Table des matières

Lumbar disc herniation

Hernie discale lombaire : évaluation de l'acupuncture

Articles connexes: - conduites thérapeutiques - pathologies - qigong - acupuncture expérimentale - sciatique - lombalgies aigues -

1. Systematic Reviews and Meta-Analysis

☆☆☆	Evidence for effectiveness and a specific effect of acupuncture.
☆☆	Evidence for effectiveness of acupuncture.
☆	Evidence for effectiveness of acupuncture mais limitées qualitativement et/ou quantitativement.
Ø	No evidence or insufficient evidence.

1.1. Generic Acupuncture

1.1.1. Tang 2018

Tang S , Mo Z , Zhang R. Acupuncture for lumbar disc herniation: a systematic review and meta-analysis. Acupuncture in Medicine. 2018;36(2):62-70. [200569].

Objective	To evaluate evidence for the effectiveness of acupuncture in the treatment of lumbar disc herniation (LDH).
Methods	Electronic databases were searched to identify randomised controlled trials (RCTs) of acupuncture for LDH. A meta-analysis was conducted using RevMan 5.3 and the evidence level was assessed using GRADE methodology.
Results	**Thirty RCTs involving 3503 participants** were included in the study. Meta-analysis showed that acupuncture had a higher total effective rate than lumbar traction (RR=1.1, 95% CI 1.05 to 1.15; p<0.001), ibuprofen (RR=1.24, 95% CI 1.03 to 1.48; p=0.02), diclofenac sodium (RR=1.44, 95% CI 1.24 to 1.67; p<0.001) and meloxicam (RR=1.16, 95% CI 1.03 to 1.31; p=0.01). Acupuncture was also better than lumbar traction (SMD -1.33, 95% CI -1.82 to -0.84; p<0.001) and diclofenac sodium (SMD -1.36, 95% CI -2.59 to -0.13; p=0.03) in terms of visual analogue scale (VAS) scores, and better than lumbar traction (SMD 0.96, 95% CI 0.48 to 1.45; p=0.0001) with respect to Japanese Orthopaedic Association (JOA) scores. In addition, the total effective rate in five individual trials was greater for acupuncture than for mannitol plus dexamethasone and mecobalamin, ibuprofen plus fugui gutong capsule, loxoprofen, mannitol plus dexamethasone and huoxue zhitong decoction, respectively. Additionally, two individual trials showed a superior effect of acupuncture in VAS scores compared with ibuprofen or mannitol plus dexamethasone, respectively.
Conclusions	Acupuncture showed a more favourable effect in the treatment of LDH than lumbar traction, ibuprofen, diclofenac sodium, meloxicam, mannitol plus dexamethasone and mecobalamin, fugui gutong capsule plus ibuprofen, mannitol plus dexamethasone, loxoprofen and huoxue zhitong decoction. However, further rigorously designed, large-scale RCTs are needed to confirm these findings.

1.1.2. Wu 2013

Wu X et al. [Acupuncture for lumbar disc herniation: a systematic review]. Journal of Guangxi Medical University. 2013;30(4):562–566.

AMSTAR **5** Liu 2015]

1.1.3. Yu 2012 ★

Yu LZ, Sun ZQ, Li XJ, He TY, Yan XK. [Meta-analysis on randomized controlled clinical trials of acupuncture for lumbar disc herniation]. Chinese Journal of Information on Traditional Chinese Medicine. 2012;5:27-29, 9. [186954].

Objective	To assess therapeutic effect and the safety of acupuncture and moxibustion for treatment of lumbar disc herniation.
Methods	Méthods literatures were searched from CNKI data, VIP data, Wan Fang data and Medline data (2001. 03-2011. 03). The quality of RCT and CCT documents on acupuncture and moxibustion for lumbar disc herniation compared with other methods were evaluated according to Jadad score standard, and RevMan4. 2 was used for Meta-analysis.
Results	**Thirteen studies involving 1 558 patients** were included. The results of Meta-analysis indicated that effective rate of the acupuncture and moxibustion for lumbar disc herniation were superior to other methods such as drugs, traction, tuina. There was profound significant difference [after combination, RR=3. 86, 95% confidence interval was (2. 80, 5. 31), according to Z test, Z=8. 28, P<0. 000 1]. It indicated that there was significant difference in the therapeutic effect between the acupuncture-moxibustion group and the control group.
Conclusion	**The therapeutic effect of acupuncture and moxibustion for lumbar disc herniation is superior to other therapies**, but it still needs more large sample RCTs to verify.

1.1.4. Jordan 2011 ∅

Jordan J, Konstantinou K, O'Dowd J. Herniated lumbar disc. BMJ Clin Evid. 2011.[152893].

Introduction	Herniated lumbar disc is a displacement of disc material (nucleus pulposus or annulus fibrosis) beyond the intervertebral disc space. The highest prevalence is among people aged 30 to 50 years, with a male to female ratio of 2:1. There is little evidence to suggest that drug treatments are effective in treating herniated disc.
Methods	And Outcomes: We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of drug treatments, non-drug treatments, and surgery for herniated lumbar disc? We searched: Medline, Embase, The Cochrane Library, and other important databases up to June 2010 (Clinical Evidence reviews are updated periodically; please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found 37 systematic reviews, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions.

Conclusions	In this systematic review, we present information relating to the effectiveness and safety of the following interventions: **acupuncture**, advice to stay active, analgesics, antidepressants, bed rest, corticosteroids (epidural injections), cytokine inhibitors (infliximab), discectomy (automated percutaneous, laser, microdiscectomy, standard), exercise therapy, heat, ice, massage, muscle relaxants, non-steroidal anti-inflammatory drugs (NSAIDs), percutaneous disc decompression, spinal manipulation, and traction.
Acupuncture	Unknown effectiveness

1.1.5. Jordan 2009 Ø

Jordan J, Konstantinou K, O'dowd J. Herniated lumbar disc. Clin Evid (online). 2009;26:1118.[153027].

