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# menopause sleep disorders

# Insomnies de la ménopause : évaluation de l'acupuncture

## 1. Systematic Reviews and Meta-Analysis

### 1.1. Generic Acupuncture

#### 1.1.1. Bruyneel 2026

Bruyneel M, Rozenberg S, Sanida C, Demaeyer N, Castermans E, Bruyneel AV. Pharmacological and non-pharmacological treatments for chronic insomnia in perimenopausal and postmenopausal women: a systematic review and meta-analysis. Sleep Med. 2026;146:109040. https://doi.org/10.1016/j.sleep.2026.109040

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| **Introduction** | Chronic insomnia is highly prevalent during menopause, with or without vasomotor symptoms, and is associated with significantly impaired quality of life, impaired cognitive functioning, mood disturbances, and increased cardiovascular risk. This systematic review assessed the effectiveness of pharmacological and non-pharmacological treatments (acupuncture, yoga, massage) versus placebo or no treatment for chronic insomnia in peri- and postmenopausal women. The secondary aim was to establish the most effective treatment (pharmacological or non-pharmacological) for menopausal-associated chronic insomnia. |
| **Methods** | We performed data extraction from PubMed/Medline, EMBASE and CINAHL to include only randomized controlled trials in adult peri-menopausal or menopausal women with chronic insomnia, comparing a pharmacological treatment or a non-pharmacological intervention with placebo, passive control, or active control. The primary outcome was sleep quality, assessed by Pittsburgh sleep quality index (PSQI), insomnia severity index (ISI), or total sleep time (TST). |
| **Results** | Out of 80 identified studies, 24 were included in the qualitative synthesis and 17 in the meta-analysis. Methodological quality was generally good to excellent (mean PEDro score 8.66/10). The meta-analysis showed a significant effect of non-pharmacological treatment on PSQI and ISI, while pharmacological treatments were only effective on PSQI. Neither objective nor subjective TST was modified by the treatments. |
| **Conclusion** | Despite several limitations, nonpharmacological interventions, particularly cognitive behavioral therapy for insomnia and techniques reducing sympathetic hyperarousal (**acupuncture**, yoga, massage), seem to be the most robust first-line options for peri- and postmenopausal women suffering from chronic insomnia, whereas pharmacological treatments still require longer and better designed studies to establish their long-term efficacy and safety. |

#### 1.1.2. Luo 2026

Luo R, Zhu J, Yang J. Effectiveness of non-pharmacological interventions for insomnia related to

natural menopause: A meta-analysis of randomized controlled trials. Maturitas. 2026;209:108970. https://doi.org/10.1016/j.maturitas.2026.108970

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| **Background** | Insomnia is common in the general population and is more prevalent in menopausal women. This meta-analysis synthesized and assessed the effect of non-pharmacological interventions for insomnia related to natural menopause. |
| **Methods** | Comprehensive searches for randomized controlled trials were conducted across multiple databases from inception to February 2025, including PubMed, Web of Science, Embase, and the Cochrane Library. Sleep quality was evaluated with the Pittsburgh Sleep Quality Index, and insomnia was evaluated with the Insomnia Severity Index. The risk of bias was evaluated with the revised Cochrane RoB 2 tool, and random effects models were used for meta-analyses. |
| **Results** | Twenty-two studies with a total of 1648 participants were analyzed. Non-pharmacological interventions significantly reduced PSQI and ISI scores. In a subgroup analysis, cognitive behavioral therapy, exercise, **acupuncture, acupressure**, and integrated interventions all improved low sleep quality in women after natural menopausal (cognitive behavioral therapy: MD -3.38, 95% CI -4.15 to -2.62, P < 0.01, heterogeneity I2 = 0%, P = 0.67; exercise: MD -1.17, 95% CI -1.88 to -0.47, P < 0.01; heterogeneity I2 = 24%, P = 0.27; acupuncture: MD -6.25, 95% CI -7.64 to -4.87, P < 0.01, heterogeneity I2 = 22%, P = 0.26; **self-administered acupressure**: MD -2.26, 95% CI -3.10 to -1.43, P < 0.01, heterogeneity I2 = 0%, P = 0.38; **nurse-administered acupressure**: MD -7.61, 95% CI -8.30 to -6.93, P < 0.01, heterogeneity I2 = 0%, P = 0.74; integrated interventions MD -2.89, 95% CI -3.67 to -2.12, P < 0.01, heterogeneity I2 = 33%, P = 0.19). The sensitivity analysis indicated that these findings are robust. |
| **Conclusion** | They suggest that non-pharmacological interventions are preferred options for managing insomnia related to natural menopause and may be beneficial for patients who refuse to use hypnotic medications or hormone therapy, or who have contraindications. PROSPERO REGISTRATION OF REVIEW PROTOCOL: CRD420250652866. |

### 1.1.3. Dong 2025

Dong M, Sun Y, Wang X, Yu X, Li H. Efficacy of acupuncture as an adjunctive therapy for perimenopausal insomnia: a systematic review and meta-analysis of randomized controlled trials. Clinics (Sao Paulo). 2025 Oct 28;80:100814. https://doi.org/10.1016/j.clinsp.2025.100814

