Comparative systematic review and meta-analysis of compression modalities for the promotion of venous ulcer healing and reducing ulcer recurrence

Mauck KF, Asi N, Elraiyah TA, Undavalli C, Nabhan M, Altayar O, Sonbol MB, Prokop LJ, Murad MH.

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Present by 陳秀鉛
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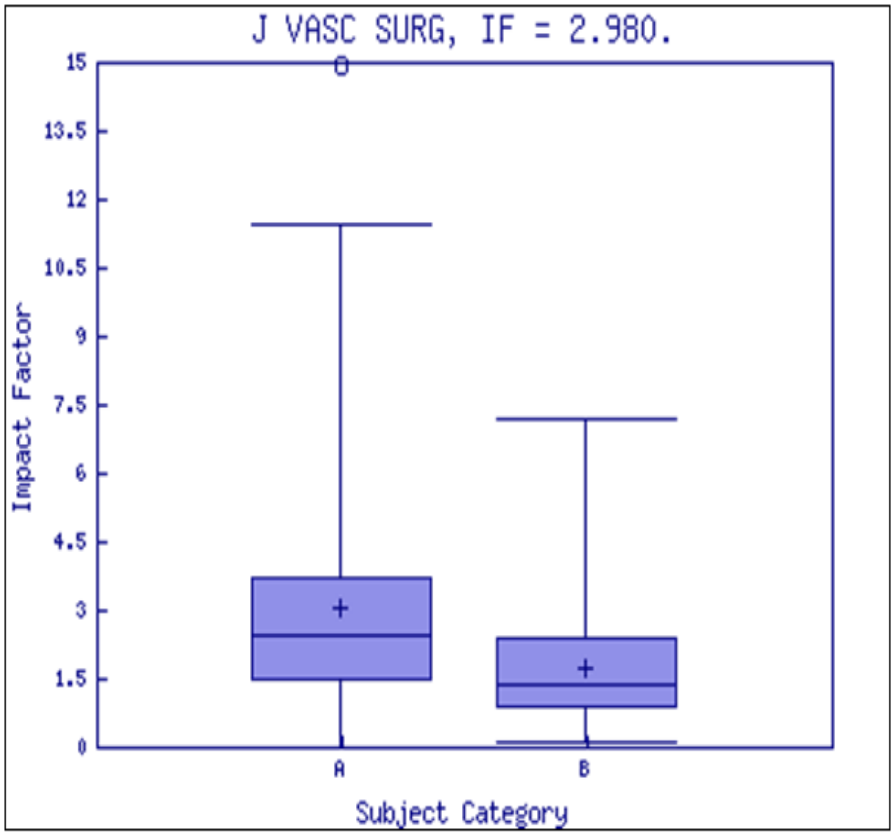
JOURNAL OF VASCULAR SURGERY

Category Box Plot

For **2013**, the journal **JOURNAL OF VASCULAR SURGERY** has an Impact Factor of **2.980**.

This is a box plot of the subject category or categories to which the journal has been assigned. It provides information about the distribution of journals based on Impact Factor values. It shows median, 25th and 75th percentiles, and the extreme values of the distribution.



Key

A - PERIPHERAL VASCULAR DISEASE

B - SURGERY

Introduction

- Leg ulceration due to venous disease affects >2.5million patients per year in the United States alone. The estimated prevalence in individuals aged >65 years in the United States is 1.7%
- Compression therapy is the cornerstone of management in patients with venous ulceration of the lower extremity; in addition to debridement, compression is considered the standard first-line clinical treatment.
- Compression can be achieved by several methods ,including the use of a single component or layer (such as a compression stocking or one type of bandage) or the use of multiple components or layers (different types of bandages or stockings and bandages used together).
- Several varieties of compression stockings, compression bandages, and various compression bandage systems have been studied.
- The available evidence is mixed regarding which method of compression is the most effective in improving ulcer healing and decreasing ulcer recurrence.

Critical Appraisal
[系統性文獻回顧 Systematic Review]

步驟 1：研究探討的問題為何？

compression modalities for the promotion of venous ulcer healing and reducing ulcer recurrence

研究族群 / 問題 (Problems)	lower extremity venous ulcer disease/adults (excluded :arterial、neuropathic or vasculitis)
介入措施 (Intervention)	Compression stockings with any compression bandage, bandage system , or dressing
比較 (Comparison)	(1)the efficacy of compression stockings vs compression bandages, (1)Four layer bandaging (4LB) systems vs bandaging systems that contain less than four layers, and (3) short stretch bandages (SSBs) with long stretch bandages (LSBs)
結果 (Outcomes)	(1) ulcer healing (number of ulcers healed or number of limbs with ulcers healed) (2) time to ulcer healing (3) ulcer recurrence.

步驟 2：系統性文獻回顧的品質如何？ (FAITH)

Find-良好的文獻搜尋至少應包括二個主要的資料庫，並且加上文獻引用檢索(參考文獻中相 關研究、Web of Science, Scopus 或 Google Scholar)、試驗登錄資料等。文獻搜尋應不只限於英文，並且應同時使用 MeSH 字串及一般檢索詞彙(text words)。

METHODS

Search strategy. With the assistance of an expert librarian (L.P.), we designed and conducted an electronic search strategy, the details of which are available in Appendix. We conducted a comprehensive search for randomized controlled trials (RCTs) and comparative observational studies from January 1990 to December 2013. The databases included in the search were Ovid Medline In-Process & Other Non-Indexed Citations, Ovid MEDLINE, Ovid EMBASE, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus. Controlled vocabulary supplemented with keywords was used to search for comparative studies of compression therapy for venous leg ulcers. We also performed a secondary hand search of the reference lists of all included studies as well as from previously published systematic reviews on this topic.

