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Chronic Fatigue Syndrome

Syndrome de fatigue chronique : évaluation de l'acupuncture

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Li 2026

Li Y, Liang G, Xiao T, Xu L. Efficacy of acupuncture-based traditional Chinese medicine therapies for chronic fatigue syndrome: a systematic review and meta-analysis. Front Neurol. 2026;17:1860788. doi: 10.3389/fneur.2026.1860788.

Objective	To systematically review the available evidence on acupuncture-related therapies for chronic fatigue syndrome (CFS), with cautious interpretation due to the limited number and heterogeneity of studies.
Methods	PubMed, Embase, Web of Science, and Cochrane Library were systematically searched for randomized controlled trials (RCTs) on acupuncture-related therapies for CFS from database inception to April 1, 2026. Two researchers independently performed literature screening, data extraction, and risk of bias assessment. The methodological quality of the included studies was evaluated using the Cochrane RoB 2 tool for RCTs. Meta-analysis was conducted using R software. Continuous outcomes were expressed as standardized mean difference (SMD) with 95% confidence interval (CI), and binary outcomes as risk ratio (RR) with 95% CI. Primary outcomes included overall fatigue, physical fatigue, mental fatigue, total response rate, and incidence of adverse events.
Results	A total of **8 RCTs involving 715 patients** were included. Risk of bias assessment showed that one study had a high overall risk of bias, and seven studies raised “some concerns.” Meta-analysis results indicated that acupuncture-related therapies were superior to control interventions in improving overall fatigue, with a statistically significant difference (SMD = -1.31, 95% CI: -2.16 to -0.47, p = 0.002), although heterogeneity was high (I2 = 91.7%). They were also superior to controls in improving physical fatigue (SMD = -0.52, 95% CI: -0.88 to -0.16, p = 0.0048; I2 = 63.8%) and mental fatigue (SMD = -0.59, 95% CI: -0.93 to -0.26, p = 0.0006; I2 = 56.5%). The total response rate was higher in the intervention group than in the control group, with a statistically significant difference (RR = 1.22, 95% CI: 1.07 to 1.40, p = 0.004; I2 = 0.0%). Safety analysis showed no statistically significant difference in the risk of adverse events between the intervention and control groups (RR = 2.26, 95% CI: 0.76 to 6.76, p = 0.144; I2 = 0.0%).
Conclusion	Current limited evidence indicates that acupuncture-related therapies may have some beneficial effects on overall, physical, and mental fatigue in patients with CFS, and may increase response rates; however, these findings should be interpreted cautiously due to small sample sizes, moderate risk of bias, and heterogeneity among studies. No explicit safety hazards have been confirmed. And further validation by more high-quality RCTs is needed.

1.1.2. Feng 2025

Feng C, Qu Y, Wu J, Chen T, Liu T, Lu J, Li S, Yang T. The efficacy of acupuncture-based Chinese medicine in chronic fatigue syndrome: a meta-analysis. Medicine (Baltimore). 2025 May 23;104(21):e42111. https://doi.org/10.1097/MD.0000000000042111

Background	The efficacy of acupuncture therapy in treating chronic fatigue syndrome (CFS) remains debated due to inconsistent findings. This study conducted a systematic review and meta-analysis to assess its effects on fatigue, functional mobility, and mental health.
Methods	Comprehensive searches were performed in PubMed, PEDro, CINAHL, SportDiscus, and Scopus. Studies meeting PICO criteria were screened and analyzed. Standardized mean differences (SMDs) with 95% confidence intervals (CIs) were calculated using fixed or random-effects models. Study quality and publication bias were evaluated to ensure reliability.
Results	Acupuncture showed significant short-term improvement in fatigue (RR = -1.21, 95% CI: -1.38 to -1.04), long-term fatigue (RR = -0.56, 95% CI: -0.70 to -0.42), somatic and mental health (RR = -0.30, 95% CI: -1.03 to 0.44), and reduced depression incidence (RR = -0.28, 95% CI: -2.11 to 1.56).
Conclusion	Acupuncture, particularly when combined with rehabilitation, appears to improve fatigue and quality of life in patients with CFS. However, methodological variability and inclusion of lower-quality studies limit the strength of conclusions. Larger, multicenter RCTs with standardized protocols are needed.

