

EBM Journal Club

Effectiveness of acupuncture
for autism spectrum disorder

報告醫師：R2 余兆蕙

指導醫師：黃新家醫師/顏宏融醫師

報告日期：2011/10/24

有一天.....

小襄帶著兩歲半的兒子彌彌來針灸門診

- 小襄：「醫師，我兒子已經兩歲半了，都不太愛說話，也不喜歡跟別家小孩玩，每天都在堆積木，如果把積木沒收又很容易生氣，帶去給西醫看說是「自閉症」，我上網查這種病好像很複雜，問題很多，也發現很多人用針灸治療，阿你這邊可以治療嗎？有沒有效阿？」
- 醫師：&*&o*^%^%\$%x#\$#@&



5A step I --Asking 問問題

針灸治療自閉症有沒有效？

P	Problem	Autism
I	Intervention	Acupuncture
C	Comparison	Placebo or Sham acupuncture
O	Outcome	Symptom improvement

Autism Spectrum Disorder

廣泛性發展障礙疾患

- Autistic disorder
- Asperger disorder
- Rett disorder
- Childhood disintegrative disorder
- Pervasive developmental disorder-not otherwise specified
- DSM-IV
- ICD-10
- ABC
- CARS

Autistic Disorder

- 盛行率：約0.05%
- 男：女：3-4:1
- 主要症狀：
- 語言及溝通障礙
- 社交障礙
- 行為障礙



治療

- 行為及教育訓練
- 藥物治療(if with hyperactivity, inattention, anxiety,sleep disturbance, depressive symptoms, obsessive compulsive disorder,)
- 輔助及替代醫學治療 → **針灸**

5A step 2--Assessing 找資料

search strategy

6		DynaMed	Database EBSCO	
7		EBM Reviews (ALL)	Database OVID	
8		EBMR--ACP Journal Club	Database OVID	1991-
9		EBMR--Cochrane Central Register of Controlled Trials	Database OVID	
10		EBMR--Cochrane Database of Systematic Reviews	Database OVID	
11		EBMR--Cochrane Methodology Register	Database OVID	
12		EBMR--Database of Abstracts of Reviews of Effects	Database OVID	
13		EBMR--Health Technology Assessment	Database OVID	
14		EBMR--NHS Economic Evaluation Database	Database OVID	
15		EndNote	Database Thomson	
16		First Consult	Database Elsevier	
17		HDCN	Database Medtext, Inc.	
18		Journal Citation Report(JCR) : Science Edition	Database Thomson	
19		Journals@Ovid Full Text	Database OVID	1993-
20		Mdconsult	Database Elsevier	
21		Medline+Journals @ ovid	Database OVID	1948-
22		Micromedex(CCIS) 2.0版	Database Thomson	
23		Nursing Consult	Database Mosby	
24		Nursing Index (Mosby's Index)	Database Mosby	
25		NursingConnect(試用至11/30)	Database Elsevier	
26		Oxford Scholarship Online Collection牛津線上學術電子書	Database Oxford University Press	
27		Pharmaceutical News Index	Database Proquest	
28		ProQuest Health and Medical Complete	Database Proquest	
29		PubMed	Database National Library of Medicine, NLM	1948-
30		PubMed (Intranet)	Database National Library of Medicine, NLM	1948-
31		Reference Manager	Database Thomson	
32		Regional Business News	Database EBSCO	
33		Science Direct	Database Elsevier	1995-
34		Scopus	Database Elsevier	
35		SDOS	Database Elsevier	
36		UpToDate Online	Database Uptodate	
37		Web of Science(SCIE)	Database Thomson	1991-

[Search](#)[Journals](#)[Books](#)[My Workspace](#)**▼ Search History (1 search) (Click to close)**[View Saved](#)

#	Search	Results	Search Type	Actions
1	(autism and acupuncture).mp. [mp=protocol supplementary concept, rare disease supplementary concept, title, original title, abstract, name of substance word, subject heading word, unique identifier]	19	Advanced	Display More >

[Remove Selected](#) [Save Selected](#) | Combine selections with: And Or [RSS](#)

[Save Search History](#)

[Basic Search](#) | [Find Citation](#) | [Search Tools](#) | [Search Fields](#) | [Advanced Search](#) | [Multi-Field Search](#)**▼ Change Ovid Resources**Ovid Resources: [Ovid MEDLINE\(R\) 1948 to Present with Daily Update](#) Keyword Author Title Journal

autism and acupuncture

[Search](#)[▶ Limits \(Click to expand\)](#) Map Term to Subject Heading



PubMed

US National Library of Medicine
National Institutes of Health

Limits Advanced

Search

PubMed

PubMed comprises more than 21 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

Using PubMed

[PubMed Quick Start Guide](#)

[Full Text Articles](#)

[PubMed FAQs](#)

[PubMed Tutorials](#)

[New and Noteworthy](#) 

PubMed Tools

[PubMed Mobile](#)

[Single Citation Matcher](#)

[Batch Citation Matcher](#)

[Clinical Queries](#)

[Topic Specific Queries](#)

More Resources

[MeSH Database](#)

[Journals in NCBI Databases](#)

[Clinical Trials](#)

[E-Utilities](#)

[LinkOut](#)

PubMed Clinical Queries

Pubmed(Clinical Queries)

Results of searches on this page are limited to specific clinical research areas. For comprehensive searches, use the main PubMed search.

autism and acupuncture

Clinical Study Categories

Category: Therapy

Scope: Broad

Results: 5 of 19

Acupuncture for autism spectrum disorders (ASD).

[Cochrane Database Syst Rev. 2011]

[Treatment of autism with scalp acupunctur].

[Zhongguo Zhen Jiu. 2011]

Acupuncture for treating attention deficit hyperactivity disorder: a systematic review and meta-analysis.

[Chin J Integr Med. 2011]

Randomized controlled trial of electro-acupuncture for autism spectrum disorder.

[Altern Med Rev. 2010]

Tongue acupuncture and autism spectrum disorder.

[J Altern Complement Med. 2010]

Systematic Reviews

Results: 3 of 3

Acupuncture for autism spectrum disorders (ASD).

[Cochrane Database Syst Rev. 2011]

Acupuncture for treating attention deficit hyperactivity disorder: a systematic review and meta-analysis.

[Chin J Integr Med. 2011]

Novel and emerging treatments for autism spectrum disorders: a systematic review.