評讀結果：□是 □否 □不清楚

APPENDIX (online only). Search strategy

Ovid

Database(s): Embase 1988 to 2012 Week 39, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to Present, EBM Reviews—Cochrane Central Register of Controlled Trials September 2012, EBM Reviews—Cochrane Database of Systematic Reviews 2005 to September 2012 Search Strategy:

No.	*Searches*	*Results*
1	exp Stockings, Compression/	2683
2	exp compression therapy/	5724
3	(compression or bandage* or stocking* or dressing* or unna or unnas or "circ-aid" or circaid).mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, ps, rs, ui, tx, ct]	224,681
4	or/1-3	224,681
5	exp Varicose Ulcer/dh, dt, pc, rt, rh, su, th [Diet Therapy, Drug Therapy, Prevention & Control, Radiotherapy, Rehabilitation, Surgery, Therapy]	2284
6	exp ulcer/dm, dt, pc, rt, rh, su, th [Disease Management, Drug Therapy, Prevention, Radiotherapy, Rehabilitation, Surgery, Therapy]	46,961
7	exp leg ulcer/	24,470
8	(((venous or varicose or stasis) adj2 ulcer*) and (leg or legs)).mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, ps, rs, ui, tx, ct]	6298
9	(5 or 6) and 7	6078
10	8 or 9	10,012
11	4 and 10	3821
12	exp controlled study/	3,943,648
13	exp randomized controlled trial/	651,961
14	((control$ or randomized) adj2 (study or studies or trial or trials)).mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, ps, rs, ui, tx, ct]	5,050,079
15	meta analysis/	102,969
16	meta-analys$.mp.	165,476
17	exp "systematic review"/	53,391
18	(systematic* adj review$).mp.	125,284
19	exp Cohort Studies/	1,441,721
20	exp longitudinal study/	936,912
21	exp retrospective study/	716,957
22	exp prospective study/	596,445
23	exp comparative study/	2,334,016
24	exp clinical trial/	1,592,689
25	((clinical or comparative or cohort or longitudinal or retrospective or prospective or concurrent) adj (study or studies or survey or surveys or analysis or analyses or trial or trials)).mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, ps, rs, ui, tx, ct]	6,339,437
26	or/12-25	9,900,498
27	11 and 26	1890
28	from 11 keep 2046-3458	1413
29	limit 28 to (clinical trial, all or clinical trial, phase I or clinical trial, phase II or clinical trial, phase III or clinical trial, phase IV or clinical trial or comparative study or controlled clinical trial or meta analysis or randomized controlled trial) [Limit not valid in Embase, CCTR, CDSR; records were retained]	405
30	27 or 29	1890
31	limit 30 to (book or book series or editorial or erratum or letter or note or addresses or autobiography or	104

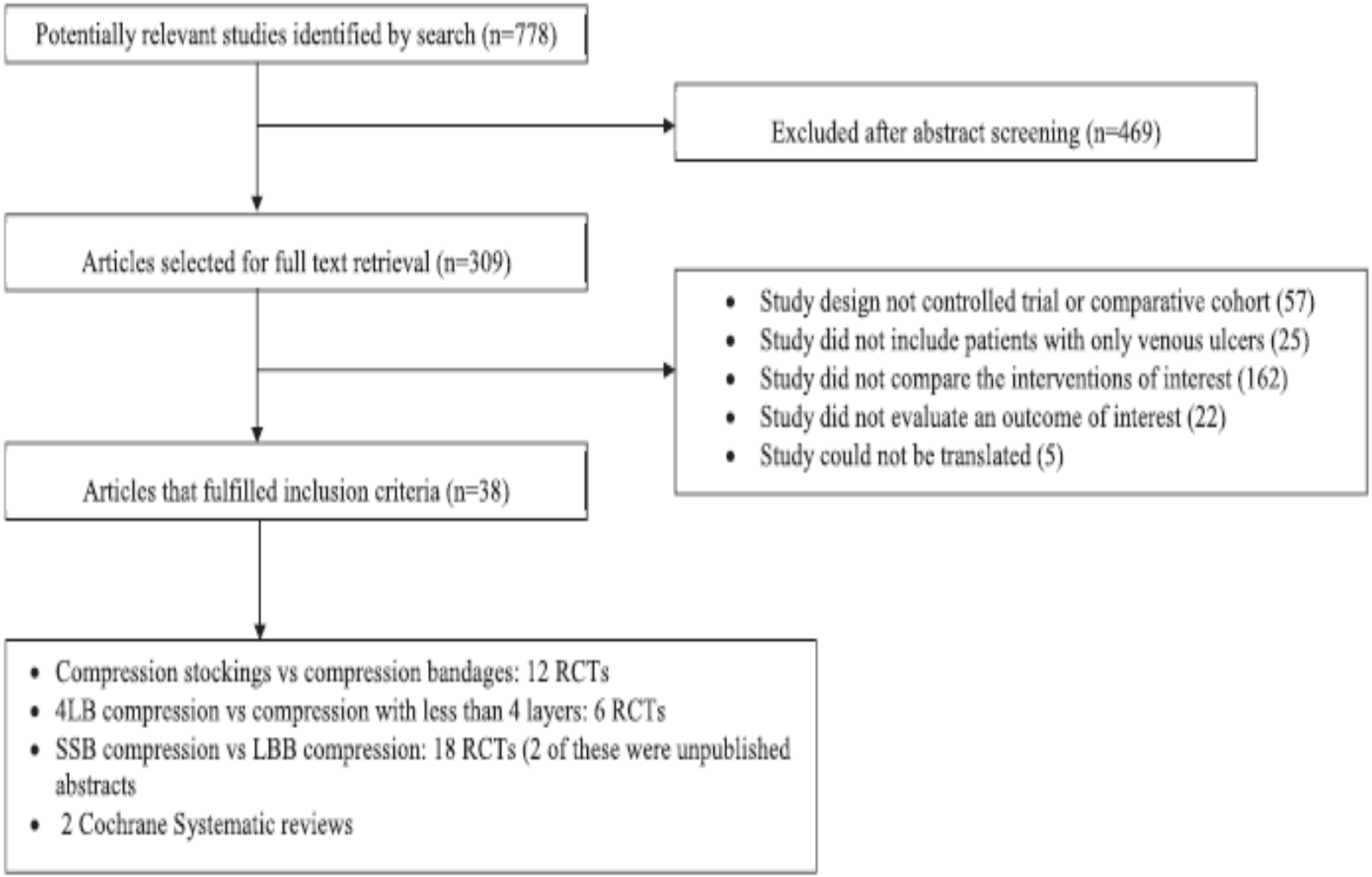


Fig 1. Study selection process. *4LB*, Four-layer bandage; *LLB*, long stretch bandage; *RCT*, randomized controlled trial; *SSB*, short stretch bandage.

評讀結果：□是 □否 □不清楚

A - 文獻是否經過嚴格評讀 (Appraisal)？

應根據不同臨床問題的文章類型，選擇適合的評讀工具，並說明每篇研究的品質
(如針對治療型的臨床問題，選用隨機分配、盲法、及完整追蹤的研究類型)

P72

- References from the search were uploaded to Distiller SR (Evidence Partners Inc, Ottawa, Ontario, Canada), an online application designed specifically for the screening and data extraction phases of a systematic review. Two reviewers, working Independently, screened all titles and abstracts for eligibility.
- All references that were considered potentially relevant were retrieved in full text and again screened by two independent reviewers against the eligibility criteria.
- Disagreements were resolved by a third reviewer.