Purpose	We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of drug treatments, non-drug treatments, and surgery for herniated lumbar disc?
Methods	We searched: Medline, Embase, The Cochrane Library, and other important databases up to July 2008 (Clinical Evidence reviews are updated periodically; please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found 49 systematic reviews, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions.
Conclusion	In this systematic review, we present information relating to the effectiveness and safety of the following interventions: **acupuncture**, advice to stay active, analgesics, antidepressants, bed rest, corticosteroids (epidural injections), cytokine inhibitors (infliximab), discectomy (automated percutaneous, laser, microdisectomy, standard), exercise therapy, heat, ice, massage, muscle relaxants, non-steroidal anti-inflammatory drugs (NSAIDs), percutaneous disc decompression, spinal manipulation, and traction.
Acupuncture	Unknown effectiveness

1.1.6. Luo 2005 ★★

Luo S, Luo SW. [Systematic Review of Acupuncture For Treating Intervertebral Disk Displacement]. Journal of clinical acupuncture and moxibustion. 2005;21(6):10-14. [182480]

Purpose	To assess the current situation and quality of the clinical randomized controlled trials relevant to Intervertebral Disk Displacement in acupuncture published in Chinese medical journals to provide scientific basis of systematic review (SR) of acupuncture for the Intervertebral Disk Displacement.
Methods	203 articles were obtained by electronic searching and-hand searching, and investigated and evaluated according to the principle of EBM and the clinical researching standard of acupuncture.
Results	There were **27 articles with randomized controlled trial** among actually found 203 ones. At present RCT provide effective and reliable evidence and commonly used therapies and needing techniques for acupuncture treatment of Intervertebral Disk Displacement.
Conclusion	**The acupuncture treatment and the integrative therapeutics with acupuncture is effect for Intervertebral Disk Displacement, and the latter is superior to the former**. At the same time, the random control research of higher quality must, be carried out for systematic evaluation of acupuncture and moxibustion treatment of Intervertebral Disk Displacement.

1.1.7. Longworth 1997 ★

Longworth W Et Al. A review of research on acupuncture for the treatment of lumbar disk protrusions and associated neurological symptomatology. J Altern Complement Med. 1997;3(1):55-76.[58489].

> The association between acupuncture (AP) and pain relief is so strong that it has tended to obscure any other potentially significant clinical results. This review indicates the wealth of data from around the world on various aspects of AP treatment for low back syndromes related to lumbar intervertebral disk prolapse (PID). Although plentiful, the research is variable in quality, especially with respect to design, consistency, and follow-up. Even so, the large number of patients who appear to have been treated successfully (i.e., given a high degree of symptomatic relief) supports a potential role for AP. This is further supported by studies on patients who had previously had unsuccessful treatment with conservative methods. The role envisaged for AP, in cases of lumbar PID and sciatica, is at least of a supplementary therapy capable of reducing the requirement of more invasive forms of treatment. No such role is envisaged in cases of cauda equina compression where surgery must remain the treatment of choice. AP should be explored more fully, using appropriate designs, so that this discipline may achieve its full therapeutic potential in the West.

1.2. Special Acupuncture Techniques

1.2.1. Comparison of Acupuncture and TCM Techniques

1.2.1.1. Zhang 2020

Zhang Liubo. [Network Meta-analysis of Five Acupuncture Treatments for Lumbar Disc Herniation]. Journal of Hainan Medical University. 2020. [212929].

Objective	To evaluate the effectiveness of different acupuncture treatments in the treatment of lumbar disc herniation.
Methods	Searching PubMed, EMBASE, Cochrane Library, web of by computer Science, Chinese Journal Full-text Database, Wanfang database, VIP database and Chinese biomedical literature database, the retrieval time is from the establishment of the database to January 1, 2020. Two researchers conducted literature screening, quality evaluation and data extraction according to the nano platoon standard, and used stata16. 0 for network meta-analysis.
Results	A total of 69 RCTs were included, involving 6168 patients with lumbar disc herniation, 5 kinds of acupuncture therapy (warm acupuncture, fire acupuncture, electroacupuncture, acupuncture thread embedding, general acupuncture). The results of network meta-analysis showed that the effect of electroacupuncture was inferior to that of warm acupuncture, acupuncture thread embedding, and the effect of general acupuncture was inferior to that of warm acupuncture, fire acupuncture, electroacupuncture, acupuncture thread embedding, and the difference was statistically significant. In terms of efficiency, acupuncture and moxibustion embedding thread > warming acupuncture and moxibustion > fire acupuncture > electroacupuncture > ordinary acupuncture.
Conclusion	In the treatment of lumbar disc herniation, the clinical effect of acupuncture thread embedding is better than the other four interventions. However, the quality and quantity of literature in this study are limited, and the conclusion of this study needs to be verified by high-quality RCT with multiple centers and large samples.

1.2.1.2. Mo 2019

Mo Z, Li D , Zhang R , Chang M , Yang B , Tang S. Comparisons of the Effectiveness and Safety of Tuina, Acupuncture, Traction, and Chinese Herbs for Lumbar Disc Herniation: A Systematic Review and Network Meta-Analysis. Evid Based Complement Alternat Med. 2019. [197201].

Background	Tuina, acupuncture, traction, and Chinese herbs play an important role in the treatment of lumbar disc herniation. However, the comparative effectiveness and safety of the four commonly utilized treatment modalities are still unclear.
Objective	To compare the effectiveness and safety of the four interventions for lumbar disc herniation. Methods: Randomized controlled trials comparing any two of the four interventions in the treatment of lumbar disc herniation were identified using the following databases: PubMed, the Cochrane Library, Embase, Web of Science, the China National Knowledge Infrastructure, Chinese Science and Technology Periodical Database, and Wanfang data, and network meta-analysis was performed using STATA 14.0.
Results	**One hundred and twenty-one studies** involving a total of **13075 patients** were included. In all the outcome measurements, traction demonstrated a worst effectiveness, and Tuina and acupuncture demonstrated a best effectiveness, but no significant differences were found between Tuina and acupuncture. Compared with Tuina or acupuncture, Chinese herbs showed a similar effectiveness in Visual Analogue Score and Japanese Orthopedic Association Scores, but an inferior effectiveness in invalid rate and cure rate.
Conclusions	In the treatment of lumbar disc herniation, Tuina and acupuncture were superior to traction or Chinese herbs, and the effectiveness of traction was the worst. However, considering the limitations of this review, more high-quality trials, especially those comparing Chinese herbs with the other three interventions, should be carried out in the future to further confirm the current findings.