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| **Background** | Perimenopausal insomnia (PMI) is a prevalent condition that significantly impacts women’s quality of life and overall well-being. This study aimed to evaluate the efficacy of acupuncture used alongside conventional treatments for improving sleep and related symptoms in PMI. |
| **Methods** | A systematic search was conducted up to December 2024 across six databases, including PubMed, Web of Science, Cochrane Library, Embase, CNKI, and Wanfang. Only randomized controlled trials assessing acupuncture as an adjunctive therapy for PMI were included. Sensitivity and subgroup analyses were performed using Review Manager 5.4 and Stata 15.0 to test result stability and identify sources of heterogeneity. |

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| **Results** | **Thirty-two randomized controlled trials with 2,673 participants** were included. Adjunctive acupuncture significantly improved overall therapeutic effects (RR = 1.25, 95% CI [1.20–1.30]) compared with controls. It also yielded greater improvements in Pittsburgh Sleep Quality Index (PSQI) (SMD = −1.00, 95% CI [−1.21 to −0.79]), Menopause-Specific Quality of Life (MENQOL) (SMD = −0.56, 95% CI [−0.88 to −0.23]), Traditional Chinese Medicine Syndrome Score Scale (TCMSSS) (SMD = −1.40, 95% CI [−2.55 to −0.24]), Adverse Drug Reactions (ADR) (RR = 0.35, 95% CI [0.17–0.71]), Epworth Sleepiness Scale (ESS) (SMD = −0.57, 95% CI [−0.83 to −0.31]), and Insomnia Severity Index (ISI) (SMD = −0.94, 95% CI [−1.43 to −0.46]). |
| **Conclusion** | Acupuncture as an adjunctive therapy significantly enhances treatment efficacy for perimenopausal insomnia and reduces adverse effects, supporting its integration into clinical practice. Further high-quality studies are needed to confirm these findings and guide individualized therapeutic approaches. |

### 1.1.4. Eskandari 2025

Eskandari L, Keramat A, Rohani-Rasaf M. Effectiveness of Acupuncture and Acupressure for Improving the Sleep Quality of Menopausal Women: A Meta-Analysis. Iran J Med Sci. 2025 Mar 1;50(3):132-145. https://doi.org/10.30476/ijms.2024.102726.3586.

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| **Backgound** | Various pharmacological and non-pharmacological treatments are utilized to address sleep disorders. This meta-analysis aimed to evaluate the effects of acupuncture and acupressure on enhancing sleep quality in menopausal women. |
| **Methods** | A systematic search was conducted using multiple databases, including Scopus, MEDLINE/PubMed, Cochrane CENTRAL, ProQuest, Google Scholar, and Iranian databases (SID, Iranmedex, Magiran) with no date restrictions up to July 2024. Studies published in both Persian and English were included in this meta-analysis. The search utilized keywords such as acupuncture, acupressure, sleep quality, insomnia, menopause, and sleep disorders. A pairwise random-effects meta-analysis was performed to calculate the mean difference (MD) and 95% confidence intervals (95% CIs). |
| **Results** | The analyses indicated that both acupuncture and acupressure effectively improved sleep quality in menopausal women. **Eight trials with 499 participants** demonstrated that acupressure significantly enhanced sleep quality (MD=-2.33, 95% CI=-3.27 to -1.38; I2=94%, P<0.001, n=8). Additionally, six trials with 344 participants showed that acupuncture enhanced sleep quality (MD=-3.47, 95% CI=-5.06 to -1.88; I2=97%, P<0.001, n=6). |
| **Conclusion** | The findings revealed that acupressure and acupuncture might improve sleep quality in menopausal women. However, there was a high heterogeneity between studies, and further research is required to confirm the findings of the present study. |

### 1.1.5. Jiang 2025 (combined with medication)

Jiang S, Zhang Y, Sun Y. The effectiveness and safety of acupuncture combined with medication in the treatment of perimenopausal insomnia: a systematic review and meta-analysis. Front Neurol. 2025 Mar 13;16:1476719. https://doi.org/10.3389/fneur.2025.1476719

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| **Introduction** | The aim of this study is to evaluate the effectiveness and safety of the combination therapy of acupuncture and medication in the treatment of perimenopausal insomnia (PMI). This research seeks to provide scientific evidence for clinical practice, optimize treatment protocols, and enhance the sleep quality and overall quality of life for women experiencing perimenopausal insomnia. |