1.1.3. Jiang 2025

Jiang B, Cao M, Xia X, Wang L. Effect of nonpharmacologic therapies on depressive symptoms in patients with chronic fatigue syndrome: a network meta-analysis. Front Psychiatry. 2025 Aug 19;16:1657615. https://doi.org/10.3389/fpsyt.2025.1657615

Backgound	Depression or depressive symptoms exacerbate the burden in patients with chronic fatigue syndrome (CFS). The therapeutic effects of various non-pharmacological interventions remain unclear.
Objective	This paper aims to evaluate the effectiveness of different non-pharmacological measures in alleviating depression or depressive symptoms in patients with CFS through network meta-analysis.
Methods	PubMed, Cochrane Library, Web of Science, Embase, CNKI, Wanfang, CBM, VIP, and Sinomed databases were searched for randomized controlled trials (RCTs) until March 26, 2025. The Cochrane Risk of Bias Assessment Tool 2.0 was utilized to appraise the risk of bias. A network meta-analysis was conducted using the GeMTC package in R (4.4.2). This protocol has been registered in PROSPERO (CRD420251020737).
Results	47 RCTs involving 4,028 participants were included. Compared with control measures, diet therapy was most effective in improving depression or depressive symptoms in patients with CFS (SMD = -5.64, 95% CI: -8.98 to -2.29), followed by moxibustion (Mox) (SMD = -2.91, 95% CI: -4.61 to -1.22), acupuncture (Ap) + Mox + acupoint embedding (SMD = -3.16, 95% CI: -0.39 to -5.98), and Ap + Mox (SMD = -2.53, 95% CI: -1.17 to -3.91).
Conclusion	Diet therapy is the most effective in improving depression or depressive symptoms in patients with CFS, followed by Mox. Further carefully designed RCTs are warranted to substantiate these findings.

1.1.4. Li 2025

Li R, Zhang Y, Xie Y, Chen X. Comparing different acupuncture methods for the treatment of chronic fatigue syndrome: A systematic review and network meta-analysis. Eur J Integr Med. 2025;79:102556. https://doi.org/10.1016/j.eujim.2025.102556

Background	Acupuncture includes various therapeutic modalities that have been shown to improve symptoms of Chronic Fatigue Syndrome (CFS). However, the comparative efficacy of these different acupuncture-related methods remains uncertain.
Objective	To evaluate and rank the effectiveness of different acupuncture and related therapies for CFS through a network meta-analysis.
Methods	A comprehensive search of three Chinese and four English databases identified randomized controlled trials evaluating acupuncture for CFS from inception to July 2025. Primary and secondary outcomes were FS-14 fatigue scores and total effective rate, respectively. A Bayesian network meta-analysis compared nine distinct intervention types.
Results	Thirty-five randomized controlled trials including 2,383 participants were analyzed. Pairwise comparisons showed that moxibustion (mean difference [MD]: 12.43, 95% CI: 4.03–21.14) and acupuncture (MD: 11.15, 95% CI: 3.3–19.39) were more effective than Western medicine in improving FS-14 scores. For total effective rate, moxibustion outperformed acupuncture (risk ratio [RR]: 0.82, 95% CI: 0.74–0.9) and Western medicine (RR: 1.5, 95% CI: 1.33–1.71). SUCRA rankings indicated moxibustion had the highest overall curative effect across both outcomes.
Conclusion	Moxibustion appears to provide the greatest benefit for reducing fatigue symptoms in CFS. Nevertheless, further high-quality RCTs are required to confirm these results.

1.1.5. Fang 2022

Fang Y, Yue BW, Ma HB, Yuan YP. Acupuncture and moxibustion for chronic fatigue syndrome: A systematic review and network meta-analysis. Medicine (Baltimore). 2022 Aug 5;101(31):e29310. https://doi.org/10.1097/MD.0000000000029310

Background	Research into acupuncture and moxibustion and their application for chronic fatigue syndrome (CFS) has been growing, but the findings have been inconsistent.
Objective	To evaluate the existing randomized clinical trials (RCTs), compare the efficacy of acupuncture, moxibustion and other traditional Chinese medicine (TCM) treatments.
Methods	Data sources: Three English-language databases (PubMed, Embase, Web of Science, and The Cochrane Library) and 4 Chinese-language biomedical databases (Chinese Biomedical Literature Database, VIP Database for Chinese Technical Periodicals, China National Knowledge Infrastructure, and Wanfang) were searched for RCTs published from database inception through August 2021. Study selection: RCTs include acupuncture, moxibustion, traditional Chinese herbal medicine, western medicine and no control. Data extraction and synthesis: Data were screened and extracted independently using predesigned forms. The quality of RCTs was appraised with the Cochrane Collaboration risk of bias tool. We conducted a random-effects network meta-analysis within a frequentist framework. We assessed the certainty of evidence contributing to network estimates of the main outcomes with the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework. Main outcomes and measures: The primary outcomes were the overall response rate and FS-14 scale.