評讀結果：□是 □否 □不清楚

A - 文獻是否經過嚴格評讀 (Appraisal)？

P72

Validity assessment (1)-RCT

Cochrane risk of bias tool

- How the randomization sequence was generated and concealed
- Whether the randomization successfully ensured no important differences between groups at baseline
- How blinding was achieved and which individuals were blinded
- How follow-up was assessed and reported
- How the analysis was reported.

Validity assessment(2)-cohort studies

Newcastle-Ottawa Scale to determine the following for cohort studies:

- Selection of study cohorts: how representative these cohorts were of patients of interest, whether adequate ascertainment of the exposures and outcomes at baseline was conducted
- Comparability of study cohorts by means of matching or statistical adjustment by key predictors of outcome
- Ascertainment of outcome: planning long enough follow-up to allow time for critical outcomes to develop ,blinding the assessment of outcomes in both groups, etc.

I - 是否只納入 (included) 具良好效度的文章？

僅進行文獻判讀是不足夠，系統性文獻回顧只納入至少要有一項研究結果是極小偏誤的試驗。

Table II. Quality of included studies

Study, year	Randomization method	Allocation concealment	Blinding	Baseline imbalance	Lost to follow-up, %	Funding source
Stocking vs bandage						
Koksal,[20] 2003	Randomization method not reported	NR, unclear	NR	No imbalances at baseline	10	NR
Polignano,[15] 2004	Randomization method not reported	NR, unlcear	NR	Yes, bandage group older (71 vs 67 years), more women, and more comorbid clinical conditions	3	For profit
Junger,[13] 2004	Randomized in blocks of 4, performed by an external contract research organization	Yes	Outcome assessors	No imbalances at baseline	10	For profit
Junger,[12] 2004	Stratified randomization by telephone from an external randomization center	Yes	NR	NR	1	NR
Mariani,[14] 2008	2 blocks of 10 for each of 3 centers, no report on how this was done	NR, unclear	NR	No imbalances at baseline	7	NR
Taradaj,[17] 2009	Computer generated random numbers sealed in sequentially numbered envelopes	Yes	NR	No imbalances at baseline	NR	NR
Brizzio,[10] 2010	Randomization method NR	NR, unclear	Not blinded	No imbalances at baseline	8	For profit
Szewczk,[16] 2010	Randomization method NR	NR, unclear	NR	No imbalances at baseline	NR	Nonprofit
Finlayson,[11] 2012	Computerized	Yes	Outcome	No imbalances at	10	Nonprofit

P 82-83

評讀結果：□ 是 □ 否 □ 不清楚

T - 作者是否以表格和圖表「總結」(total up) 試驗結果？

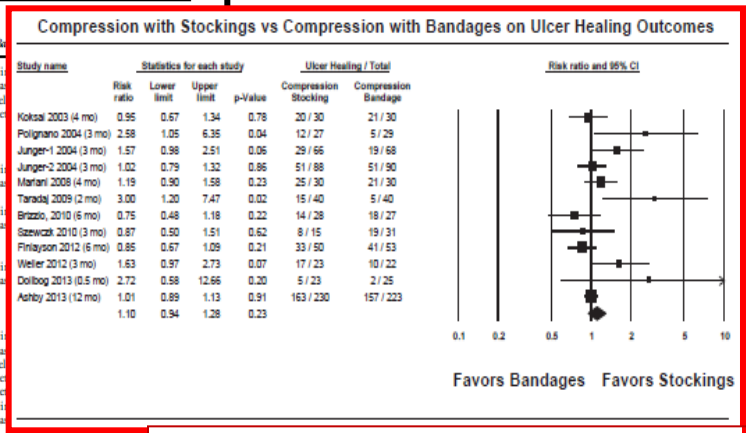
應該用至少 1 個摘要表格呈現所納入的試驗結果。若結果相近，可針對結果進行統合分析(meta-analysis)，並以「森林圖」(forest plot)呈現研究結果，最好再加上異質性分析

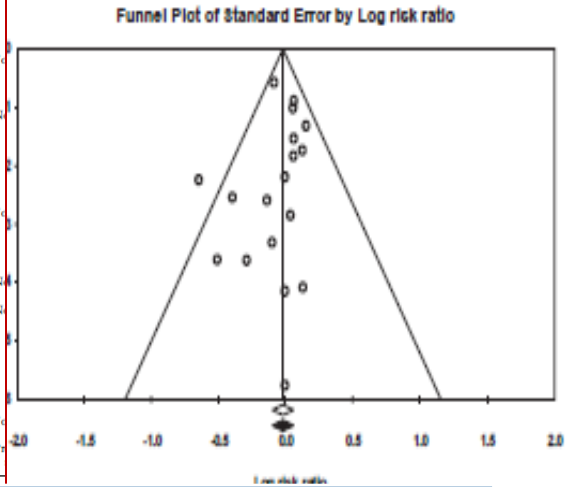
Table I. Characteristics of included studies