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| **Methods and analysis** | A comprehensive search was conducted across 8 databases, including the China National Knowledge Infrastructure (CNKI), Wanfang Academic Journal Full-text Database (Wanfang), Chongqing VIP Database (CQVIP), China Biology Medicine Disc (CBM), PubMed, Web of Science, Excerpta Medica Database (EMBASE), and Cochrane Library, from their establishment to July 1, 2024. Outcome measures were analyzed using Review Manager 5.4 and Stata 15.0 software. The included randomized controlled trials (RCTs) involved 1,187 patients with perimenopausal sleep disorders (596 in the experimental group and 591 in the control group). The analysis indicated that compared to Western medication alone, the combination therapy showed better efficacy [risk ratio (RR) = 1.24, 95% confidence interval (CI) (1.17, 1.31), $p < 0.00001$] and safety [RR = 0.31, 95%CI (0.18, 0.53), $p < 0.0001$]. It also demonstrated more significant improvements in Pittsburgh Sleep Quality Index (PSQI) [mean difference (MD) = -2.77, 95%CI (-4.11, -1.43), $p < 0.0001$], Hamilton Anxiety Rating Scale (HAMA) scores [MD = -3.45, 95%CI (-3.94, -2.97), $p < 0.00001$], Kupperman Menopausal Index (KMI) [MD = -1.46, 95%CI (-2.23, -0.70), $p = 0.0002$], Traditional Chinese Medicine Syndromes (TCMS) scores [MD = -2.45, 95%CI (-3.85, -1.04), $p = 0.0006$], and hormone levels, including Luteinizing Hormone (LH) [MD = -4.17, 95%CI (-7.42, -0.93), $p = 0.01$], Follicle-Stimulating Hormone (FSH) [MD = -10.50, 95%CI (-14.80, -6.20), $p < 0.00001$], and Estradiol (E2) [MD = 12.15, 95%CI (6.79, 17.51), $p < 0.00001$]. |
| **Discussion** | The combination therapy demonstrates great efficacy and safety for PMI patients, representing an innovative integrative alternative treatment with high clinical application value. |

### 1.1.6. Song 2025

Song S, Chen H, Fu H. Systematic review and meta-analysis on the efficacy and safety of acupuncture for perimenopausal insomnia. Front Neurol. 2025 Aug 11;16:1649856. https://doi.org/10.3389/fneur.2025.1649856

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| **Backgound** | Perimenopausal insomnia is a chronic physical and mental health disorder that plagues women. However, there are no systematic reviews or meta-analyses on the treatment of perimenopausal insomnia with acupuncture alone. Therefore, we conducted a meta-analysis to assess the efficacy and safety of acupuncture alone in improving perimenopausal insomnia. |
| **Methods** | This study searched for randomized controlled trials on acupuncture treatment for perimenopausal insomnia from seven major literature databases in both Chinese and English: Web of Science, PubMed, the Cochrane Library, Embase, China National Knowledge Infrastructure, VIP database, and Wan-fang database. The quality of the studies was assessed according to the Cochrane Handbook for Systematic Reviews of Interventions. Meta-analysis was conducted using Rev Man 5.4 software. |
| **Results** | The study comprised **nine randomized controlled trials involving 968 people**. The results showed that acupuncture was superior to the control group in improving the effective rate (OR: 3.30; 95% CI: 2.18-4.98; $p < 0.00001$), PSQI score (MD: -3.26; 95% CI: -4.62- -1.90; $p < 0.00001$), FSH (MD: -11.01; 95% CI: -15.39- -6.63; $p < 0.00001$), KMI score ($p < 0.05$), 5-HT ($p < 0.05$), NE ($p < 0.05$), MENQOL score ($p < 0.05$), early-wake score ($p < 0.05$), sleep actigraphy monitoring ($p < 0.05$), and Traditional Chinese Medicine symptom scores ($p < 0.05$) in patients with menopausal insomnia. The two groups had no significant differences in regulating serum E2 (MD: 7.70; 95% CI: 2.20-13.19; $p = 0.06$) and LH levels (MD: -5.42; 95% CI: -9.46- -1.37; $p = 0.009$). |

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| **Conclusion** | Acupuncture treatment is significantly effective for patients with perimenopausal insomnia. However, large-sample, multi-center, long-term follow-up trials should be conducted to obtain more reliable results. Considering the particularities of acupuncture treatment, actively constructing a real-world acupuncture clinical research paradigm will bring more authentic, rich, and practical research outcomes to clinical practitioners. |

### 1.1.7. Wang 2025 (network meta-analysis)

Wang Z, Yang H, Li S, Cheng L, Yuan Y, Bai Y, Su J, Li Y, Wang T, Xu Z. Effectiveness of nonpharmacological interventions for menopause-related insomnia: A systematic review and Bayesian network meta-analysis. Maturitas. 2025 Aug 30;202:108713. https://doi.org/10.1016/j.maturitas.2025.108713

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| **Backgound** | Nonpharmacological therapies are widely used to improve the sleep quality of menopausal women experiencing insomnia. It is necessary to clarify which of the nonpharmacological therapies studied in randomized controlled trials are most effective and comprehensively evaluate their impacts. |
| **Method** | We conducted a systematic search across PubMed, Embase, the Cochrane Central Register of Controlled Trials, and the Web of Science from their inception until May 25, 2025. To analyze and visualize our results, we utilized the “BUGSnet” and “JAGS” packages within the R statistical software. Employing a random-effects model, we calculated effect sizes as mean differences (MD) for continuous outcomes. Furthermore, we performed a quality assessment of our study using the RoB2 tool. |
| **Results** | Out of 1925 studies screened, 44 were included in the final analysis. The findings revealed that, compared with a control condition, relaxation, cognitive behavioral therapy, mindfulness, aromatherapy, acupuncture, massage, yoga and exercise all significantly improved sleep quality. The MD values ranged from -5.61 (95 % CrI: -8.70 to -2.50) for mindfulness to -2.40 (95 % CrI: -4.19 to -0.62) for exercise. Mindfulness was also the most effective based on SUCRA. |
| **Conclusion** | Relaxation, cognitive behavioral therapy, mindfulness, aromatherapy, **acupuncture**, massage, yoga and exercise all significantly improve sleep quality and mindfulness is the most effective. |