Results	A total of **51 randomized controlled trials involving 3473** patients with CFS were included in this review. Forty one studies indicate low risk or unknown risk, and the GRADE scores of the combined results show low levels. Among the main indicators, traditional Chinese medicine therapies have excellent performance. However, the overall response rate is slightly different from the results obtained from the Fatigue Scale-14 total score. Moxibustion and traditional Chinese medicine (Odds ratios 48, 95% CrI 15-150) perform better in the total effective rate, while moxibustion plus acupuncture (MD 4.5, 95% CrI 3.0-5.9) is better in the FS-14 total score.
Conclusions	The effect of acupuncture and moxibustion in the treatment of CFS was significantly higher than that of other treatments. Traditional Chinese medicine should be used more widely in the treatment of CFS.

1.1.6. Hu 2020

Hu Yue. [A systematic review of the effectiveness and safety of combined acupuncture and moxibustion in the treatment of chronic fatigue syndrome]. Hunan Journal of TCM. 2020. [212957].

Objective	To systematically evaluate the clinical effectiveness and safety of combined acupuncture and moxibustion in the treatment of chronic fatigue syndrome (CFS).
Methods	Electronic search of domestic and foreign databases, foreign language databases including Web of Science, Pub Med, The Cochrane Library and Embase, Chinese databases including China Knowledge Network (CNKI), Wanfang Data (WANFANG DATA), China Biomedical Literature Database (CBM) HeVIP Chinese Science and Technology Journal Database (VIP), the document language is not limited, and the final retrieval time is November 1, 2018. Collect all randomized controlled trials (RCT) of combined acupuncture and moxibustion therapy for CFS, and use Rev Man version 5. 3 software for Meta analysis.
Results	A total of **18 RCTs (1329 patients)** were included. 1) Comparative simple needling quantitative analysis of the results showed that combination therapy acupuncture can significantly improve the cure rate [OR = 2. 08, 95% CI = (1. 37, 3. 14), P <0. 05] and the total Efficiency [OR=3. 43, 95%CI= (2. 39, 4. 93), P<0. 05], and significantly improved the fatigue symptom score of CFS patients [MD=3. 86, 95%CI= (2. 94, 4. 78), P <0. 05]. 2) Qualitative comprehensive analysis shows that the clinical effect of combined acupuncture and moxibustion therapy is better than oral Chinese medicine or Western medicine.
Conclusion	The combined acupuncture and moxibustion therapy has a good clinical effect on CFS.

1.1.7. Kim 2020

Kim DY, Lee JS, Park SY, Kim SJ, Son CG. Systematic review of randomized controlled trials for chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME). J Transl Med. 2020;18(1):7. [204143].DOI

Background	Although medical requirements are urgent, no effective intervention has been proven for chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME). To facilitate the development of new therapeutics, we systematically reviewed the randomized controlled trials (RCTs) for CFS/ME to date.
Methods	RCTs targeting CFS/ME were surveyed using two electronic databases, PubMed and the Cochrane library, through April 2019. We included only RCTs that targeted fatigue-related symptoms, and we analyzed the data in terms of the characteristics of the participants, case definitions, primary measurements, and interventions with overall outcomes.

Results	Among 513 potentially relevant articles, 55 RCTs met our inclusion criteria; these included 25 RCTs of 22 different pharmacological interventions, 28 RCTs of 18 non-pharmacological interventions and 2 RCTs of combined interventions. These studies accounted for a total of 6316 participants (1568 males and 4748 females, 5859 adults and 457 adolescents). CDC 1994 (Fukuda) criteria were mostly used for case definitions (42 RCTs, 76.4%), and the primary measurement tools included the Checklist Individual Strength (CIS, 36.4%) and the 36-item Short Form health survey (SF-36, 30.9%). Eight interventions showed statistical significance: 3 pharmacological (Staphypan Berna, Poly(I):poly(C12U) and CoQ10 + NADH) and 5 non-pharmacological therapies (cognitive-behavior-therapy-related treatments, graded-exercise-related therapies, rehabilitation, **acupuncture** and abdominal tuina). However, there was no definitely effective intervention with coherence and reproducibility.
Conclusions	This systematic review integrates the comprehensive features of previous RCTs for CFS/ME and reflects on their limitations and perspectives in the process of developing new interventions.