[Ann Clin Psychiatry. 2009]

See all (3)

Display citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines. See filter information

EBM reviews(ALL)

Wolters Kluwer Health | OvidSP

My Account | Ask a Librarian | Support & Training | Help | Logoff

Search Journals Books My Workspace

▼ Search History (1 search) (Click to close)

#	Searches	Results	Search Type	Actions
1	(acupuncture and autism).mp [mp=ti, ot, ab, tx, kw, ct, sh, hw]	11	Advanced	Display More ➤

Remove Selected Save Selected | Combine selections with: And Or

Save Search History

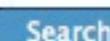
Basic Search | Find Citation | Search Tools | Search Fields | Advanced Search | Multi-Field Search

▼ Change Ovid Resources

Ovid Resources: [EBM Reviews - Cochrane Database of Systematic Reviews 2005 to October 2011](#), [EBM Reviews - ACP Journal Club 1991 to September 2011](#), [EBM Reviews - Database of Abstracts of Reviews of Effects 4th Quarter 2011](#), [EBM Reviews - Cochrane Central Register of Controlled Trials 4th Quarter 2011](#), [EBM Reviews - Cochrane Methodology Register 4th Quarter 2011](#), [EBM Reviews - Health Technology Assessment 4th Quarter 2011](#), [EBM Reviews - NHS Economic Evaluation Database 4th Quarter 2011](#)

Keyword Author Title Journal

acupuncture and autism 

Search 

Limits (Click to expand)

Acupuncture for autism spectrum disorders (ASD).

Cheuk, KL Daniel. Wong, Virginia. Chen, Xiong Wen.

EBM Reviews - Cochrane Database of Systematic Reviews

Cochrane Developmental, Psychosocial and Learning Problems Group Cochrane Database of Systematic Reviews. 10, 2011.

[Systematic Review]

[Effects of electroacupuncture combined with behavior therapy on intelligence and behavior of children of autism].

Wang CN, Liu Y, Wei XH, Li LX

EBM Reviews - Cochrane Central Register of Controlled Trials

Zhongguo zhen jiu = Chinese acupuncture & moxibustion. 27(9):660-2, 2007 Sep.

[English Abstract. Journal Article. Randomized Controlled Trial]

Journal of Alternative and Complementary Medicine - New York. 13(8):880 (PI-53), 2007.

Double blind randomized control trial of acupuncture in children with autism spectrum disorder *Acupuncture Research]*

Wong V C-N, Chen WX, Liu WL

EBM Reviews - Cochrane Central Register of Controlled Trials

Journal of Alternative and Complementary Medicine - New York. 13(8):880 (PI-51), 2007.

[Oral/poster abstract from 2007 Annual Conference of the Society for Acupuncture Research]

Journal of alternative and complementary medicine (New York, N.Y.). 16(5):545-53, 2010 May.

[Comparative Study. Journal Article. Randomized Controlled Trial]

Randomized controlled trial of electro-acupuncture for autism spectrum disorder.

Wong VC, Chen WX

EBM Reviews - Cochrane Central Register of Controlled Trials

Alternative medicine review : a journal of clinical therapeutic. 15(2):136-46, 2010 Jul.

[Journal Article. Randomized Controlled Trial. Research Support, Non-U.S. Gov't]

<input type="checkbox"/>	i	Science Direct	Database Elsevier	1995-
<input type="checkbox"/>	i	Scopus	Database Elsevier	
<input type="checkbox"/>	i	SDOS	Database Elsevier	
<input checked="" type="checkbox"/>	i	UpToDate Online	Database Uptodate	
<input type="checkbox"/>	i	Web of Science(SCIE)	Database Thomson	1991-
<input type="checkbox"/>	i	中文電子期刊服務(CEPS)	Database 華藝數位	1991-
<input checked="" type="checkbox"/>	i	中國博士學位論文全文數據庫	Database CNKI中國知網	2000-
<input checked="" type="checkbox"/>	i	中國期刊全文數據庫	Database CNKI中國知網	1915-
<input checked="" type="checkbox"/>	i	中國優秀碩士學位論文全文數據庫	Database CNKI中國知網	2000-
<input type="checkbox"/>	i	中醫藥知識庫(試用至10/31)	Database 萬芳數據庫	
<input type="checkbox"/>	i	方正中文電子書(試用至11/15)	Database 北京方正	
<input type="checkbox"/>	i	台灣全文資料庫HyRead(試用至10/31)	Database 凌網科技	
<input checked="" type="checkbox"/>	i	台灣期刊論文索引系統	Database 國家圖書館	
<input type="checkbox"/>	i	全國法規資料庫	Database 行政院法務部	
<input type="checkbox"/>	i	考選部-考畢試題查詢	Database 考選部	
<input type="checkbox"/>	i	國家考試題庫	Database 飛資得資訊	
<input type="checkbox"/>	i	麥格羅希爾中文電子書	Database McGraw-Hill	