### 1.1.8. Yang B 2025 (Integrated acupuncture-pharmacotherapy)

Yang B, Jiang S, Teng Y, Wang Y, Zhang J, Gao C, Song C. Integrated acupuncture-pharmacotherapy for perimenopausal insomnia: a systematic review and meta-analysis. Front Neurol. 2025 Aug 20;16:1633794. https://doi.org/10.3389/fneur.2025.1633794

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| **Objective** | Insomnia is a prevalent symptom among perimenopausal women, mainly attributed to estrogen-progesterone imbalance and neuropsychiatric factors, significantly impacting their quality of life. This article seeks to systematically evaluate the efficacy of integrated acupuncture-pharmacotherapy (AP) in treating perimenopausal insomnia (PMI), offering new insights for the management of insomnia in women. |

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| **Methods** | Searches were conducted in 8 databases: PubMed, Web of Science (WOS), Cochrane Library, Embase, China National Knowledge Infrastructure (CNKI), China Biology Medicine Disc (CBM), Wanfang Academic Journal Full-text Database (Wanfang), and Chongqing VIP Database (CQVIP). Database searches extended through August 1, 2024. Endnote 20 was used to build the database and screen for eligible randomized controlled trials (RCTs). The efficacy of AP for PMI were demonstrated by assessing 3 primary outcome measures (Effective rate, Hamilton Anxiety Scale [HAMA], Traditional Chinese Medicine Syndromes [TCMS]) and 5 secondary outcome measures (Pittsburgh Sleep Quality Index [PSQI], Modified Kupperman Index [KMI], Luteinizing Hormone [LH], Follicle-Stimulating Hormone [FSH], Estradiol [E2]). The risk of bias was assessed according to the Cochrane Handbook for Systematic Reviews of Interventions. Data analysis was performed using RevMan 5.4 and StataMP 15.0. Subgroup or sensitivity analysis was applied as necessary to address issues of heterogeneity. Regression analysis was used to determine whether the division of potential subgroups is reasonable. The evidence quality level was evaluated using the GRADEprofiler following the GRADE approach. |
| **Results** | A total of **12 eligible studies comprising 969 PMI** cases were ultimately included in this meta-analysis. Pooled results indicated AP had statistically significant benefits for PMI: Efficacy (Effective rate [RR = 1.22, 95% CI (1.13, 1.30), Z = 3.88, p < 0.00001]), Scores (HAMA [MD = -3.26, 95% CI (-3.79, -2.73), Z = 12.06, p < 0.00001]), TCMS [MD = -0.98, 95% CI (-1.21, -0.74), Z = 7.99, p < 0.00001], PSQI [MD = -3.12, 95% CI (-4.21, -2.03), Z = 5.63, p < 0.00001], KMI [MD = -3.96, 95% CI (-5.78, -2.15), Z = 4.28, p < 0.0001], and hormone levels LH [MD = -10.16, 95% CI (-16.41, -3.91), Z = 3.18, p = 0.001 < 0.05], FSH [MD = -8.65, 95% CI (-13.67, -3.64), Z = 3.39, p = 0.0007 < 0.05], E2 [MD = 15.87, 95% CI (10.16, 21.58), Z = 5.45, p < 0.00001]. |
| **Conclusion** | AP demonstrates significant efficacy in treating PMI patients, offering an innovative integrative therapy with substantial clinical value. Future studies should involve more large-scale, multicenter RCTs with long-term follow-up. |

### 1.1.9. Yang R 2025

Yang R, Zhang S, Huang G, Tang X, Li Q, Huang Y, Deng Y, Wang H, Chen Z, Guo T, Liang F. Acupuncture for perimenopausal insomnia: a systematic review and meta-analysis. Front Med (Lausanne). 2025 Oct 13;12:1673994. https://doi.org/10.3389/fmed.2025.1673994

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| **Background** | Perimenopausal insomnia (PMI) significantly compromises the quality of life and the physical and mental wellbeing of perimenopausal women. Although many randomized controlled trials indicate that acupuncture alleviates PMI symptoms, comprehensive evidence on its efficacy and safety is lacking. This meta-analysis aimed to systematically evaluate the therapeutic efficacy and safety of acupuncture for PMI to provide robust, evidence-based guidance for clinical practice. |
| **Methods** | Twelve randomized controlled trials were included, involving 499 participants in the acupuncture group and 495 in the control group. Quality assessment was performed using the Cochrane Risk of Bias tool. RevMan 5.4 and Stata 18.0 were used for meta-analysis and sensitivity analysis. |

