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# Fibromyalgia Syndrome

# Fibromyalgie : évaluation de l'acupuncture

Article connexe : - taiji-qigong - traitements de référence -

## 1. Systematic Reviews and Meta-Analysis

### 1.1. Carrasco-Vega 2024

Carrasco-Vega E, Guiducci S, Nacci F, Bellando Randone S, Bevilacqua C, Gonzalez-Sanchez M, Barni L. Efficacy of physiotherapy treatment in medium and long term in adults with fibromyalgia: an umbrella of systematic reviews. Clin Exp Rheumatol. 2024 Jun;42(6):1248-1261. https://doi.org/10.55563/clinexprheumatol/ctfuqe

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| **Objectives** | To summarise the available evidence and assess the effectiveness of medium and long-term physiotherapy treatment in adults with fibromyalgia (FM). |
| **Methods** | This systematic review was registered in PROSPERO: CRD42023388356. The databases searched were MEDLINE, PEDro, Scopus, Cinhal, LatinIndex, and Cochrane, using the following keywords: “fibromyalgia”, “physiotherapy”, “treatment”, “therapeutic exercise”, “TENS”, “laser therapy” and “manual therapy.” The included articles analysed treatments with active or passive physiotherapy approaches in patients with FM. The variables included structural characteristics, such as: author, publication year, research question, and main outcome variables. The data on the findings of the articles comprised the following aspects: number of participants, intervention, follow-up, results, and principal conclusions. |
| **Results** | Thirty-three articles were analysed, with an overall PRISMA score of 18.63±3.36. The active treatment methods analysed were: movement and body awareness therapies (stretching, tai chi, yoga and Pilates); hydrotherapy; physical or aerobic exercise; and multidisciplinary therapy. The passive therapies analysed were: manual therapy; repetitive transcranial magnetic stimulation (rTMS); and other therapies (hyperbaric oxygen therapy, vibration therapy, virtual reality, transcutaneous electric nervous stimulation (TENS), pain neuroscience education, and **acupuncture**). Evidence was found on the positive effect of physiotherapy treatment on the signs and symptoms of fibromyalgia, such as pain, impairment of physical capacity and worse quality of life. |
| **Conclusions** | The effectiveness of the active and passive therapies analysed in the management of the symptoms and signs of the disease was positive in most of the studies. However, more specific descriptions of the treatment protocol, frequency, intensity and treatment dose are required to reach a consensus, as well as primary studies for a more extended follow-up period to better evaluate long-term effects. |

### 1.2. Ye 2024

Ye G, Miao R, Chen J, Huang J, Jiang M. Effectiveness of Complementary and Alternative Medicine in Fibromyalgia Syndrome: A Network Meta-Analysis. J Pain Res. 2024 Jan 20;17:305-319. https://doi.org/10.2147/JPR.S439906

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| **Objective** | Fibromyalgia (FM) is a prevalent chronic disorder characterized by widespread skeletal muscle pain. In recent years, complementary and alternative medicine (CAM) has increasingly been recognized for its potential in treating FM symptoms. This study aims to assess the efficacy of CAM therapies in mitigating the symptoms of FM. |
| **Methods** | This systematic review was registered with INPLASY. A thorough search of both English and Chinese databases was undertaken from their inception until April 15, 2023. The search criteria focused on prospective controlled trials examining CAM therapies in FM patients. The statistical analysis employed mean values and standard deviations. Additionally, an evaluation of the literature's quality and potential biases was conducted. |
| **Results** | The search yielded 41 articles, encompassing 2877 FM patients and involving 20 different interventions. All studies were randomized controlled trials (RCTs). The results of the network meta-analysis (NMA) indicated that a combination of Acupuncture and Massage therapy, as well as Navel Needling therapy, effectively alleviated pain symptoms in FM patients. Furthermore, Abdominal Acupuncture and Electroacupuncture were found to be beneficial in improving patients' mood and sleep quality. |
| **Conclusion** | Acupuncture + Massage and Umbilical Acupuncture emerged as the most efficacious therapies in relieving pain symptoms in FM patients. Abdominal Acupuncture and Electroacupuncture demonstrated their effectiveness in enhancing mood and sleep quality. Overall, CAM therapies exhibited a high safety profile for patients with fibromyalgia. |

## 1.3. Almutari 2022 ★★★

Almutairi NM, Hilal FM, Bashawyah A, Dammas FA, Yamak Altinpulluk E, Hou JD, Lin JA, Varrassi G, Chang KV, Allam AE. Efficacy of Acupuncture, Intravenous Lidocaine, and Diet in the Management of Patients with Fibromyalgia: A Systematic Review and Network Meta-Analysis. Healthcare (Basel). 2022 Jun 23;10(7):1176. https://doi.org/10.3390/healthcare10071176.

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| **Introduction** | This network meta-analysis aimed to assess the efficacy of acupuncture, intravenous lidocaine, and diet compared with other comparators such as physiotherapy and sham/placebo in fibromyalgia patients. |
| **Materials and Methods** | We searched Embase, PubMed, Scopus, and Web of Science for relevant studies till September 2021. The included studies were randomized controlled clinical trials. For the network meta-analysis, we used the R software. |
| **Results** | There were 23 included RCTs. The total sample size was 1409 patients. Compared with the sham/placebo group, the network analysis showed the highest improvement in the quality of life in the acupuncture group standardized mean difference (SMD) = -10.28, 95%-CI [-14.96; -5.59]), and then in the physiotherapy group (SMD = -7.48, 95%-CI [-14.72; -0.23]). For the pain, there was a significant reduction with acupuncture (SMD = -1.69, 95%-CI [-2.48; -0.89]), compared with sham/placebo. Regarding depression, it showed a significant reduction with acupuncture (SMD = -9.64, 95%-CI [-16.13; -3.14]) compared with sham/placebo. Finally, for stiffness, it showed no significant differences in the stiffness between acupuncture (SMD = -8.52, 95%-CI [-20.40; 3.36]), fluoxetine (SMD = -6.52, 95%-CI [-29.65; 16.61]), and physiotherapy (SMD = -4.64, 95%-CI [-22.83; 13.54]) compared with sham/placebo. |
| **Conclusions** | The acupuncture showed a significant effect in the management of fibromyalgia patients. It reduced pain, depression, and enhanced the quality of life. While physiotherapy showed a significant improvement in the quality of life only. In contrast, intravenous lidocaine and diet showed no significant differences when compared with sham/placebo. |

### 1.3.1. Valera-Calero 2022 ★★

Valera-Calero JA, Fernández-de-Las-Peñas C, Navarro-Santana MJ, Plaza-Manzano G. Efficacy of Dry Needling and Acupuncture in Patients with Fibromyalgia: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2022 Aug 11;19(16):9904. https://doi.org/10.3390/ijerph19169904

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| **Background** | Fibromyalgia (FM) is a syndrome that involves chronic pain, fatigue, sleep disturbance and impaired quality of life and daily functioning. In addition to medical and psychological therapies, other therapies including acupuncture and dry needling aim to reduce pain and disability in patients with FM. The aim of this study was to investigate the efficacy of dry needling and acupuncture in patients with FM regarding pain, function and disability in both the short and the long term. |
| **Method** | MEDLINE, PubMed, SCOPUS and Web of Science databases were systematically searched for randomized controlled trial studies evaluating efficacy data of dry needling or/and acupuncture treatments to improve pain, fatigue, sleep disturbance and impaired quality of life and/or daily function. A qualitative analysis including the methodological quality and a systematic data synthesis was performed. |
| **Results** | A total of **25 studies** addressed the selection criteria. Most studies had an acceptable methodological quality. Four studies assessed the effect of dry needling, and twenty-one studies assessed the effect of acupuncture. In general, both interventions improved pain, anxiety, depression, fatigue, stiffness, quality of sleep and quality of life. However, both techniques were not compared in any study. |
| **Conclusions** | Acupuncture and dry needling therapies seems to be effective in patients with FM, since both reduced pain pressure thresholds, anxiety, depression, fatigue, sleep disturbances and disability in the short term. It is still required to compare both techniques and their application in the long term. |

## 1.4. Zheng 2022 ★★★

Zheng C, Zhou T. Effect of Acupuncture on Pain, Fatigue, Sleep, Physical Function, Stiffness, Well-Being, and Safety in Fibromyalgia: A Systematic Review and Meta-Analysis. J Pain Res. 2022 Feb 3;15:315-329. https://doi.org/10.2147/JPR.S351320

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| **Purpose** | Fibromyalgia (FM) is a syndrome characterized by widespread pain, which caused huge economic and social burden. Acupuncture is often used to manage chronic pain. However, the efficacy of acupuncture in FM is still controversial. This study aimed to systematically review the effects of acupuncture on pain, fatigue, sleep quality, physical function, stiffness, well-being, and safety in FM. |
| **Methods** | We searched databases including PubMed, Embase, the Cochrane Library, Wanfang Database, Chongqing Weipu, and the China National Knowledge Infrastructure from inception to September 2021. Eligible studies included randomized or quasi-randomized controlled studies of acupuncture in patients with FM. Quantitative analysis was conducted using RevMan 5.3 software, and risk assessment was performed according to the Cochrane collaboration tool. Safety was quantitatively analyzed. |
| **Results** | A total of **13 articles** were searched, of which 12 were analyzed quantitatively. Our meta-analysis found that acupuncture could alleviate pain (SMD: -0.42, 95% CI, -0.66, -0.17, P<0.001, I2=58%) and improve well-being (SMD: -0.86, 95% CI, -1.49, 0.24, P=0.007, I2=85%) at post-treatment. In addition, acupuncture showed long-term effects on reducing pain (P=0.03) and improving well-being (P<0.001). No evidence that acupuncture works on fatigue, sleep quality, physical function, or stiffness was found. No serious adverse events were detected in acupuncture treatment. |

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| **Conclusion** | Moderate quality of evidence supports acupuncture in reducing pain in patients with FM. Therefore, acupuncture is recommended as a treatment for FM. |

## 1.5. Sarmiento-Hernández 2020 ★★

Sarmiento-Hernández I, Pérez-Marín MLÁ, Nunez-Nagy S, Pecos-Martín D, Gallego-Izquierdo T, Sosa-Reina MD. Effectiveness of Invasive Techniques in Patients with Fibromyalgia: Systematic Review and Meta-Analysis. Pain Med. 2020;21(12):3499-3511. [212223]. doi

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| **Objective** | To attain a synthesis of the evidence on the effectiveness of invasive techniques [acupuncture and dry-needling] in patients with fibromyalgia, through systematic review and meta-analysis and by assessing the methodological quality of the studies considered. |
| **Methods** | A systematic review and meta-analysis were carried out as defined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. The bibliographic research was carried out in the PEDro, Cochrane, PubMed, Science Direct, Web of Science, Google Academics, Dialnet, and Scielo databases from September through December of 2018. |
| **Results** | Results show that invasive techniques produce a significant decrease in the pain, the impact of fibromyalgia and in the pain pressure threshold (standardized mean difference [95% confidence interval]: -0.94 [-1.44, -0.44], P of global effect= 0.0002; -0.99 [-1.69, -0.29], P of global effect= 0.006; and 0.31 [0.02, 0.61], P of global effect = 0.04, respectively). Lastly, a significant increase was observed in the quality-of-life variable after intervention (0.84 [0.30, 1.38], P of global effect = 0.002). |
| **Conclusions** | Invasive techniques are considered effective for pain relief, as well as for producing a short-term increase in the pain pressure threshold, an improvement in quality of life, and a decrease in the impact of fibromyalgia. |

## 1.6. Kim 2019 ★★★

Kim J, Kim SR, Lee H, Nam DH. Comparing Verum and Sham Acupuncture in Fibromyalgia Syndrome: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2019:8757685. [199574].