1.2.2. Jiaji Acupoints

1.2.2.1. Li L 2011 ★

Li L, Zhan HS, Chen B, Zhang MC, Gao NY, Shi YY. [Acupuncture jiaji treatment on lumbar disc herniation systematic review in clinical randomized controlled trials]. Chinese Archives of Traditional Chinese Medicine. 2011;6:1208-121. [186934].

Objective	To evaluate the efficacy and safety of the acupuncture Jiaji treatment on lumbar disc herniation and analyze the current status of clinical study.
Methods	Retrieveing the PubMed, OVID, Cochrane Library, CBM-disc database, CNKI database, VIP database and manual search, we collected 95 Literature of jiaji treatment of lumbar disc herniation, of which 11 studies met the inclusion criteria. Cochrane systematic review was used to quality evaluation; and 11 was used RevMan 4. 2 for Meta Analysis of Literature.
Results	**11 studies included a total of 1108 patients**. 10 documents cure rate for the Consolidated OR is 2. 61, 95% CI is [2. 01, 3. 39], Acupuncture Jiaji group were superior to the routine acupuncture group (P<0. 01) in cure rate of lumbar disc herniation;total effective rate for the Consolidated OR is 3. 54, 95% CI is [2. 22, 5. 65], Acupuncture Jiaji group were superior to the routine acupuncture group (P<0. 01) in total effective rate of lumbar disc herniation. 3 documents Consolidated total pain OR is 1. 53, 95% CI is [0. 79, 2. 27]. Acupuncture Jiaji group were superior to the routine acupuncture group (P<0. 01) in pain improvement of lumbar disc herniation.

Conclusion	At present, documents included in this study have shown that **manipulation treatment on lumbar disc herniation is safe, effective**. But the incorporation of a limited number of documents and the quality is not very high, the conclusion is still uncertain, high-quality evidence needed.

1.2.3. Moxibustion

1.2.3.1. Yao 2023 (moxibustion alone)

Yao Y, Zhenni Z, Fengqin C, Yufei L, Xiangtian P, Xiao XU, Zhiling S. Effectiveness of moxibustion alone on lumbar disc herniation: a Metaanalysis of randomized controlled trials. J Tradit Chin Med. 2023 Feb;43(1):14-26. https://doi.org/10.19852/j.cnki.jtcm.20221108.001.

Objective	To evaluate the available evidence from randomized controlled trials (RCTs) of moxibustion alone for lumbar disc herniation (LDH) treatment.
Methods	A systematic search of 10 databases (until August 30, 2021) was used to identify studies that reported the response rate, visual analogue scale (VAS) score, Japanese Orthopedic Association (JOA) score, and Oswestry Disability Index (ODI) score. Study selection and data extraction were independently performed by two reviewers. Cochrane criteria for risk of bias were used to assess the methodological quality of the trials. The Grading of Recommendations Assessment, Development, and Evaluation Methodology (GRADE) were also used to test the quality of the result evidence.
Results	**Nineteen RCTs, including 1888 patients**, met the inclusion criteria. Five studies showed no difference between moxibustion and acupuncture on response rate [risk ratio () = 1.07, 95%(0.98, 1.16), = 0.11]. Meanwhile, six studies suggested that there is no significant difference between moxibustion and acupuncture on VAS score [mean difference () = □0.43, 95% (□0.91, 0.05), = 0.08]. Eight studies implied that there is no significant difference between moxibustion and acupuncture on JOA score [= 0.84, 95% (□1.27, 2.96), = 0.44]. Two studies indicated that moxibustion may have equivalent effects for treating LDH in the VAS score in comparison with drug therapy [= □1.16, 95% (□2.63, 0.31), = 0.12]. The evidence level of results was determined to be very low to low.
Conclusions	Based on the existing evidence, moxibustion may not be suitable for treating LDH alone, but it may be applied as an adjuvant treatment. Furthermore, welldesigned RCTs with high quality and larger samples are still needed to evaluate the efficacy and safety of moxibustion alone for LDH treatment.

1.2.3.2. Chen 2022 (Thunder-fire moxibustion)

Chen J, Luo Z, Liu M, Wang F, Zhou R, Wang Y, Jia Y, Wang X, Leng X. Thunder-fire moxibustion for lumbar disc herniation: A systematic review and meta-analysis. Medicine (Baltimore). 2022 Dec 9;101(49):e32270. https://doi.org/10.1097/MD.0000000000032270.

Background	Lumbar disc herniation (LDH) is a common degenerative disease that severely impacts the quality of life of patients. Thunder-fire moxibustion is an ancient Chinese medicine-based external therapeutic procedure that has been employed for pain relief until this day. The focus of our study was to demonstrate the effectiveness and safety of thunder-fire moxibustion in the treatment of LDH.

Methods	The literature databases searched included the Cochrane Library, Web of Science, Springer, PubMed, Wanfang digital periodicals database, China national knowledge infrastructure, VIP, and Chinese biomedical literature database, and the search period was from database creation to March 2022. These include randomized controlled trials of Thunder-Fire moxibustion alone or in combination with other therapies for LDH. Two evaluators independently extracted data. We accessed the quality of inclusive studies through a Cochrane risk of bias tool. Meta-analyses were performed using Review Manager (Version 5.5). Data was analyzed using fixed-effects or random-effects models, depending on the heterogeneity test results.
Results	The meta-analysis included **17 studies involving 1344 patients** with LDH. The analysis results were as follows: compared with other therapies, the efficacy of thunder-fire moxibustion was statistically significant; the total effective rate (RR = 1.20; 95%CI [1.15, 1.26]; P < .00001), the Japanese orthopaedic association score (MD = 4.42; 95%CI [4.10, 4.73]; P < .00001), the pain score (SMD = -2.66; 95% CI [-3.39, -1.94]; P < .00001). Only 2 reported no adverse events in the included literature, and the remaining had no relevant records. The quality of the evidence in the 17 papers we examined was low or very low.
Conclusion	Thunder-Fire moxibustion is effective in relieving discomfort in patients with LDH. It has significant clinical efficacy, but there is still a need for prospective, multicentre, large-sample randomized controlled trials to enhance the clinical evidence due to the quality of included studies and methodological limitations.

1.2.3.3. Wang 2019

Wang Y, Zhang HL, Xia LP, Sun ZL, Xu X, Du SZ. Effectiveness and safety of moxibustion in treatment of lumbar disc herniation: a systematic review and Meta-analysis. Journal of TCM. 2019;39(5):599. [197391].