Study, year Study duration	No. of patients or limbs Mean age Outcomes of interest	Location/setting	Inclusion and exclusion criteria	Ulcer characteristics	Interventions
Stocking vs bandage					
Koksal,[20] 2003 4 months	60 patients Mean age: 50 years Outcomes: Ulcer healing, time to ulcer healing	University hospital in Turkey	Inclusion: Patients with post-thrombotic chronic venous insufficiency with a venous ulceration between 5 and 8 cm^2, who provided informed consent Exclusion: Patients with ABPI <0.8, clinical signs of infection requiring treatment, diabetes, other etiology of leg ulceration	Size: Mean ulcer area 6.2 cm^2 in the stocking vs 6.4 cm^2 in the bandage group Duration: Mean ulcer duration 16.7 weeks Recurrence: Mixture of recurrent and new ulcerations	Stocking intervention (n = 30): Hydrocolloid dressing covered with an elastic stocking to provide 30-40 mm Hg compression at the ankle Bandage intervention (n = 30): Unna's boot (calamine, zinc oxide, glycerine, sorbitol, gelatin, and magnesium aluminum)
Polignano,[15] 2004 3 months	56 patients Mean age: 69 years Outcomes: Ulcer healing, time to ulcer healing	Multicenter (Florence, Rome, Milan) in Italy	Inclusion: Adult patients with a venous leg ulcer with surface area >2 cm^2 but <10 cm^2 in any dimension, ABPI >0.8, ankle circumference between 18 and 30.5 cm. Exclusion: Patients with "champagne-bottle" shaped legs, severe arthritis, history of poor compliance, hypersensitivity to any dressing or compression system, bedridden, taking systemic antibiotics, infected or mixed-etiology ulcers, participation in other clinical investigations in the month before recruitment	Size: Mean surface area 9.7 cm^2 stocking vs 9.3 cm^2 in bandage group (no difference) Duration: Ulcers that were <6 months and >6 months duration were included in both groups (no difference)	Stocking intervention (n = 27): Light compression stocking covered by a second medium-compression stocking to provide "high compression" therapy Bandage intervention (n = 29): SSB over gauze
Junger,[14] 2004 3 months (stopped after interim analysis at 2 months)	134 patients Mean age: 63 years Outcomes: Ulcer healing, time to ulcer healing	Multicenter: Phlebology outpatient clinics in Germany and the Netherlands (16 study sites)	Inclusion: Adults ages 18-80 years with venous ulcer with a maximum of 1 cm to 10 cm in breadth, present for <12 months, documented venous reflux, ABPI >0.9, ability to comply with instructions and scheduled visits. Exclusion: Patients who were bedridden or spent <1 hour/day on their feet, clinically infected ulcers or ulcers of mixed etiology, diabetes or diabetic neuropathy, DVT in last 3 months, poorly controlled hypertension, advanced coronary disease, chronic polyarthritis, restricted ankle movement, vascular surgery or sclerotherapy in the last 3 months, medication for venous disease, immunosuppressants, cytotoxic drugs, obesity (BMI >35 kg/m^2), noncompliance	Size: Mean surface area 5.6 cm^2 in stocking vs 5.9 cm^2 in the bandage group (no difference) Location: Mixed medial and lateral ulcers Recurrence: Mixture of first time and recurrent ulcers	Stocking intervention (n = 66): Stocking (size selected to fit each patient) to provide ~43 mm Hg compression at the ankle Bandage intervention (n = 68): 2 SSBs wrapped in opposite directions
Junger,[12] 2004 3 months	188 patients Mean age: 65 years Outcomes: Ulcer healing, time to ulcer healing	Multicenter: France, Germany, Austria, Switzerland	Inclusion: Adult patients with venous leg ulcers present for <3 months with a maximum diameter of 5 cm, ABPI >0.9, and ultrasound confirmation of venous reflux, not confined to bed, walking for at least 1 h/d Exclusion: Patients with diabetic, arterial, or mixed ulcers, ulcers showing local or systemic clinical signs of infection, decompensated heart failure, cancer, chronic or autoimmune infection, insulin-dependent diabetes or diabetic neuropathy, or clinically significant restricted ankle movement, use of medication for venous disease, immunosuppressants, cytotoxic drugs	Size: Mean surface area 2.4 cm^2 in stocking vs 2.4 cm^2 in the bandage group (no difference) Duration: Ulcer duration ≤3 months Location: Mixed medial and lateral ulcers Recurrence: Mixture of first time and recurrent ulcers	Stocking intervention (n = 88)*: Tubular, heelless, open-toed elastic compression device knitted in tubular form to provide compression of 30-40 mm Hg at the ankle Bandage intervention (n = 90)*: Compression SSB

Table II. Continued.

Study, year	Randomization method	Allocation concealment	Blinding	Ba
Duby,[32] 1993	Randomization method NR	NR, unclear	NR	No i ba
Colgan,[30] 1995 (abstract only)	NR	NR, unclear	Not blinded	Basel be
Kralj 1996[37] ABSTRACT ONLY	NR	NR, unclear	NR	NR
Danielson,[31] 1998	Randomization method not clearly reported, but stratified by ulcer size	Yes	Not blinded	No i ba
Gould,[34] 1998	Randomization method not clearly reported	NR, unclear	Clinicians blinded, "observers" blinded	No i ba
Scriven,[43] 1998	Block randomization of each limb by presence of unilateral or bilateral ulcers; stratified by ulcer area	Yes	Not blinded	No i ba
Moody,[39] 1999	Not randomized	No	Not blinded	No i ba
Partsch 2001[41]	Randomized by each center separately; stratified by ulcer area	NR	Not blinded	Basel be
Meyer,[33] 2002	Randomization method not clearly described, but stratified by ulcer size	NR	NR	No i ba
Ukat,[44] 2003	Randomization method not clearly described, but performed using sealed envelopes	Yes	NR	Baseline imbalances 46%
Franks 2004[33]	Separate randomization by center, stratified by ulcer area, using sequential sealed envelopes	Yes	NR	No imbalances at baseline 21% Fe
Nelson,[40] 2004 Iglesias,[36] 2004	Offsite computer-generated block randomization accessed by phone; stratified by center, previous ulceration (y/n), ulcer duration and ulcer area	Yes	Not blinded	No imbalances at baseline 0% N
Polignano,[42] 2004	Randomization method NR	NR, unclear	NR	No imbalance at baseline 12 Fe
Blecken,[28] 2005	Randomization by dividing the extremities into 2 groups	No	NR	NR NR
Szewczk,[16] 2010	Randomization method NR	NR, unclear	NR	No imbalances at baseline NR Ne
Harrison,[35] 2011	Centrally located, computer generated block randomization stratified by center, ulcer size, ulcer duration, history of previous ulcer. Sequentially sealed envelopes	Yes	Not blinded	No imbalances at baseline 8% Ne
Lazareth,[27] 2012	Randomization method NR	NR, unclear	NR	No imbalances at baseline 14 Fe
Wong 2012[45]	Computer generated randomization	NR, unclear	NR	No imbalances at baseline 14 Pr