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| **Objectives** | Acupuncture is often used for relieving symptoms of fibromyalgia syndrome (FMS). Our aim is to ascertain whether verum acupuncture is more effective than sham acupuncture in FMS. |
| **Methods** | We collected RCTs to investigate the effects of verum acupuncture and sham acupuncture on pain, sleep quality, fatigue, and general status in FMS patients. The databases used for data retrieval were PubMed, Central Cochrane, EMBASE, PsycINFO, CNKI, VIP, OASIS, KoreaMed, and RISS. Selection/exclusion from the retrieved records was performed according to prespecified criteria, and the final selected records were assessed according to the Cochrane risk of bias tool. The results of the included trials were synthesized on the basis of outcomes, and subgroup analysis depended on the type of add-on sham acupuncture that was performed. |

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| **Results** | **Ten RCTs (690 participants)** were eligible, and eight RCTs were eventually included in the meta-analysis. The synthesis showed a sizable effect of verum acupuncture compared with sham acupuncture on pain relief (standardized mean difference (SMD) -0.49, Z = 3.26, P=0.001; I 2 = 59%), improving sleep quality (SMD -0.46, Z = 3.24, P=0.001; I 2 = 0%), and reforming general status (SMD -0.69, Z = 6.27, P < 0.00001; I 2 = 4%). However, efficacy on fatigue was insignificant (SMD -0.10, Z = 0.51, P=0.61; I 2 = 46%). When compared with a combination of simulation and improper location of needling, the effect of verum acupuncture for pain relief was the most obvious. |
| **Conclusions** | Verum acupuncture is more effective than sham acupuncture for pain relief, improving sleep quality, and reforming general status in FMS posttreatment. However, evidence that it reduces fatigue was not found. |

## 1.7. Zhang 2019 ★★★

Zhang XC, Chen H, Xu WT, Song YY, Gu YH, Ni GX. Acupuncture therapy for fibromyalgia: a systematic review and meta-analysis of randomized controlled trials. J Pain Res. 2019;12:527-542. [193278].

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| **Background** | Fibromyalgia (FM) can cause chronic widespread pain and seriously affect the quality of patient lives. Acupuncture therapy is widely used for pain management. However, the effect of acupuncture on FM is still uncertain. |
| **Aim** | The aim of this review was to determine the effect and safety of acupuncture therapy on the pain intensity and quality of life in patients with FM. |
| **Materials and methods** | We searched PubMed, the Cochrane Library, Embase, the China National Knowledge Infrastructure, the Chinese Science and Technology Periodical Database, and the Chinese Biomedical Literature Database to collect randomized controlled trials (RCTs) of acupuncture for FM published before May 2018. A meta-analysis was performed according to the Cochrane systematic review method by using RevMan 5.3 software, and GRADE was used to evaluate the quality of the evidence. |
| **Results** | We identified **12 RCTs** that compared acupuncture therapy to sham acupuncture or conventional medication. Meta-analysis showed that acupuncture was significantly better than sham acupuncture for relieving pain (MD =-1.04, 95% CI [-1.70, -0.38], P=0.002, I 2=78%) and improving the quality of life (MD =-13.39, 95% CI [-21.69, -5.10], P=0.002, I 2=82%), with low- to moderate-quality evidence in the short term. At follow-up in the long term, the effect of acupuncture was also superior to that of sham acupuncture. No serious adverse events were found during acupuncture. |
| **Conclusion** | Acupuncture therapy is an effective and safe treatment for patients with FM, and this treatment can be recommended for the management of FM. |

## 1.8. Yang 2014 ★

Yang B, Yi G, Hong W, Bo C, Wang Z, Liu Y, Xue Z, Li Y. Efficacy of acupuncture on fibromyalgia syndrome: a meta-analysis. J Tradit Chin Med. 2014;34(4):381-91. [174961]

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| **Objective** | To comprehensively evaluate the effectiveness of acupuncture as a treatment for fibromyalgia syndrome. |
| **Methods** | Two review authors independently selected the trials for the Meta-analysis, assessed their methodological quality and extracted relevant data. A quality assessment was conducted according to the Cochrane Review Handbook 5.0. RevMan 5.0.20 software was used in the statistical analysis. |

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| **Results** | A total of 523 trials were reviewed and **9 trials** were selected for Meta-analysis. (a) Compared acupuncture with sham acupuncture, there was a significant difference in the visual analogue scale, but no difference in the pressure pain threshold. Additionally, and there was a difference in the fibromyalgia impact questionnaire and the multidisciplinary pain inventory after 4 weeks of treatment, but no difference after 7 weeks of therapy. There was no difference in the numerical rating scale in weeks 3, 8 and 13. (b) Acupuncture versus drugs. There were differences in the VAS after 20 days of acupuncture and moxibustion treatment comparing with the drug amitriptyline, and after 4 weeks of acupuncture and moxibustion treatment comparing with the drug fluoxetine and amitriptyline. There were also differences in the number of tender points when comparing acupuncture with amitriptyline or fluoxetine. There was no difference in total efficiency when comparing acupuncture with amitriptyline after 4 weeks of treatment, but there were differences between the two groups 45 days after treatment. There were also differences in total efficiency comparing acupuncture with fluoxetine, and when comparing 4 weeks post-treatment of acupuncture with a combination of amitriptyline, oryzanol and vitamin B. © A comparison of acupuncture, drugs and exercise with drugs and exercise showed PPT differences in months 3 and 6. There was no difference between the two comparison groups after follow-up visits in months 12 and 24. |
| **Conclusion** | Compared with sham acupuncture, there was not enough evidence to prove the efficacy of acupuncture therapy for the treatment of fibromyalgia. Some evidence testified that the effectiveness of acupuncture therapy for fibromyalgia was superior to drugs; however, the included trials were not of high quality or had high bias risks. Acupuncture combined with drugs and exercise could increase pain thresholds in the short term, but there is a need for higher quality randomized controlled trials to further confirm this. |

AMSTAR : **6** [Perry 2017]

## 1.9. Cao 2013 ★

Cao H, Li X, Han M, Liu J. . Acupoint Stimulation for Fibromyalgia: A Systematic Review of Randomized Controlled Trials. Evid Based Complement Alternat Med. 2013;2013:362831.[166605]

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| **Purpose** | To systematically review the beneficial effects and safety of acupoint stimulation for fibromyalgia. |
| **Methods** | We searched six electronic databases for randomized trials on acupoint stimulation for treatment of fibromyalgia. Two authors extracted data and assessed the trial quality independently. RevMan 5.2 software was used for data analyses with effect estimate presented as (standard)mean difference and a 95% confidence interval. We defined minimum, medium, and large SMD effect sizes as 0.3, 0.5, and 0.75. |
| **Results** | **16 RCTs with 1081 participants** were involved in this review. Only two trials were evaluated as low risk of bias. Meta-analysis showed that acupuncture alone or combined with cupping therapy was superior to conventional medications on reducing pain scores and/or the number of tender points. However, acupuncture showed no better than sham acupuncture on pain reduction.There was no serious adverse event reported to be related to acupoint stimulation. |
| **Conclusion** | **Acupoint stimulation appears to be effective in treating fibromyalgia compared with médications**. However, further large, rigorously designed trials are warranted due to insufficient methodological rigor in the included trials. |

AMSTAR : **7** [Perry 2017]

## 1.10. Deare 2013 ★

Deare Jc, Zheng Z, Xue Cc, Liu Jp, Shang J, Scott Sw, Littlejohn G. Acupuncture for treating fibromyalgia. Cochrane Database Syst Rev. 2013 May 31;5:CD007070. [160695]

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| **Purpose** | To examine the benefits and safety of acupuncture treatment for fibromyalgia. |
| **Methods** | Search methods—We searched CENTRAL, PubMed, EMBASE, CINAHL, National Research Register, HSR Project and Current Contents, as well as the Chinese databases VIP and Wangfang to January 2012 with no language restrictions. Selection criteria—Randomised and quasi-randomised studies evaluating any type of invasive acupuncture for fibromyalgia diagnosed according to the American College of Rheumatology (ACR) criteria, and reporting any main outcome: pain, physical function, fatigue, sleep, total wellbeing, stiffness and adverse events. Data collection and analysis—Two author pairs selected trials, extracted data and assessed risk of bias. Treatment effects were reported as standardised mean differences (SMD) and 95%confidence intervals (CI) for continuous outcomes using different measurement tools (pain, physical function, fatigue, sleep, total well-being and stiffness) and risk ratio (RR) and 95% CI for dichotomous outcomes (adverse events).We pooled data using the random-effects model. |