邏輯 檢索項 檢索詞 詞頻 擴展

+ - 主題 **自閉** 在結果中檢索

從 1994 到 2011 更新 全部數據 范圍 全部期刊 匹配 模糊 排序

邏輯 檢索項 檢索詞 詞頻 擴展

+ - 主題 **針** 在結果中檢索

從 1994 到 2011 更新 全部數據 范圍 全部期刊 匹配 模糊 排序

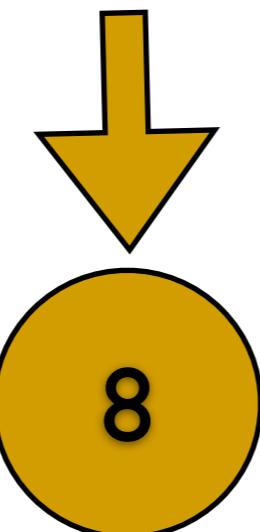
已訂購 未訂購 未登錄 不提供全文

友情提示：部分全文需經由海外中心網站調閱，下載時間會依使用單位網路速度快慢而不同，下載時請您耐心等候。

共有記錄103條

首頁 上頁 下頁

Clinical trials



邏輯 檢索項 檢索詞 詞頻 擴展

+ - 主題 孤獨 在結果中檢索

從 1994 到 2011 更新 全部數據 范圍 全部期刊 匹配 模糊 排

邏輯 檢索項 檢索詞 詞頻 擴展

+ - 主題 針 在結果中檢索

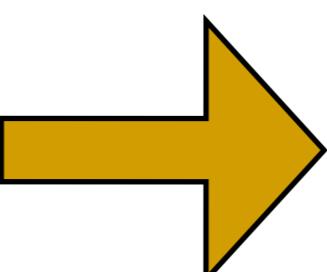
從 1994 到 2011 更新 全部數據 范圍 全部期刊 匹配 模糊 排

已訂購 未訂購 未登錄 不提供全文

友情提示：部分全文需經由海外中心網站調閱，下載時間會依使用單位網路速度快慢而不同，下載時請您耐心等候。

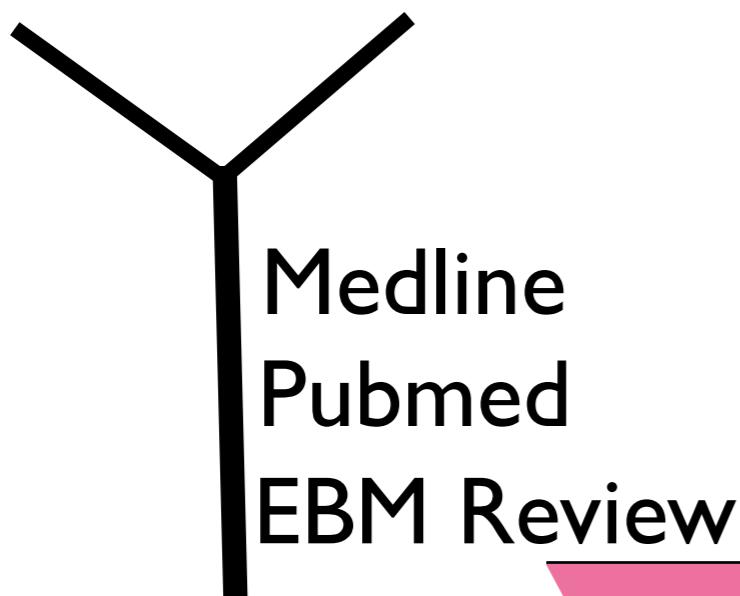
共有記錄 15 條 首頁 上頁 下頁

Total Clinical trials



14

Autism + Acupuncture



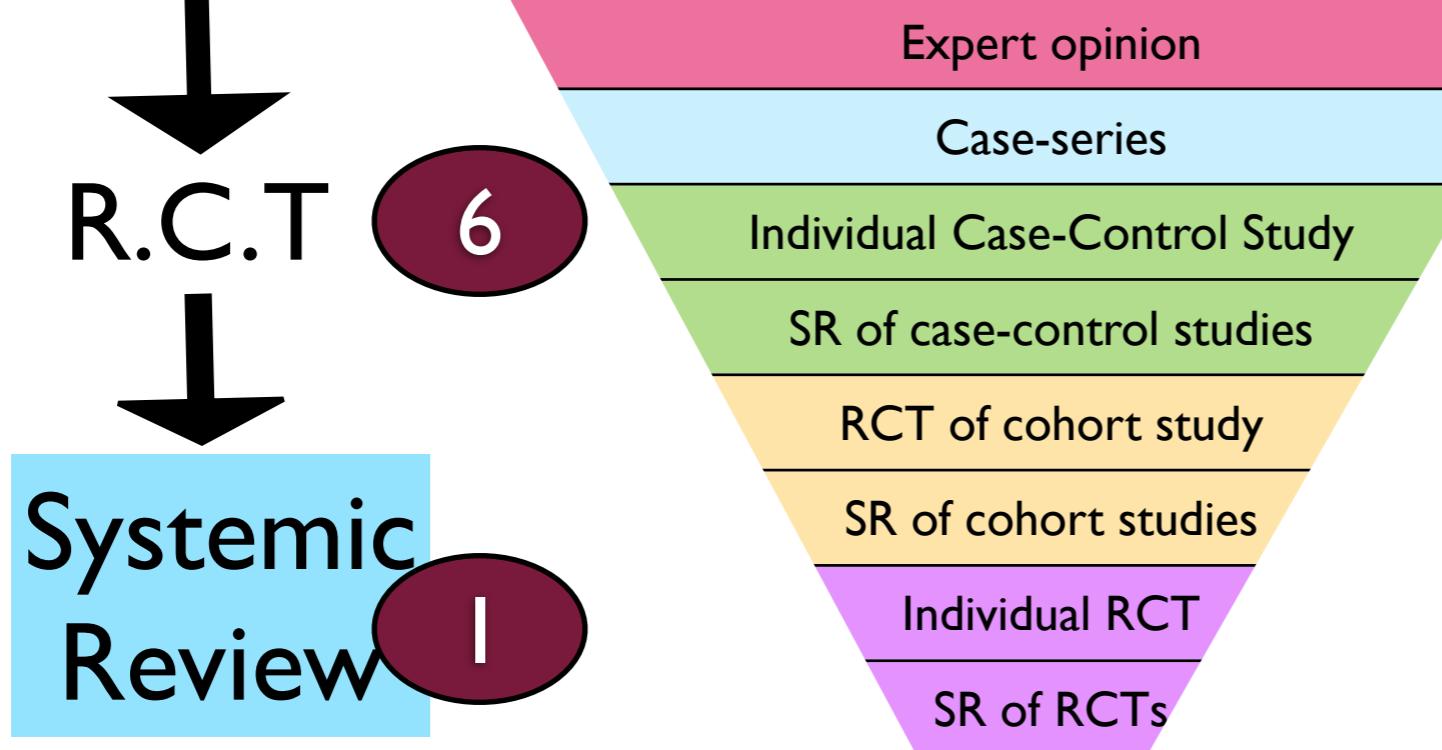
自閉症 + 針
孤獨症 + 針

中國期刊全文資料庫
台灣全文資料庫

Clinical trial 14

R.C.T 2

Systemic Review 0



Final Result.....

Acupuncture for autism spectrum disorder(ASD)

Daniel KL Cheuk, Virginia Wong, Wen Xiong Chen

Cochrane Database Systemic Review. 2011 Sep.



THE COCHRANE
COLLABORATION®

Systemic
Review

Level Ia

Rank	Abbreviated Journal Title (linked to journal information)	ISSN	JCR Data ⓘ			
			Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index
1	COCHRANE DB SYST REV	1469-493X	27366	6.186	6.346	0.953