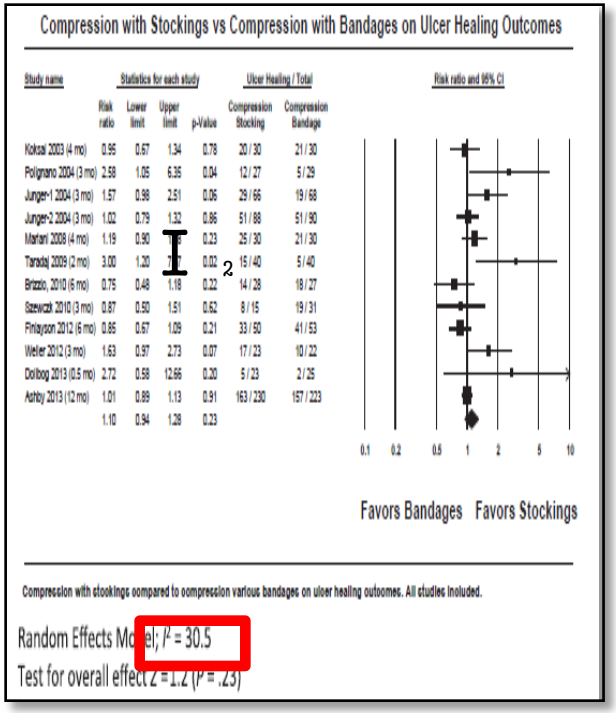


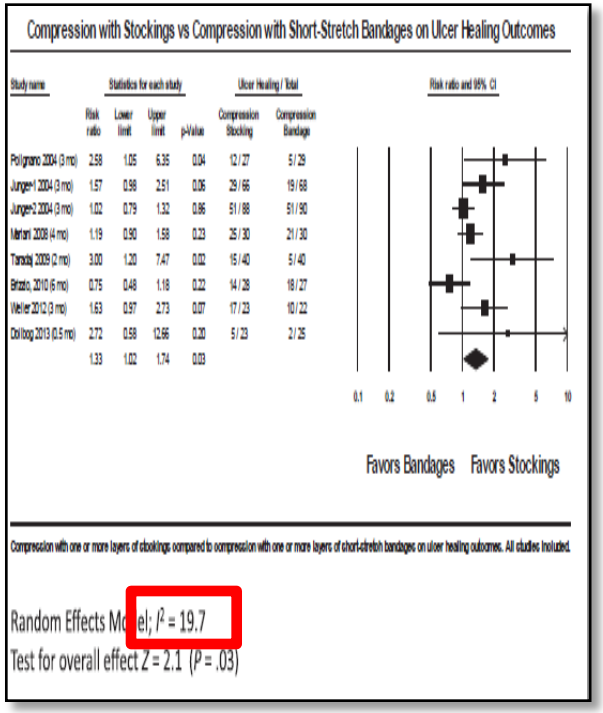


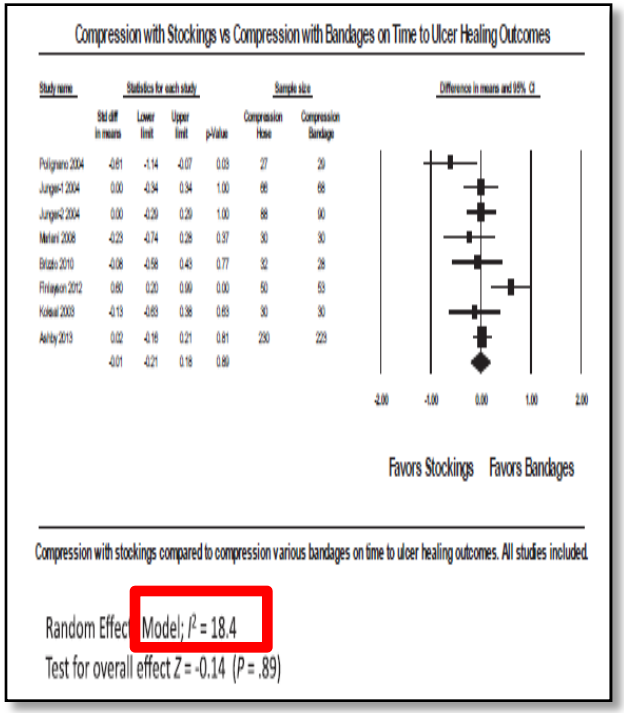
評讀結果：□是　□否　□不清楚

H - 試驗的結果是否相近 - 異質性 (Heterogeneity)？

在理想情況下，各個試驗的結果應相近或具同質性，若具有異質性，作者應評估差異是否顯著(卡方檢定)。根據每篇個別研究中不同的PICO及研究方法，探討造成異質性的原因。







I²:30.5(Fig2)
19.7(Fig3)
18.4(Fig5)

其餘I²: 0
表示異質性低

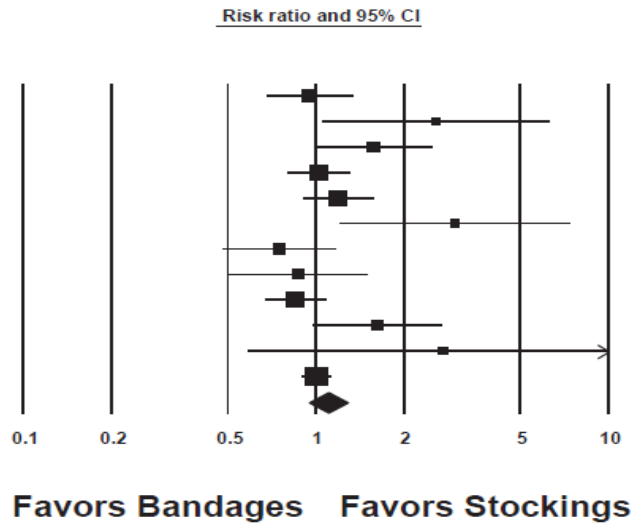
評讀結果：■是 □否 □不清楚

Results

Compression stockings vs compression

Compression with Stockings vs Compression with Bandages on Ulcer Healing Outcomes

Study name	Statistics for each study				Ulcer Healing / Total	
	Risk ratio	Lower limit	Upper limit	p-Value	Compression Stocking	Compression Bandage
Koksal 2003 (4 mo)	0.95	0.67	1.34	0.78	20 / 30	21 / 30
Polignano 2004 (3 mo)	2.58	1.05	6.35	0.04	12 / 27	5 / 29
Junger-1 2004 (3 mo)	1.57	0.98	2.51	0.06	29 / 66	19 / 68
Junger-2 2004 (3 mo)	1.02	0.79	1.32	0.86	51 / 88	51 / 90
Mariani 2008 (4 mo)	1.19	0.90	1.58	0.23	25 / 30	21 / 30
Taradaj 2009 (2 mo)	3.00	1.20	7.47	0.02	15 / 40	5 / 40
Brizzio, 2010 (6 mo)	0.75	0.48	1.18	0.22	14 / 28	18 / 27
Szewczk 2010 (3 mo)	0.87	0.50	1.51	0.62	8 / 15	19 / 31
Finlayson 2012 (6 mo)	0.85	0.67	1.09	0.21	33 / 50	41 / 53
Weller 2012 (3 mo)	1.63	0.97	2.73	0.07	17 / 23	10 / 22
Dolibog 2013 (0.5 mo)	2.72	0.58	12.66	0.20	5 / 23	2 / 25
Ashby 2013 (12 mo)	1.01	0.89	1.13	0.91	163 / 230	157 / 223
	1.10	0.94	1.28	0.23		



Compression with stockings compared to compression various bandages on ulcer healing outcomes. All studies included.

Random Effects Model; $I^2 = 30.5$
Test for overall effect $Z = 1.2$ ($P = .23$)

Fig 2. The *solid squares* denote the relative risk, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the pooled relative risk. Random effects model; $I^2 = 30.5$. Test for overall effect $Z = 1.2$ ($P = .23$).