1.1.8. Zhang 2019

Zhang Q, Gong J, Dong H, Xu S, Wang W, Huang G. Acupuncture for chronic fatigue syndrome: a systematic review and meta-analysis. Acupuncture in Medicine. 2019;37(4):211-222. [205540]. doi

Objective	To evaluate evidence for the efficacy of acupuncture for chronic fatigue syndrome (CFS).
Methods	Randomized controlled trials (RCTs) comparing acupuncture with sham acupuncture, other interventions that may have a therapeutic effect, or no intervention, for the treatment of CFS, were searched for in the following databases up to March 2018: Pubmed; Embase; the Cochrane Library; Web of Science; Wanfang database; China National Knowledge Infrastructure (CNKI); Chinese Biomedicine (CBM) database; and VIP database. Risk of bias was determined using the Cochrane tool. Meta-analyses were performed using RevMan V.5.3 software. The GRADE approach (Grading of Recommendations Assessment, Development and Evaluation) was adopted for levels of evidence.
Results	Sixteen studies with 1346 subjects were included. Most studies had low methodological quality. Meta-analyses showed a favourable effect of acupuncture on overall response rate compared with sham acupuncture (four studies, 281 participants, RR=2.08, 95% CI 1.4 to 3.1, I2=64%, low certainty) and Chinese herbal medicine (three studies, 290 participants, RR=1.17, 95% CI 1.07 to 1.29, I2=0%, low certainty). Acupuncture also appeared to significantly reduce fatigue severity measured by Chalder's Fatigue Scale and the Fatigue Severity Scale compared with other types of control.
Conclusion	Our review indicated that acupuncture was more effective than sham acupuncture and other interventions (Chinese herbal medicine, mainly), but no firm conclusion could be reached owing to limited data, poor quality and potentially exaggerated effect size evaluation. Further large, rigorously designed and reported RCTs are required.

1.1.9. Hong 2017 ☆☆☆

Hong Guk Kim, Dek Woo Ryoo, Seong Mok Jeong, Sung Jin Kim, Seung Won Baek, Chang Hee Lee, Jin Young Yoon, Bon Hyuk Goo, Min Jeong Kim, Yeon Cheol Park, Byung Kwan Seo, Yong Hyeon Baek, Sang Soo Nam, Yong Suk Kim. A Systematic Review of Acupuncture for Chronic Fatigue Syndrome. The Acupuncture. 2017;34(2):93-112. [151668].

Objectives	To evaluate and summarize the efficacy and safety of acupuncture treatment (AT) in chronic fatigue syndrome (CFS).

Methods	Fifteen databases (Pubmed, Cochrane, EMBASE, AMED, CINAHL, CNKI, Wanfang, and eight Korean databases) were searched up to September 2016. Only trials in which acupuncture was the sole treatment were included. Fatigue was used as the primary outcome measure, while the quality of life, pain, mood disorders, and adverse events were used as secondary outcome measures. We adopted three classifications: AT vs Sham AT, AT vs Wait-list, AT vs Western medication. The Cochrane risk of bias tool was used to assess the methodological quality.
Results	A total of **11 randomized controlled trials involving 869 participants** were identified. **In comparison with Sham AT, AT significantly alleviated fatigue and pain**, but no conclusions about the quality of life and mood disorders could be drawn. In the Wait-list group and Western medication groups, patients with CFS might feel less fatigued following acupuncture treatment, but the evidence was insufficient due to lack of study. Nine of 11 RCTs (81.8%) reported adverse events and there were two cases of mild subcutaneous hemorrhage, but no serious adverse cases.
Conclusion	This review found **evidence that patients with CFS may generally benefit from alleviation of symptoms by acupuncture treatment**, and there is no evidence of worsening symptoms or causing of serious adverse events. A positive effect on fatigue and pain was observed, but no conclusion for improving quality of life and mood disorders.

1.1.10. Wang 2017 ☆☆

Wang T, Xu C, Pan K, Xiong H. Acupuncture and moxibustion for chronic fatigue syndrome in traditional Chinese medicine: a systematic review and meta-analysis. BMC Complement Altern Med. 2017;17(1):163. [191956].