Objective	To evaluate the effectiveness and safety of moxibustion therapy in the treatment of lumbar disc herniation (LDH).
Methods	Four Chinese databases and three English databases were searched from their inception to April 2018.Randomized controlled trials (RCTs) were included if moxibustion was used as the sole treatment or as a part of combination therapy with other treatments in patients with LDH. Two reviewers independently extracted the data and assessed the methodological quality using the Cochrane criteria for the risk of bias. The Meta-analysis was performed using Review Manager 5.3 software.
Results	In total, 16 RCTs including 1186 patients with LDH were analyzed. The Meta-analysis showed favorable effects of moxibustion in combination with massage therapy on the visual analog scale score compared with massage therapy alone [mean difference (MD) = −1.32, 95% confidence interval (CI) (−2.12, −0.51), P = 0.001]. The subgroup Meta-analysis failed to show favorable effects of electro-acupuncture plus moxibustion on the efficacy rate compared with electro-acupuncture alone [relative risk (RR) = 1.06, 95% CI (0.98, 1.14), P = 0.15]. However, acupuncture or massage therapy plus moxibustion improved the efficacy rates compared with acupuncture or massage therapy alone [RR = 1.33, 95% CI (1.18, 1.49), P < 0.000 01] [$\chi 2$ = 2.76, P = 0.25, I2 = 27%], [RR = 1.15, 95% CI (1.06, 1.25), P = 0.001] [$\chi 2$ = 0.00, P = 0.95, I2 = 0%]. With respect to the Japanese Orthopaedic Association (JOA) scores, acupuncture or massage therapy in addition to moxibustion produced results different from those of acupuncture or massage therapy alone [MD = 5.58, 95% CI (4.15, 7.00), P < 0.000 01] [$\chi 2$ = 0.58, P = 0.45, I2 = 0%], [MD = 3.61, 95% CI (3.01, 4.21), P < 0.000 01].There were no significant differences in the JOA score for subjective symptoms, objective symptoms, daily living ability, and other parameters. In six RCTs, no adverse reactions occurred during moxibustion.

Conclusion	Whether moxibustion is an effective intervention for LDH is unclear because of the small sample size of qualified RCTs and the high risk of bias. More high-quality RCTs that overcome the methodological shortcomings of the existing evidence are needed.

1.2.3.4. Chen 2012 (moxibustion sur les points calori-sensibles) ★★

Chen R, Xiong J, Chi Z, Zhang B. Heat-sensitive moxibustion for lumbar disc herniation: a meta-analysis of randomized controlled trials J Tradit Chin Med. 2012;32(3):322-8.[156655]..

Objective	To assess the efficacy and safety of heat-sensitive moxibustion in the treatment of lumbar disc herniation (LDH).
Methods	Randomized controlled trials (RCTs) involving heat-sensitive moxibustion in the treatment of LDH were retrieved from the Chinese Biological Medical Literature database (1978-20011), Weipu database (1989-2011), Wanfang digital journal (1998-2011), China National Knowledge Internet (1979-2011), PubMed (1966-2011), EMBASE (1980-2011), and Cochrane Library (Issue 1,2011). Hand-search of the relevant journals from the Library of Jiangxi University of Traditional Chinese Medicine was also adopted for the collection of data. Data were extracted and evaluated by two reviewers independently with a specially designed extraction form. The Cochrane Collaboration's RevMan 5.0.20 software was used for data analyses.
Results	A total of **6 trials involving 580 patients** were included. Meta-analysis showed that the total effectiveness rate in the heat-sensitive moxibustion group was significantly different when compared with conventional moxibustion [RR=1.19, 95% CI [1.06, 1.33)] and diclofenac sodium [RR=1.47, 95% CI [1.17, 1.85)], but similar to that of acupuncture. The cure rate in the heat-sensitive moxibustion group was significantly different when compared with conventional moxibustion [RR=1.58, 95% CI (1.04, 2.40)] and diclofenac sodium [RR-1.91, 95% CI (1.01, 3.60)], but similar with that of acupuncture. In terms of the Japanese Orthopaedic Association scores, significant differences were noted in subjective indices, objective indices, and daily life subscales. Two trials reported that there were no adverse events over the duration of treatment.
Conclusion	Compared with conventional moxibustion, acupuncture, and diclofenac sodium, **heat-sensitive moxibustion in the treatment of LDH is superior in efficacy**. Further large-scale trials are required to define the role of heat-sensitive moxibustion in the treatment of this disease.

1.2.4. Warm Needle

1.2.4.1. Wang 2022

Wang J, Liang C, Zeng F, Fan L, Zhuang J. Comparison of Needle-Warming Moxibustion and Other Physical Therapies for Lumbar Disc Herniation: A Meta-analysis. Comput Math Methods Med. 2022 Jul 28;2022:2986223. https://doi.org/10.1155/2022/2986223

Background	Needle-warming moxibustion (NWM) demonstrates a controversial effect on lumbar disc herniation (LDH). This study is aimed at comparing the efficacy of NWM and conventional acupuncture or other physical therapies on LDH through a meta-analysis.

Methods	Potentially eligible literatures were retrieved and screened from electronic databases. The subject of the literature was a comparison of NWM and conventional acupuncture or other physical therapies for LDH. The methodological quality was evaluated by the Jadad scale. The chi-square test was used for the heterogeneity test. Subgroup analysis was used to explore the source of heterogeneity. Risk ratio (RR) or mean difference (MD) with 95% confidence interval (CI) was used to describe the effect size. The publication bias was evaluated by Egger's test.
Results	The effective rate of NWM in the treatment of LDH was significantly higher than that of conventional acupuncture (RR = 1.27, 95%CI [1.18, 1.36], P < 0.00001) and lumbar traction (RR = 1.12, 95%CI [1.06, 1.18], P < 0.0001) There was no significant difference in the effective rate between NWM and electric acupuncture for LDH (RR = 1.06, 95%CI [0.98, 1.14], P = 0.17). VAS of LDH patients treated with NWM was lower than conventional acupuncture (MD = -1.51, 95%CI [-1.70, -1.31], P < 0.00001) and lumbar traction (MD = -2.64, 95%CI [-2.79, -2.49], P < 0.00001) but statistically insignificant with electric acupuncture (MD = -0.31, 95%CI [-0.72, 0.09], P = 0.13). JOA scores of LDH patients treated with NWM were higher than those with conventional acupuncture (MD = 2.24, 95%CI [1.04, 3.45], P = 0.0003) and lumbar traction (MD = 10.76, 95%CI [10.45, 11.07], P < 0.00001) but statistically insignificant with electric acupuncture (MD = 0.25, 95%CI [-0.95, 1.45], P = 0.69). The long-term effective rate of NWM on LDH was higher than that of conventional acupuncture (MD = 3.13, 95%CI[2.12, 4.61], P < 0.00001). In this study, no heterogeneity (P > 0.10, I 2 < 50%) and publication bias (P > 0.05) among the literature were noted.
Conclusion	The effect of NWM on LDH was superior to traction therapy and conventional acupuncture therapy, but similar to electric acupuncture for LDH. High-quality randomized controlled trials were still needed to confirm the results.