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| **Results** | **Nine trials (395 participants)** were included. All studies except one were at low risk of selection bias; five were at risk of selective reporting bias (favouring either treatment group); two were subject to attrition bias (favouring acupuncture); three were subject to performance bias (favouring acupuncture) and one to detection bias (favouring acupuncture). Three studies utilised electro-acupuncture (EA) with the remainder using manual acupuncture (MA) without electrical stimulation. All studies used 'formula acupuncture' except for one, which used trigger points. Low quality evidence from one study (13 participants) showed EA improved symptoms with no adverse events at one month following treatment. Mean pain in the non-treatment control group was 70 points on a 100 point scale; EA reduced pain by a mean of 22 points (95% confidence interval (CI) 4 to 41), or 22% absolute improvement. Control group global well-being was 66.5 points on a 100 point scale; EA improved well-being by a mean of 15 points (95% CI 5 to 26 points). Control group stiffness was 4.8 points on a 0 to 10 point; EA reduced stiffness by a mean of 0.9 points (95% CI 0.1 to 2 points; absolute reduction 9%, 95% CI 4% to 16%). Fatigue was 4.5 points (10 point scale) without treatment; EA reduced fatigue by a mean of 1 point (95% CI 0.22 to 2 points), absolute reduction 11% (2% to 20%). There was no difference in sleep quality (MD 0.4 points, 95% CI −1 to 0.21 points, 10 point scale), and physical function was not reported. Moderate quality evidence from six studies (286 participants) indicated that acupuncture (EA or MA) was no better than sham acupuncture, except for less stiffness at one month. Subgroup analysis of two studies (104 participants) indicated benefits of EA. Mean pain was 70 points on 0 to 100 point scale with sham treatment; EA reduced pain by 13% (5% to 22%); (SMD −0.63, 95% CI −1.02 to −0.23). Global well-being was 5.2 points on a 10 point scale with sham treatment; EA improved well-being: SMD 0.65, 95% CI 0.26 to 1.05; absolute improvement 11% (4% to 17%). EA improved sleep, from 3 points on a 0 to 10 point scale in the sham group: SMD 0.40 (95% CI 0.01 to 0.79); absolute improvement 8% (0.2% to 16%). Low- quality evidence from one study suggested that MA group resulted in poorer physical function: mean function in the sham group was 28 points (100 point scale); treatment worsened function by a mean of 6 points (95% CI −10.9 to −0.7). Low-quality evidence from three trials (289 participants) suggested no difference in adverse events between real (9%) and sham acupuncture (35%); RR 0.44 (95% CI 0.12 to 1.63). Moderate quality evidence from one study (58 participants) found that compared with standard therapy alone (antidepressants and exercise), adjunct acupuncture therapy reduced pain at one month after treatment: mean pain was 8 points on a 0 to 10 point scale in the standard therapy group; treatment reduced pain by 3 points (95% CI −3.9 to −2.1), an absolute reduction of 30% (21% to 39%). Two people treated with acupuncture reported adverse events; there were none in the control group (RR 3.57; 95% CI 0.18 to 71.21). Global well-being, sleep, fatigue and stiffness were not reported. Physical function data were not usable. Low quality evidence from one study (38 participants) showed a short-term benefit of acupuncture over antidepressants in pain relief: mean pain was 29 points (0 to 100 point scale) in the antidepressant group; acupuncture reduced pain by 17 points (95% CI −24.1 to −10.5). Other outcomes or adverse events were not reported. Moderate-quality evidence from one study (41 participants) indicated that deep needling with or without deqi did not differ in pain, fatigue, function or adverse events. Other outcomes were not reported. Four studies reported no differences between acupuncture and control or other treatments described at six to seven months follow-up. No serious adverse events were reported, but there were insufficient adverse events to be certain of the risks. |

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| **Conclusion** | **There is low tomoderate-level evidence that compared with no treatment and standard therapy, acupuncture improves pain and stiffness in people with fibromyalgia. There is moderate-level evidence that the effect of acupuncture does not differ from sham acupuncture in reducing pain or fatigue, or improving sleep or global well-being. EA is probably better than MA for pain and stiffness reduction and improvement of global well-being, sleep and fatigue**. The effect lasts up to one month, but is not maintained at six months follow-up. MA probably does not improve pain or physical functioning. Acupuncture appears safe. People with fibromyalgia may consider using EA alone or with exercise and medication. The small sample size, scarcity of studies for each comparison, lack of an ideal sham acupuncture weaken the level of evidence and its clinical implications. |

AMSTAR : **10** [Perry 2017] **11** [Lauche 2015, Macfarlane 2017]

## 1.11. Wang 2011 ★

Wang X, Du YH, Xiong J. [Survey on clinical evidence of acupuncture therapy for fibromyalgia syndrome]. Acupuncture Research. 2011;36(3):230-5. (chi) [159623]

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| **Purpose** | To evaluate the clinical effect of acupuncture therapy for fibromyalgia syndrome CFMS) by analyzing the available studies so asto provide clinical qecision-making reference. |
| **Methods** | The published papers on clinical trails for acupuncture treatment of FMS were widely retrieved from Chinese Biomedical Databases C 1979 - 2010), www. cnki. net C 1979- 20 1 0) , VIP China Scientific Journal Database C 1989 - 2010), Digital Periodicals on Wanfang Data C 1998 - 20 10), PubMed C 1966- 2010) , etc. and by using key words of fibromyalgia syndrome and acupuncture. According to criterion of evidence-based medicine, the evidence from high to low quality levels was selected to answer corresponding clinical questions, and software RevMan 5. 0 was used to analyze the final results. **6 RCTs, 323 patients**. |
| **Results** | There has been no enough clinical evidence showing definite efficacy of acupuncture for FMS. However, a Level-A study (being in line with conditions of large sample, multi-centers, randomized controlled trails) and a level-C study (having control group, but without distinct randomizing method) showed respectively that **acupuncture might be superior to Amitriptyline and Brufen in relieving FMS**. Moreover, a piece of evidence that **acupuncture combined with western medicine was superior to western medicine alone was allocated to a level-B** (having correct randomizing method and control group). Finally, only a level-C evidence proved that laser irradiation on acupoint might be superior to traditional acupuncture in improving FMS. |
| **Conclusion** | **Acupuncture for FMS has a positive effect, and acupuncture combined with western medicine can strengthen the curative effect**. However this conclusion should be proved further by randomized controlled double blind clinical trials with large samples. |

## 1.12. Terhorst 2011 ★

Terhorst L, Schneider MJ, Kim KH, Goozdich LM, Stilley CS. Complementary and alternative medicine in the treatment of pain in fibromyalgia: a systematic review of randomized controlled trials. J Manipulative Physiol Ther. 2011;34(7):483-96. [169173].

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| **Objective** | The purpose of this study was to systematically review the literature for randomized trials of complementary and alternative medicine (CAM) interventions for fibromyalgia (FM). |

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| **Methods** | A comprehensive literature search was conducted. Databases included the Cochrane library, PubMed, PsycINFO, Cumulative Index to Nursing and Allied Health, Natural Medicines Comprehensive Database Manual, Alternative and Natural Therapy Index System (MANTIS), Index for Chiropractic Literature, and Allied and Complementary Medicine (AMED). Inclusion criteria were (a) subjects were diagnosed with fibromyalgia and (b) the study design was a randomized controlled trial that compared a CAM therapy vs a control group. Studies were subgrouped by CAM treatment into 11 categories. Evidence tables and forest plots were organized to display quality ratings and effect sizes of each study. |
| **Results** | The literature search yielded 1,722 results; 102 abstracts were selected as potential articles for inclusion. Sixty studies met criteria and were rated by 2 reviewers; 18 were rated as good quality; 20, moderate; 18, low; and 4, very low. Synthesis of information for CAM categories represented by more than 5 studies revealed that balneotherapy and mind-body therapies were effective in treating FM pain. This study analyzed recent studies and focused exclusively on randomized controlled trials. Despite common use of manual therapies such as massage and manipulation to treat patients with FM, there is a paucity of quality clinical trials investigating these particular CAM categories. |
| **Conclusion** | Most of these studies identified were preliminary or pilot studies, thus had small sample sizes and were likely underpowered. Two CAM categories showed the most promising findings, balneotherapy and mind-body therapies. Most of the other CAM categories showed a trend favoring the treatment group. It appears that several CAM therapies show some preliminary treatment effect for FM pain, but larger trials that are more adequately powered are needed. |
| Acupuncture | A survey of the plot indicated that most studies showed only a modest treatment effect in favor of acupuncture. |

## 1.13. Langhorst 2010 ★

Langhorts J et al. Efficacy of acupuncture in fibromyalgia syndrome–a systematic review with a meta-analysis of controlled clinical trials. Rheumatology. 2010;49(4):778-88. [147756]

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| **Purpose** | To systematically review the efficacy of acupuncture in fibromyalgia syndrome (FMS). |
| **Methods** | MEDLINE, PsychInfo, EMBASE, CAMBASE and the Cochrane Library were screened (through July 2009). The reference sections of original studies and systematic reviews for randomized controlled trials (RCTs) on acupuncture in FMS were searched. |
| **Results** | **Seven RCTs** with a median treatment time of 9 (range 6–25) sessions and **385 patients** were included. Outcomes of interest were key symptoms of FMS, namely pain, fatigue, sleep disturbances, reduced physical function and side effects at post-treatment. Follow-up of two RCTs with a median follow-up of 26 weeks was available. Standardized mean differences (SMDs) comparing verum and control acupuncture were calculated. Strong evidence for the reduction of pain (SMD □0.25; 95% CI □0.49, □0.02; P = 0.04) was found at post-treatment. There was no evidence for the reduction of fatigue and sleep disturbances, or the improvement of physical function at post-treatment. There was no evidence for the reduction of pain and improvement of physical function at the latest follow-up. Subgroup analyses resulted in moderate evidence for a significant and small reduction of pain at post-treatment in studies with electro-stimulation and individualized acupuncture. Stratifying the type of controls (penetrating vs non-penetrating control acupuncture) did not change the results. Significant reduction of pain was only present in studies with risk of bias. Side effects were inconsistently reported. |
| **Conclusion** | **A small analgesic effect of acupuncture was present**, which, however, was not clearly distinguishable from bias. |
| AMSTAR : **8** [Perry 2017] **9** [Lauche 2015] | |

## 1.14. Cao 2010 ★

Cao H et al. TCM for treatment of fibromyalgia: a systematic review of randomised controlled trials. J Altern Complement Med. 2010;13(4):397-409.[160229]

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| **Purpose** | Traditional Chinese Medicine (TCM) is popular for treatment of fibromyalgia (FM) although there is a lack of comprehensive evaluation of current clinical evidence for TCM's therapeutic effect and safety. To review systematically the beneficial and harmful effects of TCM therapies for FM. |
| **Methods** | We searched six English and Chinese electronic databases for randomized clinical trials (RCTs) on TCM for treatment of FM. Two authors extracted data and assessed the trial quality independently. RevMan 5 software was used for data analyses with an effect estimate presented as mean difference (MD) with a 95% confidence interval (CI). |
| **Results** | **Twenty-five RCTs were identified with 1516 participants** for this review. Seven trials (28%) were evaluated as having a low risk of bias and the remaining trials were identified as being as unclear or having a high risk of bias. Overall, ten trials were eligible for the meta-analysis, and data from remaining 15 trials were synthesized qualitatively. Acupuncture reduced the number of tender points (MD, –3.21; 95% CI –4.23 to –2.11; p<0.00001, I2¼0%), and pain scores compared with conventional medications (MD, –1.78; 95% CI, –2.24 to – 1.32; p<0.00001; I2¼0%). Acupuncture showed no significant effect, with a random-effect model, compared with sham acupuncture (MD, –0.55; 95% CI, –1.35–0.24; p¼0.17; I2¼69%), on pain reduction. A combination of acupuncture and cupping therapy was better than conventional medications for reducing pain (MD, –1.66; 95% CI, –2.14 to –1.19; p<0.00001; I2¼0%), and for improving depression scores with related to FM (MD, –4.92; 95% CI, –6.49 to –3.34; p<0.00001; I2¼32%). Other individual trials demonstrated positive effects of Chinese herbal medicine on pain reduction compared with conventional medications. There were no serious adverse effects reported that were related to TCM therapies in these trials . |
| **Conclusion** | **TCM therapies appear to be effective for treating FM**. However, further large, rigorously designed trials are warranted because of insufficient methodological rigor in the included trials . |

## 1.15. Porter 2010 ★

Porter NS, Jason LA, Boulton A, Bothne N, Coleman B. Alternative medical interventions used in the treatment and management of myalgic encephalomyelitis/chronic fatigue syndrome and fibromyalgia. J Altern Complement Med 2010;16(3):235-49. [160248].