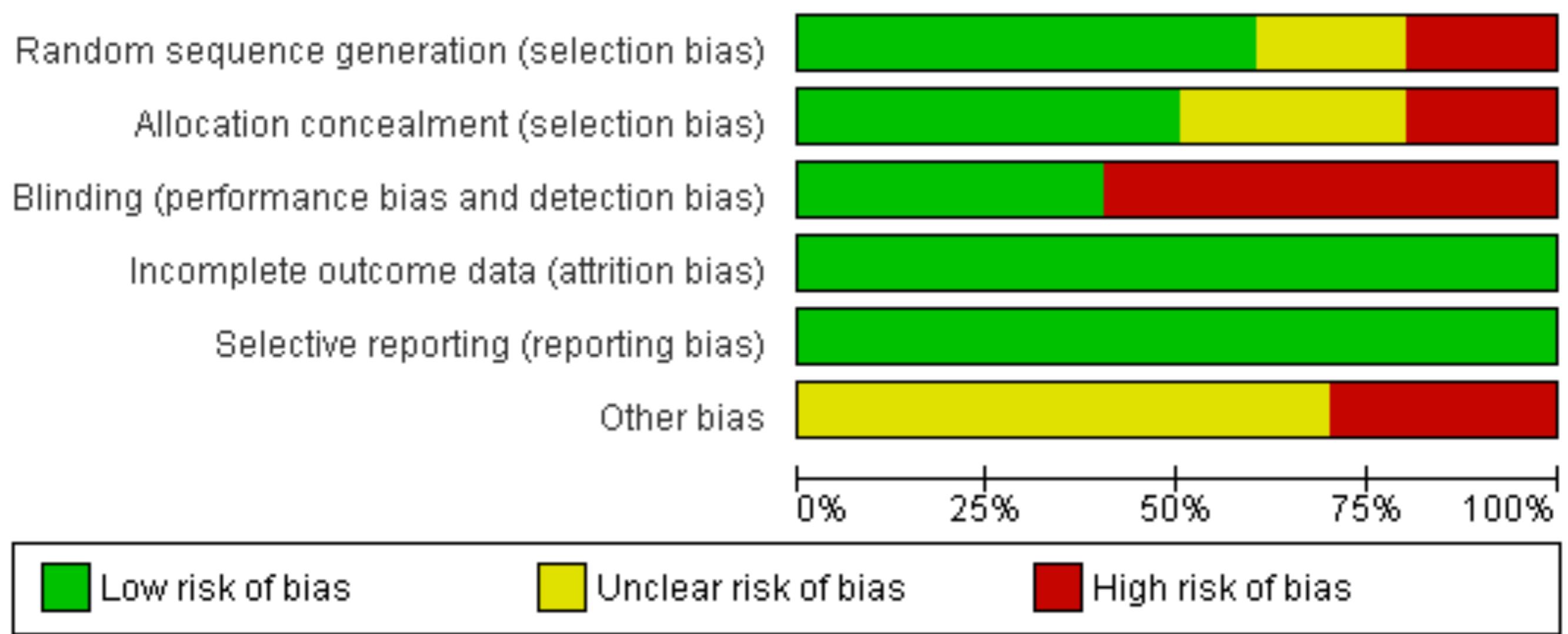
5A step 3--Appraising 評讀

Acupuncture for autism spectrum disorder(ASD)

Daniel KL Cheuk, Virginia Wong, Wen Xiong Chen
Cochrane Database Systemic Review. 2011 Sep 7;9.

15 database
↓
10 RCT articles
↓
N= 390
3-18 years olds
治療1-9個月

- Wong 2002
- Wang 2007
- Wong 2007
- Yan 2007
- Allam 2008
- Wong 2008
- Zhou 2008
- Chan 2009
- Wong 2010a
- Wong 2010b



Outcome Measurement

Primary outcome (Core features)	Aberrant Behavior Checklist(ABC)
	Ritvo-Freeman Real Life Rating Scale(RFRLRS)
	Autism Treatment Evaluation Checklist(ATEC)
	Autism Diagnostic Observation Scale(ADOS)
Secondary Outcome	Communication and linguistic ability
	Reynell Language Developmental scale(RLDS)
	Symbolic Play Test(SPT)
Cognitive Function	Griffiths Mental Developmental Scale(GMDS)
	Leiter International Performance Scale-Revised (Leiter-R)
Global Functioning	Pediatric Evaluation Disability Inventory(PEDI)
	Functional Independence Measure for Children (WeeFIM)
Side effects	needle pain, bleeding, faintness, pneumothorax