1.2.4.2. Zhong 2020

Zhong Min. [Meta-analysis of Effectiveness and Safety of Heated Needle Therapy in Treating Lumbar Intervertebral Disc Herniation]. Journal of Guangzhou University of TCM. 2020. [212933].

Objectives and Methods	The clinical randomized controlled trials of heated needle therapy (trial group) vs conventional acupuncture or electroacupuncture (control group) in the main domestic and oversea databases of CNKI, VIP, CBM, Wanfang Data, PubMed, Embase, Cochrane Library were searched. And then the efficacy and safety of the heated needle therapy for the treatment of lumbar intervertebral disc herniation were evaluated systematically, so as to provide evidence-based reference for clinical practice.
Results	A total of 14 randomized controlled trials which met the included and excluded criteria were obtained, and the trials involved 1 138 cases. The trial group had higher total effective rate than the control group [RR = 1. 17, 95%CI (1. 06, 1. 30), P = 0. 003], and showed better efficacy on improving Fairback J C scores for lumbago[WMD =-4. 28, 95%CI (-6. 49, -2. 06), P = 0. 000], visual analogue scale (VAS)pain scores [WMD =-1. 35, 95%CI (-1. 60, -1. 10), P = 0. 000], present pain intensity (PPI) scores [WMD=-0. 66, 95%CI (-0. 84, -0. 49), P = 0. 000], McGill scale pain scores [WMD =-0. 87, 95%CI (-1. 11, -0. 63), P = 0. 000], and Japanese Orthopedic Association (JOA)lumbago scores [WMD = 2. 59, 95%CI (2. 19, 2. 98), P = 0. 000] than the control group.
Conclusions	The results indicated that heated needle therapy exerts certain effects and with good safety for the treatment of lumbar intervertebral disc herniation, but for the inferior methodological quality and less amount of the included research, the conclusion still needs further verification with multi-center, large-sample, and high-quality randomized controlled trials.

1.2.4.3. Chen 2018

Chen Bai-Shu, Yin Jian-Ping, Zhu Mei-Ling, Zhou Peng, Zhao Zhi-En, Li Ying-Zhen, Zhou Bo-Yu, Zhang Qing-Song, Chen Shu-Hui, Fu Wei. [Systematic Review on Warm Acupuncture Treatment for Lumbar Intervertebral Disc Protrusion]. Chinese Journal of Information on Traditional Chinese Medicine. 2018;2:104-109. [201797].

Objective	To conduct Meta-analysis and trial sequential analysis (TSA) on warm acupuncture treatment on lumbar intervertebral disc protrusion (LIDP); To provide references for evidence-based medicine of this disease.
Methods	Articles about warm acupuncture treatment for LIDP clinical randomized controlled trials in CNKI, Wanfang database, Chonging Wepu, CBM, PubMed, Cochrane Library, and Embase were retrieved by computer. The retrieval range was from the database establishing to March 2017. According to Cochrane Handbook for Systematic Reviews of Interventions 5.2.0 Bias risk assessment tool, included articles were under quality evaluation. Revman5.2 software was used to carry out Meta-analysis, and TSAv0.9 software was used to conduct TSA.
Results	**Ten articles were included, involving 1035 cases**. Meta-analysis showed that the total effective rates of warm acupuncture treatment for LIDP [95□CI (2.43, 5.40),Z=6.31,P<0.00001], pain index [95□CI (-1.05, -0.58),Z=6.77,P<0.00001], lumbar function [95□CI (2.56, 8.61),Z=3.62,P=0.0003] were better than other therapies, with statistical significance. Funnels included in the study suggest publication bias. TSA results suggested that the total efficiency and pain index Meta-analysis results of this study were reliable.
Conclusion	Warm acupuncture treatment for LIDP has confirmed efficacy, with certain advantages. However, the literature included is not with good quality, so larger sample, multicenter, methodological RCTs are needed for further validation.

1.2.4.4. Li 2016 ★★

Li X, Han Y, Cui J, Yuan P, Di Z, Li L. Efficacy of Warm Needle Moxibustion on Lumbar Disc Herniation: A Meta-Analysis. J Evid Based Complementary Altern Med. 2016;214:314-9. [183322].

Purpose	To assess the clinical effect of warm needle moxibustion on lumbar disc herniation.
Methods	We searched relevant trials that compared warm needle moxibustion with other methods for lumbar disc herniation from 9 databases.
Results	Warm needle moxibustion showed statistical significance efficiency rate compared with acupuncture and manipulation but had a similar rate with nonsteroidal anti-inflammatory drugs (NSAIDs). It showed a statistically significanty excellent rate when compared with acupuncture and manipulation but had a similar rate with NSAIDs. Regarding Japanese Orthopedic Association scores, it showed statistical significance with acupuncture and manipulation, but the rate was similar with Chinese medicine and NSAIDs. Regarding visual analog scale score, it demonstrated statistical significance when compared with acupuncture, manipulation, and NSAIDs but had a similar rate with Chinese medicine.
Conclusion	**Warm needle moxibustion is superior to acupuncture and manipulation in terms of efficiency rate, excellent rate, and controlling of pain for lumbar disc herniation, but it is similar when compared with NSAIDs and Chinese medicine**.

1.2.5. Combined with Tractions

1.2.5.1. Li 2014 ☆

Li XZ, Chen HY, Zheng X, Liu NY. [Acupuncture combined with traction therapy for lumbar disc herniation: a systematic review]. Chinese Acupuncture and Moxibustion. 2014;34(9):933-40. [167664].