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| **Background** | There have been several systematic reviews attempting to evaluate the efficacy of possible treatments for myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and fibromyalgia (FM). However, information regarding the efficacy of complementary and alternative medicine (CAM) has not been comprehensively or systematically covered in these reviews, despite its frequent use in the patient community. PURPOSE: The purpose of this study was to systematically review and evaluate the current literature related to alternative and complementary treatments for ME/CFS and FM. It should be stressed that the treatments evaluated in this review do not reflect the clinical approach used by most practitioners to treat these illnesses, which include a mix of natural and unconventionally used medications and natural hormones tailored to each individual case. However, nearly all clinical research has focused on the utility of single CAM interventions, and thus is the primary focus of this review. |

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| **MethodS** | Several databases (e.g., PubMed, MEDLINE, PsychInfo) were systematically searched for randomized and nonrandomized controlled trials of alternative treatments and nonpharmacological supplements. Included studies were checked for references and several experts were contacted for referred articles. Two leading subspecialty journals were also searched by hand. Data were then extracted from included studies and quality assessments were conducted using the Jadad scale. |
| **Results** | Upon completion of the literature search and the exclusion of studies not meeting criterion, a total of 70 controlled clinical trials were included in the review. Sixty (60) of the 70 studies found at least one positive effect of the intervention (86%), and 52 studies also found improvement in an illness-specific symptom (74%). The methodological quality of reporting was generally poor. |
| **Conclusions** | Several types of alternative medicine have some potential for future clinical research. However, due to methodological inconsistencies across studies and the small body of evidence, no firm conclusions can be made at this time. Regarding alternative treatments, **acupuncture** and several types of meditative practice show the most promise for future scientific investigation. Likewise, magnesium, l-carnitine, and S-adenosylmethionine are nonpharmacological supplements with the most potential for further research. Individualized treatment plans that involve several pharmacological agents and natural remedies appear promising as well. |

## 1.16. Martin-Sanchez 2009 Ø

Martin-Sanchez E et al. Efficacy of acupuncture for the treatment of fibromyalgia: systematic review and meta-analysis of randomized trials. Open Rheumatol. 2009;3:25-9.[126323]

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| **Purpose** | The study sought to ascertain the effectiveness of acupuncture as a treatment for fibromyalgia. |
| **Methods** | The following electronic databases were searched: PubMed; The Cochrane Library (CENTRAL); EMBASE; CINAHL; and Pascal Biomed (last date of search: January 2008). We analyzed pain intensity and patient withdrawals prior to termination of the study. A meta-analysis was performed, and a weighted global effect obtained using the inverse of variance. |
| **Results** | This review covered a total of **6 studies (323 subjects).** No statistically significant differences were observed in terms of pain intensity (VAS): 0.02 (-0.24 a 0.28) or withdrawals: RR 0.91 (0.53 a 1.58). |
| **Conclusion** | **This systematic review found no evidence of benefit resulting from acupuncture versus placebo, as a treatment for fibromyalgia**. |
| AMSTAR : **3** [Perry 2017, Lauche 2015] | |

## 1.17. Daya 2007 Ø

Daya S. The efficacy of acupuncture in the treatment of fibromyalgia syndrome. Acupunct Assoc Charter Physiother. 2007;3:35-46. [28309].

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| **Background** | Acupuncture is used in the management of fibromyalgia syndrome (FMS) despite the lack of conclusive evidence for its efficacy. |

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| **Methods** | This paper reviews the current literature on the effectiveness of acupuncture in FMS. In June 2006, the keywords ‘‘acupuncture’’ and ‘‘fibromyalgia’’ were used in a computerized search of all the resources in the National Electronic Library for Health. The search included only English-language articles that had been published world-wide in peer-reviewed journals after 1999; no grey literature was reviewed. Following the literature search, the author completed validity assessment and data extraction. The studies were not combined for statistical analysis because of variations in methodology. |
| **Results** | The search identified four papers that met the criteria: two randomized controlled trials, one quasi-experimental study and a pilot study. The Critical Appraisal Skills Programme, Standards for Reporting Interventions in Controlled Trials of Acupuncture and Cochrane guidelines were amalgamated and modified to critically appraise the studies. The evidence suggests that acupuncture may have a beneficial effect in FMS; it is not curative, but may be used as an adjuvant therapy in the management of the syndrome. |
| **Conclusions** | No recommendation can be given regarding the prescription of acupuncture for FMS. Furthermore, treatment can result in temporary minor bruising and soreness, and patients should be informed of this. Further high-quality research is necessary to provide a definitive answer regarding the efficacy of acupuncture in the treatment of FMS. |

AMSTAR : **4** [Perry 2017]

## 1.18. Mayhew 2007 Ø

Mayhew E, Ernst E.Acupuncture for fibromyalgia–a systematic review of randomized clinical trials. Rheumatology (Oxford). 2007 May;46(5):801-4.[144467]

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| **Purpose** | Acupuncture is often used and frequently advocated for the symptomatic treatment of fibromyalgia. A systematic review has previously demonstrated encouraging findings. As it is now outdated, we wanted to update it. |
| **Methods** | We searched seven electronic databases for relevant randomized clinical trials (RCTs). The data were extracted and validated independently by both authors. As no meta-analysis seemed possible, the results were evaluated in narrative form. |
| **Results** | **Five RCTs** met our inclusion criteria, all of which used acupuncture as an adjunct to conventional treatments. Their methodological quality was mixed and frequently low. Three RCTs suggested positive but mostly short-lived effects and two yielded negative results. There was no significant difference between the quality of the negative and the positive RCTs. All positive RCTs used electro-acupunture. |
| **Conclusion** | The notion that acupuncture is an effective symptomatic treatment for fibromyaligia is not supported by the results from rigorous clinical trials. On the basis of this evidence, **acupuncture cannot be recommended for fibromyalgia.** |

AMSTAR : **3** [Perry 2017] **5** [Lauche 2015]

## 1.19. Holdcraft 2003 ★

Holdcraft Lc, Assefi N, Buchwald D. complementary and alternative medicine in fibromyalgia and related syndromes. Best Pract Res Clin Rheumatol. 2003;17(4):667-83. . [126318].

> Complementary and alternative medicine (CAM) has gained increasing popularity, particularly among individuals with fibromyalgia syndrome (FMS) for which traditional medicine has generally been ineffective. A systematic review of randomized controlled trials (RCTs) and non-RCTs on CAM studies for FMS was conducted to evaluate the empirical evidence for their effectiveness. Few RCTs achieved high scores on the CONSORT, a standardized

evaluation of the quality of methodology reporting. **Acupuncture**, some herbal and nutritional supplements (magnesium, SAMe) and massage therapy **have the best evidence for effectiveness with FMS**. Other CAM therapies have either been evaluated in only one RCT with positive results (Chlorella, biofeedback, relaxation), in multiple RCTs with mixed results (magnet therapies), or have positive results from studies with methodological flaws (homeopathy, botanical oils, balneotherapy, anthocyanidins, dietary modifications). Lastly, other CAM therapies have neither well-designed studies nor positive results and are not currently recommended for FMS treatment (chiropractic care).

## 1.20. Sim 2002 ★

Sim J, Adams N.Clin J Pain. 2002 Sep-Oct;18(5):324-36. Systematic review of randomized controlled trials of nonpharmacological interventions for fibromyalgia.[145570]

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| **Purpose** | Little is known of the effectiveness of nonpharmacological interventions for fibromyalgia syndrome (FMS). The authors therefore carried out a systematic review from 1980 to May 2000 of randomized controlled trials (RCTs) of nonpharmacological interventions for FMS. |
| **Methods** | A search of computerized databases was supplemented by hand searching of bibliographies of key publications. The methodological quality of studies included in the review was evaluated independently by two researchers according to a set of formal criteria. Discrepancies in scoring were resolved through discussion. |
| **Results** | The review yielded **25 RCTs**, and the main categories of interventions tested in the studies were exercise therapy, educational intervention, relaxation therapy, cognitive-behavioral therapy, **acupuncture**, and forms of hydrotherapy. Methodological quality of studies was fairly low (mean score = 49.5/100). Most studies had small samples (median for individual treatment groups after randomization = 20), and the mean power of the studies to detect a medium effect ( > or = 0.5) was 0.36. Sixteen studies had blinded outcome assessment, but patients were blinded in only 6 studies. The median longest follow-up was 16 weeks. Statistically significant between-group differences on at least one outcome variable were reported in 17 of the 24 studies. |
| **Conclusion** | The varying combinations of interventions studied in the RCTs and the wide range of outcome measures used make it hard to form conclusions across studies. **Strong evidence did not emerge in respect to any single intervention**, though preliminary support of moderate strength existed for aerobic exercise. There is a need for larger, more methodologically rigorous RCTs in this area. |

## 1.21. Langhorst 2000

Langhorst J, Häuser W, Irnich D, Speeck N, Felde E, Winkelmann A, Lucius H, Michalsen A, Musial F. [Alternative and complementary therapies in fibromyalgia syndrome.]. Schmerz. 2008;may 9. [148948].