BACKGROUND	As the etiology of chronic fatigue syndrome (CFS) is unclear and the treatment is still a big issue. There exists a wide range of literature about acupuncture and moxibustion (AM) for CFS in traditional Chinese medicine (TCM). But there are certain doubts as well in the effectiveness of its treatment due to the lack of a comprehensive and evidence-based medical proof to dispel the misgivings. Current study evaluated systematically the effectiveness of acupuncture and moxibustion treatments on CFS, and clarified the difference among them and Chinese herbal medicine, western medicine and sham-acupuncture.
METHODS	We comprehensively reviewed literature including PubMed, EMBASE, Cochrane library, CBM (Chinese Biomedical Literature Database) and CNKI (China National Knowledge Infrastructure) up to May 2016, for RCT clinical research on CFS treated by acupuncture and moxibustion. Traditional direct meta-analysis was adopted to analyze the difference between AM and other treatments. Analysis was performed based on the treatment in experiment and control groups. Network meta-analysis was adopted to make comprehensive comparisons between any two kinds of treatments. The primary outcome was total effective rate, while relative risks (RR) and 95% confidence intervals (CI) were used as the final pooled statistics.

RESULTS	A total of **31 randomized controlled trials (RCTs)** were enrolled in analyses. In traditional direct meta-analysis, we found that in comparison to Chinese herbal medicine, CbAM (combined acupuncture and moxibustion, which meant two or more types of acupuncture and moxibustion were adopted) had a higher total effective rate (RR (95% CI), 1.17 (1.09 ~ 1.25)). Compared with Chinese herbal medicine, western medicine and sham-acupuncture, SAM (single acupuncture or single moxibustion) had a higher total effective rate, with RR (95% CI) of 1.22 (1.14 ~ 1.30), 1.51 (1.31-1.74), 5.90 (3.64-9.56). In addition, compared with SAM, CbAM had a higher total effective rate (RR (95% CI), 1.23 (1.12 ~ 1.36)). In network meta-analyses, similar results were recorded. Subsequently, we ranked all treatments from high to low effective rate and the order was CbAM, SAM, Chinese herbal medicine, western medicine and sham-acupuncture.
CONCLUSIONS	**In the treatment of CFS, CbAM and SAM may have better effect than other treatments**. However, the included trials have relatively poor quality, hence high quality studies are needed to confirm our finding.

1.1.11. Li 2016 ☆

Li Pei-wen, Sun ying. [Systematic Review of Acupuncture Treatment for Chronic Fatigue Syndrome in Recent Decade] Journal of Clinical Acupuncture and Moxibustion. 2016;32(8):71. [190339].

Objective	To observe and evaluate the effect of acupuncture therapy on CFS.
Methods	Make strict inclusion and exclusion criteria and use Cochrane evaluation method to make systematic review of clinical trials of acupuncture therapy for CFS.
Results	**5 researches with 337 patients** were included. Statistical analysis showed that the effectiveness of acupuncture, acupuncture and moxibustion, electrical acupuncture with acupoint injection, acupuncture and herb decoction for chronic fatigue syndrome had a clinical and statistical significance (OR> 1, 95% CI not including 1). Acupuncture had advantages over single western medicine.
Conclusion	**Acupuncture treatment for chronic fatigue syndrome has a certain effect**. There may be advantages in the method of acupuncture, acupuncture and moxibustion, electrical acupuncture with acupoint injection. Since the qualities of the included research are not satisfactory, the depth 'evaluation is Limited. It' s necessary to make further systematic review of high-quality clinical trials.

1.1.12. Wang 2014 ☆☆

Wang YY, Li XX, Liu JP, Luo H, Ma LX, Alraek T. Traditional Chinese medicine for chronic fatigue syndrome: a systematic review of randomized clinical trials. Complement Ther Med. 2014 Aug;22(4):826-33. [170432].

Contexte	There is no curative treatment for chronic fatigue syndrome (CFS). Traditional Chinese medicine (TCM) is widely used in the treatment of CFS in China.
Objectifs	To evaluate the effectiveness and safety of TCM for CFS.
Méthodes	The protocol of this review is registered at PROSPERO. We searched six main databases for randomized clinical trials (RCTs) on TCM for CFS from their inception to September 2013. The Cochrane risk of bias tool was used to assess the methodological quality. We used RevMan 5.1 to synthesize the results.