10
RCT
trials

Acupuncture+Conventional
V.S
Sham acupuncture+Conventional

Wong 2010a
Wong 2010b

Acupuncture+Conventional
V.S
Conventional

Wong 2002
Wang 2007
Yan 2007
Allam 2008
Wong 2008

Acupressure+Conventional
V.S
Conventional

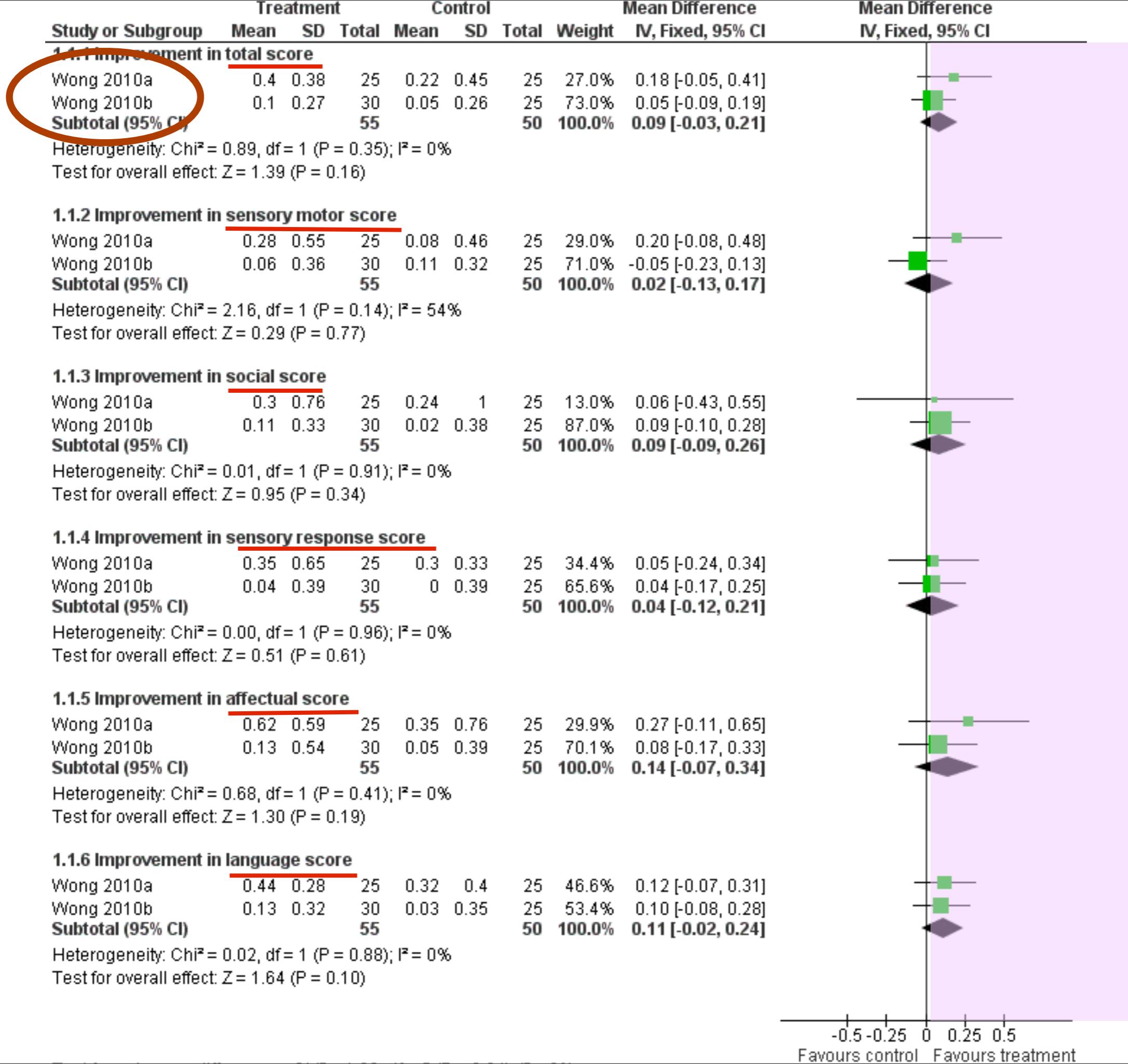
Zhou 2008
Chan 2009

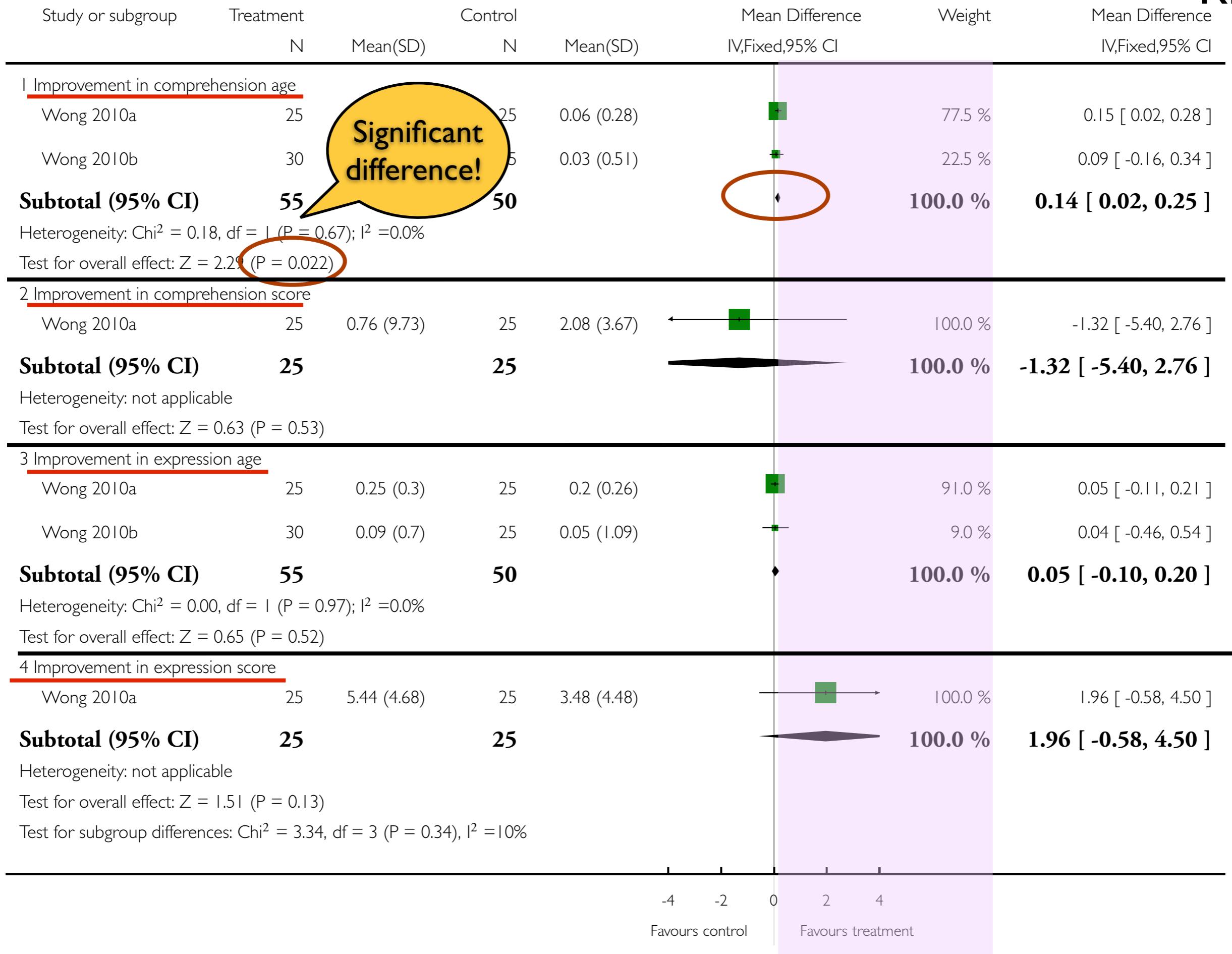
Acupuncture(A)+Conventional(C)

