, back pain in Title, Abstract or Keywords in Cochrane Database of Systematic Reviews"
[Save Search](#)
[Edit Search](#)

View: [1-25](#) | [26-50](#) | [51-75](#) | [76-100](#) | [101-115](#)

Record Information Restrict to: [Reviews](#) | [Protocols](#) Sort by: [Record Title](#) | [Match %](#) | [Year](#)

<input type="checkbox"/>	Lumbar supports for prevention and treatment of low back pain Ingrid van Duijvenbode, Petra Jellema, Mireille van Poppel, Maurits W van Tulder Year: 2008 Record Review
<input type="checkbox"/>	Acupuncture and dry-needling for low back pain Andrea D Furlan, Maurits W van Tulder, Dan Cherkin, Hiroshi Tsukayama, Lixing Lao, Bart W Koes, Brian M Berman Year: 2005 Record Comment Review
<input type="checkbox"/>	Antidepressants for non-specific low back pain Donna Urquhart, Jan L Hoving, Willem JJ Assendelft, Martin Roland, Maurits W van Tulder Year: 2002

Objectives

- To determine the effects of acupuncture for (sub)acute and chronic non-specific lowback pain compared to no-treatment, sham-therapies, other therapies, and the addition of acupuncture to other therapies.

Search Strategy

- ❑ We updated the searches from 1996 to February 2003 in CENTRAL, MEDLINE, and EMBASE.
- ❑ We also searched the Chinese Cochrane Centre database of clinical trials and Japanese databases to February 2003.

Selection Criteria

- ❑ Randomized trials of acupuncture for adults with non-specific (sub)acute or chronic low-back pain.

Main results (1)

- ❑ Thirty-five RCTs were included; 20 were published in English, seven in Japanese, five in Chinese and one each in Norwegian, Polish and German.
- ❑ There were only three trials of acupuncture for acute low-back pain.

Main results (2)

- ❑ There is evidence that acupuncture, added to other conventional therapies, relieves pain and improves function better than the conventional therapies alone.
- ❑ Acupuncture appears to be a useful adjunct to other therapies for chronic low-back pain.

Appraisal

證據等級

Level	與[治療/預防/病因/危害]有關的文獻
1a	用多篇RCT所做成的綜合性分析(SR of RCTs)
1b	單篇RCT
1c	All or none
2a	用多篇世代研究所做成的綜合性分析
2b	單篇cohort及低品質的RCT
2c	Outcome research / ecological studies
3a	SR of case-control studies
3b	Individual case-control studies
4	Case-series(poor quality)
5	沒有經過系統性評讀醫學文獻的專家意見

Critical Appraisal of Therapy Study

- ❑ Are the results of the trial valid (效度如何) ?
 - ❑ Was the assignment of patients to treatment randomized? (隨機分配嗎?) **Yes**
 - ❑ Were the groups similar at the start of the trial? (試驗開始時不同組條件是否相似?) **Yes**
 - ❑ Were all patients who entered the trial accounted for and were they analysed in the groups to which they were randomized? (所有進入試驗者皆列入統計，並依所分配的組別計算?) **Yes**
 - ❑ Were measures objective or were the patients and clinicians were blinded? (結果的測量客觀，或病人及醫師不知道所接受的治療為何?) **No**
- ❑ What were the results?
 - ❑ How large was the treatment effect (治療效果有多大)? **Yes**
 - ❑ How precise was the estimate of the treatment effect (治療效果的預測多準確)? **Yes**
- ❑ Will the results help me in my patient care ? **Yes**

總結與應用在病人身上

Patients or population	Patients with low back pain
Intervention	acupuncture
Comparison	Routine care
Outcomes	Acupuncture appears to be a useful adjunct to other therapies for low back pain if taken carefully

經過實證醫學的驗證，我對於病人病情的想法或治療策略有以下改變

- 對於low back pain病人，經常規治療而沒有明顯療效時，使用acupuncture是有幫助的。
- 如果操作者技術純熟，acupuncture是安全且不貴的。
- 實證醫學不盲從經驗但也不完全排除經驗，在實證醫學的實施中，我們可以獲得更多的與臨床實際相結合的直接和間接經驗，並在今後臨床行為中根據具體情況加以運用。

Thank You for Your Attention