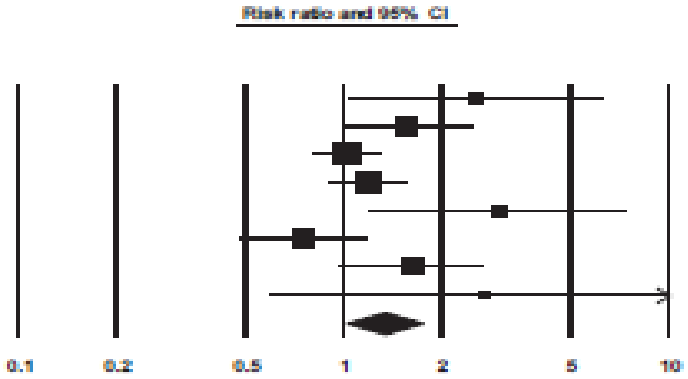
The pooled risk ratio (RR) was 1.10 (95% confidence interval [CI], 0.94-1.28), indicating that ulcer healing outcomes did not differ between the two group

Results

Compression stockings vs compression Bandage

Compression with Stockings vs Compression with Short-Stretch Bandages on Ulcer Healing Outcomes

Study name	Risk ratio	Lower limit	Upper limit	p-Value	Ulcer Healing / Total: Compression Stocking	Ulcer Healing / Total: Compression Bandage
Poligriano 2004 (3 mo)	2.58	1.05	6.35	0.04	12 / 27	5 / 29
Junger-1 2004 (3 mo)	1.57	0.98	2.51	0.06	29 / 66	19 / 68
Junger-2 2004 (3 mo)	1.02	0.79	1.32	0.86	51 / 88	51 / 90
Mariani 2008 (4 mo)	1.19	0.90	1.58	0.23	25 / 30	21 / 30
Tarabaj 2009 (2 mo)	3.00	1.20	7.47	0.02	15 / 40	5 / 40
Brizzio, 2010 (6 mo)	0.75	0.48	1.18	0.22	14 / 28	18 / 27
Weller 2012 (3 mo)	1.63	0.97	2.73	0.07	17 / 23	10 / 22
Dollbog 2013 (0.5 mo)	2.72	0.58	12.66	0.20	5 / 23	2 / 25
	1.33	1.02	1.74	0.03		



Compression with one or more layers of stockings compared to compression with one or more layers of short-stretch bandages on ulcer healing outcomes. All studies included.

Random Effects Model; $I^2 = 19.7$
Test for overall effect $Z = 2.1$ $(P = .03)$

Fig 3. The *solid squares* denote the relative risk, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the pooled relative risk. Random effects model; $I^2 = 19.7$ Test for overall effect $Z = 2.1$ $(P = .03)$.

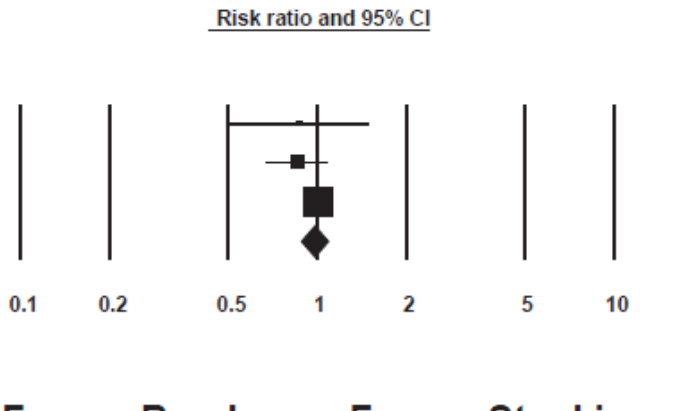
The pooled RR was 1.33 (95% CI, 1.02-1.74), indicating that ulcer healing was better in the stocking group than in the SSB group

Results

Compression stockings vs compression

Compression with Stockings vs Compression with Four-Layer Bandages on Ulcer Healing Outcomes

Study name	Statistics for each study				Ulcer Healing / Total	
	Risk ratio	Lower limit	Upper limit	p-Value	Compression Stocking	Compression Bandage
Szewczk 2010 (3 mo)	0.87	0.50	1.51	0.62	8 / 15	19 / 31
Finlayson 2012 (6 mo)	0.85	0.67	1.09	0.21	33 / 50	41 / 53
Ashby 2013 (12 mo)	1.01	0.89	1.13	0.91	163 / 230	157 / 223
	0.97	0.87	1.08	0.59		



Compression with one or more layers of stockings compared to compression with four- layer bandages on ulcer healing outcomes. All studies included.

Random Effects Model; $I^2 = 0$

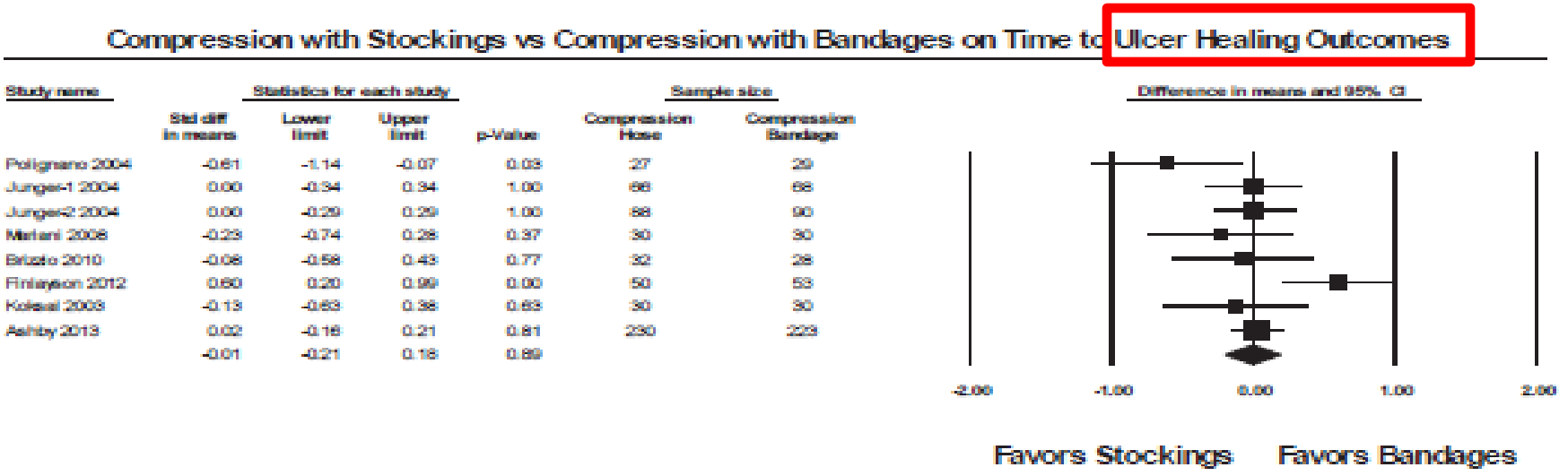
Test for overall effect $Z = -0.54$ ($P = .59$)

Fig 4. The *solid squares* denote the relative risk, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the pooled relative risk. Random effects model; $I^2 = 0$. Test for overall effect $Z = -0.54$ ($P = .59$).