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| **Introduction** | Interdisciplinary S3 level guidelines were devised in cooperation with 8 medical, 2 psychological and 2 patient support groups. Results were elaborated in a multilevel group process. |
| **Methods** | On the bases of the “Cochrane Library” (1993-2006), “Medline” (1980-2006), “PsychInfo” (2006) and “Scopus” (2006) controlled studies and meta-analyses of controlled studies were analyzed. |
| **Results** | Only few controlled studies were found supporting in part the effectiveness of CAM therapies in the treatment of fibromyalgia syndrome. Due to the lack of information on long term efficacy and cost-effectiveness, only limited recommendations for CAM therapies can be given. |

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| **Conclusion** | Within a multicomponent therapy setting, selective CAM therapies (acupuncture, vegetarian diet, homeopathy, Tai Chi, Qi Gong, music-oriented and body-oriented therapies) can be recommended for a limited period of time. |

## 1.22. Sim 1999

Sim J, Adams N. Physical and other non-pharmacological interventions for fibromyalgia. Baillieres Best Pract Res Clin Rheumatol. 1999;13(3):507-23. [141197].

There is little empirical evidence for the effectiveness of physical and other non-pharmacological approaches to the management of fibromyalgia. Although a number of studies have been conducted into such approaches, many of these are uncontrolled, and relatively few randomized controlled trials of appropriate size and methodological rigour have been carried out. This chapter provides an overview of the evidence available under the following headings: exercise, EMG biofeedback training, electrotherapy and **acupuncture**, patient education and self-management programmes, multimodal treatment approaches, and other interventions. It is hard to reach firm conclusions from the literature, owing to the variety of interventions that have been evaluated and the varying methodological quality of the studies concerned. Nonetheless, in terms of specific interventions, exercise therapy has received a moderate degree of support from the literature, and has been subjected to more randomized studies than any other intervention. In contrast, there is little or no evidence available for most types of electrotherapy. In terms of overall management strategies, a multimodal programme of management, including physical, psychological and educational components and delivered in a multidisciplinary setting, has gained some support from descriptive and experimental studies, and accords with current understanding of the aetiology and clinical features of fibromyalgia. There is a clear need for further systematic evaluation of the effectiveness of non-pharmacological treatment approaches in fibromyalgia.

## 1.23. Berman 1999 ★

Berman BM et al. Is acupuncture effective in the treatment of fibromyalgia? Journal oF Family Practice. 1999;48(3):213-8. [59075].

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| **Background** | We conducted this study to assess the effectiveness of acupuncture in the treatment of fibromyalgia syndrome (FMS), report any adverse effects, and generate hypotheses for future investigation. |
| **Methods** | We searched MEDLINE, EMBASE, Manual Therapy Information System, the Cochrane registry, the University of Maryland Complementary and Alternative Medicine in Pain, the Centralized Information Service for Complementary Medicine, and the National Institutes of Health Office of Alternative Medicine databases for the key words “acupuncture” and “fibromyalgia.” Conference abstracts, citation lists, and letters supplemented the search. We selected all randomized or quasirandomized controlled trials, or cohort studies of patients with FMS who were treated with acupuncture. Methodologic quality, sample characteristics, type of acupuncture treatment, and outcomes were extracted. Statistical pooling was not performed because of the differences in control groups. |
| **Results** | Seven studies (**3 randomized controlled trials** and 4 cohort studies) were included; only one was of high methodologic quality. The highquality study suggests that real acupuncture is more effective than sham acupuncture for relieving pain, increasing pain thresholds, improving global ratings, and reducing morning stiffness of FMS, but the duration of benefit following the acupuncture treatment series is not known. Some patients report no benefit, and a few report an exacerbation of FMSrelated pain. Lowerquality studies were consistent with these findings. Booster doses of acupuncture to maintain benefit once regular treatments have stopped have been described anecdotally but not investigated in controlled trials. |

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| **Conclusions** | The limited amount of highquality evidence suggests that **real acupuncture is more effective than sham acupuncture for improving symptoms of patients with FMS**. However, because this conclusion is based on a single highquality study, further highquality randomized trials are needed to provide more robust data on effectiveness. |

## 1.24. Berman 1999 ★

Berman BM, Swyers JP. Complementary medicine treatments for fibromyalgia syndrome. Baillieres Best Pract Res Clin Rheumatol. 1999 Sep;13(3):487-92. [126129]

> Fibromyalgia is a chronic-pain-related syndrome associated with high rates of complementary and alternative medicine (CAM) use. Among the many CAM therapies frequently used by fibromyalgia patients, empirical research data exist to support the use of only three: (1) mind-body, (2) acupuncture, and (3) manipulative therapies for treating fibromyalgia. The strongest data exist for the use of mind-body techniques (e.g. biofeedback, hypnosis, cognitive behavioural therapy), particularly when utilized as part of a multidisciplinary approach to treatment. The weakest data exist for manipulative techniques (e.g. chiropractic and massage). **The data supporting the use of acupuncture for fibromyalgia are only moderately strong**. Also, for some fibromyalgia patients, acupuncture can exacerbate symptoms, further complicating its application for this condition. Further research is needed not only in these three areas, but also for other treatments being frequently utilized by fibromyalgia patients.

## 1.25. Special Acupuncture Techniques

### 1.25.1. Cupping

#### 1.25.1.1. Salazar-Méndez 2023

Salazar-Méndez J, Cancino-Valderrama V, Aguilar-Román G, Guzmán-Muñoz E. Efficacy of cupping therapy in individuals with fibromyalgia. A systematic review of randomized clinical trials. J Bodyw Mov Ther. 2023 Oct;36:256-262. https://doi.org/10.1016/j.jbmt.2023.04.088

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| **Backgound** | Fibromyalgia is a chronic and idiopathic condition and is among the most common causes of generalized chronic pain, even affecting psychological and cognitive aspects. |
| **Aim** | To evaluate the efficacy of cupping therapy on pain, quality of life, sleep disorders, and the impact of the disease in subjects with fibromyalgia. |
| **Methods** | We searched the Pubmed, CINAHL, Epistemonikos, Scopus, and Web of Science databases. Randomized controlled trials involving adults with fibromyalgia undergoing cupping were included. Pain intensity, quality of life, sleep disturbances, and the impact of fibromyalgia were assessed. We have reported the results using descriptive statistics and narrative synthesis. |
| **Results** | Two articles with a total of 155 participants were included. Large effect sizes were found for pain intensity, moderate for quality of life, and low for the impact of fibromyalgia and sleep disorders. However, the certainty of the evidence is low for most outcomes except for sleep disorders. |
| **Conclusions** | There is a discrepancy in the efficacy of cupping therapy in improving pain intensity, quality of life, sleep disturbances, and disease impact in people with fibromyalgia. Future high-quality randomized clinical trials are required. |

# 2. Overviews of Systematic Reviews

## 2.1. Araya-Quintanilla 2024

Araya-Quintanilla F, Ramirez-Vélez R, Mendez-Rebolledo G, Cuyul-Vásquez I, Arce-Álvarez A, Ezzatvar Y, Gutiérrez-Espinoza H. Effects of acupuncture versus placebo on clinical status and potential specific effects in Fibromyalgia: an umbrella review of 11 meta-analyses. Ther Adv Musculoskelet Dis. 2024 Aug 20;16:1759720×241271775. https://doi.org/10.1177/1759720X241271775

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| **Backgound** | The use of acupuncture is related to patients' expectations, and the therapeutic interaction effect remains a topic of debate in the literature. Accordingly, it is still unclear whether acupuncture can generate positive clinical effects in patients with fibromyalgia (FM). |
| **Objective** | To determine the effectiveness of acupuncture versus placebo for clinical outcomes and determine the overall effect not attributed to specific effects in patients with FM. |
| **Design** | Umbrella review of systematic reviews (SRs) and meta-analyses. |
| **Data sources and methods** | An electronic search was performed in MEDLINE (via PubMed), Web of Science, CENTRAL, EMBASE, LILACS, CINAHL, PEDro, and SPORTDiscus databases from inception until December 2023. We selected studies with a clinical diagnosis of FM and that analyzed the effectiveness of acupuncture compared with a placebo. Pain intensity, functional status, fatigue, sleep quality, and depression symptoms were assessed. Effect sizes were calculated as the mean difference (MD) or standard mean difference (SMD). The quality of intervention reporting was assessed using the Grading of Recommendations Assessment, Development, and Evaluation approach. |
| **Results** | **Eleven SRs with 8399 participants** were included. Compared with placebo, acupuncture was associated with reductions in pain intensity (MD = -1.13 cm, 95% CI -2.09 to -0.17, $p < 0.001$), physical function (SMD = -0.63, 95% CI -1.67 to 0.41, $p = 0.06$), sleep quality (SMD = -0.25, 95% CI -1.39 to 0.88, $p = 0.06$), and fatigue (SMD = 0.20, 95% CI = 0.17 to 0.22, $p < 0.001$). The proportion not attributable to specific effects (PCE) of acupuncture was 58% for pain intensity (PCE = 0.58, 95% CI 0.45 to 0.71), 57% for physical function (PCE = 0.57, 95% CI -0.07 to 1.20), and 69% for fatigue (PCE = 0.69, 95% CI 0.18 to 1.21). |
| **Conclusion** | Acupuncture showed a statistically significant difference in decreased pain intensity and fatigue in women with FM. However, the certainty of evidence was low to very low; its effects are not clinically important, and more than 50% of the overall treatment effects were not attributed to the specific effects of acupuncture. |

## 2.2. Perry 2017 ☆

Perry R, Leach V, Davies P, Penfold C, Ness A, Churchill R. An overview of systematic reviews of complementary and alternative therapies for fibromyalgia using both AMSTAR and ROBIS as quality assessment tools. Syst Rev. 2017;6(1):97. [159001].