Objective	To evaluate the efficacy and safety of acupuncture combined with traction therapy for lumbar disc herniation, providing the basis for future research strategies.
Methods	Randomized control trials. (RCT) of acupuncture combined with traction therapy for lumber disc herniation at home and abroad from 2000 to 2013 were searched, analysis and evaluation of literature and strength of evidence were based on the principles and methods of Evidence-based Medicine. The total effective rate and curative rate were considered as primary outcome measures; pain improvement, quality of life, relapse rate and adverse effects were considered as secondary outcome measures.
Results	**Seventeen RCTs were identified**, Meta-analysis showed that (1) total effective rate and curative rate: acupuncture combined with traction therapy was better than single therapy (acupuncture or traction); (2) pain improvement: acupuncture combined with traction therapy was better than traction therapy; (3) relapse rate: current evidence could not support the conclusion that acupuncture combined with traction therapy was better than traction therapy.
Conclusions	Acupuncture combined with traction therapy for lumbar disc herniation was effective. However, the included studies were with high risk of bias, important outcome measures such as quality of life, relapse rate and adverse effects were not found in most of the studies. Current evidence has not yet been able to fully reflect acupuncture combined with traction therapy for lumbar disc herniation is better than single therapy, so more RCTs of higher quality are needed to further confirm its efficacy and safety compared with NSAIDs and Chinese medicine.

1.2.6. Acupotomy

1.2.6.1. Zhang 2025

Zhang Y, Li R, Zhang X, Wang Z, Zhang Z, Xu H, Li X. Needle-knife therapy for lumbar disc herniation: A systematic review and meta-analysis. Medicine (Baltimore). 2025 Nov 14;104(46):e45659. https://doi.org/10.1097/MD.0000000000045659

Objective	To explore the effectiveness of needle-knife therapy for lumbar disc herniation and its advantages compared with traditional treatments.
Methods	PubMed, Embase, Web of Science, Cochrane Central Register of Controlled Trials, China National Knowledge Infrastructure, Wanfang Database, China National Knowledge Infrastructure, ClinicalTrials.gov, and the Chinese Clinical Trial Registry were searched with a cutoff date of March 1, 2025. Randomized controlled trial studies comparing needle-knife therapy or needle-knife combined with traditional therapy with traditional therapy were included. Cochrane risk assessment software was used to assess bias risk in the included randomized controlled trials (RCTs). Meta-analysis was conducted using RevMan 5.4.1 software, and GRADE was used to assess the quality of evidence for each outcome.

Results	A total of 12 RCTs were included, with 1160 patients. Compared with traditional treatment, needle-knife combined with traditional treatment significantly improved the treatment efficacy (mean difference [MD] = 5.19, 95% confidence interval [CI]: 2.91-9.26, P = .0001, I2 = 0%). Visual Analog Scale (VAS), Japanese Orthopaedic Association (JOA), and Oswestry Disability Index (ODI) scores were all improved compared to traditional treatment (VAS: MD = -1.44, 95% CI: -1.60 to -1.28, P = .0001, I^2 = 93%, JOA: MD = 2.93, 95% CI: 1.88-3.98, P = .0001, I^2 = 0%, ODI: MD = -4.93, 95% CI: -5.68 to -4.18, P = .0001, I2 = 0%). Compared with traditional treatment, simple needle-knife therapy was superior in terms of efficacy, VAS, JOA, and ODI scores (efficacy: MD = 2.26, 95% CI: 1.27-4.03, P = .006, I2 = 0%, VAS: MD -1.12, 95% CI: -1.23 to -1.01, P = .0001, I2 = 99%, JOA: MD = 3.73, 95% CI: 3.0-4.45, P = .0001, I2 = 0%). Sensitivity analysis showed no significant reversal, indicating the reliability of the included results.
Conclusion	Compared with traditional treatment, needle-knife therapy for lumbar disc herniation is superior in terms of efficacy and scores. However, due to the lack of high-quality literature and limited sample sizes, more large-sample, multi-center, high-quality RCTs should be conducted using scientific methods.

1.2.6.2. Xu 2020

Xu Yigao. [Meta-analysis of Simple Needle Knife on Lumbar Disc Herniation Cases]. Journal of Emergency in TCM. 2020. [212924].

Objective	To evaluate the effect of needle knife on LDH with the meta-analysis of the published literature on its therapeutic effect.
Methods	A comprehensive search of the literatures on therapeutic effect of needle knife on LDH from January 2010 to March 2019 in CNKI, VIP, Wanfang Data and other databases to select and make a meta-analysis. In order to reduce the interference factors, from a large number of literature, we selected the simple use of needle knife and other traditional therapy for LDH for mate-analysis. According to the Cochrane system evaluation method, the included methodological qualities study were evaluated, Data and the statistical analyses were carried out with Revman 5. 3 software.
Results	8 articles were included with 1 329 patients, 665 cases in the treatment group and 664 cases in the control group. According to the meta-analysis, 8 studies were homogenous (Chi~2=4. 40, df=7, P = 0. 73>0. 1), and the fixed effect model was used for analysis and calculation. After OR combined, Z = 9. 32, P < 0. 00001, indicating that the effect of the simple needle knife group was superior to other traditional treatment groups.
Conclusion	The clinical effect of simple needle knife on LDH is better than other traditional therapies, such as acupuncture, physiotherapy, massage, electroacupuncture and traction.

1.2.6.3. Wang 2020

Wang Dexiang. [Network meta-analysis of needle knife and needle knife combined with other therapies in the treatment of lumbar disc herniation]. China Medical Herald. 2020. [212920].

Objective	To systematically evaluate the effect of needle knife and needle knife combined with other therapies in the treatment of lumbar disc herniation (LDH) by network meta-analysis.