The pooled RR was 0.97 (95% CI, 0.87-1.08), indicating no difference between stockings and 4LB on ulcer healing outcomes

Results

Compression stockings vs compression Bandage



Compression with stockings compared to compression various bandages on time to ulcer healing outcomes. All studies included.

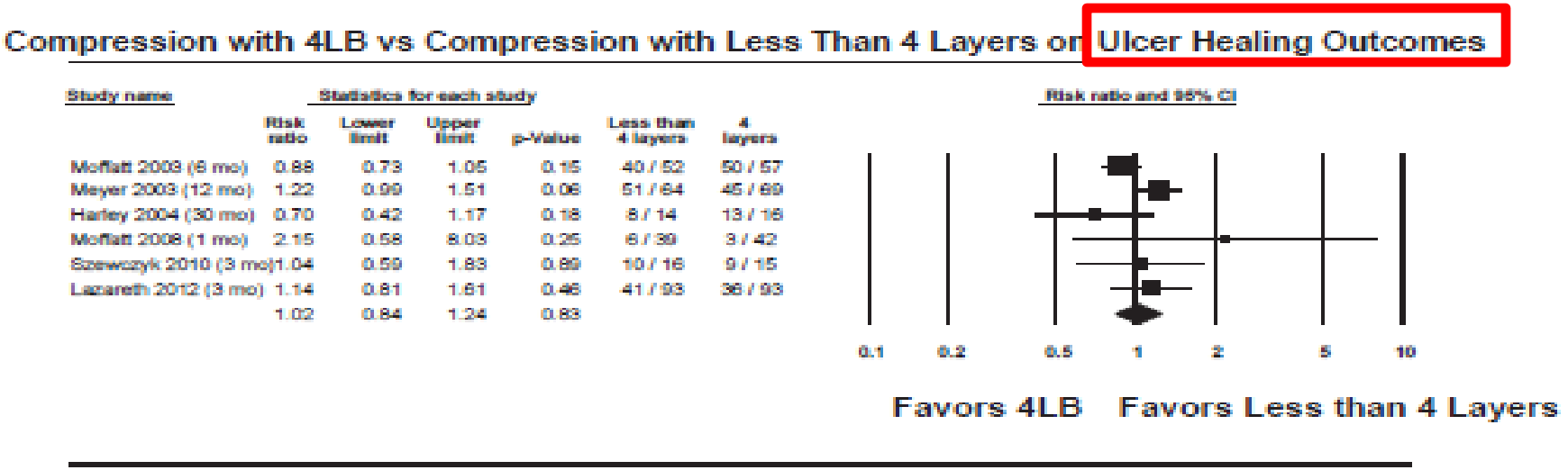
Random Effects Model; $I^2 = 18.4$
Test for overall effect $Z = -0.14$ $(P = .89)$

Fig 5. The *solid squares* denote the mean difference, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the weighted mean difference. Random effects model; $I^2 = 18.4$. Test for overall effect $Z = -0.14$ $(P = .89)$.

The pooled standard difference in means for the remaining eight studies was 0.01 months (95% CI, 0.21 to 0.18;P ¼ .89), indicating no difference between the two groups with respect to time to ulcer healing

Results

Compression with 4LBs vs compression with less than four layers



Comparison of compression with 4-layer bandage systems vs compression with bandage systems with less than 4 layers. All studies included; all RCTs.

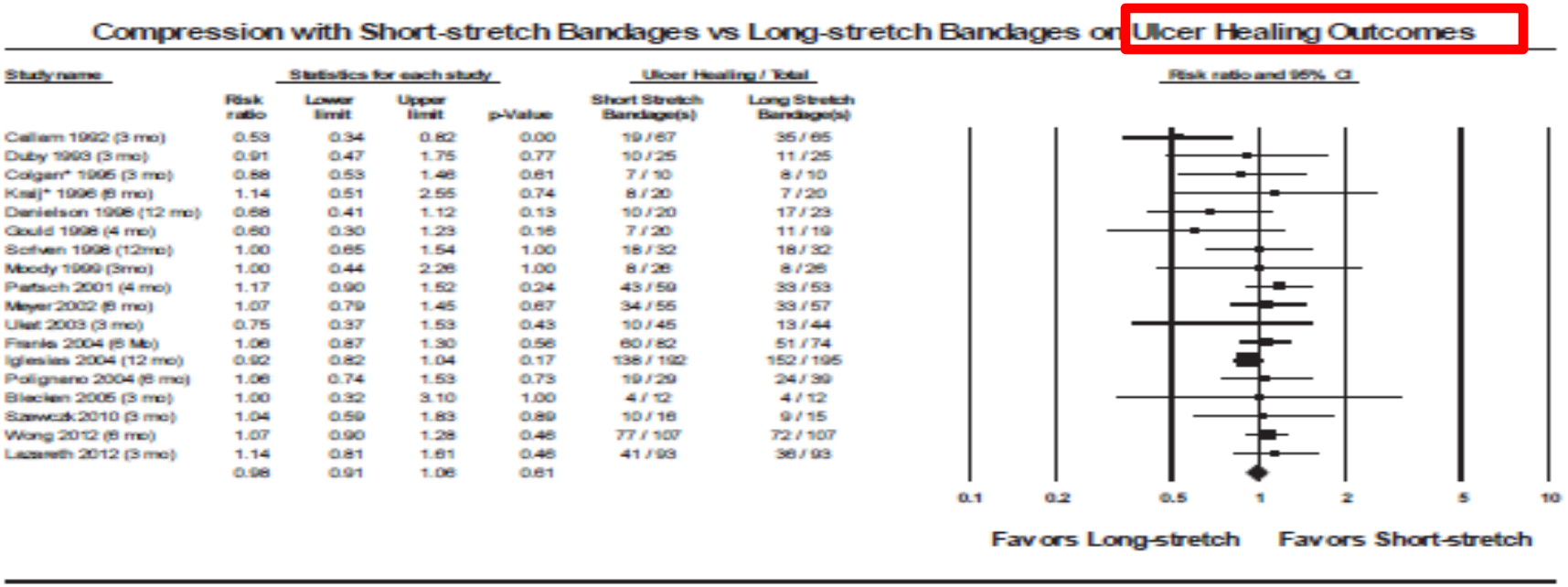
Random Effects Model; $I^2 = 0$
Test for overall effect $Z = 0.21$ ($P = .83$)

Fig 6. The *solid squares* denote the relative risk, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the pooled relative risk. Random effects model; $I^2 = 0$. Test for overall effect $Z = 0.21$ ($P = .83$).