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| **Results** | **Ten studies** were included in the quantitative synthesis. The random-effects model showed that acupuncture significantly improved sleep quality compared to the drug control group, with a reduction in PSQI scores (MD = −2.26, 95% CI [−4.23 to −0.29], $p < 0.00001$). Subgroup analyses revealed superiority over Estazolam (MD = −2.89, $p < 0.00001$) but not over alprazolam (MD = −2.30, $p = 0.27$) or diazepam (MD = −6.55, $p < 0.00001$). Compared with sham acupuncture, acupuncture produced a greater reduction in PSQI (MD = −4.85, $p = 0.0001$). Acupuncture also reduced LH (MD = −6.55, $p < 0.00001$) and FSH (MD = −12.12, $p = 0.002$) while increasing estradiol (E2) (MD = 11.96, $p < 0.00001$). One study reported a significant improvement in ISI scores (MD = −3.64, $p = 0.0003$). Adverse events were documented in only 4 of the 12 trials. |
| **Conclusion** | Evidence of low to moderate quality suggests that acupuncture may offer potential benefits and good safety for perimenopausal insomnia. Further large-scale, multicenter, double-blind RCTs using standardized protocols are needed to confirm these findings. |

### 1.1.10. Zhang 2025

Zhang X, Liu C, Qin S, Chen C, Wang X, Jiang Y, Wu W. Acupuncture as an independent or adjuvant therapy to standard management for menopausal insomnia: A systematic review and meta-analysis. PLoS One. 2025 Feb 6;20(2):e0318562. https://doi.org/10.1371/journal.pone.0318562

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| **Objective** | This systematic review aimed to clarify if acupuncture is more effective for menopausal insomnia compared with sham acupuncture, standard care (sedative hypnotics and/or MHT) or waitlist control. |
| **Methods** | Seven literature databases were searched on April 30, 2024, to identify RCTs assessing the effectiveness of acupuncture. The methodological quality was assessed by the Cochrane Collaboration, and meta-analyses were conducted to calculate comparative effects using Rev Man software. |
| **Results** | **28 RCTs** were analyzed. Six sham acupuncture-controlled RCTs were notable because of their high quality, and they showed that acupuncture significantly lowered PSQI scores, increased TST, sleep efficiency, and reduced WASO. The effect of acupuncture was maintained at a 4-week follow-up. Sixteen RCTs compared acupuncture with standard care, which showed acupuncture significantly reduced PSQI scores, KI scores, HAMD and HAMA scores. However, the subgroup analysis showed that there was no obviously difference between acupuncture and western medication in the treatment duration >8 weeks. Five RCTs assessed acupuncture combined with standard care and showed a favorable reduction in the PSQI score than standard care. One RCT showed that acupuncture significantly reduced PSQI and KI scores than a waitlist control. The GRADE assessment demonstrated that the level of evidence was very low to moderate, probably for the poor methodological quality and substantial heterogeneity among studies. |

### 1.1.11. Li 2023 (combined with Chinese herbal medicine)

Li Z, Yin S, Feng J, Gao X, Yang Q, Zhu F. Acupuncture combined with Chinese herbal medicine in the treatment of perimenopausal insomnia: A systematic review and meta-analysis. Medicine (Baltimore). 2023 Nov 10;102(45):e35942. https://doi.org/10.1097/MD.0000000000035942

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| **Background** | Perimenopausal insomnia (PMI) is a relatively common menopausal symptom that can cause serious problems for the women themselves and their families. Today, the world is facing the trend and challenges of an aging population. It is reported that about 1.5 million women worldwide enter menopause every year, with sleep disorder identified as a core symptom. The efficacy of acupuncture combined with traditional Chinese medicine for treating PMI has been recognized by patients and doctors. |

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| **Methods** | We searched 8 databases to identify 15 randomized controlled trials evaluating the effects of acupuncture combined with traditional Chinese medicine on sleep in patients with PMI compared with Western medicine alone. Subsequently, data extraction and analysis were performed to assess the quality and risk of bias of the study method design, and a meta-analysis of the data was performed. |
| **Results** | This study included **15 randomized controlled trials involving 1188 patients** with PMI. The results show that acupuncture combined with traditional Chinese medicine seems to be more effective than Western medicine in the treatment of PMI: efficiency (RR: 1.18; 95% CI: 1.08, 1.29; P = .001); the Pittsburgh Sleep Quality Index (PSQI) (WMD: -2.77; 95% CI: 4.15-1.39; P < .0001); follicle-stimulating hormone (FSH) (WMD: -31.45; 95% CI: 42.7-20.2; P < .001) and the Hamilton Anxiety Score (HAMA) (WMD: -2.62, 95% CI: -3.93, -1.32; P < .0001). Compared with western medicine, E2 (WMD: 5.07; 95% CI: 5.78-15.92; P = .36) and LH (WMD: -4.86; 95% CI: 11.5-1.78; P = .151) had no difference. |
| **Conclusion** | The current analysis results show that acupuncture combined with Chinese medicine seems to have a more positive effect than western medicine alone in improving sleep and FSHF in PMI patients, but no difference has been found in improving E2 and LH. This study provides a basis for acupuncture combined with Chinese medicine to treat PMI. However, due to the higher risk of evaluation in included studies, more rigorous randomized controlled trials and higher quality studies are needed to validate included studies. |

### 1.1.12. Zhao 2021

Zhao FY, Fu QQ, Kennedy GA, Conduit R, Wu WZ, Zhang WJ, Zheng Z. Comparative Utility of Acupuncture and Western Medication in the Management of Perimenopausal Insomnia: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2021. [218689]. doi