Methods	The following databases were searched online: PubMed, Cochrane Library, CNKI, Wanfang database, VIP and China biomedical literature database (CBMdisc). The search was conducted using a combination of subject words and free words. The search keywords included needle knife, sharp needle and lumbar disc herniation. The search time limit was from January 2009 to July 2019. Two investigators independently screened the literature, extracted the data and evaluated the risk of bias in the included studies. Data was analyzed using Stata 15. 0, ADDIS v1. 16. 8 and Review Manager 5. 3 software.
Results	A total of 41 studies with 3962 patients were included, involving 17 interventions. The results of network meta-analysis showed that the 10 ten intervention measures in the order of total clinical effective rate were as followed: needle knife plus internal administration of traditional Chinese medicine, needle knife plus manipulation, needle knife plus epidural injection, needle knife plus external use of traditional Chinese medicine, needle knife plus acupuncture, traditional Chinese medicine internal administration, electroacupuncture, needle knife, manipulation, needle knife plus functional exercise.
Conclusion	The effect of needle knife combined with other therapies is better than that of needle knife alone. Needle knife therapy combined with manipulation for LDH is well developed. The therapeutic effect of needle knife combined with traditional Chinese medicine on LDH deserves further study.

1.2.6.4. Zhou 2017 ★★

Zhou Fanyuan, Liu Fushui, Zhao Meimei, Fang Ting, Chen Mei. [Systematic Review and Meta-analysis of Acupotomy Versus Acupuncture for Lumbar Intervertebral Disc Herniation]. Liaoning Journal of Traditional Chinese Medicine. 2017;03:. [52381].

Objective	To evaluate the effectiveness and safety of acupotomy versus acupuncture for lumbar intervertebral disc herniation.
Methods	CNKI, Wanfang, VIP, Pub Med and The Cochrane Library (Issue1, 2016) were retrieved to identify randomized controlled trials of acupotomy versus acupuncture for lumbar intervertebral disc herniation. The data was extracted and evaluated by two reviewers independently according to Cochrane Reviewers' Handbook (5. 0). The Cochrane Collaboration's Rev Man 5. 2 software was used for Meta-analyses.
Results	A total of 8 trials involving 772 patients were included. The Meta-analysis showed that both total effective rate and curative rate of acupotomy for the treatment of lumbar intervertebral disc herniation were higher than those of acupuncture in short term and long-term and the recurrence rate of the acupotomy was lower than that of acupuncture.
Conclusion	It showed that acupotomy was more effective than acupuncture in the treatment of lumbar intervertebral disc herniation.

1.2.6.5. Zhang 2014 ★

Zhang LY , Ye Y , Shao XN et al. [Meta - analysis of needle - knife therapy for lumbar intervertebral disc protrusion]. Journal of Clinical Acupuncture and Moxibustion. 2014;30(2):49.169608.

Objective	To discuss the clinical curative effect of needle knife therapy on lumbar intervertebral disc protrusion and provide evidence - based medical evidence for clinical practice.

Methods	Comprehensively search CNKI (1989 - 2012), VIP(1989 - 1989) , Wanfang(1989 - 2012) , such as database, collect clinical randomized controlled trials about needle knife in the treatment of lumbar intervertebral disc protrusion. After screening, finally 12 standard articles were found as Meta analysis objects. Use Review Manage5. 0 specialized software Cochrane provided freely for statistical analysis.
Results	12 researches by Meta analysis combined showed that **12 studies** homogeneity test results, Chi square is 4. 65, degrees of freedom was 1 1 (P = 0. 95 >0,1), and 12 studies had homogeneity , so use the fixed effects model to analyze , calculate and summarize statistics. OR combination checked by Z: Z = 7.94(P<0.00001), which suggested that needle knife compared with other treatments had a statistical significance.
Conclusion	**Current clinical evidence suggests that the curative effect of small needle knife therapy on lumbar intervertebral disc protrusion is better than electric acupuncture, massage, traction therapy**. But with this research low methodological quality, limited sample size, it needs more large samples of reasonable esign,execution,strict,scientific and standardization,and high quality clinical randomized controlled trials are needed to further verify its effectiveness.

1.2.7. Electro-acupuncture

1.2.7.1. Li 2010

Li L, Zhan HS, Gao NY, Chen B, Shi YY. [Clinical randomized controlled trials on treatment of lumbar disc herniation by electro-acupuncture]. China Journal of Traditional Chinese Medicine and Pharmacy. 2010;25(12):1949-52. [200379].

AMSTAR : **5** [Liu 2015]

1.2.7.2. Li Q 2008 ★★

Li Q, Peng W, Mu Y, Xu Y, Jiang Y, Ma K. [The system evaluation of electroacupuncture for lumbar intervertebral disc herniation] Xiandai Zhongxiyi Jiehe Zazhi [Modern Journal of Integrated Traditional Chinese and Western Medicine]. 2008; 17(3):325-330. [181693].

> **Traduction automatique.** Objectif Évaluer l'utilisation du traitement médecine approche systématique acupuncture fondée sur des preuves d'une hernie discale lombaire de l'efficacité et de la sécurité de la méthode avec l'acupuncture, l'électro-acupuncture et la hernie discale lombaire, hernie discale lombaire, disque lombaire prolapsus comme les mots-clés, la recherche Cochrane groupe faible retour de la douleur, les essais cliniques, la base de données Cochrane de médecine complémentaire, base de données Cochrane Library Center, MEDLINE, EMBASE et d'autres bases de données en anglais et en chinois base de données bio-disque (CBM) et autre base de données chinoise récupérer manuellement les 20 types de médecine traditionnelle chinoise et des conférences connexes référence compilation de documents. articles connexes Annexe identifiés comme une recherche supplémentaire. résultats 5 traitement d'acupuncture de la hernie discale lombaire essais contrôlés randomisés remplissaient les critères d'inclusion, à la fois la recherche de qualité supérieure. le nombre inclus un total de 547 personnes de la fonction globale résumé OR2.11 (IC à 95% 1,18 à 3,76) résumé .VAS Note OU-0,70 (95% CI-1,00 à -0,41). résumé EMG Note OU 4,16 (IC à 95% 2,68 à 5,64). Conclusion du présent limitée études incluses montrent un traitement d'acupuncture du disque lombaire sécurité hernies, d'améliorer la douleur, la fonction globale et électrophysiologique efficace que le groupe témoin, mais moins évaluer l'échantillon physiologique électrique, doit encore supplément de recherche plus haute qualité. électrique efficacité de la qualité de vie des traitements d'acupuncture de la hernie discale lombaire est encore plus de recherche est nécessaire syndrome.