V.S

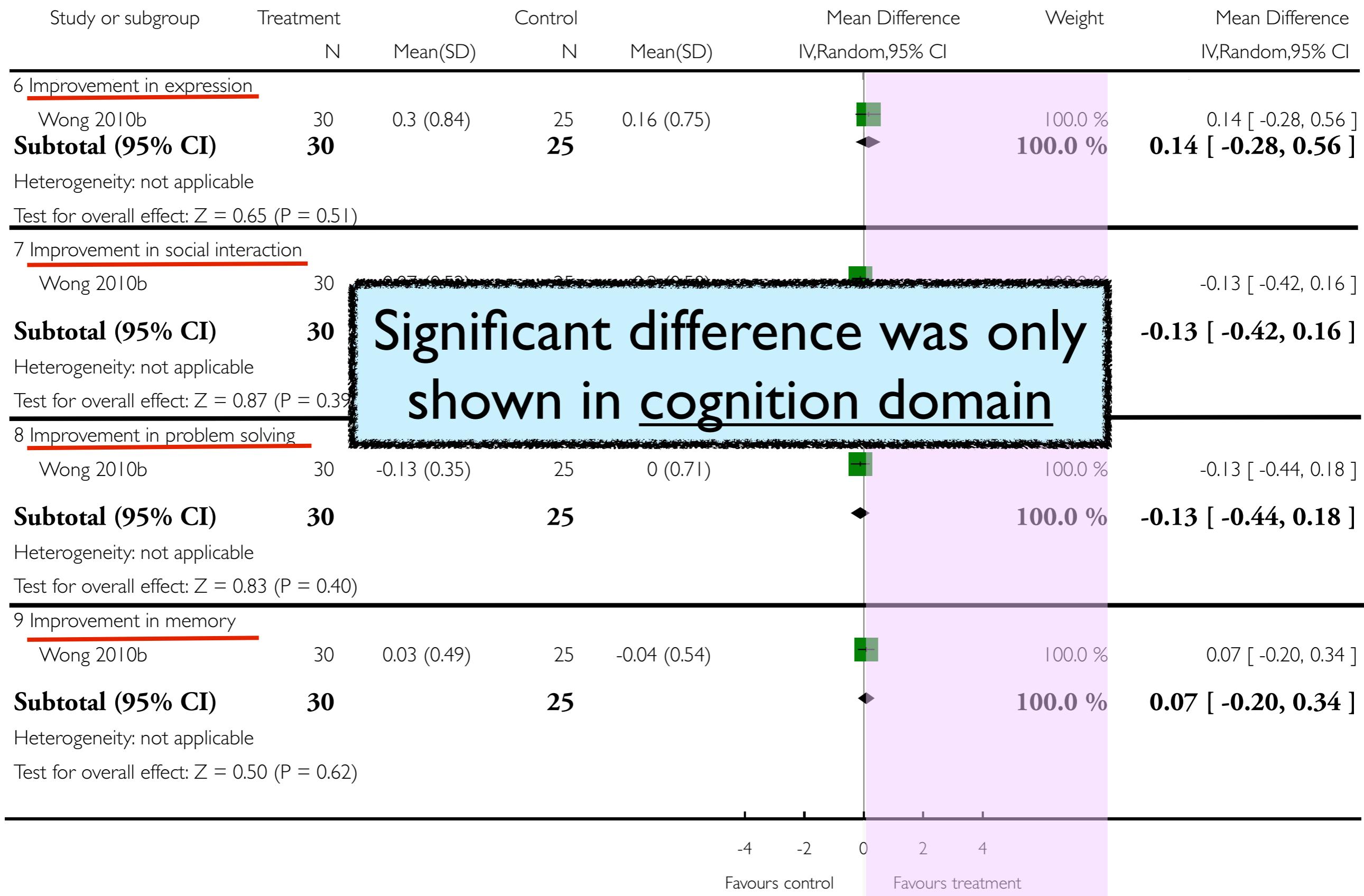
Sham acupuncture(S)+Conventional

	A	S	C	Primary outcome	Secondary outcome
Wong 2010a	舌針	鈍端碰		X	SPT GMDS
Wong 2010b	全身 電針	距針灸穴 位3-5mm的 表淺針刺	衛教 課程	RFRLRS ABC	<u>RLDS</u> ● <u>WeeFIM</u> ● Leiter-R CGIS● PEDI●



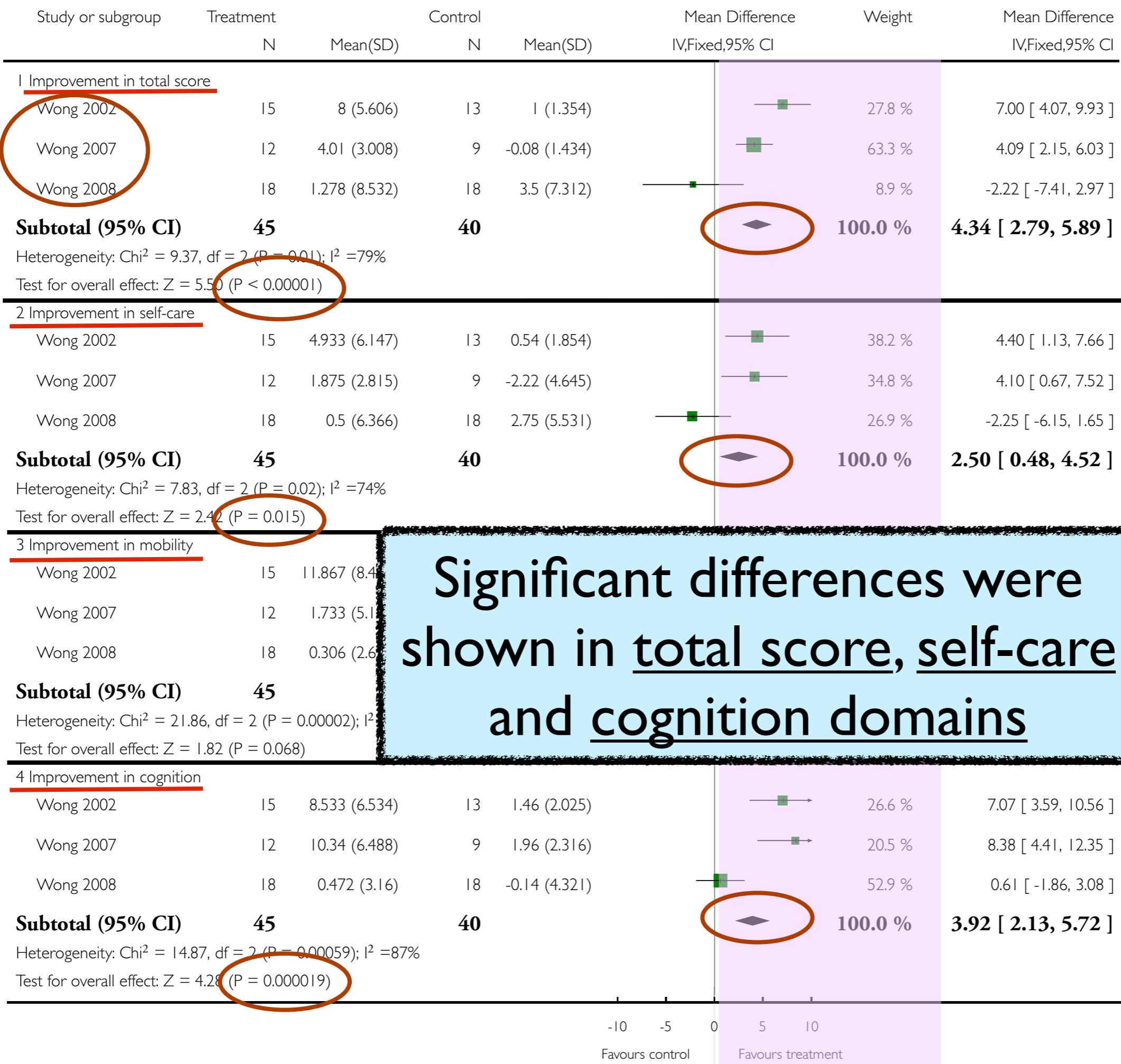






Acupuncture(A)+Conventional(C) V.S Conventional

	A	C	Primary outcome	Secondary outcome	
Wong 2002	舌針	衛教	RFRLRS	WeeFIM CGIS	X
Wong 2007	舌針	行為治療與衛教	ATEC		RLDS SPT
Wong 2008	全身電針	衛教	RFRLRS ABC ATES ADOS		SPT
Yan 2007	全身	行為治療與衛教	X	CPEP	
Allam 2008	頭針	語言治療	X	ALT	
Wang 2007	全身電針	行為治療	ABC	PPVT	