The pooled RR was 1.02 (95% CI, 0.84-1.24; I2 ¼ 0), indicating that ulcer healing outcomes did not differ between the two groups

Results

Compression with SSBs vs LSBs



Comparison of compression with short-stretch bandages vs long-stretch bandages on ulcer healing outcomes. All studies included.

Random Effects Model; $I^2 = 0$

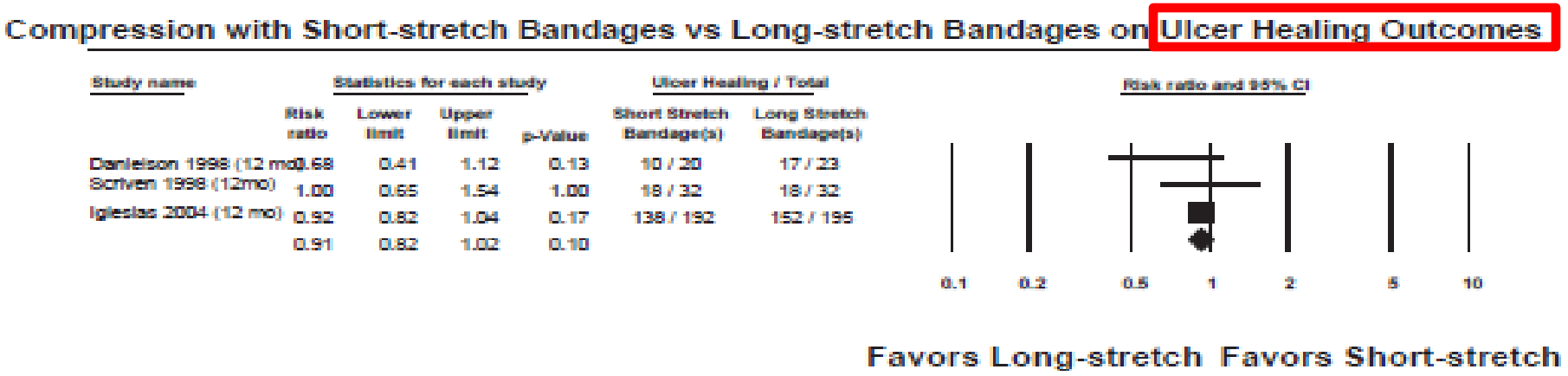
Test for overall effect $Z = -0.51$ ($P = .61$)

Fig 7. The *solid squares* denote the relative risk, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the pooled relative risk. Random effects model; $I^2 = 0$. Test for overall effect $Z = -0.51$ ($P = .61$).

The pooled RR of 0.98 (95%CI, 0.91-1.06; I2 ¼ 0.0) indicated no difference in ulcer healing outcomes when SSBs were compared with LSBs

Results

Compression with SSBs vs LSBs



Comparison of compression with short-stretch bandages vs long-stretch bandages on ulcer healing outcomes. Only high quality studies included.

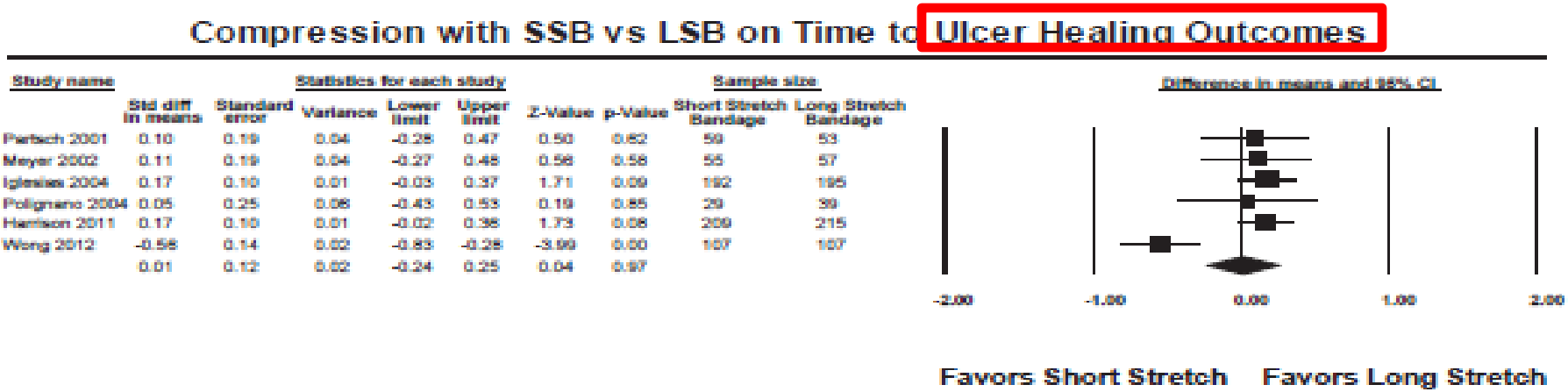
Random Effects Model; $I^2 = 0$
Test for overall effect $Z = -1.63$ ($P = .10$)

Fig 8. The *solid squares* denote the mean difference, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the weighted mean differences. Random effects model; $I^2 = 0$. Test for overall effect $Z = -1.63$ ($P = .10$).

When only higher-quality studies were considered (those with clear description of randomization, allocation, and a reasonable lost to follow-up rate), there was a non significant trend toward superior ulcer healing in the LSB group compared with the SSB group at 12 months (RR, 0.91; 95% CI, 0.82-1.02)

Results

Time to ulcer healing



Compression with short stretch bandanging vs long-stretch bandaging on time to ulcer healing outcomes. All studies included

Random Effects Model; $I^2 = 0$

Test for overall effect $Z = 0.04$ ($P = .97$)

Fig 9. The *solid squares* denote the mean difference, the *horizontal lines* represent the 95% confidence intervals (*CIs*), and the *diamond* denotes the weighted mean difference. Random effects model; $I^2 = 0$. Test for overall effect $Z = 0.04$ ($P = .97$).

The pooled difference in means for the remaining RCTs was 0.5 months (95% CI, 0.6 to 0.16; P ¼ .41), indicating there was no difference between compression with SSB vs LSB with respect to time to ulcer healing

Conclusion

We did not find any significant differences with respect to ulcer healing outcomes when comparing

- stocking compression vs bandage compression,
- 4LB compression vs compression with less than four layers,
- compression with SSBs vs LSBs

Discussion

下肢靜脈潰瘍病人手術後出院是否持續穿彈性襪?

同意:23人

懷疑:2人

不同意:0人


THANK
YOU!