Résultats	23 RCTs involving 1776 participants were identified. The risk of bias of the included studies was high. The types of TCM interventions varied, including Chinese herbal medicine, **acupuncture**, qigong, moxibustion, and acupoint application. The results of meta-analyses and several individual studies showed that TCM alone or in combination with other interventions significantly alleviated fatigue symptoms as measured by Chalder's fatigue scale, fatigue severity scale, fatigue assessment instrument by Joseph E. Schwartz, Bell's fatigue scale, and guiding principle of clinical research on new drugs of TCM for fatigue symptom. There was no enough evidence that TCM could improve the quality of life for CFS patients. The included studies did not report serious adverse events.
Conclusions	TCM appears to be effective to alleviate the fatigue symptom for people with CFS. However, due to the high risk of bias of the included studies, larger, well-designed studies are needed to confirm the potential benefit in the future.

1.1.13. 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].

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.
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.

1.1.14. Wang JJ 2009 ☆☆

Wang JJ et al. A meta analysis on randomised controlled trials of acupuncture treatment of chronic fatigue syndrome. Acupuncture Research. 2009;34(6):421-28. [155768].

Purpose	To assess the effectiveness of acupuncture treatment of chronic fatigue syndrome (CFS).
Methods	According to the requirement of evidence-based medicine, CFS, fatigue syndrome, acupuncture and moxibustion, acupuncture, electroacupuncture, auricular acupuncture, auricular pellet pressure, plum-blossom needle, intradermal needle, moxibustion, three edged needle, cupping, cup-moving, acupoint injection, etc. were selected as the subject words for retrieving the related papers form domestic and foreign medical databases. The RCT was used as the enrolled criteria, and the clinical cure rate, markedly effective rate, total effective rate, and the scores of the Fatigue Assessment Instrument Questionnaire (FAI) and fatigue scale (FS) were used as the assessment indexes. The statistical package (RevMan 4.2) was used to review management and analysis of **13 papers**.
Results	A total of 28 papers were enrolled. Logistic regression analysis showed that the total odds ratio (OR) was 4.56, with 95% confidence interval (CI) [2.84, 7.33] for the total effective rate in 10 studies, the total OR was 2.07 with 95% CI [1.49, 2.88] for the markedly effective rate in 8 studies, and the total OR was 2.51 with 95% CI [1.64, 3.85] for the clinical cure rate in 8 studies. The weighted mean difference (WMD) was -29.52 with 95% CI [-36.17, -22.88] for the FAI score in 3 studies, and the WMD -1.22 with 95% CI [-1.77, -0.67] for the FS score in 4 studies. The therapeutic effect in the treatment group of CFS was superior to that in the control group (P<0.01).
Conclusion	**Acupuncture therapy is effective for CFS**, but still needs being confirmed by more high-quality studies.

1.1.15. Wang T 2008 ☆

Wang T, Zhang Q, Xue X, Yeung A. A systematic review of acupuncture and moxibustion treatment for chronic fatigue syndrome in China. Am J Chin Med. 2008;36(1):1-24.[148369].

> Studies on the treatment of chronic fatigue syndrome (CFS) with acupuncture and moxibustion in China were reviewed. All studies concluded the treatments were effective, with response rates ranging from 78.95% to 100%. However, the qualities of the studies were generally poor, and none of them used a RCT design. The common acupoints/sites used in the treatment of CFS, which may reflect the collective experience of acupuncturists in China based on Traditional Chinese Medicine theories can be used to evaluate the effectiveness of acupuncture for the treatment of CFS in future studies using more scientifically rigorous study designs.

1.2. Special Acupuncture Techniques

1.2.1. Moxibustion

1.2.1.1. You 2021

You J, Ye J, Li H, Ye W, Hong E. Moxibustion for Chronic Fatigue Syndrome: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2021 Nov 11;2021:6418217. https://doi.org/10.1155/2021/6418217