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| **Background** | Many women with perimenopausal insomnia (PMI) have sought alternative therapies such as acupuncture because of concerns about risks associated with hormone replacement therapy (HRT) and/or psychotropic drugs. This systematic review aimed to clarify if acupuncture alone or combined with standard Western pharmacotherapy (HRT and/or psychotropic drugs) is more effective in ameliorating PMI in comparison to pharmacotherapy alone. |
| **Methods** | Randomized controlled trials (RCTs) of PMI treatment via acupuncture alone or combined with Western pharmacotherapy versus Western pharmacotherapy were searched for from eleven databases from inception to March 2020. Cochrane criteria were followed. |
| **Results** | **Fifteen studies involving 1410 women** were analyzed. Meta-analysis indicated that acupuncture significantly reduced the global scores of Pittsburgh Sleep Quality Index (PSQI) [MD = -2.38, 95% CI (-3.38, -1.37), p < 0.01] and Kupperman Index [MD = -5.95, 95% CI (-10.68, -1.21), p = 0.01], compared with hypnotics. Acupuncture combined with hypnotics was more effective than hypnotics alone in decreasing PSQI scores [MD = -3.13, 95% CI (-5.43, -0.83), p < 0.01]. Too few RCTs were available to investigate the clinical efficacy differences between acupuncture and HRT/psychotropic drugs other than hypnotics. |
| **Conclusions** | Despite limited evidence, in comparison to hypnotics, acupuncture was associated with significant improvements in PMI, and reductions of other menopausal symptoms. This finding suggests that acupuncture may be a useful addition to treatment for PMI. |

### 1.1.13. Chiu 2016 ☆☆

Chiu HY, Hsieh YJ, Tsai PS. Acupuncture to Reduce Sleep Disturbances in Perimenopausal and

Postmenopausal Women: A Systematic Review and Meta-analysis. Obstet Gynecol:. 2016;127(3):507-15. [176627].

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| **Objectives** | To examine the association of acupuncture with sleep disturbances and serum sex hormone levels in perimenopausal and postmenopausal women and whether there are associated changes in sex hormone levels. |
| **Methods** | DATA SOURCES: We systematically searched electronic databases (EMBASE, PubMed, PsycINFO, CINAHL, ClinicalTrials.gov, Wanfang Data Chinese Database, and China Knowledge Resource Integrated Database) and the reference lists of the identified studies. METHODS OF STUDY SELECTION: Randomized controlled trials that examined the effects of acupuncture on sleep disturbances in perimenopausal and postmenopausal women were included. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement was followed. |
| **Results** | We identified **31 randomized controlled trials with 34 effect sizes involving a total of 2,433 participants**. Acupuncture is associated with a significant reduction in the likelihood of sleep disturbances (odds ratio [OR] 0.21, 95% confidence interval [CI] 0.14-0.31), a significant increase in the secretion of serum estradiol (pooled difference in means 7.56 pg/mL, 95% CI 4.03-11.08), and reduction in the secretion of serum follicle-stimulating hormone (-6.75 milli-international units/mL, 95% CI -12.16 to -1.34) and luteinizing hormone (-2.71 milli-international units/mL, 95% CI -4.22 to -1.20). Studies with a large effect size of acupuncture-associated changes in serum estradiol had a significantly lower odds of sleep disturbances than did those with a small-to-moderate effect sizes (Ors 0.07 and 0.36, P=.02). |
| **Conclusions** | Acupuncture is associated with a significant reduction in sleep disturbances in women experiencing menopause-related sleep disturbances. Our findings suggest that acupuncture should be adopted as part of a multimodal approach for improving sleep disturbances in perimenopausal and postmenopausal women. |

### 1.1.14. Zhang 2012

Zhang Ning, Hu Jing, Wang Yan. [Meta-analysis on RCTs of menopause sleep disorders treated by acupuncture therapy]. Chinese Journal of Information on Traditional Chinese Medicine. 2012;8:24-26. [186948].

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| **Objectives** | To assess the efficacy of acupuncture treatment on menopause sleep disorders. |
| **Methods** | Collect randomized controlled clinical trial involving acupuncture for menopause sleep disorders, retrieve Chinese and English relevant database by computer and manual searching, then evaluate the quality of the literature according to Cochrane Handbook recommended quality assessment method, and statistically analyze the data using software RevMan5. 1. 2. |
| **Results** | The systematic review included **eleven randomized controlled study with a total of 858 cases**. Meta-analysis derived: the difference in efficiency, the acupuncture treatment compared with drug control, was statistically significant [OR=5. 99, 95%CI (2. 32, 15. 49), P=0. 000 2]. Sub-group analysis showed that: between acupuncture and herb control, the difference was not statistically significant [OR=2. 34, 95%CI (0. 23, 23. 78), P=0. 47]. While between acupuncture and western medicine control, special acupuncture and Chinese and Western medicine control, the differences were both statistically significant. In increasing serum E2 levels, acupuncture compared with drug therapy, the difference was statistically significant [MD=33. 69, 95% CI (29. 87, 37. 50), P<0. 000 01]. In increasing PSQI index, acupuncture compared with drug therapy, the difference was not statistically significant [MD=-0. 62, 95%CI (-2. 75, 1. 51), P=0. 57]. |
| **Conclusions** | Acupuncture has some effect on menopause sleep disorders. |