Significant differences were shown in total score, self-care and cognition domains

Acupressure(A')+Conventional V.S Conventional(C)

	A'	C	Primary Outcome	Secondary Outcome
Zhou 2008	拇指按壓	語言治療	×	CRRC
Chan 2009	七星針點刺	衛教	×	家長問卷●

此十篇治療均無明顯副作用！

分類	Article	Primary outcome	Secondary outcome
A+C VS Sham+C	Wong 2010a	X	SPT GMDS
	Wong 2010b	RFRLRS <u>ABC</u>	RLDS <u>WeeFIM</u>
	Wong 2002	RFRLRS	X
A+C VS C	Wong 2007	ATEC	RLDS SPT
	Wong 2008	RFRLRS ABC ATES ADOS	WeeFIM CGIS
	Yan 2007	X	CPEP
	Allam 2008	X	ALT
A'+C VS C	Wang 2007	ABC	PPVT
	Zhou 2008	X	CRRC
	Chan 2009	X	家長問卷

WeeFIM	domain	P-value
Wong 2010a 2010b	Cognition	P=0.024
Wong 2002 2007 2008	Cognition	P=0.000019
	Self-care	P=0.015
	Total score	P<0.00001

Acupuncture for autism spectrum disorder(ASD)

Daniel KL Cheuk, Virginia Wong, Wen Xiong Chen, Cochrane Database Systemic Review. 2011 Sep.

- Acupuncture didn't seem to be effective in improving core features of ASD, but it may improve cognition development.

5A step 4--Applying 臨床應用

Q1: 我的病人會不會跟這些研究差很多？

A1: 不會，可以參考

Q2: 這些研究所用的治療合理可行嗎？

A2: 可以

Q3: 我的病人可以從中得到什麼好處？

A3: 針灸加上行為治療對認知發展有幫助

Q4: 我的病人如何看待治療結果？

A4: 正向（稍有幫助又無明顯副作用）

5A step 5--Auditing

評估成果



醫師你說了一堆&*&o*^%^%\$%x#
\$#@&我攏聽唔啦！阿到底有沒有
效阿？



Take Home Message

- Autism spectrum disorder is not only autistic disorder
- Boy:Girl = 3-4:1
- Complicated etiology, complicated symptom, complicated evaluation, complicated treatment
- A+C V.S C had a little bit of better effect on cognition development with no bad adverse effect.

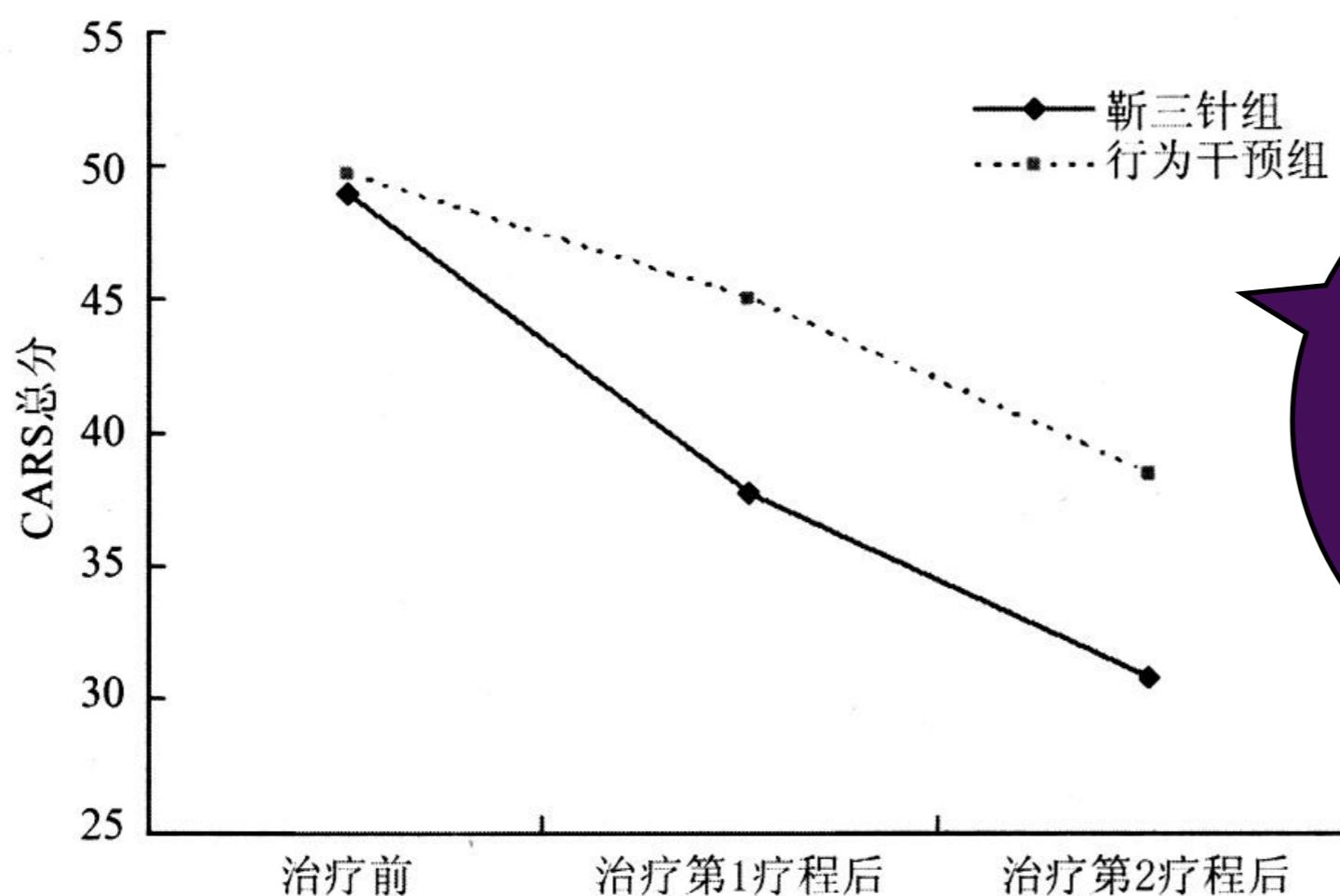
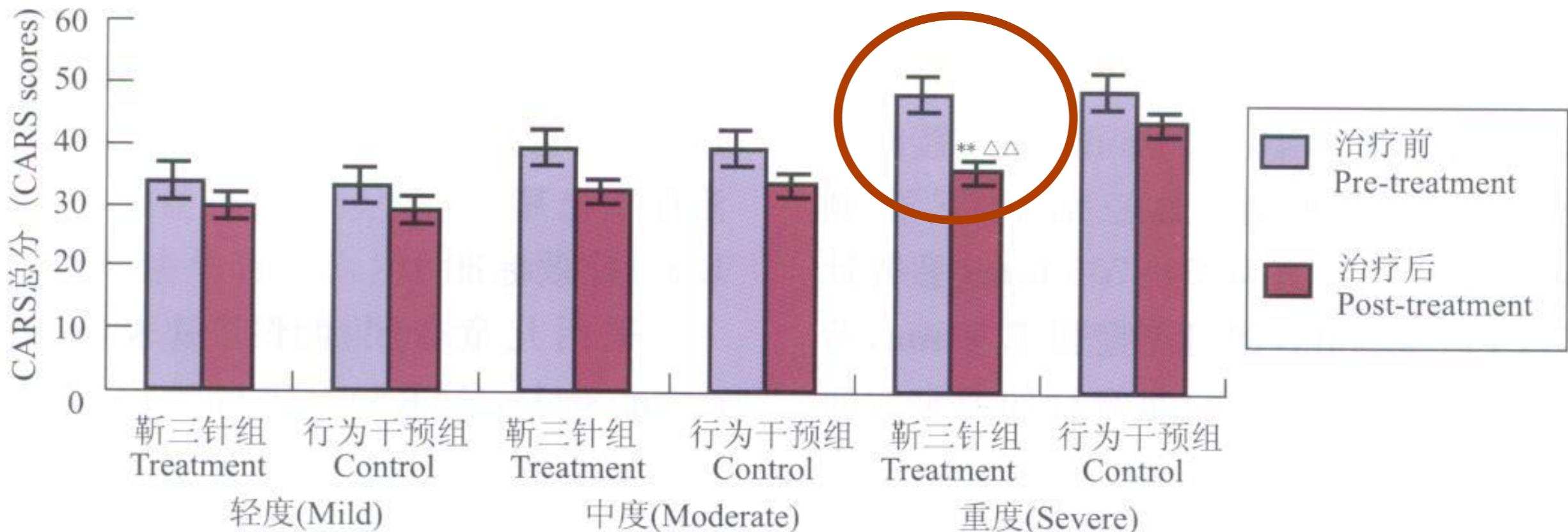
	隨機	雙盲	參與者 age N(M:F)	治療組 (n)	對照組(n)	穴位	評估方式
Liu 2008	○	×	3-9y/o 67(60:7)	針刺(33)	感覺統合訓 練(34)	四神針 顛三針 智三針 腦三針 舌三針 手智針 足智針 四關穴	ABC CARS
组别	n			Selection Bias	Unclear		
治疗组	33	9		Blinding bias	High risk	导分	
对照组	34	9		Attribution bias (Incomplete outcome data)	Low risk	治疗后	
				Reporting bias (Selective reporting)	High risk	29.45 ± 41 * ☆	
						31.27 ± 96 *	