Objective	This review aimed at systematically evaluating the efficacy and safety of moxibustion for chronic fatigue syndrome (CFS).
Methods	Relevant trials were searched in seven digital databases up to January 2021. After literature screening, data extraction, and literature quality evaluation, the included studies were meta-analyzed using RevMan 5.4 software. The evidence level was assessed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE).
Results	**Fifteen studies involving 1030 CFS participants** were included. Meta-analyses showed a favorable effect of moxibustion on the total effective rate compared with acupuncture (OR = 4.58, 95%CI = [2.85, 7.35],) and drugs (OR = 6.36, 95%CI = [3.48, 11.59],). Moxibustion also appeared to significantly reduce fatigue severity measured by fatigue scale-14 (FS-14) (WMD = −2.20, 95% CI = [−3.16, −1.24],) and fatigue assessment instrument (FAI) (WMD = −16.36, 95% CI = [−26.58, −6.14],) compared with the control group. In addition, among the 15 included studies, only two studies reported adverse events related to moxibustion, and the symptoms were relatively mild. The quality of evidence based on the 15 included trials was assessed as moderate to very low.
Conclusions	Based on limited evidence, moxibustion might be an effective and safe complementary therapy for CFS, which can be recommended to manage CFS. Because of the limited level of evidence in this review, further high-quality trials are still needed to confirm these findings.

1.2.2. Catgut Embedding

1.2.2.1. Guo 2019

Guo Ting, Zhou Rui, Wang Qingyun, Zhuang Lixing. [Meta - Analysis of Acupoint Catgut Embedding in Treating CFS]. Journal of Clinical Acupuncture and Moxibustion. 2019;35(10):86. [203180].

Objective	To investigate the effect of acupoint catgut embedding in treating chronic fatigue syndrome (CFS) with meta - analysis method.
Methods	Randomized controlled trials of acupoint catgut embedding in treating CFS were coflected from CBM, CNKI, VIP, PubMed, Embase and Cochrane Library. Literature were strictly screened out, and the quality of the included literature were assessed in accordance with the Cochrane system evaluation criteria (5. 1. 0), software Revman5. 3 and Statal 3. 0 were used for statistical analysis.
Results	There were **9 clinical studies, involving 755 patients**. Heterogeneous test ultimately determined that the trials had no heterogeneity (x2 = 5. 89, j2< 50%, P = O. 75). The effective rate of acupoint catgut embedding in treating CFS was higher than that of the control group (OR = 4. 76, 95 % CI: [2. 9 1, 7. 80], P< 0. 01).
Conclusion	Acupoint catgut embedding therapy has a positive role in clinical treatment of CFS. However, more reasonable and higher quality randomized trials are required to support the result of the study.

1.3. Preclinical and mechanistic systematic reviews

1.3.1. Ren 2026

Ren S, Wei J, Zhao S, Li L, Zhang J, Yan C, Wang J. Effectiveness of non-pharmacological therapies in complementary and alternative medicine on improving fatigue levels, oxidative stress, inflammation,

and endocrine levels in animal models of chronic fatigue-like conditions: a systematic review and network meta-analysis. Front Physiol. 2026;17:1807587. DOI:10.3389/fphys.2026.1807587

Objective	To systematically evaluate the effects of various complementary and alternative medicine (CAM) non-pharmacological therapies on fatigue levels, oxidative stress, inflammation, and endocrine indicators in chronic fatigue-like conditions animal models, and to rank the efficacy of these interventions.
Methods	A computerized search was conducted across databases including PubMed, Cochrane Library, Embase, Web of Science, CNKI, Wanfang, VIP, and CBMdisc, to collect animal experiments on fatigue-like conditions treated with CAM non-pharmacological therapies published from the establishment of the databases to January 14, 2026. Two researchers independently screened the literature, extracted data, and assessed risk of bias. Stata 16.0 software was used for network meta-analysis, and SYRCLE's risk of bias tool was employed to evaluate the quality of the included studies.
Results	A total of 77 studies involving nine types of CAM non-pharmacological therapies were included. In terms of improving fatigue levels, compared to the control group, **electroacupuncture** (MD = 347.00 s, 95% CI [144.70, 549.29]) and **moxibustion** (MD = 311.28 s, 95% CI [146.36, 476.20]) significantly prolonged exhaustive swimming time. In terms of improving oxidative stress damage, fire **acupuncture** (MD = -13.15 nmol/ml, 95% CI [-18.06, -8.24]), **manual acupuncture** (MD = -3.85 nmol/ml, 95% CI [-5.12, -2.58]), **needle-pricking** (MD = -11.43 nmol/ml, 95% CI [-16.54, -6.32]), and moxibustion (MD = -479.16 nmol/ml, 95% CI [-567.05, -391.27]) significantly reduced MDA levels. In terms of improving inflammatory damage, Tuina (MD = -552.03 pg/ml, 95% CI [-700.81, -403.25]) and **electroacupuncture** (MD = -156.59 pg/ml, 95% CI [-259.85, -53.34]) can significantly reduce the level of IL-1β. In terms of regulating endocrine, electroacupuncture (MD = -9.91 pg/ml, 95% CI [-14.77, -5.05]) and Tuina (MD = -16.96 pg/ml, 95% CI [-25.37, -8.55]) can significantly reduce the level of CRH.
Conclusion	Non-pharmacological therapies in complementary and alternative medicine have great potential in improving fatigue-related phenotypes, oxidative stress damage, inflammatory damage, and regulating endocrine levels in animal models of fatigue-like conditions. Future research should focus on developing animal models that better replicate the pathogenesis and core characteristics of CFS, and then extend them to randomized controlled trials involving CFS patients to verify the transformation potential.