## 1.2. Special Acupuncture Techniques

### 1.2.1. Comparison of Acupuncture techniques

#### 1.2.1.1. Tian 2026

Tian L, Wang Z, Chen Q, Li J, Yang X, Han J. Development of an optimal acupuncture-moxibustion treatment protocol for perimenopausal insomnia. Zhongguo Zhen Jiu. 2026;46(11):1921-1930. https://doi.org/10.13703/j.0255-2930.20251126-k0003

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| **Background** | To systematically evaluate various acupuncture-moxibustion treatment regimens for perimenopausal insomnia using network meta-analysis combined with multi-criteria decision making (MCDM) approach, and to identify interventions with optimal overall efficacy across multiple dimensions, so as to provide a scientific basis for clinical decision-making. |
| **Methods** | Randomized controlled trials (RCTs) on acupuncture-moxibustion treatment for perimenopausal insomnia published from database inception to September 27, 2025 were systematically searched in the China National Knowledge Infrastructure (CNKI), VIP Chinese Journal Service Platform (VIP), Wanfang Data Knowledge Service Platform, China Biology Medicine Database (SinoMed), PubMed, EMbase, Cochrane Library, and Web of Science. Network meta-analysis was performed using R software (version 4.4.3), and surface under the cumulative ranking curve (SUCRA) value was calculated. A multidimensional evaluation system was established using the total effective rate, Pittsburgh sleep quality index (PSQI) score, and modified Kupperman menopausal index (KMI) score as efficacy indexes, and treatment frequency as the cost index. The entropy weight method was applied to determine index weight, and the weighted normalized decision matrix was analyzed using technique for order preference by similarity to ideal solution (TOPSIS) and multi-criteria optimization and compromise solution (Vlsekriterijumska Optimizacija I Kompromisno Resenje, VIKOR), two methods of MCDM, to comprehensively rank different acupuncture-moxibustion related interventions. |
| **Results** | A total of 32 RCTs were finally eligible, involving 19 acupuncture-moxibustion related protocols and 3 control measures. Network meta-analysis showed: for the total effective rate, the cumulative ranking curve was high for depression-relieving acupuncture therapy combined with western medication (SUCRA = 0.76), mind-regulating acupuncture therapy combined with Chinese herbal medication (SUCRA=0.75), and acupuncture at back-shu points of five zang organs combined with warming needle (SUCRA=0.75); for improvement in PSQI scores, cumulative ranking curve was high for abdominal acupuncture combined with Chinese herbal medication (SUCRA=0.93), depression-relieving acupuncture therapy combined with western medication (SUCRA=0.93), and acupuncture at back-shu points of five zang organs combined with warming needle (SUCRA= 0.84); and for improvement in modified KMI scores, it was high for warm needling (SUCRA=0.95), time-based acupoint selection acupuncture (SUCRA=0.79), and scalp acupuncture (SUCRA=0.76). MCDM analysis on treatment frequency demonstrated that acupuncture at back-shu points of five zang organs combined with warming needle ranked first in both TOPSIS and VIKOR methods, with relative closeness of 0.780 8 and Q value of 0, respectively. |
| **Conclusion** | Acupuncture at back-shu points of five zang organs combined with warming needle demonstrates the advantages in both efficacy and cost, showing superior comprehensive performance among various acupuncture-moxibustion related interventions for perimenopausal insomnia, and it may serve as a clinically recommended option. |

#### 1.2.1.2. Wang 2026

Wang S, Bai L, Zhu P, Wang H, Zhou E, Jing M, Fu S, Lyu Q, Bai T. A network meta-analysis of acupuncture therapy for female insomnia and negative emotions from the perspective of the perimenopausal window. Front Neurol. 2026;16:1726927. https://doi.org/10.3389/fneur.2025.1726927

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| **Background** | Perimenopausal women frequently experience insomnia and negative emotions due to hormonal fluctuations. Acupuncture, a traditional Chinese therapy, has attracted significant interest for its potential to regulate endocrine function and alleviate insomnia. Despite this, no systematic review has hitherto evaluated the efficacy of acupuncture on insomnia and negative emotions in perimenopausal women. This network meta-analysis was conducted to assess the therapeutic effects of acupuncture on these conditions, thereby generating robust clinical evidence to inform evidence-based practice and guide future research directions. |
| **Methods** | A systematic literature search was performed in multiple databases, such as PubMed, Web of Science, Medline, Scopus, Wanfang, CNKI, VIP Database, and CBM, covering all records from inception through November 2025. The primary outcome was measured using the Pittsburgh Sleep Quality Index (PSQI), while secondary outcomes were evaluated through various depression and anxiety scales, including the Kupperman Menopausal Index, Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, Self-Rating Anxiety Scale, Self-Rating Depression Scale, Generalized Anxiety Disorder-7, Patient Health Questionnaire-9, Beck Depression Inventory, and Beck Anxiety Inventory. |
| **Results** | According to the network meta-analysis, the top three interventions identified for the improvement of PSQI scores were, in order: routine acupuncture combined with auricular acupuncture; auricular acupuncture combined with Western medicine; and routine acupuncture combined with Pentatonic therapy. Seven interventions demonstrated significant effects compared to SH ($P < 0.05$). Regarding negative moods, balance acupuncture combined with Xiaoyao powder, routine acupuncture combined with pentatonic therapy, and abdominal acupuncture combined with sedative prescription and western medicine ranked highest ($P < 0.05$). |
| **Conclusion** | This network meta-analysis suggests that routine acupuncture combined with auricular acupuncture may be an effective intervention treatment for treating insomnia in perimenopausal women. Furthermore, balanced acupuncture combined with Xiaoyao powder may have a positive effect in alleviating negative emotions. |