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| **Background** | Fibromyalgia (FM) is a chronic, debilitating pain disorder. Dissatisfaction with conventional medicine can lead people with FM to turn to complementary and alternative medicine (CAM). Two previous overviews of systematic reviews of CAM for FM have been published, but they did not assessed for risk of bias in the review process. |

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| **Methods** | Five databases Medline, Embase, AMED (via OVID), Web of Science and Central were searched from their inception to December 2015. Reference lists were hand-searched. We had two aims: the first was to provide an up-to-date and rigorously conducted synthesis of systematic reviews of CAM literature on FM; the second was to evaluate the quality of the available systematic review evidence using two different tools: AMSTAR (Shea et al. BMC Med Res Methodol 15; 7:10, 2007) and a more recently developed tool ROBIS (Whiting et al. J Clin Epidemiol 69:225-34, 2016) specifically designed to assess risk of bias in systematic reviews. Any review that assessed one of eight CAM therapies for participants diagnosed with FM was considered. The individual studies had to be randomised controlled trials where the intervention was compared to placebo, treatment as usual or waitlist controls to be included. The primary outcome measure was pain, and the secondary outcome measure was adverse events. |
| **Results** | We identified 15 reviews that met inclusion criteria. There was low-quality evidence that acupuncture improves pain compared to no treatment or standard treatment, but good evidence that it is no better than sham acupuncture. The evidence for homoeopathy, spinal manipulation and herbal medicine was limited. |
| **Conclusions** | Overall, five reviews scored 6 or above using the AMSTAR scale and the inter-rater agreement was good (83.6%), whereas seven reviews achieved a low risk of bias rating using ROBIS and the inter-rater agreement was fair (60.0%). No firm conclusions were drawn for efficacy of either spinal manipulation or homoeopathy for FM. There is limited evidence for topical Capsicum, but further research is required. There is some evidence to support the effectiveness of acupuncture for FM, but further high-quality trials are needed to investigate its benefits, harms and mechanisms of action, compared with no or standard treatment. |

## 2.3. Lauche 2015 ∅

Lauche R, Cramer H, Häuser W, Dobos G, Langhorst J. A Systematic Overview of Reviews for Complementary and Alternative Therapies in the Treatment of the Fibromyalgia Syndrome. Evid Based Complement Alternat Med 2015;2015:610615. [184024]

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| **Objectifs** | This systematic overview of reviews aimed to summarize evidence and methodological quality from systematic reviews of complementary and alternative medicine (CAM) for the fibromyalgia syndrome (FMS) |
| **Méthodes** | The PubMed/MEDLINE, Cochrane Library, and Scopus databases were screened from their inception to Sept 2013 to identify systematic reviews and meta-analyses of CAM interventions for FMS. Methodological quality of reviews was rated using the AMSTAR instrument. |
| **Résultats** | Altogether **25 systematic reviews** were found; they investigated the evidence of CAM in general, exercised-based CAM therapies, manipulative therapies, Mind/Body therapies, acupuncture, hydrotherapy, phytotherapy, and homeopathy. Methodological quality of reviews ranged from lowest to highest possible quality. Consistently positive results were found for tai chi, yoga, meditation and mindfulness-based interventions, hypnosis or guided imagery, electromyogram (EMG) biofeedback, and balneotherapy/hydrotherapy. **Inconsistent results concerned** qigong, **acupuncture**, chiropractic interventions, electroencephalogram (EEG) biofeedback, and nutritional supplements. Inconclusive results were found for homeopathy and phytotherapy.Major methodological flaws included missing details on data extraction process, included or excluded studies, study details, and adaption of conclusions based on quality assessment. |
| **Conclusions** | Despite a **growing body of scientific evidence** of CAM therapies for the management of FMS systematic reviews still show methodological flaws limiting definite conclusions about their efficacy and safety. |

### 2.4. Terry 2012 ★

Terry R, Perry R, Ernst E. An overview of systematic reviews of complementary and alternative medicine for fibromyalgia. Clin Rheumatol. 2012;31(1):55-66. [154974].

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| **Background** | Fibromyalgia (FM) is a chronic pain condition which is difficult to diagnose and to treat. Most individuals suffering from FM use a variety of complementary or alternative medicine (CAM) interventions to treat and manage their symptoms. |
| **Objective** | The aim of this overview was to critically evaluate all systematic reviews of single CAM interventions for the treatment of FM. |
| **Results** | Five systematic reviews met the inclusion criteria, evaluating the effectiveness of homoeopathy, chiropractic, acupuncture, hydrotherapy and massage. |
| **Conclusions** | **The reviews found some evidence of beneficial effects arising from acupuncture**, homoeopathy, hydrotherapy and massage, whilst no evidence for therapeutic effects from chiropractic interventions for the treatment of FM symptoms was found. The implications of these findings and future directions for the application of CAM in chronic pain conditions, as well as for CAM research, are discussed. |

## 3. Clinical Practice Guidelines

⊕ positive recommendation (regardless of the level of evidence reported)
Ø negative recommendation (or lack of evidence)

### 3.1. Centers for Disease Control and Prevention (CDC, USA) 2022 ⊕

Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC Clinical Practice Guideline for Prescribing Opioids for Pain - United States, 2022. MMWR Recomm Rep. 2022 Nov 4;71(3):1-95. https://doi.org/10.15585/mmwr.rr7103a1

Clinicians should recommend appropriate noninvasive nonpharmacologic approaches to help manage chronic pain, such as […] cognitive behavioral therapy, myofascial release massage, mindfulness practices, tai chi, qigong, **acupuncture**, and multidisciplinary rehabilitation for *fibromyalgia*.

### 3.2. American Academy of Family Physicians (AAFP, USA) 2021 ⊕

AAFP Chronic Pain Toolkit. American Academy of Family Physicians. 2021. [188191]. URL

Chronic pain : Non-opioid analgesics, physical therapy, cognitive behavioral therapy, rehabilitation, exercise, integrative medical therapies (e.g., yoga, relaxation, tai chi, massage, and **acupuncture**), opioids on a case-by-case basis.
Acupuncture : indications Low back pain, **fibromyalgia**, chronic headache, neck pain. Magnitude to benefit pain and function: small to moderate.

### 3.3. Department of Veterans Affairs Department of Defense (VA/DoD, USA) 2021 ⊕

VA/DoD clinical practice guideline for the management of chronic multisymptom illness. Department of Veterans Affairs Department of Defense. 2021:117P. [112589]. URL

We suggest offering manual acupuncture as part of the management of patients with CMI and symptoms consistent with fibromyalgia. (Weak for / Reviewed, New-replaced).

## 3.4. Italian Society for Rheumatology (SIR, Italy) 2021 ⊕

Ariani A, Bazzichi L, Sarzi-Puttini P, Salaffi F, Manara M, Prevete I, Bortoluzzi A, Carrara G, Scirè CA, Ughi N, Parisi S. The Italian Society for Rheumatology clinical practice guidelines for the diagnosis and management of fibromyalgia Best practices based on current scientific evidence. Reumatismo. 2021 Aug 3;73(2):89-105. https://doi.org/10.4081/reumatismo.2021.1362

*Recommendation* 15: acupuncture (level 1, grade A)

## 3.5. Ministère de la Santé et des Services, Gouvernement du Québec (MSSS, Canada) 2021 ⊕

Algorithme de prise en charge de la fibromyalgie. Ministère de la Santé et des Services. URL

Acupuncture. Une récente revue Cochrane conclue que l'acupuncture améliore la douleur, la rigidité, le bien-être général et la fatigue par rapport au non-traitement (évidence faible-modérée), mais tout autant que le placebo. L'acupuncture avec stimulation électrique serait plus efficace que le seuil aiguilletage. L'effet perdure à 1 mois, mais pas à 6 mois. Cette modalité semble sécuritaire et peut être recommandée aux patients souffrant de fibromyalgie. Combinée à l'exercice, elle pourrait potentialiser l'effet sur la douleur (Deare et autres, 2013).

## 3.6. Agency for Healthcare Research and Quality (ARQ, USA) 2020 ⊕

Skelly AC, Chou R, Dettori JR, Turner JA, Friedly JL, Rundell SD, Fu R, Brodt ED, Wasson N, Kantner S, Ferguson AJR. Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review Update [Internet]. . 2020;:607p. [208656]. doi

Interventions that improved function and/or pain for ≥1 month: Exercise, CBT, myofascial release massage, mindfulness practices, tai chi, qigong, **acupuncture**, MDR.
*Acupuncture*: Acupuncture was associated with a small improvement in function compared with sham acupuncture at short-term (3 trials [1 new]) and intermediate-term (2 trials) followup (SOE: moderate). There was no effect for acupuncture versus sham acupuncture on pain in the short term (4 trials [1 new]) or intermediate term (3 trials) (SOE: low) or based on pooled estimates across control conditions (sham or attention control, 5 trials [2 new]) SOE: low).

## 3.7. Turkish Society of Physical Medicine and Rehabilitation (TSPMR, Turquie) 2019 ⊕

Evcik D, Ketenci A, Sindel D. The Turkish Society of Physical Medicine and Rehabilitation (TSPMR) guideline recommendations for the management of fibromyalgia syndrome. Turk J Phys Med Rehabil. 2019;6(2):111-123. [200353].

Acupuncture can be used as a part of the treatment program in patients with FM according to the patient's clinical status and general condition (Evidence level Ia, Weak recommendation).

## 3.8. Agency for Healthcare Research and Quality (ARQ, USA) 2018 ⊕

Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review. Agency for Healthcare Research and Quality (ARQ, USA). 2018. 1398P. [192680].

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| Interventions that improved function and/or pain for at least 1 month when used for: - Fibromyalgia: Exercise, CBT, myofascial release massage, tai chi, qigong, **acupuncture**, MDR. |

## 3.9. Canadian Medical Association (CMA, Canada) 2017 ⊕

Lignes directrices canadiennes relatives à l'utilisation des opioïdes pour le traitement de la douleur chronique non cancéreuse, Canadian Medical Association. 2017:110P. [196698].

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| Recommandation 1: Lorsqu'on envisage le traitement d'un patient atteint de douleur chronique non cancéreuse nous recommandons l'optimisation de la pharmacothérapie non opioïde et du traitement non pharmacologique plutôt qu'un essai d'opioïdes (Recommandation Forte).<br>Le tableau 2 énumère certains des traitements spécifiques disponibles pour la prise en charge de la douleur chronique non cancéreuse ainsi que les données probantes appuyant chacun de ces traitements .<br>*Douleurs dorsales, ostéo-arthrite du genou, douleurs cervicales, **fibromyalgie**, céphalées graves ou migraines.* Qualité des données probantes : Faible ou très faible. Thérapies dont l'efficacité est appuyée par certaines données probantes : **acupuncture**, yoga, massothérapie, manipulation rachidienne, manipulation ostéopathique, tai-chi et approches de relaxation peuvent aider certains patients à gérer leur douleur. |

## 3.10. Deutschen Schmerzgesellschaft 2017 (German Pain Society, Germany) ⊕

Langhorst J, Heldmann P, Henningsen P, Kopke K, Krumbein L, Lucius H, Winkelmann A, Wolf B, Häuser W. [Complementary and alternative procedures for fibromyalgia syndrome : Updated guidelines 2017 and overview of systematic review articles]. Schmerz. 2017;31(3):289-295. [165989].