袁青等人	參與者 age N(M:F)	治療組(n)	對照組(n)
靳三針治療 自閉症療效	202 (173:29)	<p>針刺穴位</p> <p>留針45分鐘</p> <p>四神針 智三針 腦三針 巍三針 定神針 醒神針 手智針 足智針 舌三針</p> <p>肝鬱氣滯加合谷太衝 心肝火旺加少府行間 痰迷心竅加豐隆大陵 腎精虧虛加太蹊</p>	<p>行為干預 訓練</p>

靳三針治療重度自閉症療效對照觀察，袁青，汪睿超，吳至鳳，趙妍，包小娟，靳瑞，中國針灸雜誌2009年3月

靳三針治療兒童自閉症不同中醫證型療效分析，袁青，汪睿超，吳至鳳，劉剛，包小娟，郎建英，廣州中醫藥大學學報2009年5月

針刺對不同病情程度兒童自閉症療效分析，袁青，汪睿超，吳至鳳，鄧晶晶，周花玲，郎建英，針刺研究雜誌2009年6月



比起行為干
預治療，靳三針對
於重度自閉症
($CARS > 42$ 分)治療
效果較好！

图 1 两组重度自闭症患儿治疗前后 CARS 总分变化

中医证型	组别	例数(N)	CARS总分		
			治疗前	治疗后	前后差值
肝郁气滞	治疗组	55	44.73±6.31	32.89±4.77 ^①	11.84±4.63 ^②
	对照组	17	44.06±5.57	38.35±6.34 ^①	5.71±2.47
心肝火旺	治疗组	25	44.88±5.43	35.56±4.70 ^①	9.32±4.78 ^②
	对照组	35	44.49±7.12	39.11±7.93 ^①	5.37±2.41
痰迷心窍	治疗组	21	43.90±6.61	34.90±3.22 ^①	9.00±6.11 ^②
	对照组	19	45.05±7.76	40.47±8.09 ^①	4.58±3.27
肾精亏虚	治疗组	17	45.35±6.28	36.24±3.53 ^①	9.12±5.42
	对照组	13	50.77±5.23	44.38±6.59 ^①	6.38±3.04

比起行為干預治療，靳三針對於實證治療效果明顯較好，尤其是肝鬱氣滯的證型

穴位	出現次數
神門	12
內關	11
舌三針	10
神庭	9
本神	7
顱三針	
四神針	
勞宮	
足智針	
印堂	
人中	
腦戶	
百會	6

Grade of recommendation for nonbiological treatments in ASD

Treatment	Grade
Music therapy	A
Vision therapy	B
Acupuncture	C
Auditory integration training	C
Massage and yoga	C
Neurofeedback	C
Homeopathy	D
Vagus nerve stimulator	D

A: Supported by at least 2 prospective randomized controlled trials (RCTs) *or* 1 systematic review

B: Supported by at least 1 prospective RCT *or* 2 nonrandomized controlled trials

C: Supported by at least 1 nonrandomized controlled trial *or* 2 case series

D: Troublingly inconsistent or inconclusive studies *or* studies reporting no improvements

謝謝聆聽