# 2. Overview of Systematic Reviews

## 2.1. Zhao 2021 ☆

Zhao FY, Zhang WJ, Kennedy GA, Conduit R, Zheng Z, Fu QQ. The Role of Acupuncture in Treating Perimenopausal Insomnia: An Overview and Quality Assessment of Systematic Reviews and Meta-Analyses. Neuropsychiatr Dis Treat. 2021 Nov 11;17:3325-3343. https://doi.org/10.2147/NDT.S337504

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| **Objective** | To summarize and critically assess the reliability of the methodological quality and outcome measures from systematic reviews (SRs)/meta-analyses (MAs) and provide an overall verdict about the therapeutic value of acupuncture for perimenopausal insomnia (PMI). |

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| **Methods** | We conducted a comprehensive literature search for SRs/MAs of seven major databases (English and Chinese). For each included review, the methodological quality was appraised according to the Assessing the Methodological Quality of Systematic Reviews 2 (AMSTAR-2), the evidence quality was classified on the basis of the Grading of Recommendations, Assessment, Development and Evaluation (GRADE), and reporting quality was evaluated complying with Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2009 (PRISMA-2009). Veritas plots were used to quantify the quality of included SRs/MAs. |
| **Results** | **Nine SRs/MAs** were deemed eligible for the present overview. Considering the assessment of results from the AMSTAR-2 checklist, the methodological quality of one SR/MA was considered low, and the remaining eight were critically low. Major methodological deficiencies were concentrated on item 2 (the lack of protocol and/or registration information), item 7 (the lack of a list of excluded studies), and item 10 (the lack of reports on funding sources for individual studies included in the SRs/MAs). For the GRADE system, of the 25 outcomes, only three (12%) were rated as moderate-quality, while the remaining 22 were rated between low- and very low-quality. The PRISMA-2009 statement indicated three major reporting quality limitations in most SRs/MAs, namely: 1) only search terms without specific retrieval strategy; 2) incomplete descriptions for study characteristics, particularly the specific dosage and frequency of interventions in treatment/control groups; and 3) inadequate investigation and explanation of the source of high heterogeneity among original randomized control trials included. According to Veritas plots, quality rank scores of included SRs/MAs ranged from 3.3 to 8.3, with an average score of 6.4 ± 1.7. |
| **Conclusion** | Acupuncture appears to be beneficial for PMI management, but the quality of evidence is weakened by the unsatisfactory quality of both SRs/MAs and original trials included. |

# 3. Clinical Practice Guidelines

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

## 3.1. American College of Obstetricians & Gynecologists (ACOG, USA) 2026 ⊕

American College of Obstetricians & Gynecologists' Committee on Clinical Practice Guidelines–Gynecology. ACOG Clinical Practice Guideline: Management of Menopause-Related Vasomotor, Sleep, and Mood Symptoms. Obstet Gynecol. 2026 Nov 1;148(5):e345-e369. https://doi.org/10.1097/aog.0000000000006428

ACOG suggests acupuncture to reduce VMS (vasomotor symptoms) and improve menopause-related sleep disturbance and mood symptoms (conditional recommendation, low-quality evidence).

*Supporting evidence:*

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## 3.2. International Menopause Society (IMS) 2026 ⊕

Maunder A, Mardon AK, Rao V, Torkel S, Metri NJ, Liu J, Yang G, Giese N, Mantzioris E, Abdul Jafar NK, Rodrigues de Souza GE, Al-Kanini I, Romero L, Panay N, Pedder H, Ee C. Complementary therapies for management of menopausal symptoms: a systematic review to inform the update of the International Menopause Society recommendations on women's midlife health. Climacteric. 2026 Jan 7:1-45. https://doi.org/10.1080/13697137.2025.2584061

**Acupuncture.** *Menopause scale, psychological,safety*: Some studies demonstrate efficacy for menopausal symptoms and psychological symptoms. Acupuncture is likely to be safe ⊕⊕◯◯ LOW C.
**Acupuncture combined with Chinese herbal medicine (CHM).** *Sleep:* There is insufficient evidence to recommend acupuncture + CHM for sleep quality in general; however, the combination may be considered in women with perimenopausal insomnia ⊕⊕⊕◯ MODERATE C. *Psychological*: The combination could be considered for depressive symptoms ⊕⊕◯◯ LOW C. *Safety*: HCPs and women should be informed that short-term use of acupuncture + CHM appears to be safe ⊕⊕◯◯ LOW A.

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