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| Meditative movement therapies (e.g. qi gong, tai chi and yoga) are strongly recommended. Acupuncture and weight reduction in cases of obesity can be considered. |

## 3.11. European League Against Rheumatism (EULAR) 2017 ⊕

Macfarlane GJ, Kronisch C, Dean LE, Atzeni F, Häuser W, Fluß E, Choy E, Kosek E, Amris K, Branco J, Dincer F, Leino-Arjas P, Longley K, McCarthy GM, Makri S, Perrot S, Sarzi-Puttini P, Taylor A, Jones GT. EULAR revised recommendations for the management of fibromyalgia. Ann Rheum Dis. 2017;76(2):318-28. [157512].

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| Acupuncture : level of evidence Ia ; Grade : A ; Strength of recommendation : weak for |

## 3.12. Finnish Medical Association, Finnish Society of Anaesthesiology and Finnish General Practitioner (Finland) 2017 Ø

[Pain]. Duodecim of the Finnish Medical Association, Finnish Society of Anaesthesiology and Finnish General Practitioner. 2017:23P. [219464]. URL

There is no reliable research evidence on the effect of acupuncture on pain in patients with fibromyagia.

## 3.13. Japan College of Fibromyalgia Investigation, Japan Agency for Medical Research and Development (JCFI, JAMRD, Japan) 2017 ⊕

Japan College of Fibromyalgia Investigation, Japan Agency for Medical Research and Development. Sen-i Kintsu Syo Shinryo Gaidorain [Clinical Practice Guideline For Fibromyalgia]. Jpn Med J . 2017 [in Japanese] . *Cited by* Okawa Y, Yamashita H, Masuyama S, Fukazawa Y, Wakayama I. Quality assessment of Japanese clinical practice guidelines including recommendations for acupuncture. Integr Med Res. 2022 Sep;11(3):100838. https://doi.org/10.1016/j.imr.2022.100838

Fibromyalgia. Acupuncture: Propose to do

## 3.14. Israeli Rheumatology Association (Israel) 2013 ∅

Ablin JN, Amital H, Ehrenfeld M, Aloush V, Elkayam O, Langevitz P, Mevorach D, Mader R6, Sachar T, Amital D, Buskila D; Israeli Rheumatology Association. [Guidelines for the diagnosis and treatment of the fibromyalgia syndrome]. Harefuah. 2013;152(12):742-7, 750-1. [28344].

Acupuncture Level of evidence III ; Strength of recommendation : not recommended

## 3.15. U.S. Navy Bureau of Medicine and Surgery (USA) 2013 Ø

Acupuncture. U.S. Navy Bureau of Medicine and Surgery. 2013.17p. [180539].

Category B (limited evidence): Authorized but not recommended for routine use (consider as adjunct). **Fibromyalgia** .

## 3.16. Institute for Clinical Systems Improvement (ICSI, USA) 2013 ⊕

Hooten WM, Timming R, Belgrade M, Gaul J, Goertz M, Haake B, Myers C, Noonan MP, Owens J, Saeger L, Schweim K, Shteyman G, Walker N. Assessment and management of chronic pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Nov. 105 p. [167354]

Fibromyalgia may be considered a special case within neuropathic pain due to mechanisms that are less well defined and a distribution that is widespread. Treatments proven effective include graded aerobic exercise, behavioral therapies such as relaxation, interdisciplinary management and **acupuncture** (Karjalainen, 2008 [Systematic Review]; Martin, 2006 [High Quality Evidence])

## 3.17. Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF, Germany) 2012 ⊕

Langhorst J, Häuser W, Bernardy K, Lucius H, Settan M, Winkelmann A, Musial F. [Complementary and alternative therapies for fibromyalgia syndrome : systematic review, meta-analysis and guideline]. Schmerz. 2012;26(3):311-7. [157291].

Evidenzbasierte Empfehlung : Der zeitlich befristete Einsatz von Akupunktur kann erwogen werden. EL2a, Empfehlungsgrad offen, starker Konsens [Evidence-based recommendation: The temporary use of acupuncture can be considered. EL2a, degree of recommendation open, strong consensus].

## 3.18. Canadian Pain Society (CPS, Canada) 2012 ∅

Fitzcharles MA, Ste-Marie PA, Goldenberg DL, Pereira JX, Abbey S, Choinière M, Ko G, Moulin DE, Panopalis P, Proulx J, Shir Y; National Fibromyalgia Guideline Advisory Panel. 2012 Canadian Guidelines for the diagnosis and management of fibromyalgia syndrome: executive summary. Pain Res Manag. 2013;18(3):119-26. [175867].

**22.** Patients should be informed that there is currently insufficient evidence to support the recommendation of complementary and alternative medicine treatments [acupuncture] for the management of FM symptoms because they have mostly not been adequately evaluated regarding benefit (level 1, grade A).
**23.** Patients should be encouraged to disclose use of complementary and alternative medicines [acupuncture] to the health care professional, who should be understanding and tolerant of this disclosure and should provide information on current evidence-based understanding of efficacy and risks where available (level 5, consensus).

## 3.19. Association of the Scientific Medical Societies in Germany (AWMF) and German Inter-disciplinary Association of Pain Therapy (AWMF, DIVS, Germany) 2008 ⊕

Häuser W, Arnold B, Eich W, Felde E, Flügge C, Henningsen P, Herrmann M, Köllner V, Kühn E, Nutzinger D, Offenbächer M, Schiltenwolf M, Sommer C, Thieme K, Kopp I. Management of fibromyalgia syndrome – an interdisciplinary evidence-based guideline. Behandlung des Fibromyalgiesyndroms – eine interdisziplinäre S3-Leitlinie; GMS German Medical Science. 2008;6:1-11. [192987].
Klement A, Häuser W, Brückle W, Eidmann U, Felde E, Herrmann M, Kühn-Becker H, Offenbächer M, Settan M, Schiltenwolf M, von Wachter M, Eich W. [Principles of treatment, coordination of medical care and patient education in fibromyalgia syndrome and chronic widespread pain]. Schmerz. 2008;22(3):283-94. [200190].

Acupuncture: A systematic review concluded that acupuncture is not effective [23]. A minority vote considered electroacupuncture as effective and that it should be offered. Because of patients' preferences an open recommendation was given within a MT-treatment. Strenght of Evidence Ia, number of controlled studies/ consistency of results 5/No, Strenght of consensus : consensus.

## 3.20. European League Against Rheumatism (EULAR) 2008 Ø

Carville SF, Arendt-Nielsen L, Bliddal H, et al. EULAR evidence-based recommendations for the management of fibromyalgia syndrome Ann Rheum Dis. 2008;67:536-41. [202385].

Acupuncture : no data

## 3.21. American Pain Society (APS, USA) 2005 ⊕

Burckhardt CS, Goldenberg D, Crofford L, Gerwin R, Gowans S, Kackson, et al. Guideline for the management of fibromyalgia syndrome. Pain in adults and children. APS Clinical Practice Guideline Series No. 4. Glenview, IL: American Pain Society. 2005. [200322].
Goldenberg DL, Burckhardt C, Crofford L. Management of fibromyalgia syndrome. JAMA. 2004;292(19):2388-95. [199577].

24. Offer clinician-assisted treatments such as clinical hypnosis and biofeedback (B), **acupuncture (C)**, chiropractic manipulation, therapeutic massage (B), and balneotherapy (A), which may be helpful for pain relief.
Moderate Evidence for Efficacy : Strength training, **acupuncture**, hypnotherapy, Biofeedback, balneotherapy.

# 4. Overviews of Clinical Practice Guidelines

## 4.1. Hauser 2010

Häuser W, Thieme K, Turk DC. Guidelines on the management of fibromyalgia syndrome - a systematic review. Eur J Pain. 2010;14(1):5-10. [200437].

# 5. Randomized Controlled Trials

## 5.1. Sources

1. **Zheng 2022**: Zhou T. Effect of Acupuncture on Pain, Fatigue, Sleep, Physical Function, Stiffness, Well-Being, and Safety in Fibromyalgia: A Systematic Review and Meta-Analysis. J Pain Res. 2022;15:315-329.
2. **Sarmiento-Hernández**: Sarmiento-Hernández I, Pérez-Marín MLÁ, Nunez-Nagy S, Pecos-Martín D, Gallego-Izquierdo T, Sosa-Reina MD. Effectiveness of Invasive Techniques in Patients with Fibromyalgia: Systematic Review and Meta-Analysis. Pain Med. 2020;21(12):3499-3511. [212223].
3. **Kim 2019**: Kim J, Kim SR, Lee H, Nam DH. Comparing Verum and Sham Acupuncture in Fibromyalgia Syndrome: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2019:8757685. [199574].
4. **Zhang 2019**: Zhang XC, Chen H, Xu WT, Song YY, Gu YH, Ni GX. Acupuncture therapy for fibromyalgia: a systematic review and meta-analysis of randomized controlled trials. J Pain Res. 2019;12:527-542. [193278].
5. **Yang 2014**: Yang B, Yi G, Hong W, Bo C, Wang Z, Liu Y, Xue Z, Li Y. Efficacy of acupuncture on fibromyalgia syndrome: a meta-analysis. J Tradit Chin Med. 2014;34(4):381-91. [174961]
6. **Cao 2013**: Cao H, Li X, Han M, Liu J . Acupoint Stimulation for Fibromyalgia: A Systematic Review of Randomized Controlled Trials. Evid Based Complement Alternat Med. 2013;2013:362831.[166605]
7. **Deare 2013**: Deare Jc, Zheng Z, Xue Cc, Liu Jp, Shang J, Scott Sw, Littlejohn G. Acupuncture for treating fibromyalgia. Cochrane Database Syst Rev. 2013 May 31;5:CD007070. [160695]