AMSTAR **7** [Liu 2015]

1.2.8. Thread-embedding acupuncture

1.2.8.1. Song 2020

Won-Suk Sung, Bon-Hyuk Goo, Eun-Jung Kim, Dong-Woo Nam, … Byung-Kwan Seo. Efficacy and safety of thread-embedding acupuncture for lumbar herniated intervertebral disc: A systematic review and meta-analysis. European Journal of Integrative Medicine. 2020;39. [216370]. doi

Introduction	Thread-embedding acupuncture (TEA) has characteristics that use absorbable medical threads and stimulate tissues and muscles in mechanical and chemical ways. Various studies have proven its therapeutic effect in experimental, as well as clinical trials. However, there remains insufficient evidence to clarify its efficacy and safety for the treatment of lumbar herniated intervertebral disc (LHIVD).
Methods	An electronic search for randomized controlled trials that compared the effects of TEA on LHIVD with other conventional treatments from its inception to October 2019 was conducted. Outcome measures were defined as the change in pain intensity and functional status or disability. A quality assessment by the Cochrane's risk of bias tool and a Meta-analysis by Review Manager software was performed.
Results	**Eighteen articles** with **2237 participants** were identified. Twelve articles compared the single effect of TEA with other therapy and showed significant improvement in visual analogue scale and curative rates. Six articles compared the added effect of TEA with other single therapies and also showed significant improvement in curative rates. Both single and combined TEA treatments showed significant improvement over other therapy including various types of acupuncture, integrative treatments, herbal medicine, chuna, traction, and injections. There were no reports of serious adverse events.
Conclusions	Our results indicated that TEA showed potential benefits on LHIVD. However, it is difficult to draw a conclusion with certainty due to the poor quality of the identified articles. More rigorously designed studies would be needed.

1.2.9. Pharmacopuncture

1.2.9.1. Byun 2021

Byun DY, Kim H, Han SH, Kim KW, Lee JH, Chung WS, Song MY, Cho JH. Pharmacopuncture for lumbar herniated intervertebral disc: A systematic review and meta-analysis. Complement Ther Clin Pract. 2021. [218680]. doi

Introduction	The purpose of this systematic review was to evaluate the effectiveness of pharmacopuncture treatment for lumbar herniated intervertebral disc (LHIVD).
Methods	Databases including Korean and Chinese ones were searched to identify all randomized controlled trials (RCTs) that evaluated the effect of pharmacopuncture on LHIVD. Outcome measurements included pain scale and functional index of the lower back and lower limb. The risk of bias of studies was assessed using Cochrane's Risk of Bias tool, and a meta-analysis was conducted.
Results and conclusions	Sixteen studies were included in the systematic review, and the quality assessment showed equivocal results. The meta-analysis revealed that pharmacopuncture has a significant effect on pain relief and functional status compared to the control intervention.

1.2.10. Abdominal Acupuncture

1.2.10.1. Wang 2018

Wang Danfeng, Lyu Songyu, Wang Kailong, Wang Xiongjiang, Lin Chaodai. [Meta-analysis on Clinical Curative Effect of Lumbar Disc Herniation with Abdominal Acupuncture]. Liaoning Journal of Traditional Chinese Medicine. 2018;10:2026-2029. [201758].

Objective	To evaluate the clinical effect of abdominal acupuncture on the treatment of lumbar disc herniation with evidence-based medicine.
Methods	We collected and screen out accordance with the inclusion criteria and exclusion criteria literature about abdominal acupuncture treating lumbar disc herniation from CNKI (China National Knowledge Infrastructure),Wanfang database, VIP, Pubmed, the Cochrane Library. We scaled the literature by Jadad and produced forest and funnel map troughing Rev Man 5. 3 which provided by Cochrane.
Results	A total of **10 articles** were included in this study including **912 patients**. Meta-analysis results showed the abdominal acupuncture group was more effective than other conventional acupuncture or electroacupuncture therapy groups and the research has good homogeneity (χ2= 5. 29,I2= 0%). The effects of the fixed effect model were adopted, OR = 3. 30,95% CI[1. 89,5. 76], Z = 4. 19 (P < 0. 0001) and the difference was statistically significant.
Conclusion	The clinical effect of abdominal acupuncture therapy on lumbar disc herniation is superior to that of conventional needle therapy or electroacupuncture therapy. But the funnel graph is asymmetrical, suggesting that Meta-analysis may be biased. And as a result of the evaluation, the literature quality is generally not high and has publication bias. The system needs large sample, highquality, multicenter and standardized clinical randomized controlled trials to confirm the methodology.

1.3. Specific Comparison

1.3.1. Mo 2018 (versus Spinal Manipulation)

Mo Z, Zhang R, Chen J, Shu X, Shujie T. Comparison Between Oblique Pulling Spinal Manipulation and Other Treatments for Lumbar Disc Herniation: A Systematic Review and Meta-Analysis. J Manipulative Physiol Ther. 2018;41(9):771-779. [115764].

Objective	The purpose of this review was to compare oblique pulling spinal manipulation with other treatments for lumbar disc herniation.
Methods	Randomized controlled trials of oblique pulling manipulation versus other treatment for lumbar disc herniation were identified using the following databases: China National Knowledge Infrastructure, Wanfang Data, Chinese Science and Technology Periodical Database, PubMed, the Cochrane Library, Embase, Chinese Biological Medicine, and Web of Science. Data extraction was carried out based on inclusion and exclusion criteria, and meta-analysis were performed using RevMan 5.3 software.

Results	Nine relevant randomized controlled trials with a total of 887 patients were included. Meta-analysis revealed that oblique pulling manipulation was superior in effective rate to lumbar traction (risk ratio = 1.12; 95% confidence interval [CI]: 1.06-1.19; P < .01) and acupuncture (risk ratio = 1.22; 95% CI: 1.06-1.39; P < .01) and more effective in Visual Analog Scale score (mean difference = - 1.03, 95% CI: -1.32 to -0.74; P < .01) when compared to lumbar traction. It also demonstrated a favorable effect of modified oblique pulling manipulation in Japanese Orthopedic Association scores when compared with lumbar traction (mean difference = 1.66, 95% CI: 0.89 to 2.43; P < .01).
Conclusion	In the treatment of lumbar disc herniation, oblique pulling spinal manipulation presented with a higher effective rate than acupuncture and lumbar traction. Manipulation had a favorable effect in alleviating pain, and modified oblique pulling manipulation had significant superiority in improving lumbar function when compared with lumbar traction. However, considering the low methodological quality of included studies, more rigorously designed trials should be performed in the future.