2. Overviews of Systematic Reviews

2.1. Luo 2020

Luo Zhenyi. [Acupuncture and Moxibustion for Chronic Fatigue Syndrome: An Overview of Systematic Reviews]. Journal of Yunnan University of TCM. 2020. [212951].

Objective	To reevaluate the methodological quality and evidence quality of systematic reviews (SRs) of acupuncture for chronic fatigue syndrome (CFS).
Methods	PubMed, EMBASE, the Cochrane Library, web of science, VIP, CNKI and Wanfang database were searched by computer to collect the SRs of acupuncture and moxibustion in the treatment of chronic fatigue syndrome. The retrieval time limit was from the establishment of the database to December 1, 2019. The AMSTAR 2 scale and GRADE tool were used to evaluate the methodological and evidence-based quality of the inclusion SRs.

Results	Finally, **13 SRs** were included, including 54 main outcome indicators. The results of the AMSTAR 2 tool evaluation showed that: 8 were of“low”quality and 5 were of“very low”quality. The results of the GRADE system showed that among the main outcome indicators included, there were 8 “high level”evidence quality grades, 10 “medium level”evidence quality grades, 6“low level”evidence quality grades and 30“very low level”evidence quality grades.
Conclusion	The current systematic review of acupuncture and moxibustion for CFS is of low quality and evidence level. Therefore, in the design of clinical trials in the future, large samples and high-quality RCTs should be used to strictly evaluate the efficacy and safety of acupuncture in the treatment of CFS, and the methodological quality and evidence quality of evidence-based acupuncture research should be further standardized in order to guide clinical in terms of decision-making and better use of the advantages and characteristics of Chinese medicine.

3. Clinical Practice Guidelines

3.1. Toward Optimized Practice 2016 (TOP, Canada)

Toward Optimized Practice. Identification and symptom management of myalgic encephalomyelitis/chronic fatigue syndrome. Edmonton (AB): Toward Optimized Practice. 2016. 34P. [168600].

Non-pharmacologic pain management is very individual. Treating fibromyalgia pain in ME/CFS is similar to treating pain in fibromyalgia. One may try: pacing activities exercise, (aerobic is best for those with fibromyalgia pain according to the Ottawa Consensus) physical therapy, massage, stretching, **acupuncture**, hydrotherapy, chiropractic, yoga, **Tai Chi** and meditation (relaxation response).

3.2. International Association for Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (IACFS/ME) 2012

Chronic fatigue syndrome/myalgic encephalomyelitis. A primer for clinical practitioners. Chicago (IL): International Association for Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (IACFS/ME). 2012. 41P. [168885].

5:10 Alternative and complementary approaches. Patients with ME/CFS often try costly alternative treatments in search of a cure. A review of a number of studies revealed generally poor methodologies and little evidence for more than modest effects. Equivocal evidence was found for homeopathy and biofeedback. Acupuncture, massage and chiropractic are relatively established treatments for pain, and thus are covered in the pain section. More detailed information may be found in recent reviews.

3.3. Agence d’évaluation des technologies et des modes d’intervention en santé (AETMIS, Canada) 2010

Rouleau G, Ceppi U, Hjelholt Pedersen V, Dagenais P. Le syndrome de fatigue chronique : état des connaissances et évaluation des modes d’intervention au Québec. Agence d’évaluation des technologies et des modes d’intervention en santé (AETMIS). 2010;6(2):185P. [204346].

Efficacité inconnue : l'**acupuncture**, la massothérapie, l'homéopathie et l'ostéopathie obtiennent quelques résultats encourageants qui devront être confirmés.

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