## 5.2. List

| | RCT | Comparator | |
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| **2021** | Mawla I, Ichesco E, Zöllner HJ, et al. Greater somatosensory afference with acupuncture increases primary somatosensory connectivity and alleviates fibromyalgia pain via insular γ-aminobutyric acid: a randomized neuroimaging trial. Arthritis Rheumatol. 2021;73(7):1318–1328. []. | | Zheng 2022 [] |
| **2018** | Karatay S , Okur SC , Uzkeser H , Yildirim K , Akcay F. Effects of Acupuncture Treatment on Fibromyalgia Symptoms, Serotonin, and Substance P Levels: A Randomized Sham and Placebo-Controlled Clinical Trial. Pain Med. 2018;19(3):615-628. [196085]. | Sham | Kim 2019 [32], Zhang 2019 [20] |
| **2017** | Ugurlu FG, Sezer N, Aktekin L, Fidan F, Tok F, Akkuş S. The effects of acupuncture versus sham acupuncture in the treatment of fibromyalgia: a randomized controlled clinical trial. Acta Reumatol Port. 2017;42(1):32-37. [32868]. | Sham | Kim 2019 [33], Zhang 2019 [19] |
| | Zucker NA, Tsodikov A, Mist SD, et al. Evoked pressure pain sensitivity is associated with differential analgesic response to verum and sham acupuncture in fibromyalgia. Pain Med. 2017;18(8):1582–1592.<br>`\|  Sham`<br>`\| Zheng 2022 []` | | |
| **2016** | Vas J, Santos-Rey K, Navarro-Pablo R, Modesto M, Aguilar I, Campos MÁ, Aguilar-Velasco JF, Romero M, Párraga P, Hervás V, Santamaría O, Márquez-Zurita C, Rivas-Ruiz F. Acupuncture for fibromyalgia in primary care: a randomised controlled trial. Acupuncture in Medicine. 2016;34(4):257-66. [191719]. | Sham | Kim 2019 [30], Zhang 2019 [18] |
| **2014** | Stival RS, Cavalheiro PR, Stasiak CE, Galdino DT, Hoekstra BE, Schafranski MD. [Acupuncture in fibromyalgia: a randomized, controlled study addressing the immediate pain response]. Rev Bras Reumatol. 2014;54(6):431-6. [190120]. | Sham | Kim 2019 [31], Zhang 2019 [26] |
| **2013** | Harte SE, Clauw DJ, Napadow V, Harris RE. Pressure pain sensitivity and insular combined glutamate and glutamine (GLX) are associated with subsequent clinical response to sham but not traditional acupuncture in patients who have chronic pain. Medical Acupuncture. 2013;25(2):154-160. [170039]. | Sham | Zhang 2019 [27] |
| **2012** | Hadianfard MJ, Hosseinzadeh Parizi M. A randomized clinical trial of fibromyalgia treatment with acupuncture compared with fluoxetine. Iran Red Crescent Med J. 2012;14(10):631-40. [169909]. | Fluoxetine | Cao 2013 [18], exclu Zhang 2019 (“Different treatment period. Acupuncture group received therapy for 2 weeks and control group received fluoxetine orally for 8 weeks”) |

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| | Liu SJ. [Clinical study on treating fibromyalgia syndrome with acupuncture and point injection]. [M.S. thesis], Hubei University of Traditional Chinese Medicine. 2012. | Amitriptyline | Cao 2013 [24] |
| **2010** | Gong Wei-Zhi, Wang Yu-Qi. [Observations on the therapeutic effect of acupuncture on fibromyalgia syndrome]. Shanghai Journal of Acupuncture and Moxibustion. 2010;29(11):725. [179722]. | Amitriptyline | Zhang 2019 [28], Cao 2013 [17], exclu Deare 2013 (“Article in Chinese”). |
| | Gou AS, Li AH. Clinical observation on therapeutic effect of electroacupuncture combining TDP irradiation on fibromyalgia syndrome 36 cases. Jiao Tong Yi Xue. 2010; 24(4): 410-411. | Fluoxetine | Yang 2014 [29], exclu Deare 2013 (“Article in Chinese”). |
| | Itoh K, Kitakoji H. Effects of acupuncture to treat fibromyalgia: a preliminary randomised controlled trial. Chinese Medicine. 2010;5(1):11. [155309]. | No intervention | Deare 2013, exclu Zhang 2019 (“Five acupuncture treatments vs ten acupuncture treatments”) |
| | Jang ZY, Li CD, Qiu L, Guo JH, He LN, Yue Y, Li FZ, Qin WY. [Combination of acupuncture, cupping and medicine for treatment of fibromyalgia syndrome: a multi-central randomized controlled trial]. Chinese Acupuncture and Moxibustion. 2010;30(4):265-9. [155708]. | Amitriptyline / Seroxat | Cao 2013 [21], exclu Zhang 2019 (control), exclu Deare 2013 (“Article in Chinese. Invalid control (acupuncture + cupping +Westernmedicine versus acupuncture + cupping versus+ Western medicine”). |
| | Ruan YD, Wei WZ, Hong XT, and Yang XH. [Clinical observation of moxibustion for fibromyalgia]. in Proceedings of the 11th Acupuncture Symposium of Guangdong Province. 2010. | Amitriptyline | Cao 2013 [26] |
| **2009** | Harris RE, Zubieta JK, Scott DJ, Napadow V, Gracely RH, Clauw DJ. Traditional Chinese acupuncture and placebo (sham) acupuncture are differentiated by their effects on mu-opioid receptors (MORS). Neuroimage. 2009;47(3):1077-1085. [153312]. | Sham | Kim 2019 [41], Zhang 2019 [29], Deare 2013 |
| **2008** | Harris RE, Sundgren PC, Pang Y, Hsu M, Petrou M, Kim SH, Mclean SA, Gracely RH, Clauw DJ. Dynamic levels of glutamate within the insula are associated with improvements in multiple pain domains in fibromyalgia. Arthritis Rheum. 2008;58(3):903-7. [148811]. | Sham | Deare 2013, exclu de Zhang 2019 (“Data unusable; only ten patients”) |
| | Targino RA, Imamura M, Kaziyama HH, Souza LP, Hsing WT, Furlan AD, Imamura ST, Azevedo Neto RS. A randomized controlled trial of acupuncture added to usual treatment for fibromyalgia. J Rehabil Med. 2008;40(7):582-8. [151018]. | Tricyclic antidepressants and exercise | Yang 2014 [32], Cao 2013 [20], Deare 2013, exlu Zhang 2019 (“Acupuncture + tricyclic antidepressants + exercise vs tricyclic antidepressants + exercise”) |
| | Wang CM. [Clinical treatment of acupuncture and semiconductor laser irradiation on fibromyalgia symptoms 28 cases]. Shi Yong Zhong Yi Nei Ke Xue Za Zhi, 2008; 22(1): 58. | Amitriptyline | Yang 2014 [27] |

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| **2006** | Martin DP, Sletten CD, Williams BA, Berger IH. Improvement in fibromyalgia symptoms with acupuncture: results of a randomized controlled trial. Mayo Clin Proc. 2006;81(6):749-57. [141310]. | Sham | Kim 2019 [43], Zhang 2019 [30], Yang 2014 [25], Cao 2013 [25], Deare 2013 |
| | Yao QP. [Clinical study on fibromyalgia syndrome with the acupuncture of stimulating Du channel and smoothing other channels and collaterals. [M.S. thesis]: Heilongjiang University of Traditional Chinese Medicine. 2006. | Amitriptyline | Cao 2013 [29] |
| **2005** | Assefi NP, Sherman KJ, Jacobsen C, Goldberg J, Smith WR, Buchwald D. A randomized clinical trial of acupuncture compared with sham acupuncture in fibromyalgia. Ann Intern Med. 2005;143(1):10-9. [140340]. | Sham | Zhang 2019 [33], Cao 2013 [14], Deare 2013, Exclu de Kim 2019 [12] (“all of the results are not reported”) |
| | Guo Ying, Sun Yuan-Zheng. [Clinical study on treatment of fibromyalgia syndrome with penetration needling at the back]. Chinese Acupuncture and Moxibustion. 2005;25(2):98-100. [136926]. | Amitriptyline | Zhang 2019 [31], Yang 2014 [28], Deare 2013 |
| | Harris RE, Tian X, Williams DA, Tian TX, Cupps TR, Petzke F, Groner KH, Biswas P, Gracely RH, Clauw DJ. Treatment of fibromyalgia with formula acupuncture: investigation of needle placement, needle stimulation, and treatment frequency. Journal of Alternative and Complementary Medicine. 2005;11(4):663-71. [117483]. | Sham | |
| | Guo XJ, Jia J. [Comparison of therapeutic effects on fibromyalgia syndrome between dermal-neurological electric stimulation and electric acupuncture]. Chinese Journal of Tissue Engineering Research 2005;(53): 171-173. | Amitriptyline | |
| **2003** | Cao JQ, Li Y. [Combination of acupuncture and antidepressant medications in treating of 56 cases of fibromyalgia], Chinese Archives of TCM. 2003;21(5):813-17. [200356]. | Seroxat | Cao 2013 [15] |
| **2002** | Liu Q, Li F. [Clinical observation of acupuncture for 30 cases of fibromyalgia]. Anthology of Medicine (医学文选). 2002. 21(2) | Ibuprofen | Cao 2013 [23], exclu de Zhang 2019 (‘“Did not meet ACR criteria”), exclu Deare 2013 (“Article in Chinese. Did not meet ACR criteria”). |
| | Wang SP, Wang XF, Zhang DX, et al. [Clinical observation on therapeutic effect of acupuncture treatment based on syndrome differentiation of meridians on fibromyalgia syndrome]. Chinese Acupuncture and Moxibustion. 2002;22(12):807. [110262]. | Amitriptyline, Oryzanol, Vit B1 | Yang 2014 [30], exclu de Zhang 2019 (“not an RCT”), exclu Deare 2013 (“Article in Chinese. Data unusable as no SD”). |

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| **1998** | Sprott H. Efficiency of Acupuncture in Patients with Fibromyalgia. Clin Bull Myofascial Ther. 1998;3(1):37-43. [94391]. | Sham | Cao 2013 [27], Exclu de Kim 2019 [39] (“all of the results are not reported”), exclu de Zhang 2019 '“Data unusable”), exclu Deare 2013 (““Randomly subdivided into 3 groups”. Data unusable as shows only ’mean’ results”). |
| **1992** | Deluze C, Bosia L, Zirbs A, Chantraine A, Vischer TL. Electroacupuncture in fibromyalgia : results of a controlled trial. BMJ. 1992;305(6864):1249-52. [37521] | Sham | Kim 2019 [42], Zhang 2019 [14], Yang 2014 [22] , Cao 2013 [16], Deare 2013 |
| **1989** | Lautenschlager J , Schnorrenberger CC, Müller W. Akupunktur bei generalisierter tendomyopathie (fibromyalgie-syndrom). Deutsche Zeitschrift für Akupunktur. 1989;6:122-8. [80120]. | Sham | Cao 2013 [22], exclu Deare 2013 (“Article in German. ACR criteria not met”). |